

**UNITED MICROELECTRONICS CORPORATION
AND SUBSIDIARIES
CONSOLIDATED FINANCIAL STATEMENTS
WITH REPORT OF INDEPENDENT AUDITORS
FOR THE YEARS ENDED
DECEMBER 31, 2019 AND 2018**

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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.

Independent Auditors' Report

To United Microelectronics Corporation

Opinion

We have audited the accompanying consolidated balance sheets of United Microelectronics Corporation and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of comprehensive income, changes in equity and cash flows for the years ended December 31, 2019 and 2018, and notes to the consolidated financial statements, including the summary of significant accounting policies (together “the consolidated financial statements”).

In our opinion, based on our audits and the reports of other auditors (please refer to the *Other Matter – Making Reference to the Audits of Component Auditors* section of our report), the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2019 and 2018, and their consolidated financial performance and cash flows for the years ended December 31, 2019 and 2018, in conformity with the requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers and International Financial Reporting Standards, International Accounting Standards, Interpretations developed by the International Financial Reporting Interpretations Committee or the former Standing Interpretations Committee as endorsed and became effective by Financial Supervisory Commission of the Republic of China.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Auditing and Attestation of Financial Statements by Certified Public Accountants and auditing standards generally accepted in the Republic of China. Our responsibilities under those standards are further described in the *Auditors' Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Company in accordance with the Norm of Professional Ethics for Certified Public Accountant of the Republic of China (the “Norm”), and we have fulfilled our other ethical responsibilities in accordance with the Norm. Based on our audits and the reports of other auditors, we believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of 2019 consolidated financial statements. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Valuation for slow-moving inventories

As of December 31, 2019, the Company's net inventories amounted to NT\$21,715 million. As the semiconductor industry is characterized by rapid changes in technology, management had to evaluate and estimate a reserve for slow-moving inventories that are expected to be written-off or otherwise disposed of at a future date. Auditing the valuation for slow-moving inventories was complex due to judgement involved in the Company's estimation of the appropriate amount of the slow-moving inventories reserve, utilizing key inputs including historical usage, write-off activities and inventory aging. Therefore, we consider this is a key audit matter.

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls over the Company's slow-moving inventories reserve process. For example, we tested the control over management's review of the reserve method and the key inputs used in the valuation process. To test the slow-moving inventories reserve, our audit procedures included, amongst others, an evaluation of the appropriateness of management's determination of inventory aging and testing the accuracy and completeness of the underlying data such as historical usage and write-off activities used in determining the inventories reserve percentages. We also recalculated inventory reserve for the application of the reserve percentages to the inventory aging categories.

In addition, we evaluated the adequacy of disclosures of inventories. Please refer to Notes 5 and 6 to the Company's consolidated financial statements.

Other Matter – Making Reference to the Audits of Component Auditors

We did not audit the financial statements of certain associates and joint ventures accounted for under the equity method. Those financial statements were audited by other auditors, whose reports thereon have been furnished to us, and our opinions expressed herein are based solely on the reports of other auditors. These associates and joint ventures under equity method amounted to NT\$11,704 million and NT\$8,714 million, representing 3.16% and 2.39% of consolidated total assets as of December 31, 2019 and 2018, respectively. The related shares of profits (loss) from the associates and joint ventures under the equity method amounted to NT\$1,231 million and NT\$(751) million, representing 21.46% and (34.37)% of the consolidated income before tax for the years ended December 31, 2019 and 2018, respectively, and the related shares of other comprehensive income (loss) from the associates and joint ventures under the equity method amounted to NT\$1,184 million and NT\$(225) million, representing 12.41% and (6.27)% of the consolidated total comprehensive income (loss) for the years ended December 31, 2019 and 2018, respectively.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with the requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers and International Financial Reporting Standards, International Accounting Standards, Interpretations developed by the International Financial Reporting Interpretations Committee or the former Standing Interpretations Committee as endorsed and became effective by Financial Supervisory Commission of the Republic of China and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the ability to continue as a going concern of the Company, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance, including audit committee or supervisors, are responsible for overseeing the financial reporting process of the Company.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with auditing standards generally accepted in the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with auditing standards generally accepted in the Republic of China, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control of the Company.
3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the ability to continue as a going concern of the Company. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
5. Evaluate the overall presentation, structure and content of the consolidated financial statements, including the accompanying notes, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
6. Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

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

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of 2019 consolidated financial statements and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Other

We have audited and expressed an unqualified opinion including an Other Matter Paragraph on the parent company only financial statements of the Company as of and for the years ended December 31, 2019 and 2018.

/s/Chiu, Wan-Ju

/s/Hsu, Hsin-Min

Ernst & Young, Taiwan

February 26, 2020

Notice to Readers

The accompanying consolidated financial statements are intended only to present the consolidated financial position, results of operations and cash flows in accordance with accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such consolidated financial statements are those generally accepted and applied in the Republic of China.

Accordingly, the accompanying consolidated financial statements and report of independent auditors are not intended for use by those who are not informed about the accounting principles or auditing standards generally accepted in the Republic of China, and their applications in practice.

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

Assets	Notes	As of December 31,	
		2019	2018
Current assets			
Cash and cash equivalents	4, 6(1), 6(26), 6(27)	\$ 95,492,477	\$ 83,661,739
Financial assets at fair value through profit or loss, current	4, 5, 6(2), 12(7)	722,794	528,450
Contract assets, current	4, 6(18)	214,243	92,210
Notes receivable	4	98	118
Accounts receivable, net	4, 6(3), 6(26), 6(27)	25,438,703	23,735,989
Accounts receivable-related parties, net	4, 7	289,945	138,912
Other receivables	4	654,466	708,432
Current tax assets	4	26,220	20,856
Inventories, net	4, 5, 6(4), 6(26), 6(27)	21,714,802	18,203,119
Prepayments		6,290,518	11,225,322
Other current assets	6(18)	2,912,875	2,878,285
Total current assets		153,757,141	141,193,432
Non-current assets			
Financial assets at fair value through profit or loss, noncurrent	4, 5, 6(2), 7, 12(7)	13,298,679	11,555,847
Financial assets at fair value through other comprehensive income, noncurrent	4, 5, 6(5), 12(7)	14,723,232	11,585,477
Investments accounted for under the equity method	4, 6(6), 7	13,322,143	10,363,977
Property, plant and equipment	4, 5, 6(7), 6(26), 6(27), 8	150,374,096	172,846,595
Right-of-use assets	4, 6(8), 6(26), 8	8,291,517	-
Intangible assets	4, 6(9), 6(26), 7	5,198,247	2,991,804
Deferred tax assets	4, 5, 6(23), 6(26)	7,807,583	6,387,909
Prepayment for equipment		217,906	661,402
Refundable deposits	8	2,600,733	2,757,399
Other noncurrent assets-others	8	596,088	4,261,064
Total non-current assets		216,430,224	223,411,474
Total assets		\$ 370,187,365	\$ 364,604,906

(continued)

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

Liabilities and Equity	Notes	As of December 31,	
		2019	2018
Current liabilities			
Short-term loans	6(10), 6(25), 6(27)	\$ 12,015,206	\$ 13,103,808
Contract liabilities, current	4, 6(18)	988,115	932,371
Notes and accounts payable	6(26)	8,877,065	6,801,745
Other payables	6(26), 7	15,235,384	12,455,861
Payables on equipment	6(26)	3,031,184	4,008,142
Current tax liabilities	4	939,207	2,059,172
Lease liabilities, current	4, 6(8), 6(25), 6(26)	569,957	-
Current portion of long-term liabilities	4, 6(11), 6(12), 6(25), 6(27), 8, 12(7)	24,795,600	5,121,396
Other current liabilities	6(14), 6(15), 6(25), 7	6,262,604	5,416,842
Total current liabilities		72,714,322	49,899,337
Non-current liabilities			
Contract liabilities, noncurrent	4, 6(18)	482,080	-
Bonds payable	4, 6(11), 6(25), 12(7)	18,687,591	38,878,947
Long-term loans	6(12), 6(25), 6(27), 8, 12(7)	29,200,299	28,204,054
Deferred tax liabilities	4, 5, 6(23)	2,087,366	1,965,693
Lease liabilities, noncurrent	4, 6(8), 6(25), 6(26)	5,461,068	-
Net defined benefit liabilities, noncurrent	4, 5, 6(13)	4,025,373	4,167,174
Guarantee deposits	6(25)	196,110	612,903
Other noncurrent liabilities-others	4, 6(14), 6(25), 9(5)	30,118,734	34,340,307
Total non-current liabilities		90,258,621	108,169,078
Total liabilities		162,972,943	158,068,415
Equity attributable to the parent company			
Capital	4, 6(11), 6(16)		
Common stock		117,243,187	124,243,187
Capital collected in advance		332,611	-
Additional paid-in capital	4, 6(11), 6(16), 6(17)		
Premiums		34,404,110	36,278,383
Treasury stock transactions		2,744,391	1,737,113
The differences between the fair value of the consideration paid or received from acquiring or disposing subsidiaries and the carrying amounts of the subsidiaries		573,336	573,336
Recognition of changes in subsidiaries' ownership		1,218	39
Share of changes in net assets of associates and joint ventures accounted for using equity method		123,268	108,613
Employee stock options		214,455	178,401
Stock options		1,476,405	1,515,297
Other		13,211	8,181
Retained earnings	6(16), 6(26)		
Legal reserve		11,572,579	10,865,280
Special reserve		14,513,940	-
Unappropriated earnings		34,733,761	50,723,263
Other components of equity	4, 6(26)		
Exchange differences on translation of foreign operations		(8,948,337)	(5,692,326)
Unrealized gains or losses on financial assets measured at fair value through other comprehensive income		(2,073,977)	(8,819,556)
Gains or losses on hedging instruments		-	(2,058)
Treasury stock	4, 6(16), 6(17)	(119,801)	(5,647,430)
Total equity attributable to the parent company		206,804,357	206,069,723
Non-controlling interests	6(16), 6(27)	410,065	466,768
Total equity		207,214,422	206,536,491
Total liabilities and equity		\$ 370,187,365	\$ 364,604,906

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

UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the years ended December 31, 2019 and 2018

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

		For the years ended December 31,	
	Notes	2019	2018
Operating revenues	4, 6(18), 7, 14	\$ 148,201,641	\$ 151,252,571
Operating costs	4, 6(4), 6(9), 6(13), 6(17), 6(19), 7, 14	(126,886,669)	(128,412,544)
Gross profit		<u>21,314,972</u>	<u>22,840,027</u>
Operating expenses	4, 6(3), 6(9), 6(13), 6(17), 6(18), 6(19), 7, 14		
Sales and marketing expenses		(3,807,610)	(3,901,912)
General and administrative expenses		(5,436,091)	(4,823,391)
Research and development expenses		(11,860,244)	(13,025,139)
Expected credit losses		(703,339)	(409,237)
Subtotal		<u>(21,807,284)</u>	<u>(22,159,679)</u>
Net other operating income and expenses	4, 6(7), 6(14), 6(20), 14	<u>5,182,162</u>	<u>5,116,884</u>
Operating income		<u>4,689,850</u>	<u>5,797,232</u>
Non-operating income and expenses			
Other income	4	1,705,675	1,391,376
Other gains and losses	4, 6(21), 6(27)	1,257,299	(1,128,290)
Finance costs	6(21)	(2,997,643)	(2,851,225)
Share of profit or loss of associates and joint ventures	4, 6(6), 14	1,147,495	(667,701)
Bargain purchase gain	4, 6(26)	171,585	-
Exchange loss, net	4, 12	(238,624)	(356,993)
Subtotal		<u>1,045,787</u>	<u>(3,612,833)</u>
Income from continuing operations before income tax		<u>5,735,637</u>	<u>2,184,399</u>
Income tax benefit	4, 5, 6(23), 14	<u>393,130</u>	<u>458,653</u>
Net income		<u>6,128,767</u>	<u>2,643,052</u>
Other comprehensive income (loss)	6(22)		
Items that will not be reclassified subsequently to profit or loss			
Remeasurements of defined benefit pension plans	4, 5, 6(13)	106,403	(55,060)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income		5,486,209	1,454,018
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	4	-	(2,572)
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss		1,231,722	(475,139)
Income tax related to items that will not be reclassified subsequently	4, 5, 6(23)	(158,260)	112,384
Items that may be reclassified subsequently to profit or loss			
Exchange differences on translation of foreign operations		(3,277,938)	(47,009)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss		15,348	(23,942)
Income tax related to items that may be reclassified subsequently	4, 5, 6(23)	5,301	(12,736)
Total other comprehensive income (loss), net of tax		<u>3,408,785</u>	<u>949,944</u>
Total comprehensive income (loss)		<u>\$ 9,537,552</u>	<u>\$ 3,592,996</u>
Net income (loss) attributable to:			
Stockholders of the parent		\$ 9,707,614	\$ 7,072,990
Non-controlling interests		<u>(3,578,847)</u>	<u>(4,429,938)</u>
		<u>\$ 6,128,767</u>	<u>\$ 2,643,052</u>
Comprehensive income (loss) attributable to:			
Stockholders of the parent		\$ 13,131,612	\$ 8,126,828
Non-controlling interests		<u>(3,594,060)</u>	<u>(4,533,832)</u>
		<u>\$ 9,537,552</u>	<u>\$ 3,592,996</u>
Earnings per share (NTD)	4, 6(24)		
Earnings per share-basic		\$ 0.82	\$ 0.58
Earnings per share-diluted		<u>\$ 0.76</u>	<u>\$ 0.55</u>

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

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
For the years ended December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	Notes	Equity Attributable to the Parent Company													Non-Controlling Interests	Total Equity
		Capital		Retained Earnings				Other Components of Equity								
		Common Stock	Collected in Advance	Additional Paid-in Capital	Legal Reserve	Special Reserve	Unappropriated Earnings	Exchange Differences on Translation of Foreign Operations	Unrealized Gains or Losses on Financial Assets Measured at Fair Value through Other Comprehensive Income	Gains or Losses on Hedging Instruments	Treasury Stock	Total				
Adjusted balance as of January 1, 2018	6(16)	\$ 126,243,187	\$ -	\$ 40,858,350	\$ 9,902,407	\$ -	\$ 56,133,198	\$ (5,712,533)	\$ (9,867,013)	\$ -	\$ (4,719,037)	\$ 212,838,559	\$ 958,405	\$ 213,796,964		
Appropriation and distribution of 2017 retained earnings	6(16)															
Legal reserve		-	-	-	962,873	-	(962,873)	-	-	-	-	-	-	-		
Cash dividends		-	-	-	-	-	(8,557,023)	-	-	-	-	(8,557,023)	-	(8,557,023)		
Net income (loss) for the year ended December 31, 2018	6(16)	-	-	-	-	-	7,072,990	-	-	-	-	7,072,990	(4,429,938)	2,643,052		
Other comprehensive income (loss), net of tax for the year ended December 31, 2018	6(16), 6(22)	-	-	-	-	-	(22,341)	20,207	1,058,030	(2,058)	-	1,053,838	(103,894)	949,944		
Total comprehensive income (loss)		-	-	-	-	-	7,050,649	20,207	1,058,030	(2,058)	-	8,126,828	(4,533,832)	3,592,996		
Share-based payment transaction	4, 6(17)	-	-	696,226	-	-	-	-	-	-	2,203,443	2,899,669	-	2,899,669		
Treasury stock acquired	4, 6(16)	-	-	-	-	-	-	-	-	-	(6,261,018)	(6,261,018)	-	(6,261,018)		
Treasury stock cancelled	4, 6(16)	(2,000,000)	-	(1,129,182)	-	-	-	-	-	-	3,129,182	-	-	-		
Share of changes in net assets of associates and joint ventures accounted for using equity method		-	-	11,131	-	-	10,573	-	(10,573)	-	-	11,131	-	11,131		
Disposal of subsidiary		-	-	-	-	-	-	-	-	-	-	-	(7,074)	(7,074)		
Changes in subsidiaries' ownership	4, 6(16)	-	-	39	-	-	(475,311)	-	-	-	-	(475,272)	(278,613)	(753,885)		
Adjustments for dividends subsidiaries received from parent company		-	-	11,442	-	-	-	-	-	-	-	11,442	-	11,442		
Others	6(16)	-	-	(48,643)	-	-	(2,475,950)	-	-	-	-	(2,524,593)	4,327,882	1,803,289		
Balance as of December 31, 2018	6(16)	124,243,187	-	40,399,363	10,865,280	-	50,723,263	(5,692,326)	(8,819,556)	(2,058)	(5,647,430)	206,069,723	466,768	206,536,491		
Impact of retroactive applications	3, 6(16)	-	-	(10,427)	-	-	-	(13,935)	-	-	-	(24,362)	(0)	(24,362)		
Adjusted balance as of January 1, 2019	6(16)	124,243,187	-	40,388,936	10,865,280	-	50,723,263	(5,706,261)	(8,819,556)	(2,058)	(5,647,430)	206,045,361	466,768	206,512,129		
Appropriation and distribution of 2018 retained earnings	6(16)															
Legal reserve		-	-	-	707,299	-	(707,299)	-	-	-	-	-	-	-		
Special reserve		-	-	-	-	14,513,940	(14,513,940)	-	-	-	-	-	-	-		
Cash dividends		-	-	-	-	-	(6,916,105)	-	-	-	-	(6,916,105)	-	(6,916,105)		
Net income (loss) for the year ended December 31, 2019	6(16)	-	-	-	-	-	9,707,614	-	-	-	-	9,707,614	(3,578,847)	6,128,767		
Other comprehensive income (loss), net of tax for the year ended December 31, 2019	6(16), 6(22)	-	-	-	-	-	84,744	(3,242,076)	6,581,330	-	-	3,423,998	(15,213)	3,408,785		
Total comprehensive income (loss)		-	-	-	-	-	9,792,358	(3,242,076)	6,581,330	-	-	13,131,612	(3,594,060)	9,537,552		
Share-based payment transaction	4, 6(17)	-	-	377,004	-	-	-	-	-	-	-	377,004	-	377,004		
Conversion of convertible bonds	6(11), 6(16)	-	332,611	130,804	-	-	-	-	-	-	-	463,415	-	463,415		
Treasury stock acquired	4, 6(16)	-	-	-	-	-	-	-	-	-	(2,859,498)	(2,859,498)	-	(2,859,498)		
Treasury stock cancelled	4, 6(16)	(7,000,000)	-	(1,387,127)	-	-	-	-	-	-	8,387,127	-	-	-		
Share of changes in net assets of associates and joint ventures accounted for using equity method		-	-	14,655	-	-	387,654	-	(387,654)	-	-	14,655	-	14,655		
Changes in subsidiaries' ownership	4, 6(16)	-	-	1,179	-	-	(22,280)	-	-	-	-	(21,101)	24,740	3,639		
Adjustments for dividends subsidiaries received from parent company		-	-	9,485	-	-	-	-	-	-	-	9,485	-	9,485		
Disposal of equity instruments investments measured at fair value through other comprehensive income	6(5), 6(26)	-	-	-	-	-	(551,903)	-	551,903	-	-	-	-	-		
Others	6(16)	-	-	15,458	-	-	(3,457,987)	-	-	2,058	-	(3,440,471)	3,512,617	72,146		
Balance as of December 31, 2019	6(16)	\$ 117,243,187	\$ 332,611	\$ 39,550,394	\$ 11,572,579	\$ 14,513,940	\$ 34,733,761	\$ (8,948,337)	\$ (2,073,977)	\$ -	\$ (119,801)	\$ 206,804,357	\$ 410,065	\$ 207,214,422		

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

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2019	2018
Cash flows from operating activities:		
Net income before tax	\$ 5,735,637	\$ 2,184,399
Adjustments to reconcile net income before tax to net cash provided by operating activities:		
Depreciation	47,172,881	49,948,589
Amortization	2,216,654	2,100,130
Expected credit losses	703,339	409,237
Net (gain) loss of financial assets and liabilities at fair value through profit or loss	(1,279,931)	1,167,735
Interest expense	2,933,815	2,768,672
Interest income	(994,061)	(789,001)
Dividend income	(711,614)	(602,375)
Share-based payment	366,186	695,669
Share of (profit) loss of associates and joint ventures	(1,147,495)	667,701
Gain on disposal of property, plant and equipment	(43,036)	(136,743)
Loss on disposal of investments	16,293	19,286
Impairment loss on non-financial assets	118,134	46,225
Exchange loss on financial assets and liabilities	206,612	1,217,590
Bargain purchase gain	(171,585)	-
Amortization of deferred government grants	(4,062,148)	(3,885,722)
Income and expense adjustments	45,324,044	53,626,993
Changes in operating assets and liabilities:		
Financial assets and liabilities at fair value through profit or loss	(594,847)	789,666
Contract assets	(126,340)	(357,515)
Notes receivable and accounts receivable	439,400	(1,382,668)
Other receivables	67,347	618,317
Inventories	(1,370,249)	(46,497)
Prepayments	5,833,773	409,962
Other current assets	(64,732)	333,557
Contract fulfillment costs	8,054	(448,933)
Contract liabilities	69,329	(3,020,517)
Notes and accounts payable	(739,066)	257,044
Other payables	514,686	(426,302)
Other current liabilities	819,746	191,559
Net defined benefit liabilities	(35,398)	(26,405)
Other noncurrent liabilities-others	(3,240)	-
Cash generated from operations	55,878,144	52,702,660
Interest received	973,241	666,774
Dividend received	818,691	782,157
Interest paid	(2,147,320)	(2,221,301)
Income tax paid	(618,608)	(995,314)
Net cash provided by operating activities	54,904,148	50,934,976

(continued)

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2019	2018
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	\$ (354,249)	\$ (593,563)
Proceeds from disposal of financial assets at fair value through profit or loss	229,553	1,061
Proceeds from disposal of equity instruments investments measured at fair value through other comprehensive income or loss	44,466	-
Acquisition of investments accounted for under the equity method	(730,000)	(840,000)
Proceeds from disposal of investments accounted for under the equity method	5,970	-
Increase in prepayment for investments	(17,974)	-
Proceeds from capital reduction and liquidation of investments	32,214	61,800
Acquisition of subsidiary (net of cash acquired)	(12,800,981)	-
Disposal of subsidiary	32,017	(9,813)
Derecognition of hedging financial assets and liabilities	-	(2,572)
Acquisition of property, plant and equipment	(16,518,483)	(19,590,075)
Proceeds from disposal of property, plant and equipment	45,042	200,991
Increase in refundable deposits	(257,909)	(1,674,984)
Decrease in refundable deposits	441,013	691,807
Acquisition of intangible assets	(2,443,593)	(838,675)
Government grants related to assets acquisition	617,685	7,129,770
Increase in other noncurrent assets-others	(15,074)	(36,440)
Decrease in other noncurrent assets-others	8,786	1,090
Net cash used in investing activities	(31,681,517)	(15,499,603)
Cash flows from financing activities:		
Increase in short-term loans	25,732,933	22,021,005
Decrease in short-term loans	(26,726,656)	(34,309,253)
Cash payments for the principal portion of the lease liability	(633,488)	-
Redemption of bonds	(2,500,000)	(7,500,000)
Proceeds from long-term loans	11,449,930	758,500
Repayments of long-term loans	(7,572,939)	(2,638,697)
Increase in guarantee deposits	269,415	213,432
Decrease in guarantee deposits	(17,146)	(125,301)
Cash dividends	(6,911,058)	(8,557,684)
Treasury stock acquired	(2,972,243)	(6,148,273)
Treasury stock sold to employees	-	2,204,000
Change in non-controlling interests	3,388	597,385
Others	10,818	-
Net cash used in financing activities	(9,867,046)	(33,484,886)
Effect of exchange rate changes on cash and cash equivalents	(1,524,847)	36,680
Net increase in cash and cash equivalents	11,830,738	1,987,167
Cash and cash equivalents at beginning of year	83,661,739	81,674,572
Cash and cash equivalents at end of year	\$ 95,492,477	\$ 83,661,739

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

UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

For the Years Ended December 31, 2019 and 2018

(Expressed in Thousands of New Taiwan Dollars unless Otherwise Specified)

1. HISTORY AND ORGANIZATION

United Microelectronics Corporation (UMC) was incorporated in Republic of China (R.O.C.) in May 1980 and commenced operations in April 1982. UMC is a full service semiconductor wafer foundry, and provides a variety of services to satisfy customer needs. UMC's ordinary shares were publicly listed on the Taiwan Stock Exchange (TWSE) in July 1985 and its American Depositary Shares (ADSs) were listed on the New York Stock Exchange (NYSE) in September 2000.

The address of its registered office and principal place of business is No. 3, Li-Hsin Road II, Hsinchu Science Park, Hsinchu City, Taiwan. The principal operating activities of UMC and its subsidiaries ("the Company") are described in Notes 4(3) and 14.

2. DATE AND PROCEDURES OF AUTHORIZATION OF FINANCIAL STATEMENTS FOR ISSUE

The consolidated financial statements of the Company were authorized for issue in accordance with a resolution of the Board of Directors' meeting on February 26, 2020.

3. NEWLY ISSUED OR REVISED STANDARDS AND INTERPRETATIONS

(1) The Company applied International Financial Reporting Standards, International Accounting Standards, and Interpretations issued, revised or amended which are endorsed by Financial Supervisory Commission ("FSC") and become effective for annual periods beginning on or after January 1, 2019. Apart from the impact of the standards and interpretations which is described below, all other standards and interpretations have no material impact on the Company's financial position and performance.

a. IFRS 16 "Leases" ("IFRS 16")

IFRS 16 replaces IAS 17 "Leases" ("IAS 17"), IFRIC 4 "Determining whether an Arrangement contains a Lease" ("IFRIC 4"), SIC 15 "Operating Leases-Incentives" and SIC 27 "Evaluating the Substance of Transactions in the Legal Form of a Lease" for annual periods beginning on or after January 1, 2019.

The Company elected not to reassess whether a contract was, or contained, a lease at the date of initial application (January 1, 2019) in accordance with the transition provision in IFRS 16. The Company was permitted to apply IFRS 16 to contracts that were previously identified as leases applying IAS 17 and IFRIC 4. The Company elected not to restate comparative information and applied the standard retrospectively only to contracts that were not completed at the date of initial application in accordance with the transition provision in IFRS 16. The Company recognized the cumulative effect of initially applying IFRS 16 on January 1, 2019. As the Company only has operating leases, the impact arising from the adoption of IFRS 16 are summarized as follows:

- i. For leases that were classified as operating leases applying IAS 17, lease payments were recognized as expenses on a straight-line basis over the lease terms. Upon adoption of IFRS 16, the Company measured and recognized those leases, except for short-term or low-value asset lease exemptions, as lease liabilities at the present value of the remaining lease payments, discounted using its weighted average incremental borrowing rate of 2.64% on January 1, 2019. On a lease-by-lease basis, the right-of-use asset was measured and recognized at an amount equal to the lease liability (adjusted by the amount of any prepaid lease payments). The Company assessed the cumulative effect at the date of initial application was primarily consisted of a decrease in prepayments amounting to NT\$15 million; an increase in right-of-use assets amounting to NT\$8,578 million; a decrease in other noncurrent assets-others amounting to NT\$2,621 million; a decrease in other payables amounting to NT\$40 million; an increase in lease liabilities amounting to NT\$6,006 million; a decrease in additional paid-in capital-other amounting to NT\$10 million; and a decrease in other components of equity amounting to NT\$14 million.
- ii. In accordance with the transition provision in IFRS 16, the Company used the following practical expedients on a lease-by-lease basis to leases previously classified as operating leases:
 - (i) Apply a single discount rate to a portfolio of leases with reasonably similar characteristics.
 - (ii) Elect to account in the same way as short-term leases to leases for which the lease term ends within 12 months of January 1, 2019.
 - (iii) Use hindsight, such as in determining the lease term if the contract contains options to extend or terminate the lease.
- iii. The difference between the present value of operating lease commitments under IAS 17 as of December 31, 2018 discounted at the lessee's incremental borrowing rate and lease liabilities recognized on January 1, 2019 is explained as below:

Operating lease commitments under IAS 17 as of December 31, 2018	\$7,408,369
Present value discounted at the incremental borrowing rate on January 1, 2019	\$5,997,551
Add: An extension option reasonably certain to be exercised	8,906
Lease liabilities as of January 1, 2019	<u>\$6,006,457</u>

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

No.	The projects of Standards or Interpretations	Effective for annual periods beginning on or after
Amendments to IFRS 3	Definition of a Business	January 1, 2020
Amendments to IAS 1 and 8	Definition of Material	January 1, 2020
Amendments to IFRS 9, IAS 39 and IFRS 7	Interest Rate Benchmark Reform	January 1, 2020

b. IFRS 3 “Business Combinations” (“IFRS 3”) - Definition of a Business (Amendment)

The amendments clarify the definition of a business in IFRS 3 Business Combinations. The amendments are intended to assist entities to determine whether a transaction should be accounted for as a business combination or as an asset acquisition.

IFRS 3 continues to adopt a market participant’s perspective to determine whether an acquired set of activities and assets is a business. The amendments clarify the minimum requirements for a business; add guidance to help entities assess whether an acquired process is substantive; and narrow the definitions of a business and of outputs; etc.

c. IAS 1 “Presentation of Financial Statements” (“IAS 1”) and IAS 8 “Accounting Policies, Changes in Accounting Estimates and Errors” - Definition of Material (Amendment)

The main amendment is to clarify new definition of material. It states that “information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.” The amendments clarify that materiality will depend on the nature or magnitude of information. An entity will need to assess whether the information, either individually or in combination with other information, is material in the context of the financial statements.

d. IFRS 9 “Financial Instruments” (“IFRS 9”), IAS 39 “Financial Instruments: Recognition and Measurement” (“IAS 39”) and IFRS 7 “Financial Instruments: Disclosures” - Interest Rate Benchmark Reform

The amendments include a number of exceptions, which apply to all hedging relationships that are directly affected by interest rate benchmark reform. A hedging relationship is directly affected if the interest rate benchmark reform gives rise to uncertainties about the timing and or amount of benchmark-based cash flows of the hedged item or the hedging instrument. Hence, the entity shall apply the exceptions to all hedging relationships directly affected by the interest rate benchmark reform.

The amendments include:

- i. highly probable requirement: When determining whether a forecast transaction is highly probable, an entity shall assume that the interest rate benchmark on which the hedged cash flows are based is not altered as a result of the interest rate benchmark reform.
- ii. prospective assessments: When performing prospective assessments, an entity shall assume that the interest rate benchmark on which the hedged item, hedged risk and/or hedging instrument are based is not altered as a result of the interest rate benchmark reform.
- iii. IAS 39 retrospective assessment: An entity is not required to undertake the IAS 39 retrospective assessment (i.e. the actual results of the hedge are within a range of 80~125%) for hedging relationships directly affected by the interest rate benchmark reform.
- iv. separately identifiable risk components: For hedges of a non-contractually specified benchmark component of interest rate risk, an entity shall apply the separately identifiable requirement only at the inception of such hedging relationships.

The amendments also include the end of application of the exceptions requirements and the related disclosures requirements of the amendments.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (b) ~ (d) to the Company’s financial position and performance, and the related impact will be disclosed when the evaluation is completed.

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

No.	The projects of Standards or Interpretations	Effective for annual periods beginning on or after
IFRS 10 and IAS 28	Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures	To be determined by IASB
IFRS 17	Insurance Contracts	1 January, 2021
IAS 1	Classification of Liabilities as Current or Non-current	1 January, 2022

The potential effects of adopting the standards or interpretations issued by IASB but not yet endorsed by FSC on the Company's financial statements in future periods are summarized as below:

e. IFRS 10 "Consolidated Financial Statements" ("IFRS 10") and IAS 28 "Investments in Associates and Joint Ventures" - Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures (Amendment) ("IAS 28")

The amendments address the inconsistency between the requirements in IFRS 10 and IAS 28, in dealing with the loss of control of a subsidiary that is contributed to an associate or a joint venture. IAS 28 restricts gains and losses arising from contributions of non-monetary assets to an associate or a joint venture to the extent of the interest attributable to the other equity holders in the associate or joint venture. IFRS 10 requires full profit or loss recognition on the loss of control of a subsidiary. IAS 28 was amended so that the gain or loss resulting from the sale or contribution of assets that constitute a business as defined in IFRS 3 between an investor and its associate or joint venture is recognized in full. IFRS 10 was also amended so that the gain or loss resulting from the sale or contribution of a subsidiary that does not constitute a business as defined in IFRS 3 between an investor and its associate or joint venture is recognized only to the extent of the unrelated investors' interests in the associate or joint venture.

f. IAS 1 - Classification of Liabilities as Current or Non-current

These are the amendments to paragraphs 69-76 of IAS 1 presentation of financial statements and the amended paragraphs related to the classification of liabilities as current or non-current.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (e) ~ (f) to the Company's financial position and performance, and the related impact will be disclosed when the evaluation is completed.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(1) Statement of Compliance

The Company's consolidated financial statements were prepared in accordance with Regulations Governing the Preparation of Financial Reports by Securities Issuers (Regulations), IFRSs, IASs, IFRIC and SIC, which are endorsed by FSC (TIFRSs).

(2) Basis of Preparation

The consolidated financial statements have been prepared on a historical cost basis, except for financial instruments measured at fair value.

(3) General Description of Reporting Entity

a. Principles of consolidation

Subsidiaries are fully consolidated from the date of acquisition (the date on which the Company obtains control), and continue to be consolidated until the date that such control ceases. The Company controls an entity when the Company is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group balances, transactions, unrealized gains and losses and dividends resulting from intra-group transactions are eliminated in full.

A change in the ownership interest of a subsidiary, without a change of control, is accounted for as an equity transaction. Total comprehensive income of subsidiaries is attributed to the stockholders of the parent and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

If the Company loses control over a subsidiary, the Company derecognizes the assets and liabilities of the subsidiary, as well as any non-controlling interests previously recorded by the Company. A gain or loss is recognized in profit or loss and is calculated as the difference between: (a) the aggregate of the fair value of consideration received and the fair value of any retained interest at the date when control is lost; and (b) the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interests. Any gain or loss previously recognized in the other comprehensive income would be reclassified to profit or loss or transferred directly to retained earnings if required by other TIFRSs. The fair value of any investment retained in the former subsidiary at the date when control is lost is regarded as the cost on initial recognition of an investment.

b. The consolidated entities are as follows:

As of December 31, 2019 and 2018

Investor	Subsidiary	Business nature	Percentage of ownership (%)	
			As of December 31,	
			2019	2018
UMC	UMC GROUP (USA)	IC Sales	100.00	100.00
UMC	UNITED MICROELECTRONICS (EUROPE) B.V.	Marketing support activities	100.00	100.00

Investor	Subsidiary	Business nature	Percentage of ownership (%)	
			As of December 31,	
			2019	2018
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 GROUP JAPAN	IC Sales	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	-
UMC, FORTUNE and TLC	NEXPOWER TECHNOLOGY CORP. (NEXPOWER)	Sales and manufacturing of solar power batteries	93.36	93.36
UMC and FORTUNE	WAVETEK MICROELECTRONICS CORPORATION (WAVETEK)	Sales and manufacturing of integrated circuits	80.49	78.47
UMC CAPITAL CORP.	UMC CAPITAL (USA)	Investment holding	100.00	100.00
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
EVERRICH-HK	EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	100.00	100.00
OMNI	UNITED MICROTECHNOLOGY CORPORATION (NEW YORK)	Research and development	100.00	100.00
OMNI	UNITED MICROTECHNOLOGY CORPORATION (CALIFORNIA)	Research and development	100.00	100.00

Investor	Subsidiary	Business nature	Percentage of ownership (%)	
			As of December 31,	
			2019	2018
OMNI	ECP VITA PTE. LTD.	Insurance	100.00	100.00
OMNI	UMC TECHNOLOGY JAPAN CO., LTD.	Semiconductor manufacturing technology development and consulting services	100.00	100.00
WAVETEK	WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED (WAVETEK-SAMOA)	Investment holding	100.00	100.00
WAVETEK- SAMOA	WAVETEK MICROELECTRONICS CORPORATION (USA)	Sales and marketing service	100.00	100.00
NEXPOWER	SOCIALNEX ITALIA 1 S.R.L.	Photovoltaic power plant	-	100.00
BE	INFOSHINE TECHNOLOGY LIMITED (INFOSHINE)	Investment holding	100.00	100.00
INFOSHINE	OAKWOOD ASSOCIATES LIMITED (OAKWOOD)	Investment holding	100.00	100.00
OAKWOOD	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. (HEJIAN)	Sales and manufacturing of integrated circuits	98.14	98.14
HEJIAN	UNITEDDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Integrated circuits design services	100.00	100.00
UNITED MICROCHIP CORPORATION and HEJIAN	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Sales and manufacturing of integrated circuits	65.22	65.22

(4) Business Combinations and Goodwill

Business combinations are accounted for using the acquisition method. The consideration transferred, the identifiable assets acquired and liabilities assumed are measured at the acquisition date fair value. For the components of non-controlling interests in the acquiree that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation, the acquirer measures at either fair value or at the non-controlling interest's proportionate share of the acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred and are classified under administrative expenses.

When the Company acquires a business, it assesses the assets acquired and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as at the acquisition date.

If the business combination is achieved in stages, the acquisition date fair value of the acquirer's previously held equity interest in the acquiree is remeasured at fair value as at the acquisition date through profit or loss.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration which is deemed to be an asset or liability, will be recognized in accordance with IFRS 9, either in profit or loss or other comprehensive income. If the contingent consideration is classified as equity, it should not be remeasured until it is finally settled within equity.

Goodwill is initially measured at cost, being the excess of the aggregate of the consideration transferred, the acquisition date fair value of the acquirer's previously held equity interest in the acquiree and the amount recognized for non-controlling interest over the net identifiable assets acquired and liabilities assumed. If the fair value of the net assets acquired is in excess of the aggregate consideration transferred and non-controlling interests, the difference is recognized as a gain on bargain purchase.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each cash-generating unit ("CGU") that is expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units. Each unit or groups of units to which the goodwill is so allocated represents the lowest level within the Company at which the goodwill is monitored for internal management purposes and cannot be larger than an operating segment before aggregation.

Where goodwill forms part of a CGU and part of the operation within that unit is disposed, the goodwill associated with the operation disposed is included in the carrying amount of the operation. Goodwill disposed in this circumstance is measured based on the relative values of the operation disposed and the portion of the CGU retained.

(5) Foreign Currency Transactions

The Company's consolidated financial statements are presented in New Taiwan Dollars (NTD), which is also the parent company's functional currency. Each entity in the Company determines its own functional currency and items included in the financial statements of each entity are measured using that functional currency.

Transactions in foreign currencies are initially recorded by the Company's entities at their respective functional currency rates prevailing at the transaction date. Monetary assets and liabilities denominated in foreign currencies are translated into functional currency at the closing rates of exchange at the reporting date. Non-monetary items measured at fair value in foreign currencies are translated using the exchange rates at the date when the fair value is determined. Non-monetary items that are measured at historical cost in foreign currencies are translated using the exchange rates as at the dates of the initial transactions.

All exchange differences arising on the settlement of monetary items or on translating monetary items are taken to profit or loss in the period in which they arise except for the following:

- a. Exchange differences arising from foreign currency borrowings for an acquisition of a qualifying asset to the extent that they are regarded as an adjustment to interest costs are included in the borrowing costs that are eligible for capitalization.
- b. Foreign currency derivatives within the scope of IFRS 9 are accounted for based on the accounting policy for financial instruments.
- c. Exchange differences arising on a monetary item that is part of a reporting entity's net investment in a foreign operation are recognized initially in other comprehensive income and reclassified from equity to profit or loss upon disposal of such investment.

When a gain or loss on a non-monetary item is recognized in other comprehensive income, any exchange component of that gain or loss is recognized in other comprehensive income. When a gain or loss on a non-monetary item is recognized in profit or loss, any exchange component of that gain or loss is recognized in profit or loss.

(6) Translation of Foreign Currency Financial Statements

The assets and liabilities of foreign operations are translated into NTD at the closing rate of exchange prevailing at the reporting date and their income and expenses are translated at an average exchange rate for the period. The exchange differences arising on the translation are recognized in other comprehensive income. On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation, recognized in other comprehensive income and accumulated in the separate component of equity, is reclassified from equity to profit or loss when the gain or loss on disposal is recognized.

On partial disposal of a subsidiary that includes a foreign operation that does not result in a loss of control, the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income is re-attributed to the non-controlling interests in that foreign operation. On partial disposal of an associate or a joint venture that includes a foreign operation that does not result in a loss of significant influence or joint control, only the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income is reclassified to profit or loss.

Any goodwill and any fair value adjustments to the carrying amounts of assets and liabilities arising from the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and expressed in its functional currency.

(7) Current and Non-Current Distinction

An asset is classified as current when:

- a. the Company expects to realize the asset, or intends to sell or consume it, in its normal operating cycle;
- b. the Company holds the asset primarily for the purpose of trading;
- c. the Company expects to realize the asset within twelve months after the reporting period; or
- d. the asset is cash or a cash equivalent unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

All other assets are classified as non-current.

A liability is classified as current when:

- a. the Company expects to settle the liability in normal operating cycle;
- b. the Company holds the liability primarily for the purpose of trading;
- c. the liability is due to be settled within twelve months after the reporting period; or
- d. the Company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.

All other liabilities are classified as non-current.

(8) Cash Equivalents

Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and with maturity dates that do not present significant risks of changes in value resulting from changes in interest rates, including time deposits with original maturities of three months or less and repurchase agreements collateralized by government bonds and corporate bonds.

(9) Financial Instruments

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instrument.

The Company determines the classification of its financial assets at initial recognition. In accordance with IFRS 9 and the Regulations, financial assets of the Company are classified as financial assets at fair value through profit or loss, financial assets at fair value through other comprehensive income, and financial assets measured at amortized cost.

Purchase or sale of financial assets and liabilities are recognized using trade date accounting. All financial assets are recognized initially at fair value plus, in the case of investments not at fair value through profit or loss, directly attributable costs. Financial assets at fair value through profit or loss are initially recognized at fair value, and transaction costs are expensed in the statement of comprehensive income.

Financial Assets

a. Classification and subsequent measurement

i. Financial assets at fair value through profit or loss

Financial assets that are not measured at amortized cost or at fair value through other comprehensive income are recognized initially at fair value and subsequently measured at fair value with changes in fair value recognized in profit or loss.

ii. Financial assets at fair value through other comprehensive income

At initial recognition, the Company may make an irrevocable election to present in other comprehensive income subsequent changes in the fair value of an investment in an equity instrument that is not held for trading. When there is a disposal of such equity instrument, accumulated amounts presented in other comprehensive income are not subsequently transferred to profit or loss but are transferred directly to the retained earnings.

The debt instruments are measured at fair value through other comprehensive income if both of the following conditions are met:

- (i) the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and
- (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent changes in the fair value of such financial assets at fair value through other comprehensive income are recognized in other comprehensive income. Before derecognition, impairment gains or losses, interest revenue and foreign exchange gains and losses are recognized in profit or loss. When the financial assets are derecognized the cumulative gain or loss previously recognized in other comprehensive income is reclassified from other comprehensive income to profit or loss as a reclassification adjustment.

iii. Financial assets measured at amortized cost

The financial assets are measured at amortized cost (including cash and cash equivalent, notes, accounts and other receivables and other financial assets) if both of the following conditions are met.

- (i) the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent to initial recognition for financial assets measured at amortized cost, interest income, measured by the effective interest method amortization process, and impairment losses are recognized during circulation period. Gains and losses are recognized in profit or loss when the financial assets are derecognized.

b. Derecognition of financial assets

A financial asset is derecognized when:

- i. the contractual rights to receive cash flows from the asset have expired;
- ii. the Company has transferred assets and substantially all the risks and rewards of the asset have been transferred; or
- iii. the Company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

On derecognition of a financial asset in its entirety, the difference between the carrying amount and the consideration received or to be received including any cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss (for debt instruments) or directly in retained earnings (for equity instruments).

If the transferred asset is part of a larger financial asset and the part transferred qualifies for derecognition in its entirety, the Company allocates the previous carrying amount of the larger financial asset between the part that continues to be recognized and the part that is derecognized, based on the relative fair values of those parts on the date of the transfer. Any cumulative gain or loss that had been recognized in other comprehensive income is allocated between the part that continues to be recognized and the part that is derecognized, based on the relative fair values of those parts. The difference between the carrying amount allocated to the part derecognized and the sum of the consideration received for the part derecognized and any cumulative gain or loss allocated that had been recognized in other comprehensive income, is recognized in profit or loss or directly in retained earnings.

c. Impairment policy

The Company measures, at each reporting date, an allowance for expected credit losses (ECLs) for debt instrument investments measured at fair value through other comprehensive income and financial assets measured at amortized cost by assessing reasonable and supportable information including forward-looking information. Where the credit risk on a financial asset has not increased significantly since initial recognition, the loss allowance is measured at an amount equal to 12-month ECLs. Where the credit risk on a financial asset has increased significantly since initial recognition, the loss allowance is measured at an amount equal to the lifetime ECLs.

For notes, accounts receivable and contract assets, the Company applies a simplified approach in calculating ECLs. Therefore, the Company does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. ECLs are measured based on the Company's historical credit loss experience and customers' current financial condition, adjusted for forward-looking factors, such as customers' economic environment.

Financial Liabilities

a. Classification and subsequent measurement

The Company classifies the instrument issued as a financial liability or an equity instrument in accordance with the substance of the contractual arrangement and the definitions of a financial liability and an equity instrument.

i. Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Excluding changes in own credit risk, gains or losses on the subsequent measurement including interest paid are recognized in profit or loss.

ii. Financial liabilities measured at amortized cost

Financial liabilities measured at amortized cost include interest bearing loans and borrowings that are subsequently measured using the effective interest method after initial recognition. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the effective interest method amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or transaction costs.

b. Derecognition of financial liabilities

A financial liability is derecognized when the obligation under the liability is discharged, cancelled or expires.

When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified (whether or not attributable to the financial difficulty of the debtor), such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss.

(10) Hedge Accounting

Cash flow hedges

The Company manages exposures arising from foreign currency exchange risk. With the adoption of IFRS 9, the Company designates a hedging relationship between the hedging instrument and the hedged item with the existence of an economic relationship and determines the hedge ratio to meet the hedge effectiveness. The Company designates certain hedging instruments to partially hedge the foreign currency exchange rate risks associated with certain highly probable forecast transactions. The separate component of equity associated with the hedged item is adjusted to the lower of the following (in absolute amounts):

- a. the cumulative gain or loss on the hedging instrument from inception of the hedge; and
- b. the cumulative change in fair value (present value) of the expected future cash flows on the hedged item from inception of the hedge.

The portion of the gain or loss on the hedging instrument that is determined to be an effective hedge is recognized in other comprehensive income, whereas the ineffective portion of the change in the fair value of the hedging instrument is recognized directly in profit or loss. If a hedge of a forecast transaction subsequently results in the recognition of a non-financial asset or a non-financial liability, the associated gains or losses that were recognized in other comprehensive income are included in the initial cost of the asset or liability.

The Company prospectively discontinues hedge accounting only when the hedging relationship ceases to meet the qualifying criteria; for instance when the hedging instrument expires or is sold, terminated or exercised.

(11) Inventories

Inventories are accounted for on a perpetual basis. Raw materials are stated at actual purchase costs, while the work in process and finished goods are stated at standard costs and subsequently adjusted to weighted-average costs at the end of each month. The cost of work in progress and finished goods comprises raw materials, direct labor, other direct costs and related production overheads. Allocation of fixed production overheads to the costs of conversion is based on the normal capacity of the production facilities. Cost associated with underutilized capacity is expensed as incurred. Inventories are valued at the lower of cost and net realizable value item by item. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

(12) Investments Accounted For Under the Equity Method

The Company's investments in associates and joint ventures are accounted for using the equity method other than those that meet the criteria to be classified as non-current assets held for sale.

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of an entity, but is not control or joint control over those policies.

A joint venture is a type of joint arrangement whereby the Company that has joint control of the arrangement has rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement where no single party controls the arrangement on its own, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

Any difference between the acquisition cost and the Company's share of the net fair value of the identifiable assets and liabilities of associates and joint ventures is accounted for as follows:

- a. Any excess of the acquisition cost over the Company's share of the net fair value of the identifiable assets and liabilities of an associate or a joint venture at the date of acquisition is recognized as goodwill and is included in the carrying amount of the investment. Amortization of goodwill is not permitted.
- b. Any excess of the Company's share of the net fair value of the identifiable assets and liabilities of an associate or a joint venture over the acquisition cost, after reassessing the fair value, is recognized as a gain in profit or loss on the acquisition date.

Under the equity method, the investments in associates and joint ventures are carried on the balance sheet at cost plus post acquisition changes in the Company's share of profit or loss and other comprehensive income of associates and joint ventures. The Company's share of changes in associates' and joint ventures' profit or loss and other comprehensive income are recognized directly in profit or loss and other comprehensive income, respectively. Distributions received from an associate or a joint venture reduce the carrying amount of the investment. Any unrealized gains and losses resulting from transactions between the Company and the associate or the joint venture are eliminated to the extent of the Company's interest in the associate or the joint venture.

Financial statements of associates and joint ventures are prepared for the same reporting period as the Company. Where necessary, adjustments are made to bring the accounting policies in line with those of the Company.

Upon an associate's issuance of new shares, if the Company takes up more shares than its original proportionate holding while maintaining its significant influence over that associate, such increase would be accounted for as an acquisition of an additional equity interest in the associate. Upon an associate's issuance of new shares, if the Company does not take up proportionate shares and reduces its stockholding percentage while maintaining its significant influence over that associate, a proportionate share of the gain or loss previously recognized in other comprehensive income is reclassified to profit and loss. Any remaining difference will be charged to additional paid-in capital. When a change in equity of an associate does not result from its profit or loss or other comprehensive income, and such changes do not affect the Company's ownership percentage, the Company recognizes its proportionate share of all related changes in equity. Accordingly, upon disposal of the associate, the Company reclassifies the aforementioned additional paid-in capital to profit or loss on a pro rata basis.

The Company ceases to use the equity method upon loss of significant influence over an associate. Any difference between the carrying amount of the investment in an associate upon loss of significant influence and the fair value of the retained investment plus proceeds from disposal will be recognized in profit or loss. If an investment in an associate becomes an investment in a joint venture or an investment in a joint venture becomes an investment in an associate, the Company continues to apply the equity method and does not remeasure the retained interest.

The Company determines at each reporting date whether there is any objective evidence that the investments in associates and joint ventures are impaired. An impairment loss, being the difference between the recoverable amount of the associate or joint venture and its carrying amount, is recognized in profit or loss in the statement of comprehensive income and forms part of the carrying amount of the investments.

(13) Property, Plant and Equipment

Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any, and any borrowing costs incurred for long-term construction projects are capitalized if the recognition criteria are met. Significant renewals, improvements and major inspections meeting the recognition criteria are treated as capital expenditures, and the carrying amounts of those replaced parts are derecognized. Maintenance and repairs are recognized in expenses as incurred. Any gain or loss arising from derecognition of the assets is recognized in other operating income and expenses.

Depreciation is calculated on a straight-line basis over the estimated useful lives. A significant part of an item of property, plant and equipment which has a different useful life from the remainder of the item is depreciated separately.

The depreciation methods, useful lives and residual values for the assets are reviewed at each fiscal year end, and the changes from the previous estimation are recorded as changes in accounting estimates.

Except for land, which is not depreciated, the estimated useful lives of the assets are as follows:

Buildings	7~56 years
Machinery and equipment	6~9 years
Transportation equipment	5~7 years
Furniture and fixtures	1~9 years
Leasehold improvement	The shorter of lease terms or useful lives

(14) Lease

The summary of significant accounting policies applying in 2019 is as follows:

A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange of consideration, and to obtain substantially all economic benefits from use of the identified asset. The Company accounts for a lease contract as a single lease and separates the lease and non-lease components included in the contract.

The Company as a lessor

The Company recognizes lease payments from operating leases as rental income on a straight-line basis over the term of the lease.

The Company as a lessee

At the commencement date of a lease, a lessee is required to recognize right-of-use assets and lease liabilities, except for short-term leases and low-value asset leases.

- a. At the commencement date, lease liabilities should be recognized and measured at the present value of the lease payments that have not been paid at that date, using the Company's incremental borrowing rate. The payments comprise:
 - i. fixed payments less any lease incentives receivable;
 - ii. variable lease payments that depend on an index or rate;
 - iii. amounts expected to be payable by the Company under residual value guarantees;
 - iv. the exercise price of a purchase option if the Company is reasonably certain to exercise; and
 - v. payments for terminating the lease unless it is reasonably certain that early termination will not occur.

Lease liabilities are measured in subsequent periods using the effective interest method, and the interest expenses are recognized over the lease terms. In addition, the carrying amount of lease liabilities is remeasured if there is a modification which is not accounted as a separate lease, a change in the lease term, a change in the lease payments (e.g., changes to future payments resulting from a change in an index or rate used to determine such lease payments) or a change in the assessment of an option to purchase the underlying asset.

- b. At the commencement date, the right-of-use assets should be measured at cost, which comprise:
 - i. the amount of the initial measurement of the lease liabilities;
 - ii. any lease payments made at or before the commencement date; and
 - iii. any initial direct costs incurred.

Subsequent to initial recognition, the right-of-use assets are measured using cost model. Right-of-use assets measured under the cost model are depreciated from the commencement date to the earlier of the end of the useful life of the right-of-use assets or the end of the lease terms. Any remeasurement of the lease liabilities results in a corresponding adjustment of the right-of-use assets.

The Company presents right-of-use assets and lease liabilities on the balance sheets, and depreciation expenses and interest expenses are separately presented in the statements of comprehensive income. The Company recognizes the lease payments associated with short-term leases and low-value asset leases as expenses on a straight-line basis over the lease terms.

(15) Intangible Assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is its fair value as at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses, if any. Internally generated intangible assets which fail to meet the recognition criteria are not capitalized and the expenditures are reflected in profit or loss in the period incurred.

The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite useful lives are amortized over the useful lives and assessed for impairment whenever there is an indication that the intangible assets may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at the end of each fiscal year. Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset is accounted for by changing the amortization period or method, as appropriate, and is treated as changes in accounting estimates.

Intangible assets with indefinite useful lives are not amortized, but are tested for impairment annually, either individually or at the CGU level. The assessment of indefinite useful life is reviewed annually to determine whether the indefinite useful life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

Gains or losses arising from derecognition of an intangible asset are recognized in other operating income and expenses.

Accounting policies of the Company's intangible assets are summarized as follows:

- a. Goodwill arising from business combinations is not amortized, and is tested for impairment annually or more frequently if events or changes in circumstances suggest that the carrying amount may not be recoverable. If an event occurs or circumstances change which indicates that the goodwill is impaired, an impairment loss is recognized. Goodwill impairment losses cannot be reversed once recognized.
- b. Software is amortized over the contract term or estimated useful life (3~6 years) on a straight-line basis.

- c. Patent and technology license fee: Upon signing of contract and obtaining the right to intellectual property, any portion attributable to non-cancellable and mutually agreed future fixed license fees for patent and technology is discounted, and recognized as an intangible asset and related liability. The cost of the intangible asset is not revalued once determined on initial recognition, and is amortized over the useful life (5~10 years) on a straight-line basis. Interest expenses from the related liability are recognized and calculated based on the effective interest method. Based on the timing of payments, the liability is classified as current and non-current.
- d. Others are mainly the intellectual property license fees, amortized over the shorter of the contract term or estimated useful life (3 years) of the related technology on a straight-line basis.

(16) Impairment of Non-Financial Assets

The Company assesses at each reporting date whether there is an indication that an asset in the scope of IAS 36 “Impairment of Assets” may be impaired. If any indication exists, the Company completes impairment testing for the CGU to which the individual assets belong. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. The recoverable amount of an individual asset or a CGU is the higher of its fair value less costs of disposal and its value in use. If circumstances indicate that previously recognized impairment losses may no longer exist or may have decreased at each reporting date, the Company re-assesses the asset’s or CGU’s recoverable amount. A previously recognized impairment loss is reversed only if there has been an increase in the estimated service potential of an asset which in turn increases the recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation or amortization, had no impairment loss been recognized for the asset in prior years.

A CGU, or group of CGUs, to which goodwill has been allocated is tested for impairment annually at the same time every year, irrespective of whether there is any indication of impairment. Where the carrying amount of a CGU (including the carrying amount of goodwill) exceeds its recoverable amount, the CGU is considered impaired. If an impairment loss is to be recognized, it is first allocated to reduce the carrying amount of any goodwill allocated to the CGU (group of units), then to the other assets of the unit (group of units) pro rata on the basis of the carrying amount of each asset in the unit (group of units). Impairment losses relating to goodwill cannot be reversed in future periods.

The recognition or reversal of impairment losses is classified as other operating income and expenses.

(17) Bonds

Convertible bonds

UMC evaluates the terms of the convertible bonds issued to determine whether it contains both a liability and an equity component. Furthermore, UMC assesses if the economic characteristics and risks of the put and call options embedded in the convertible bonds are closely related to the economic characteristics and risk of the host contract before separating the equity element.

For the liability component excluding the derivatives, its fair value is determined based on the effective interest rate applied at that time by the market to instruments of comparable credit status. The liability component is classified as a financial liability measured at amortized cost using the effective interest method before the instrument is converted or settled. For the embedded derivative that is not closely related to the host contract, it is classified as a liability component and subsequently measured at fair value through profit or loss unless it qualifies as an equity component. The equity component is recognized initially at the difference between the fair value of the compound financial instrument as a whole and the fair value of the liability component. Its carrying amount is not remeasured in the subsequent accounting periods. If the convertible bond issued does not have an equity component, it is accounted for as a hybrid instrument in accordance with the requirements under IFRS 9.

If the convertible bondholders exercise their conversion right before maturity, UMC shall adjust the carrying amount of the liability component. The adjusted carrying amount of the liability component at conversion and the carrying amount of equity component are credited to common stock and additional paid-in capital-premiums. No gain or loss is recognized upon bond conversion.

In addition, the liability component of convertible bonds is classified as a current liability if within 12 months the bondholders may exercise the put right. After the put right expires, the liability component of the convertible bonds should be reclassified as a non-current liability if it meets the definition of a non-current liability in all other respects.

(18) Post-Employment Benefits

Under defined contribution pension plans, the contribution payable to the plan in exchange for the service rendered by an employee during a period shall be recognized as an expense. The contribution payable, after deducting any amount already paid, is recognized as a liability.

Under defined benefit pension plans, the net defined benefit liability (asset) shall be recognized as the amount of the present value of the defined benefit obligation, deducting the fair value of any plan assets and adjusting for any effect of the asset ceiling. Service cost and net interest on the net defined benefit liability (asset) are recognized as expenses in the period of service. Remeasurement of the net defined benefit liability (asset), which comprises actuarial gains and losses, the return on plan assets and any change in the effect of the asset ceiling, excluding any amounts included in net interest, is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and shall not be reclassified to profit or loss in a subsequent period.

(19) Government Grants

In accordance with IAS 20 “Accounting for Government Grants and Disclosure of Government Assistance”, the Company recognizes the government grants when there is reasonable assurance that such grants will be received and the conditions attaching to them will be complied with.

An asset related government grant is recorded as deferred income and recognized in profit or loss on a straight-line basis over the useful lives of the assets. An expense related government grant is recognized in profit or loss on a systematic basis over the periods in which the Company recognizes as expenses the related costs for which the grant is intended to compensate. A government grant that compensates for expenses or losses already incurred or for the purpose of giving immediate financial support to the Company with no future related costs is recognized in profit or loss when it becomes receivable.

(20) Treasury Stock

UMC’s own equity instruments repurchased (treasury stocks) are recognized at repurchase cost and deducted from equity. No gain or loss shall be recognized in profit or loss on the purchase, sale, issue or cancellation of UMC’s own equity instruments. Any difference between the carrying amount and the consideration is recognized in equity.

(21) Share-Based Payment Transactions

The cost of equity-settled transactions between the Company and its employees is measured at the fair value using an appropriate pricing model by reference to the market price of the equity instruments on the grant date.

The cost of equity-settled transactions is recognized, together with a corresponding increase in equity, over the periods in which the performance and/or service conditions are being fulfilled. The cumulative expense recognized for equity-settled transactions at each reporting date reflects the extent to which the vesting period has passed and the Company's best estimate of the quantity of equity instruments that will ultimately vest. The charge to profit or loss for a period represents the movement in cumulative expense recognized between the beginning and the end of that period.

No expense will be recognized for awards that do not ultimately vest, except for equity-settled transactions for which vesting is conditional upon a market or non-vesting condition. These are treated as vested irrespective of whether the market or non-vesting condition is satisfied, provided that all other performance and/or service conditions are satisfied.

Where the terms of an equity-settled transaction award are modified, the minimum expense recognized is the expense as if the terms had not been modified, if the original terms of the award are met. An additional expense is recognized for any modification that increases the total fair value of the share-based payment transaction, or is otherwise beneficial to the employee as measured at the date of modification.

Where an equity-settled award is cancelled, it is treated as if it fully vests on the date of cancellation, and any expense not yet recognized for the award is recognized immediately. This includes any award where non-vesting conditions within the control of either the entity or the employee are not met. However, if a new award substitutes for the cancelled award and is designated as a replacement award on the date that it is granted, the cancelled and new awards are treated as if they were a modification of the original award.

(22) Revenue Recognition

Revenue from Contracts with Customers

The Company recognizes revenue from contracts with customers by applying the following steps of IFRS 15 "Revenue from Contracts with Customers":

- a. identify the contract with a customer;
- b. identify the performance obligations in the contract;
- c. determine the transaction price;
- d. allocate the transaction price to the performance obligations in the contract; and
- e. recognize revenue when (or as) the entity satisfies its performance obligations

Revenues on the Company' s contracts with customers for the sales of wafers and joint technology development are recognized as the Company satisfies its performance obligations to customers upon transfer of control of promised goods and services. The Company recognizes revenue at transaction price that are determined using contractual prices reduced by sales returns and allowances which the Company estimates based on historical experience having determined that a significant reversal in the amount of cumulative revenue recognized are not probable to occur. The Company recognizes refund liabilities for estimated sales return and allowances based on the customer complaints, historical experience, and other known factors.

The Company recognizes accounts receivable when the Company transfers control of the goods or services to customers and has a right to an amount of consideration that is unconditional. Such accounts receivable are short term and do not contain a significant financing component. For certain contracts that do not provide the Company unconditional rights to the consideration, and the transfer of control of the goods or services has been satisfied, the Company recognizes contract assets and revenues.

Consideration received from customers prior to the Company having satisfied its performance obligations are accounted for as contract liabilities which are transferred to revenue after the performance obligations are satisfied. The Company recognizes costs to fulfill a contract when the costs relate directly to the contract, generate or enhance resources to be used to satisfy performance obligations in the future, and are expected to be recovered. The costs and revenues are recognized when the Company satisfies its performance obligations to customers upon transfer of control of promised goods and services.

Interest income

For financial assets measured at amortized cost and financial assets at fair value through other comprehensive income, interest income is recorded using the effective interest method and recognized in profit or loss.

Dividends

Revenue is recognized when the Company's right to receive the dividends is established, which is generally when stockholders approve the dividend.

(23) Income Tax

Income tax expense (benefit) is the aggregate amount of current income tax and deferred income tax included in the determination of profit or loss for the period.

Current income tax

Current income tax assets and liabilities for the current period and prior periods are measured using the tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period. Current income tax relating to items recognized directly in other comprehensive income or equity is recognized in other comprehensive income or equity rather than profit or loss.

The additional income tax for undistributed earnings is recognized as income tax expense in the subsequent year when the distribution proposal is approved by the stockholders' meeting.

Deferred income tax

Deferred income tax is determined using the liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts in financial statements at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- a. When the deferred tax liability arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss;
- b. In respect of taxable temporary differences associated with investments in subsidiaries, associates and joint ventures, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences, the carryforward of unused tax losses and unused tax credits, to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences and the carryforward of unused tax losses and unused tax credits can be utilized, except:

- a. Where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss;
- b. In respect of deductible temporary differences associated with investments in subsidiaries, associates and joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

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.

(24) Earnings per Share

Earnings per share is computed according to IAS 33, “Earnings per Share”. Basic earnings per share is computed by dividing net income by the weighted-average number of ordinary shares outstanding during the current reporting period. Diluted earnings per share is computed by taking basic earnings per share into consideration plus additional ordinary shares that would have been outstanding if the dilutive share equivalents had been issued. Net income is also adjusted for interest and other income or expenses derived from any underlying dilutive share equivalents. The weighted-average of outstanding shares is adjusted retroactively for stock dividends and employee stock compensation issues.

5. SIGNIFICANT ACCOUNTING JUDGMENTS, ESTIMATES AND ASSUMPTIONS

The preparation of the Company’s consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets, liabilities, the accompanying disclosures and the disclosure of contingent liabilities. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

The key assumptions concerning the future and other key sources of estimating uncertainty at the reporting date that would have a significant risk for a material adjustment to the carrying amounts of assets or liabilities within the next fiscal year are discussed below.

The Company bases its assumptions and estimates on information available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the Company. Such changes are reflected in the assumptions when they occur.

(1) The Fair Value of Level 3 Financial Instruments

Where the fair values of the level 3 financial assets and financial liabilities recorded on the balance sheet cannot be derived from active markets, they are determined by the application of an appropriate valuation method including the income approach and market approach. The valuation of these financial assets involves significant judgment in the preparation of cash flow forecasts, a selection of comparable companies or equity transaction prices, as well as the application of assumptions such as discount rates, discounts for lack of marketability, and valuation multiples, etc. Changes in assumptions about these factors could affect the reported fair value of the financial assets. Please refer to Note 12 for more details.

(2) Inventories

Inventories are valued at the lower of cost and net realizable value item by item. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale. Please refer to Note 6(4). Costs of completion include direct labor and overhead, including depreciation and maintenance of production equipment, indirect labor costs, indirect material costs, supplies, utilities and royalties that is expected to be incurred at normal production level. The Company estimates normal production level taking into account loss of capacity resulting from planned maintenance, based on historical experience and current production capacity.

(3) Post-Employment Benefits

Defined benefit costs and the present value of the defined benefit obligation for a pension plan are determined using the projected unit credit method. An actuarial valuation involves making various assumptions, which include the determination of the discount rate, future salary increase rate, mortality rate, etc., and may differ from actual developments in the future. In determining the appropriate discount rate, management considers the interest rates of the government bonds extrapolated from maturity corresponding to the expected duration of the defined benefit obligation. As for the rate of future salary increase, management takes account of past experiences, comparisons within the industry and the geographical region, inflation and the discount rate. Due to the complexity of the actuarial valuation and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. The assumptions used are disclosed in Note 6(13).

(4) Impairment of Property, Plant and Equipment

At each reporting date or whenever events indicate that the asset's value has declined or significant changes in the market with an adverse effect have taken place, the Company assesses whether there is an indication that an asset in the scope of IAS 36 may be impaired. If any indication exists, the Company completes impairment testing for the CGU to which the individual assets belong. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. The recoverable amount of an individual asset or CGU is the higher of fair value less costs of disposal and its value in use. The fair value less costs of disposal is based on best information available to reflect the amount that an entity could obtain from the disposal of the asset in an orderly transaction between market participants, after deducting the costs of disposal. The value in use is measured at the net present value of the future cash flows the entity expects to derive from the asset or CGU. Cash flow projection involves subjective judgments and estimates which include the estimated useful lives of property, plant and equipment, capacity that generates future cash flows, capacity of physical output, potential fluctuations of economic cycle in the industry and the Company's operating situation.

(5) Income Tax

Uncertainties exist with respect to the interpretation of complex tax regulations, changes in tax laws, and the amount and timing of future taxable income. The Company establishes provisions, based on reasonable estimates, for possible consequences of audits by the tax authorities of the respective countries in which it operates. The amount of such provisions is based on various factors, such as experience of previous tax audits and different interpretations of tax regulations made by the taxable entity and the responsible tax authority. Such differences of interpretation may arise on a wide variety of issues depending on the conditions prevailing in the respective domicile of the Company.

Deferred tax assets are recognized for all carryforward of unused tax losses, tax credits and deductible temporary differences to the extent that it is probable that future taxable profit will be available or there are sufficient taxable temporary differences against which the unused tax losses, unused tax credits or deductible temporary differences can be utilized. The amount of deferred tax assets determined to be recognized is based upon the likely timing and the level of future taxable profits and taxable temporary differences. Please refer to Note 6(23) for more details on unrecognized deferred tax assets.

6. CONTENTS OF SIGNIFICANT ACCOUNTS

(1) Cash and Cash Equivalents

	As of December 31,	
	2019	2018
Cash on hand and petty cash	\$6,074	\$6,091
Checking and savings accounts	26,384,925	25,021,265
Time deposits	59,966,481	49,139,549
Repurchase agreements collateralized by government bonds and corporate notes	9,134,997	9,494,834
Total	<u>\$95,492,477</u>	<u>\$83,661,739</u>

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

	As of December 31,	
	2019	2018
Financial assets mandatorily measured at fair value through profit or loss		
Common stocks	\$8,381,085	\$6,814,915
Preferred stocks	3,299,419	2,998,228
Funds	2,195,524	2,030,688
Convertible Bonds	145,445	236,905
Forward contracts	-	3,561
Option	-	-
Total	<u>\$14,021,473</u>	<u>\$12,084,297</u>

	As of December 31,	
	2019	2018
Current	\$722,794	\$528,450
Noncurrent	13,298,679	11,555,847
Total	<u>\$14,021,473</u>	<u>\$12,084,297</u>

The Company had a call option of a joint venture agreement between FUJITSU SEMICONDUCTOR LIMITED (FSL) and UMC, which was measured at fair value and the change in the fair value was recorded in profit or loss. On June 29, 2018, the Board of Directors of UMC resolved to exercise the call option, and completed the acquisition on October 1, 2019. Please refer to Note 6(26).

(3) Accounts Receivable, Net

	As of December 31,	
	2019	2018
Accounts receivable	\$26,136,293	\$23,784,141
Less: loss allowance	(697,590)	(48,152)
Net	<u>\$25,438,703</u>	<u>\$23,735,989</u>

Aging analysis of accounts receivable, net:

	As of December 31,	
	2019	2018
Neither past due nor impaired	\$21,924,797	\$18,271,304
Past due but not impaired:		
≤ 30 days	2,364,311	3,407,690
31 to 60 days	204,791	739,054
61 to 90 days	85,131	545,366
91 to 120 days	138,788	365,007
≥ 121 days	720,885	407,568
Subtotal	<u>3,513,906</u>	<u>5,464,685</u>
Total	<u>\$25,438,703</u>	<u>\$23,735,989</u>

Movement of loss allowance for accounts receivable:

	For the years ended December 31,	
	2019	2018
Beginning balance	\$48,152	\$39,578
Net charge for the period	649,438	8,574
Ending balance	<u>\$697,590</u>	<u>\$48,152</u>

The collection periods for third party domestic sales and third party overseas sales were month-end 30~60 days and net 30~60 days, respectively.

An impairment analysis is performed at each reporting date to measure expected credit losses (ECLs) of accounts receivable. For receivable past due within 60 days, including not past due, the Company estimates a provision rate to calculate ECLs. A provision rate is determined based on the Company's historical credit loss experience and customers' current financial condition, adjusted for forward-looking factors, such as customers' economic environment. For the receivable past due over 60 days, the Company applies the aforementioned provision rate and also individually assesses whether to recognize additional expected credit losses by considering customer's operating situation and debt-paying ability.

(4) Inventories, Net

	As of December 31,	
	2019	2018
Raw materials	\$5,102,571	\$3,766,056
Supplies and spare parts	3,548,376	3,133,737
Work in process	11,309,718	10,034,488
Finished goods	1,754,137	1,268,838
Total	<u>\$21,714,802</u>	<u>\$18,203,119</u>

a. For the years ended December 31, 2019 and 2018, the Company recognized NT\$122,999 million and NT\$123,795 million, respectively, in operating cost, of which NT\$820 million and NT\$1,698 million were related to write-down of inventories.

b. None of the aforementioned inventories were pledged.

(5) Financial Assets at Fair Value through Other Comprehensive Income, Non-Current

	As of December 31,	
	2019	2018
Equity instruments		
Common stocks	\$14,547,738	\$11,401,451
Preferred stocks	175,494	184,026
Total	<u>\$14,723,232</u>	<u>\$11,585,477</u>

- a. These investments in equity instruments are held for medium to long-term purposes and therefore are accounted for as fair value through other comprehensive income.
- b. Amounts recognized in profit or loss and other comprehensive income in relation to the financial assets at fair value through other comprehensive income are listed below:

	For the years ended December 31,	
	2019	2018
Dividend income recognized in profit or loss		
Held at end of period	\$365,052	\$268,406
Derecognized during the period	-	-
Total	<u>\$365,052</u>	<u>\$268,406</u>

- c. In consideration of the Company's investment strategy, the Company disposed and derecognized partial equity instrument investments measured at fair value through other comprehensive income. Details on derecognition of such investments for the years end December 31, 2019 and 2018 are as follow:

	For the years ended December 31,	
	2019	2018
Fair value on the date of sale	<u>\$2,348,454</u>	<u>\$-</u>
Cumulative gains (losses) reclassified to retained earnings due to derecognition	<u>\$(551,903)</u>	<u>\$-</u>

(6) Investments Accounted For Under the Equity Method

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

	As of December 31,			
	2019		2018	
Investee companies	Amount	Percentage of ownership or voting rights	Amount	Percentage of ownership or voting rights
<u>Listed companies</u>				
CLIENTRON CORP.	\$276,866	21.90	\$249,762	22.39
FARADAY TECHNOLOGY CORP. (FARADAY)	1,470,499	13.78	1,477,167	13.78

(Note A)

Investee companies	As of December 31,			
	2019		2018	
	Amount	Percentage of ownership or voting rights	Amount	Percentage of ownership or voting rights
<u>Unlisted companies</u>				
MTIC HOLDINGS PTE. LTD.	\$18,157	45.44	\$3,026	45.44
WINAICO IMMOBILIEN GMBH (Note B)	-	44.78	-	44.78
PURIUMFIL INC.	7,164	44.45	-	-
UNITECH CAPITAL INC.	642,660	42.00	568,005	42.00
TRIKNIGHT CAPITAL CORPORATION	2,281,631	40.00	1,520,575	40.00
HSUN CHIEH INVESTMENT CO., LTD.	4,378,193	36.49	3,419,430	36.49
YANN YUAN INVESTMENT CO., LTD.	3,829,934	30.87	2,642,543	30.87
HSUN CHIEH CAPITAL CORP.	122,060	30.00	161,319	30.00
VSENSE CO., LTD.	592	25.90	31,544	26.89
UNITED LED CORPORATION HONG KONG LIMITED	121,973	25.14	167,953	25.14
TRANSLINK CAPITAL PARTNERS I, L.P. (Note C)	172,414	10.38	120,440	10.38
WINAICO SOLAR PROJEKT 1 GMBH (Note B)	-	-	-	50.00
YUNG LI INVESTMENTS, INC.	-	-	2,213	45.16
Total	<u>\$13,322,143</u>		<u>\$10,363,977</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: WINAICO SOLAR PROJEKT 1 GMBH and WINAICO IMMOBILIEN GMBH are joint ventures to the Company.

Note C: The Company follows international accounting practices in equity accounting for limited partnerships and uses the equity method to account for these investees.

The carrying amount of investments accounted for using the equity method for which there are published price quotations amounted to NT\$1,747 million and NT\$1,727 million, as of December 31, 2019 and 2018, respectively. The fair value of these investments were NT\$2,244 million and NT\$1,621 million, as of December 31, 2019 and 2018, respectively.

Certain investments accounted for under the equity method were audited by other independent accountants. Shares of profit or loss of these associates and joint ventures amounted to NT\$1,231 million and NT\$(751) million for the years ended December 31, 2019 and 2018, respectively. Share of other comprehensive income (loss) of these associates and joint ventures amounted to NT\$1,184 million and NT\$(225) million for the years ended December 31, 2019 and 2018, respectively. The balances of investments accounted for under the equity method were NT\$11,704 million and NT\$8,714 million as of December 31, 2019 and 2018, respectively.

None of the aforementioned associates and joint ventures were pledged.

b. Financial information of associates and joint ventures:

There is no individually significant associate or joint venture for the Company. When an associate or a joint venture is a foreign operation, and the functional currency of the foreign entity is different from the Company, an exchange difference arising from translation of the foreign entity will be recognized in other comprehensive income (loss). Such exchange differences recognized in other comprehensive income (loss) in the financial statements for the years ended December 31, 2019 and 2018 were NT\$(18) million and NT\$18 million, respectively, which were not included in the following table.

i. The aggregate amount of the Company's share of its associates that are accounted for using the equity method was as follows:

	For the years ended December 31,	
	2019	2018
Income (loss) from continuing operations	\$1,147,495	\$(667,701)
Other comprehensive income (loss)	1,256,622	(476,326)
Total comprehensive income (loss)	<u>\$2,404,117</u>	<u>\$(1,144,027)</u>

ii. The aggregate amount of the Company's share of its joint ventures that are accounted for using the equity method were both nil for the years ended December 31, 2019 and 2018.

c. One of UMC's associates, HSUN CHIEH INVESTMENT CO., LTD., held 441 million shares of UMC's stock as of December 31, 2019 and 2018. Another associate, YANN YUAN INVESTMENT CO., LTD., held 200 million shares and 172 million shares of UMC's stock as of December 31, 2019 and 2018.

(7) Property, Plant and Equipment

2019

a. Assets Used by the Company(Note):

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2019	\$861,487	\$35,681,733	\$853,481,220	\$66,355	\$6,736,916	\$53,449	\$10,550,763	\$907,431,923
Additions	-	-	-	-	-	-	14,579,988	14,579,988
Disposals	-	(4,637)	(8,122,361)	(3,563)	(196,487)	(6,180)	(27,758)	(8,360,986)
Disposal of a subsidiary	-	-	(161,781)	-	-	-	-	(161,781)
Acquisition of a subsidiary	871,700	3,087,585	6,704,236	9	54,978	8,372	739,663	11,466,543
Transfers and reclassifications	-	211,285	20,723,346	3,557	285,891	11,712	(20,179,970)	1,055,821
Exchange effect	(41,064)	(538,378)	(7,077,088)	(449)	(39,174)	(1,470)	(79,170)	(7,776,793)
As of December 31, 2019	<u>\$1,692,123</u>	<u>\$38,437,588</u>	<u>\$865,547,572</u>	<u>\$65,909</u>	<u>\$6,842,124</u>	<u>\$65,883</u>	<u>\$5,583,516</u>	<u>\$918,234,715</u>

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2019	\$-	\$17,549,256	\$714,286,307	\$45,434	\$5,112,684	\$49,580	\$5,949	\$737,049,210
Depreciation	-	1,542,864	44,307,925	6,105	488,216	2,441	-	46,347,551
Impairment loss	-	-	84,974	-	-	-	-	84,974
Disposals	-	(4,624)	(8,105,713)	(3,563)	(195,766)	(5,371)	(5,949)	(8,320,986)
Disposal of a subsidiary	-	-	(127,455)	-	-	-	-	(127,455)
Transfers and reclassifications	-	-	66,682	-	(325)	514	-	66,871
Exchange effect	-	(136,976)	(4,789,755)	(182)	(21,375)	(1,017)	-	(4,949,305)
As of December 31, 2019	<u>\$-</u>	<u>\$18,950,520</u>	<u>\$745,722,965</u>	<u>\$47,794</u>	<u>\$5,383,434</u>	<u>\$46,147</u>	<u>\$-</u>	<u>\$770,150,860</u>
Net carrying amount:								
As of December 31, 2019	<u>\$1,692,123</u>	<u>\$19,487,068</u>	<u>\$119,824,607</u>	<u>\$18,115</u>	<u>\$1,458,690</u>	<u>\$19,736</u>	<u>\$5,583,516</u>	<u>\$148,083,855</u>

b. Assets Subject to Operating Leases(Note):

Cost:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2019	\$452,915	\$2,624,569	\$207,285	\$1,319,985	\$4,604,754
Disposals	-	(623)	-	(317)	(940)
Acquisition of a subsidiary	7,051	24,024	-	-	31,075
Transfers and reclassifications	-	-	(81,872)	3,213	(78,659)
Exchange effect	(331)	(10,699)	-	(7,701)	(18,731)
As of December 31, 2019	<u>\$459,635</u>	<u>\$2,637,271</u>	<u>\$125,413</u>	<u>\$1,315,180</u>	<u>\$4,537,499</u>

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2019	\$-	\$915,988	\$188,881	\$1,036,003	\$2,140,872
Depreciation	-	106,250	3,827	70,708	180,785
Disposals	-	(334)	-	(317)	(651)
Transfers and reclassifications	-	-	(67,295)	10	(67,285)
Exchange effect	-	(2,868)	-	(3,595)	(6,463)
As of December 31, 2019	<u>\$-</u>	<u>\$1,019,036</u>	<u>\$125,413</u>	<u>\$1,102,809</u>	<u>\$2,247,258</u>
Net carrying amount:					
As of December 31, 2019	<u>\$459,635</u>	<u>\$1,618,235</u>	<u>\$-</u>	<u>\$212,371</u>	<u>\$2,290,241</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

2018

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2018	\$1,314,402	\$38,073,660	\$826,268,919	\$75,782	\$7,675,798	\$52,557	\$20,761,439	\$894,222,557
Additions	-	-	-	-	-	-	17,579,689	17,579,689
Disposals	-	(64,878)	(2,330,437)	(18,363)	(40,199)	-	-	(2,453,877)
Disposal of a subsidiary	-	-	(224,895)	-	(6,515)	(2,226)	-	(233,636)
Transfers and reclassifications	-	375,854	27,447,023	8,884	433,665	2,049	(27,693,591)	573,884
Exchange effect	-	(78,334)	2,527,895	52	(5,848)	1,069	(96,774)	2,348,060
As of December 31, 2018	<u>\$1,314,402</u>	<u>\$38,306,302</u>	<u>\$853,688,505</u>	<u>\$66,355</u>	<u>\$8,056,901</u>	<u>\$53,449</u>	<u>\$10,550,763</u>	<u>\$912,036,677</u>

Accumulated Depreciation and Impairment:

							Construction in progress and equipment awaiting inspection	
	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement		Total
As of January 1, 2018	\$-	\$16,960,853	\$665,771,857	\$57,031	\$5,636,982	\$48,204	\$5,949	\$688,480,876
Depreciation	-	1,535,409	47,871,174	6,080	533,628	2,298	-	49,948,589
Disposals	-	(57,812)	(2,286,359)	(17,963)	(25,467)	-	-	(2,387,601)
Disposal of a subsidiary	-	-	(180,843)	-	(5,264)	(2,014)	-	(188,121)
Transfers and reclassifications	-	297	(3,164)	-	2,867	-	-	-
Exchange effect	-	26,497	3,302,523	286	5,941	1,092	-	3,336,339
As of December 31, 2018	<u>\$-</u>	<u>\$18,465,244</u>	<u>\$714,475,188</u>	<u>\$45,434</u>	<u>\$6,148,687</u>	<u>\$49,580</u>	<u>\$5,949</u>	<u>\$739,190,082</u>
Net carrying amount:								
As of December 31, 2018	<u>\$1,314,402</u>	<u>\$19,841,058</u>	<u>\$139,213,317</u>	<u>\$20,921</u>	<u>\$1,908,214</u>	<u>\$3,869</u>	<u>\$10,544,814</u>	<u>\$172,846,595</u>

In the second quarter of 2019, the Company reclassified SOCIALNEX ITALIA 1 S.R.L (SOCIALNEX), a subsidiary, as a disposal group held for sale. As such, the Company performed an impairment test on the cash-generating unit (CGU) composed of property, plant and equipment before reclassifying the CGU as a single disposal group held for sale. The Company, determined the recoverable amount of the CGU based on the net selling price which was categorized to Level 3 and the impairment test revealed the recoverable amount of the CGU to be less than its carrying amount. Thus, the Company recorded in the other operating income and expenses an impairment loss of NT\$85 million for the year ended December 31, 2019, on the CGU to be disposed of from the new business segment. The Company disposed SOCIALNEX in November 2019.

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

(8) Leases

The Company leases various properties, such as land (including land use right), buildings, machinery and equipment, transportation equipment and other equipment with lease terms of 1 to 30 years, except for the land use rights with lease term of 50 years. Most lease contracts of land located in R.O.C state that lease payments will be adjusted based on the announced land value. The Company does not have purchase options of leased land at the end of the lease terms.

a. The Company as a lessee

(a) Right-of-use Assets

	As of December 31, 2019
Land (including land use right)	\$5,700,136
Buildings	473,558
Machinery and equipment	2,092,924
Transportation equipment	12,019
Other equipment	12,880
Net	<u>\$8,291,517</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

	For the year ended December 31, 2019
<u>Depreciation</u>	
Land (including land use right)	\$366,827
Buildings	87,572
Machinery and equipment	180,115
Transportation equipment	6,001
Other equipment	4,030
Total	<u>\$644,545</u>

i. For the year ended December 31, 2019, the Company's addition to right-of-use assets amounted to NT\$264 million.

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

(b) Lease Liabilities

	As of December 31, 2019
Current	\$569,957
Noncurrent	5,461,068
Total	<u>\$6,031,025</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

Please refer to Note 6(21) for the interest expenses on the lease liabilities.

b. The Company as a lessor

The Company entered into leases on certain property, plant and equipment which are classified as operating leases as they did not transfer substantially all of the risks and rewards incidental to ownership of the underlying assets. The main contracts are to lease the dormitory to the employees with cancellation clauses. Please refer to Note 6(7) for relevant disclosure of property, plant and equipment for operating leases under IFRS 16.

(9) Intangible Assets

2019

Cost:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2019	\$15,012	\$1,125,804	\$4,511,629	\$3,190,116	\$8,842,561
Additions	-	1,666,599	806,915	851,679	3,325,193
Write-off	-	(383,745)	(2,734,355)	(638,815)	(3,756,915)
Disposal of a subsidiary	-	-	-	(93)	(93)
Acquisition of a subsidiary	-	964,903	198,181	155,670	1,318,754
Reclassifications	-	53,661	-	-	53,661
Exchange effect	-	(80,074)	(380,092)	(10,551)	(470,717)
As of December 31, 2019	<u>\$15,012</u>	<u>\$3,347,148</u>	<u>\$2,402,278</u>	<u>\$3,548,006</u>	<u>\$9,312,444</u>

Accumulated Amortization and Impairment:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2019	\$-	\$601,649	\$2,843,411	\$2,405,697	\$5,850,757
Amortization	-	760,010	531,790	874,810	2,166,610
Impairment loss	7,398	-	-	-	7,398
Write-off	-	(383,745)	(2,734,355)	(638,815)	(3,756,915)
Disposal of a subsidiary	-	-	-	(93)	(93)
Reclassifications	-	414	-	-	414
Exchange effect	-	(27,152)	(122,850)	(3,972)	(153,974)
As of December 31, 2019	<u>\$7,398</u>	<u>\$951,176</u>	<u>\$517,996</u>	<u>\$2,637,627</u>	<u>\$4,114,197</u>
Net carrying amount: As of December 31, 2019	<u>\$7,614</u>	<u>\$2,395,972</u>	<u>\$1,884,282</u>	<u>\$910,379</u>	<u>\$5,198,247</u>

2018

Cost:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2018	\$15,188	\$1,080,726	\$4,687,751	\$3,565,705	\$9,349,370
Additions	-	-	214,278	612,253	826,531
Write-off	-	(422,591)	(179,418)	(987,841)	(1,589,850)
Disposal of a subsidiary	(176)	-	-	-	(176)
Reclassifications	-	474,127	-	-	474,127
Exchange effect	-	(6,458)	(210,982)	(1)	(217,441)
As of December 31, 2018	<u>\$15,012</u>	<u>\$1,125,804</u>	<u>\$4,511,629</u>	<u>\$3,190,116</u>	<u>\$8,842,561</u>

Accumulated Amortization and Impairment:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2018	\$-	\$670,014	\$2,585,190	\$2,306,657	\$5,561,861
Amortization	-	357,624	468,296	1,086,882	1,912,802
Write-off	-	(422,591)	(179,418)	(987,841)	(1,589,850)
Exchange effect	-	(3,398)	(30,657)	(1)	(34,056)
As of December 31, 2018	<u>\$-</u>	<u>\$601,649</u>	<u>\$2,843,411</u>	<u>\$2,405,697</u>	<u>\$5,850,757</u>
Net carrying amount:					
As of December 31, 2018	<u>\$15,012</u>	<u>\$524,155</u>	<u>\$1,668,218</u>	<u>\$784,419</u>	<u>\$2,991,804</u>

The amortization amounts of intangible assets are as follows:

	For the years ended December 31,	
	2019	2018
Operating costs	<u>\$827,596</u>	<u>\$758,050</u>
Operating expenses	<u>\$1,339,014</u>	<u>\$1,154,752</u>

(10) Short-Term Loans

	As of December 31,	
	2019	2018
Unsecured bank loans	\$8,080,200	\$7,780,552
Unsecured other loans	3,935,006	5,323,256
Total	<u>\$12,015,206</u>	<u>\$13,103,808</u>
	For the years ended December 31,	
	2019	2018
Interest rates applied	<u>0.00%~4.55%</u>	<u>0.00%~4.55%</u>

The Company's unused short-term lines of credit amounted to NT\$64,169 million and NT\$77,658 million as of December 31, 2019 and 2018, respectively.

(11) Bonds Payable

	As of December 31	
	2019	2018
Unsecured domestic bonds payable	\$21,200,000	\$23,700,000
Unsecured convertible bonds payable	17,729,293	18,196,332
Less: Discounts on bonds payable	(147,877)	(518,150)
Total	38,781,416	41,378,182
Less: Current portion	(20,093,825)	(2,499,235)
Net	<u>\$18,687,591</u>	<u>\$38,878,947</u>

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

Term	Issuance date	Issued amount	Coupon rate	Repayment
Seven-year	In early June 2012	NT\$2,500 million	1.63%	Interest was paid annually and the principal was fully repaid in June 2019.
Five-year	In mid-March 2013	NT\$7,500 million	1.35%	Interest was paid annually and the principal was fully repaid in March 2018.
Seven-year	In mid-March 2013	NT\$2,500 million	1.50%	Interest will be paid annually and the principal will be repayable in March 2020 upon maturity.

Term	Issuance date	Issued amount	Coupon rate	Repayment
Seven-year	In mid-June 2014	NT\$2,000 million	1.70%	Interest will be paid annually and the principal will be repayable in June 2021 upon maturity.
Ten-year	In mid-June 2014	NT\$3,000 million	1.95%	Interest will be paid annually and the principal will be repayable in June 2024 upon maturity.
Five-year	In late March 2017	NT\$6,200 million	1.15%	Interest will be paid annually and the principal will be repayable in March 2022 upon maturity.
Seven-year	In late March 2017	NT\$2,100 million	1.43%	Interest will be paid annually and the principal will be repayable in March 2024 upon maturity.
Five-year	In early October 2017	NT\$2,000 million	0.94%	Interest will be paid annually and the principal will be repayable in October 2022 upon maturity.
Seven-year	In early October 2017	NT\$3,400 million	1.13%	Interest will be paid annually and the principal will be repayable in October 2024 upon maturity.

b. On May 18, 2015, UMC issued SGX-ST listed currency linked zero coupon convertible bonds. The terms and conditions of the bonds were as follows:

i. Issue Amount: US\$600 million

ii. Period: May 18, 2015 ~ May 18, 2020 (Maturity date)

iii. Redemption:

- (i) UMC may redeem the bonds, in whole or in part, after 3 years of the issuance and prior to the maturity date, at the principal amount of the bonds with an interest calculated at the rate of -0.25% per annum (the Early Redemption Amount) if the closing price of the ordinary shares of UMC on the TWSE, for a period of 20 out of 30 consecutive trading days, the last of which occurs not more than 5 days prior to the date upon which notice of such redemption is published, is at least 125% of the conversion price. The Early Redemption Price will be converted into NTD based on the Fixed Exchange Rate (NTD 30.708=USD 1.00), and this fixed NTD amount will be converted using the prevailing rate at the time of redemption for payment in USD.
- (ii) UMC may redeem the bonds, in whole, but not in part, at the Early Redemption Amount if at least 90% in principal amount of the bonds has already been converted, redeemed or repurchased and cancelled.

- (iii) UMC may redeem all, but not part, of the bonds, at the Early Redemption Amount at any time, in the event of certain changes in the R.O.C.'s tax rules which would require UMC to gross up for payments of principal, or to gross up for payments of interest or premium.
- (iv) All or any portion of the bonds will be redeemable at Early Redemption Amount at the option of bondholders on May 18, 2018 at 99.25% of the principal amount.
- (v) Bondholders have the right to require UMC to redeem all of the bonds at the Early Redemption Amount if UMC's ordinary shares cease to be listed on the Taiwan Stock Exchange.
- (vi) In the event that a change of control as defined in the indenture of the bonds occurs to UMC, the bondholders shall have the right to require UMC to redeem the bonds, in whole but not in part, at the Early Redemption Amount.

iv. Terms of Conversion:

- (i) Underlying Securities: Ordinary shares of UMC
- (ii) Conversion Period: The bonds are convertible at any time on or after June 28, 2015 and prior to May 8, 2020, into UMC ordinary shares; provided, however, that if the exercise date falls within 5 business days from the beginning of, and during, any closed period, the right of the converting holder of the bonds to vote with respect to the shares it receives will be subject to certain restrictions.
- (iii) Conversion Price and Adjustment: The conversion price was originally NT\$17.50 per share. The conversion price will be subject to adjustments upon the occurrence of certain events set out in the indenture. The conversion price was NT\$14.2179 per share on December 31, 2019.

v. Redemption on the Maturity Date: On the maturity date, UMC will redeem the bonds at 98.76% of the principal amount unless, prior to such date:

- (i) UMC shall have redeemed the bonds at the option of UMC, or the bonds shall have been redeemed at option of the bondholder;
- (ii) The bondholders shall have exercised the conversion right before maturity; or
- (iii) The bonds shall have been redeemed or repurchased by UMC and cancelled.

In accordance with IAS 32 "Financial Instruments Presentation", the value of the conversion right of the convertible bonds was determined at issuance and recognized in additional paid-in capital-stock options amounting to NT\$1,894 million, after reduction of issuance costs amounting to NT\$9 million. The effective interest rate on the liability component of the convertible bonds was determined to be 2.03%.

During the year ended December 31, 2019, certain bondholders had converted the outstanding principal amount of the convertible bonds totaling US\$15 million into 33 million shares, of which capital increase share registration procedures have not been completed and were classified as capital collected in advance.

(12) Long-Term Loans

a. Details of long-term loans as of December 31, 2019 and 2018 are as follows:

Lenders	As of December 31,		Redemption
	2019	2018	
Secured Long-Term Loan from Mega International Commercial Bank (1)	\$3,827	\$6,013	Effective July 3, 2017 to July 5, 2021. Interest-only payment for the first year. Principal is repaid in 17 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Mega International Commercial Bank (2)	10,380	-	Effective October 24, 2019 to October 24, 2024. Interest-only payment for the first year. Principal is repaid in 17 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Taiwan Cooperative Bank (1)	1,288	3,006	Effective August 10, 2015 to August 10, 2020. Interest-only payment for the first year. Principal is repaid in 17 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Taiwan Cooperative Bank (2)	71,351	83,243	Effective October 19, 2015 to October 19, 2025. Interest-only payment for the first year. Principal is repaid in 37 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Taiwan Cooperative Bank (3)	29,896	-	Repayable monthly from May 31, 2019 to May 31, 2023 with monthly interest payments.
Secured Syndicated Loans from China Development Bank and 6 others	26,892,457	28,987,895	Effective October 20, 2016 to October 20, 2024. Interest-only payment for the first and the second year. Principal is repaid in 13 semi-annual payments with semi-annual interest payments.
Unsecured Syndicated Loans from Bank of Taiwan and 7 others	-	747,900	Repayable semi-annually from February 6, 2017 to February 6, 2020 with monthly interest payments.
Unsecured Long-Term Loan from Bank of Taiwan	-	1,000,000	Repayable quarterly from March 23, 2019 to December 23, 2021 with monthly interest payments.
Unsecured Long-Term Loan from CTBC Bank	747,900	-	Effective January 10, 2019 to September 30, 2021. Interest-only payment for the first and nine months. Principal is repaid in full at the end of the term with monthly interest payments.

Lenders	As of December 31,		Redemption
	2019	2018	
Unsecured Long-Term Loan from ICBC Bank	\$1,744,975	\$-	Repayable semi-annually from March 10, 2020 to September 9, 2021 with quarterly interest payments.
Unsecured Revolving Loan from Mega International Commercial Bank (Note A)	2,000,000	-	Repayable semi-annually from October 16, 2020 to April 16, 2022 with monthly interest payments.
Unsecured Revolving Loan from Chang Hwa Commercial Bank (Note B)	2,400,000	-	Repayable quarterly from January 26, 2021 to October 26, 2022 with monthly interest payments.
Subtotal	33,902,074	30,828,057	
Less: Administrative expenses from syndicated loans	-	(1,842)	
Less: Current portion	(4,701,775)	(2,622,161)	
Total	<u>\$29,200,299</u>	<u>\$28,204,054</u>	
For the years ended December 31,			
	2019	2018	
Interest rates applied	<u>0.55%~5.56%</u>	<u>0.99%~5.56%</u>	

Note A: UMC entered into a 5-year loan agreement with Mega International Commercial Bank, effective from October 17, 2016. The agreement offered UMC a revolving line of credit of NT\$3 billion. This line of credit will be reduced starting from the end of the two years and six months after the first use and every six months thereafter, with a total of six adjustments. The expiration date of the agreement is April 16, 2022. As of December 31, 2019 and 2018, the unused line of credit were NT\$0.5 billion and NT\$3 billion, respectively.

Note B: UMC entered into a 5-year loan agreement with Chang Hwa Commercial Bank, effective from November 2, 2016. The agreement offered UMC a revolving line of credit of NT\$3 billion. This line of credit will be reduced starting from the end of the third year after the first use and every three months thereafter, with a total of nine adjustments. The expiration date of the agreement is October 27, 2022. As of December 31, 2019 and 2018, the unused line of credit were NT\$0.6 billion and NT\$3 billion, respectively.

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

(13) Post-Employment 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\$1,369 million and NT\$1,339 million are contributed by the Company for the years ended December 31, 2019 and 2018, respectively.

b. Defined benefit plan

- i. The employee pension plan mandated by the Labor Standards Act of the R.O.C. is a defined benefit plan. The pension benefits are disbursed based on the units of service years and average monthly salary prior to retirement according to the Labor Standards Act. Two units per year are awarded for the first 15 years of services while one unit per year is awarded after the completion of the 15th year and the total units will not exceed 45 units. The Company contributes an amount equivalent to 2% of the employees' total salaries and wages on a monthly basis to the pension fund deposited with the Bank of Taiwan under the name of a pension fund supervisory committee. The pension fund is managed by the government's designated authorities and therefore is not included in the Company's consolidated financial statements. For the years ended December 31, 2019 and 2018, total pension expenses of NT\$59 million and NT\$69 million, respectively, were recognized by the Company.
- ii. Movements in present value of defined benefit obligation and fair value of plan assets are as follows:

Movements in present value of defined benefit obligation during the year:

	For the years ended December 31,	
	2019	2018
Defined benefit obligation at beginning of year	\$(5,620,509)	\$(5,671,058)
Items recognized as profit or loss:		
Service cost	(21,043)	(24,477)
Interest cost	(51,146)	(61,247)
Subtotal	(72,189)	(85,724)

	For the years ended December 31,	
	2019	2018
Remeasurements recognized in other comprehensive income (loss):		
Arising from changes in financial assumptions	\$(114,976)	\$(91,350)
Experience adjustments	180,095	(5,907)
Subtotal	65,119	(97,257)
Benefits paid	216,510	233,530
Defined benefit obligation at end of year	<u>\$(5,411,069)</u>	<u>\$(5,620,509)</u>

Movements in fair value of plan assets during the year:

	For the years ended December 31,	
	2019	2018
Beginning balance of fair value of plan assets	\$1,453,335	\$1,532,539
Items recognized as profit or loss:		
Interest income on plan assets	13,225	16,552
Contribution by employer	94,362	95,577
Benefits paid	(216,510)	(233,530)
Remeasurements recognized in other comprehensive income (loss):		
Return on plan assets, excluding amounts included in interest income	41,284	42,197
Fair value of plan assets at end of year	<u>\$1,385,696</u>	<u>\$1,453,335</u>

The actual returns on plan assets of the Company for the years ended December 31, 2019 and 2018 were NT\$55 million and NT\$59 million, respectively.

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

	As of December 31,	
	2019	2018
Present value of the defined benefit obligation	\$(5,411,069)	\$(5,620,509)
Fair value of plan assets	1,385,696	1,453,335
Funded status	<u>(4,025,373)</u>	<u>(4,167,174)</u>
Net defined benefit liabilities, noncurrent recognized on the consolidated balance sheets	<u>\$(4,025,373)</u>	<u>\$(4,167,174)</u>

- iv. The major categories of plan assets as a percentage of the fair value of the total plan assets are as follows:

	As of December 31,	
	2019	2018
Cash	21%	17%
Equity instruments	45%	51%
Debt instruments	24%	24%
Others	10%	8%

Employee pension fund is deposited under a trust administered by the Bank of Taiwan. The overall expected rate of return on assets is determined based on historical trend and actuaries' expectations on the assets' returns in the market over the obligation period. Furthermore, the utilization of the fund is determined by the labor pension fund supervisory committee, which also guarantees the minimum earnings to be no less than the earnings attainable from interest rates offered by local banks for two-year time deposits.

- v. The principal underlying actuarial assumptions are as follows:

	As of December 31,	
	2019	2018
Discount rate	0.67%	0.91%
Rate of future salary increase	3.50%	3.50%

- vi. Expected future benefit payments are as follows:

Year	As of December 31, 2019
2020	\$230,468
2021	252,969
2022	298,483
2023	328,958
2024	377,022
2025 and thereafter	4,263,427
Total	<u>\$5,751,327</u>

The Company expects to make pension fund contribution of NT\$93 million in 2020. The weighted-average durations of the defined benefit obligation are 9 years and 10 years as of December 31, 2019 and 2018, respectively.

vii. Sensitivity analysis:

		As of December 31, 2019			
		Discount rate		Rate of future salary increase	
		0.5%	0.5%	0.5%	0.5%
		increase	decrease	increase	decrease
Decrease (increase) in					
defined benefit obligation		\$235,666	\$(251,131)	\$(215,694)	\$205,388

		As of December 31, 2018			
		Discount rate		Rate of future salary increase	
		0.5%	0.5%	0.5%	0.5%
		increase	decrease	increase	decrease
Decrease (increase) in					
defined benefit obligation		\$262,909	\$(281,037)	\$(244,120)	\$231,751

The sensitivity analyses above have been determined based on a method that extrapolates the impact on the net defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

(14) Deferred Government Grants

		As of December 31,	
		2019	2018
Beginning balance		\$17,480,904	\$14,595,546
Arising during the period		617,685	7,129,770
Recorded in profit or loss:			
Other operating income		(4,062,148)	(3,885,722)
Exchange effect		(484,888)	(358,690)
Ending balance		\$13,551,553	\$17,480,904
Current		\$3,780,579	\$3,832,124
Noncurrent		9,770,974	13,648,780
Total		\$13,551,553	\$17,480,904

The significant government grants related to equipment acquisitions received by the Company are amortized as income over the useful lives of related equipment, and recorded in the net other operating income and expenses.

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

	As of December 31,	
	2019	2018
Refund liabilities	<u>\$2,078,075</u>	<u>\$1,213,476</u>

(16) Equity

a. Capital stock:

- i. UMC had 26,000 million common shares authorized to be issued as of December 31, 2019 and 2018, of which 11,724 million shares and 12,424 million shares were issued as of December 31, 2019 and 2018, respectively, each at a par value of NT\$10.
- ii. UMC had 138 million and 143 million ADSs, which were traded on the NYSE as of December 31, 2019 and 2018, respectively. The total number of common shares of UMC represented by all issued ADSs were 692 million shares and 717 million shares as of December 31, 2019 and 2018, respectively. One ADS represents five common shares.
- iii. On June 28, 2019, UMC cancelled 400 million shares of treasury stock, which were repurchased during the period from May 13 to June 13, 2016 for the purpose of transferring to employees, and repurchased during the period from April 26 to June 13, 2019 for the purpose of maintaining UMC's credit and its stockholders' rights and interests.
- iv. On March 11, 2019, UMC cancelled 300 million shares of treasury stock, which were repurchased during the period from November 7, 2018 to January 4, 2019 for the purpose of maintaining UMC's credit and its stockholders' rights and interests.
- v. On August 27, 2018, UMC cancelled 200 million shares of treasury stock, which were repurchased during the period from March 12 to May 4, 2018 for the purpose of maintaining UMC's credit and its stockholders' rights and interests.
- vi. Please refer to Note 6(11) for the Company's conversion of overseas unsecured convertible bonds into ordinary shares of UMC for the year ended December 31, 2019.

b. Treasury stock:

- i. UMC carried out a treasury stock program and repurchased its shares from the centralized securities exchange market. The purpose for the repurchase and changes in treasury stock during the years ended December 31, 2019 and 2018 were as follows:

For the year ended December 31, 2019

(In thousands of shares)

Purpose	As of January 1, 2019	Increase	Decrease	As of December 31, 2019
For transfer to employees	200,000	-	200,000	-
To maintain UMC's credit and its stockholders' rights and interests	280,000	220,000	500,000	-
	<u>480,000</u>	<u>220,000</u>	<u>700,000</u>	<u>-</u>

For the year ended December 31, 2018

(In thousands of shares)

Purpose	As of January 1, 2018	Increase	Decrease	As of December 31, 2018
For transfer to employees	400,000	-	200,000	200,000
To maintain UMC's credit and its stockholders' rights and interests	-	480,000	200,000	280,000
	<u>400,000</u>	<u>480,000</u>	<u>400,000</u>	<u>480,000</u>

- ii. According to the Securities and Exchange Law of the R.O.C., the total shares of treasury stock shall not exceed 10% of UMC's issued stock, and the total purchase amount shall not exceed the sum of the retained earnings, additional paid-in capital-premiums and realized additional paid-in capital. As such, the number of shares of treasury stock that UMC held as of December 31, 2019 and 2018, did not exceed the limit.

iii. In compliance with Securities and Exchange Law of the R.O.C., treasury stock held by the parent company should not be pledged, nor should it be entitled to voting rights or receiving dividends. Stock held by subsidiaries is treated as treasury stock. These subsidiaries have the same rights as other stockholders except for subscription to new stock issuance and voting rights.

iv. UMC's subsidiary, FORTUNE VENTURE CAPITAL CORP., held shares of UMC's stock through acquiring shares of UNITED SILICON INC. in 1997, and these shares were converted to UMC's stock in 2000 as a result of the Company's 5 in 1 merger. As of December 31, 2019 and 2018, UMC's subsidiary, FORTUNE VENTURE CAPITAL CORP., held 16 million shares of UMC's stock. The closing price on December 31, 2019 and 2018, were NT\$16.45 and NT\$11.25, respectively.

c. Retained earnings and dividend policies:

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

- i. Payment of taxes.
- ii. Making up loss for preceding years.
- iii. Setting aside 10% for legal reserve, except for when accumulated legal reserve has reached UMC's paid-in capital.
- iv. Appropriating or reversing special reserve by government officials or other regulations.
- v. The remaining, plus the previous year's unappropriated earnings, shall be distributed according to the distribution plan proposed by the Board of Directors according to the dividend policy and submitted to the stockholders' meeting for approval.

Because UMC conducts business in a capital intensive industry and continues to operate in its growth phase, the dividend policy of UMC shall be determined pursuant to factors such as the investment environment, its funding requirements, domestic and overseas competitive landscape and its capital expenditure forecast, as well as stockholders' interest, balancing dividends and UMC's long-term financial planning. The Board of Directors shall propose the distribution plan and submit it to the stockholders' meeting every year. The distribution of stockholders' dividend shall be allocated as cash dividend in the range of 20% to 100%, and stock dividend in the range of 0% to 80%.

According to the regulations of Taiwan FSC, UMC is required to appropriate a special reserve in the amount equal to the sum of debit elements under equity, such as unrealized loss on financial instruments and debit balance of exchange differences on translation of foreign operations, at every year-end. Such special reserve is prohibited from distribution. However, if any of the debit elements is reversed, the special reserve in the amount equal to the reversal may be released for earnings distribution or offsetting accumulated deficits.

The distribution of earnings for 2018 was approved by the stockholders' meeting held on June 12, 2019, while the distribution of earnings for 2019 was approved by the Board of Directors' meeting on February 26, 2020. The details of distribution are as follows:

	Appropriation of earnings (in thousand NT dollars)		Cash dividend per share (NT dollars)	
	2019	2018	2019	2018
Legal reserve	\$614,784	\$707,299		
Special reserve	(3,491,626)	14,513,940		
Cash dividends	9,765,155	6,916,105	\$0.75	\$0.58

The aforementioned 2018 distribution approved by stockholders' meeting was consistent with the resolutions of meeting of Board of Directors held on March 6, 2019.

The cash dividend per share for 2018 was adjusted to NT\$0.58989396 per share according to the resolution of the Board of Directors' meeting on June 19, 2019. The adjustment was made for the decrease in outstanding common shares due to the share repurchase program.

The appropriation of 2019 unappropriated retained earnings has not yet been approved by the stockholder's meeting as of the reporting date. Information relevant to the Board of Directors' meeting recommendations and stockholders' meeting approval can be obtained from the "Market Observation Post System" on the website of the TWSE.

Please refer to Note 6(19) for information on the employees and directors' compensation.

d. Non-controlling interests:

	For the years ended December 31,	
	2019	2018
Adjusted balance as of January 1	\$466,768	\$958,405
Attributable to non-controlling interests:		
Net loss	(3,578,847)	(4,429,938)
Other comprehensive income (loss)	(15,213)	(103,894)
Changes in subsidiaries' ownership	24,740	(278,613)
Disposal of a subsidiary	-	(7,074)
Others	3,512,617	4,327,882
Ending balance	<u>\$410,065</u>	<u>\$466,768</u>

(17) Share-Based Payment

In order to attract, retain talents and reward the employees for their productivity and loyalty, the Company carried out a compensation plan to offer 200 million shares of treasury stock to employees in August 2018. The compensation cost for the shared-based payment was measured at fair value, having recognized in expense the difference between the closing quoted market price of the shares at the grant date and the cash received from employees. The closing quoted market price of the Company's shares on the grant date was NT\$16.95 per share. For the stocks vested on the date of grant, the Company recognized the entire compensation cost on the grant date, whereas for the stocks with requisite service conditions to vest at the end of one or two-years from the date of grant, the Company recognizes the compensation cost on a straight-line basis over the period in which the services conditions are fulfilled, together with a corresponding increase in equity. As such, for the years ended December 31, 2019 and 2018, total compensation cost of NT\$366 million and NT\$696 million, respectively, were recognized by the Company.

(18) Operating Revenues

a. Disaggregation of revenue

i. By operating segments

For the year ended December 31, 2019					
	Wafer	New		Adjustment	
	Fabrication	Business	Subtotal	and	Consolidated
				Elimination	
Revenue from					
contracts with					
customers	\$148,123,306	\$78,335	\$148,201,641	\$-	\$148,201,641
The timing of revenue recognition:					
At a point in					
time	\$146,978,699	\$78,335	\$147,057,034	\$-	\$147,057,034
Over time	1,144,607	-	1,144,607	-	1,144,607
Total	\$148,123,306	\$78,335	\$148,201,641	\$-	\$148,201,641

For the year ended December 31, 2018					
	Wafer Fabrication	New Business	Subtotal	Adjustment and Elimination	Consolidated
Revenue from contracts with customers	\$151,023,932	\$247,929	\$151,271,861	\$(19,290)	\$151,252,571
The timing of revenue recognition:					
At a point in time	\$146,247,350	\$247,929	\$146,495,279	\$(19,290)	\$146,475,989
Over time	4,776,582	-	4,776,582	-	4,776,582
Total	\$151,023,932	\$247,929	\$151,271,861	\$(19,290)	\$151,252,571

ii. By geography

For the year ended December 31, 2019							
	Taiwan	Singapore	China (includes Hong Kong)	Japan	USA	Europe	Others
Revenue from contracts with customers	\$53,966,435	\$23,979,343	\$19,115,188	\$9,855,772	\$19,957,615	\$6,900,339	\$14,426,949
The timing of revenue recognition:							
At a point in time	\$53,905,377	\$23,976,786	\$18,987,848	\$9,684,186	\$19,946,286	\$6,138,812	\$14,417,740
Over time	61,058	2,557	127,340	171,586	11,329	761,527	9,209
Total	\$53,966,435	\$23,979,343	\$19,115,188	\$9,855,772	\$19,957,615	\$6,900,339	\$14,426,949

For the year ended December 31, 2018							
	Taiwan	Singapore	China (includes Hong Kong)	Japan	USA	Europe	Others
Revenue from contracts with customers	\$55,092,681	\$24,820,196	\$18,504,881	\$5,896,313	\$23,555,105	\$12,527,894	\$10,855,501
The timing of revenue recognition:							
At a point in time	\$54,963,771	\$24,791,908	\$14,889,672	\$5,889,277	\$23,536,756	\$11,551,052	\$10,853,553
Over time	128,910	28,288	3,615,209	7,036	18,349	976,842	1,948
Total	\$55,092,681	\$24,820,196	\$18,504,881	\$5,896,313	\$23,555,105	\$12,527,894	\$10,855,501

The geographic breakdown of the Company's operating revenues was based on the location of the Company's customers.

iii. By Product

	For the years ended December 31,	
	2019	2018
Wafer	\$142,625,019	\$142,550,304
Others	5,576,622	8,702,267
Total	<u>\$148,201,641</u>	<u>\$151,252,571</u>

b. Contract balances

i. Contract assets, current

	As of		
	December 31, 2019	December 31, 2018	January 1, 2018
Sales of goods and services	\$599,491	\$486,184	\$129,042
Less: Loss allowance	(385,248)	(393,974)	-
Net	<u>\$214,243</u>	<u>\$92,210</u>	<u>\$129,042</u>

The loss allowance was assessed by the Company primarily at an amount equal to lifetime expected credit losses. The loss allowance was mainly resulted from the indictment filed by the United States Department of Justice (DOJ) against UMC related to the joint technology development agreement. Please refer to Note 9(6).

ii. Contract liabilities

	As of		
	December 31, 2019	December 31, 2018	January 1, 2018
Sales of goods and services	<u>\$1,470,195</u>	<u>\$932,371</u>	<u>\$3,951,414</u>
Current	\$988,115	\$932,371	\$3,951,414
Noncurrent	482,080	-	-
Total	<u>\$1,470,195</u>	<u>\$932,371</u>	<u>\$3,951,414</u>

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\$616 million and NT\$3,815 million, respectively, in revenues from the contract liabilities balance at the beginning of the period as performance obligations were satisfied for the years ended December 31, 2019 and 2018.

c. The Company's transaction price allocated to unsatisfied performance obligations amounted to NT\$2,987 million and NT\$3,148 million as of December 31, 2019 and 2018, respectively. The Company will recognize revenue as the Company satisfies its performance obligations over time that aligns with progress toward completion of a contract in the future. As of the report date, the progress cannot be reliably estimated primarily due to the suspension as disclosed in Note 9(6). The estimate of the transaction price does not include any estimated amounts of variable consideration that are constrained.

d. Asset recognized from costs to fulfill a contract with customer

As of December 31, 2019 and 2018, the Company recognized costs to fulfill engineering service contracts eligible for capitalization as other current assets which amounted to NT\$560 million and NT\$567 million, respectively. Subsequently, the Company will expense from costs to fulfill a contract to operating costs when the related obligations are satisfied.

(19) Operating Costs and Expenses

The Company's employee benefit, depreciation and amortization expenses are summarized as follows:

	For the years ended December 31,					
	2019			2018		
	Operating costs	Operating expenses	Total	Operating costs	Operating expenses	Total
Employee benefit expenses						
Salaries	\$17,109,432	\$7,712,792	\$24,822,224	\$17,694,175	\$7,780,063	\$25,474,238
Labor and health insurance	911,037	395,571	1,306,608	882,671	376,556	1,259,227
Pension	1,066,877	361,281	1,428,158	1,065,176	342,565	1,407,741
Other employee benefit expenses	303,358	124,631	427,989	289,395	111,734	401,129
Depreciation	45,068,673	1,841,954	46,910,627	47,086,993	2,689,314	49,776,307
Amortization	848,214	1,368,440	2,216,654	880,967	1,219,163	2,100,130

According to UMC's Articles of Incorporation, the employees and directors' compensation shall be distributed in the following order:

UMC shall allocate no less than 5% of profit as employees' compensation and no more than 0.1% of profit as directors' compensation for each profitable fiscal year after offsetting any cumulative losses. The aforementioned employees' compensation will be distributed in shares or cash. The employees of UMC's subsidiaries who fulfill specific requirements stipulated by the Board of Directors may be granted such compensation. Directors may only receive compensation in cash. UMC may, by a resolution adopted by a majority vote at a meeting of the Board of Directors attended by two-thirds of the total number of directors, distribute the aforementioned employees and directors' compensation and report to the stockholders' meeting for such distribution.

The Company recognizes the employees and directors' compensation in the profit or loss during the periods when earned for the years ended December 31, 2019 and 2018. The Board of Directors estimates the amount by taking into consideration the Articles of Incorporation, government regulations and industry averages. If the Board of Directors resolves to distribute employee compensation through stock, the number of stock distributed is calculated based on total employee compensation divided by the closing price of the day before the Board of Directors meeting. If the Board of Directors subsequently modifies the estimates significantly, the Company will recognize the change as an adjustment in the profit or loss in the subsequent period.

The distributions of employees and directors' compensation for 2018 were reported to the stockholders' meeting on June 12, 2019, while the distributions of employees and directors' compensation for 2019 were approved through the Board of Directors meeting on February 26, 2020. The details of distribution are as follows:

	2019	2018
Employees' compensation – Cash	\$1,132,952	\$1,400,835
Directors' compensation	10,259	7,624

The aforementioned employees and directors' compensation for 2018 reported during the stockholders' meeting were consistent with the resolutions of the Board of Directors meeting held on March 6, 2019.

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

(20) Net Other Operating Income and Expenses

	For the years ended December 31,	
	2019	2018
Rental income from property	\$200,351	\$199,505
Gain on disposal of property, plant and equipment	43,036	136,743
Government grants	5,366,907	5,220,746
Impairment loss		
Property, plant and equipment	(84,974)	-
Goodwill	(7,398)	-
Others	(335,760)	(440,110)
Total	<u>\$5,182,162</u>	<u>\$5,116,884</u>

(21) Non-Operating Income and Expenses

a. Other gains and losses

	For the years ended December 31,	
	2019	2018
Gain (loss) on valuation of financial assets and liabilities at fair value through profit or loss	\$1,279,931	\$(1,167,735)
Impairment loss		
Investments accounted for under the equity method	(25,762)	(46,225)
Loss on disposal of investments	(16,293)	(19,286)
Others	19,423	104,956
Total	<u>\$1,257,299</u>	<u>\$(1,128,290)</u>

b. Finance costs

	For the years ended December 31,	
	2019	2018
Interest expenses		
Bonds payable	\$672,902	\$710,663
Bank loans	1,808,633	1,782,544
Lease liabilities (Note)	178,112	-
Others	274,168	275,465
Financial expenses	63,828	82,553
Total	<u>\$2,997,643</u>	<u>\$2,851,225</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

(22) Components of Other Comprehensive Income (Loss)

	For the year ended December 31, 2019				
	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss), before tax	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	\$106,403	\$-	\$106,403	\$(21,281)	\$85,122
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	5,486,209	-	5,486,209	(136,979)	5,349,230
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss	1,231,722	-	1,231,722	-	1,231,722
Items that may be reclassified subsequently to profit or loss:					
Exchange differences on translation of foreign operations	(3,292,023)	14,085	(3,277,938)	13,402	(3,264,536)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss	8,754	6,594	15,348	(8,101)	7,247
Total other comprehensive income (loss)	<u>\$3,541,065</u>	<u>\$20,679</u>	<u>\$3,561,744</u>	<u>\$(152,959)</u>	<u>\$3,408,785</u>

For the year ended December 31, 2018

		Reclassification	Other		Other
	Arising during	adjustments	comprehensive	Income tax	comprehensive
	the period	during the period	income (loss),	effect	income (loss),
			before tax		net of tax
Items that will not be reclassified					
subsequently to profit or loss:					
Remeasurements of defined	\$(55,060)	\$-	\$(55,060)	\$32,647	\$(22,413)
benefit pension plans					
Unrealized gains or losses from	1,454,018	-	1,454,018	44,526	1,498,544
equity instruments					
investments measured at fair					
value through other					
comprehensive income					
Gains or losses on hedging	(2,572)	-	(2,572)	514	(2,058)
instruments which will not be					
reclassified subsequently to					
profit or loss					
Share of other comprehensive	(475,139)	-	(475,139)	34,697	(440,442)
income (loss) of associates					
and joint ventures which will					
not be reclassified					
subsequently to profit or loss					
Items that may be reclassified					
subsequently to profit or loss:					
Exchange differences on	(47,417)	408	(47,009)	(18,884)	(65,893)
translation of foreign					
operations					
Share of other comprehensive	(11,045)	(12,897)	(23,942)	6,148	(17,794)
income (loss) of associates					
and joint ventures which may					
be reclassified subsequently to					
profit or loss					
Total other comprehensive					
income (loss)	\$862,785	\$(12,489)	\$850,296	\$99,648	\$949,944

(23) Income Tax

- a. The major components of income tax expense for the years ended December 31, 2019 and 2018 were as follows:

- i. Income tax expense (benefit) recorded in profit or loss

	For the years ended December 31,	
	2019	2018
Current income tax expense (benefit):		
Current income tax charge	\$622,394	\$584,419
Adjustments in respect of current income tax of prior periods	(1,033,780)	(1,111,893)
Deferred income tax expense (benefit):		
Deferred income tax related to origination and reversal of temporary differences	468,407	1,390,698
Deferred income tax related to recognition and derecognition of tax losses and unused tax credits	(243,981)	(335,367)
Deferred income tax related to changes in tax rates	-	(848,223)
Adjustment of prior year's deferred income tax	121,189	(2,744)
Deferred income tax arising from write-down or reversal of write-down of deferred tax assets	(327,359)	(135,543)
Income tax benefit recorded in profit or loss	<u>\$(393,130)</u>	<u>\$(458,653)</u>

- ii. Income tax related to components of other comprehensive income (loss)

- (i) Items that will not be reclassified subsequently to profit or loss:

	For the years ended December 31,	
	2019	2018
Remeasurements of defined benefit pension plans	\$(21,281)	\$11,012
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	(136,979)	31,998
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	-	514
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss	-	39,742
Deferred income tax related to changes in tax rates	-	29,118
Income tax related to items that will not be reclassified subsequently to profit or loss	<u>\$(158,260)</u>	<u>\$112,384</u>

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

	For the years ended December 31,	
	2019	2018
Exchange differences on translation of foreign operations	\$13,402	\$(21,672)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss	(8,101)	1,701
Deferred income tax related to changes in tax rates	-	7,235
Income tax related to items that may be reclassified subsequently	<u>\$5,301</u>	<u>\$(12,736)</u>

iii. Deferred income tax charged directly to equity

	For the years ended December 31,	
	2019	2018
Reversal of temporary difference arising from initial recognition of the equity component of the compound financial instrument	\$(45)	\$-
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	(514)	-
Deferred income tax related to changes in tax rates	-	(56,759)
Total	<u>\$(559)</u>	<u>\$(56,759)</u>

b. A reconciliation between income tax expense and income before tax at UMC's applicable tax rate was as follows:

	For the years ended December 31,	
	2019	2018
Income before tax	\$5,735,637	\$2,184,399
At UMC's statutory income tax rate	1,147,128	436,880
Adjustments in respect of current income tax of prior periods	(1,033,780)	(1,111,893)
Net changes in loss carry-forward and investment tax credits	1,911,970	2,239,058
Adjustment of deferred tax assets/liabilities for write-downs/reversals and different jurisdictional tax rates	(146,067)	26,122

	For the years ended December 31,	
	2019	2018
Tax effect of non-taxable income and non-deductible expenses:		
Tax exempt income	\$(1,778,820)	\$(451,589)
Investment gain	(477,043)	(835,669)
Dividend income	(139,093)	(112,810)
Others	110,991	140,278
Basic tax	3,215	-
Deferred income tax related to changes in tax rates	-	(848,223)
Effect of different tax rates applicable to UMC and its subsidiaries	(102,608)	(118,404)
Taxes withheld in other jurisdictions	19,749	48,291
Others	91,228	129,306
Income tax benefit recorded in profit or loss	<u>\$(393,130)</u>	<u>\$(458,653)</u>

c. Significant components of deferred income tax assets and liabilities were as follows:

	As of December 31,	
	2019	2018
Deferred income tax assets		
Depreciation	\$1,658,688	\$1,930,388
Loss carry-forward	1,310,300	502,331
Pension	800,734	825,792
Refund liabilities	339,185	232,854
Allowance for inventory valuation losses	628,725	416,270
Investment loss	257,689	341,096
Unrealized profit on intercompany sales	1,568,645	1,703,942
Investment tax credits	475,952	336,869
Others	767,665	98,367
Total deferred income tax assets	<u>7,807,583</u>	<u>6,387,909</u>
Deferred income tax liabilities		
Unrealized exchange gain	(565,175)	(535,595)
Depreciation	(550,772)	(440,524)
Investment gain	(568,683)	(499,506)
Convertible bond option	(69,484)	(139,693)
Amortizable assets	(321,459)	(342,607)
Others	(11,793)	(7,768)
Total deferred income tax liabilities	<u>(2,087,366)</u>	<u>(1,965,693)</u>
Net deferred income tax assets	<u>\$5,720,217</u>	<u>\$4,422,216</u>

d. Movement of deferred tax

	For the years ended	
	December 31,	
	2019	2018
Balance as of January 1	\$4,422,216	\$4,439,877
Impact of retroactive applications	93	17,843
Adjusted balance as of January 1	4,422,309	4,457,720
Acquisition from business combinations	1,542,895	-
Amounts recognized in profit or loss during the period	(18,256)	(68,821)
Amounts recognized in other comprehensive income (loss)	(152,959)	99,648
Amounts recognized in equity	(559)	(56,759)
Exchange adjustments	(73,213)	(9,572)
Balance as of December 31	<u>\$5,720,217</u>	<u>\$4,422,216</u>

- e. The Company is subject to taxation in Taiwan and other foreign jurisdictions. As of December 31, 2019, income tax returns of UMC and its subsidiaries in Taiwan have been examined by the tax authorities through 2016, while in other foreign jurisdictions, relevant tax authorities have completed the examination through 2012. There is an uncertain tax position that the outcome of the income tax returns of certain companies within the Company may not be accepted by the tax authorities of the respective countries of operations. For the recognition and measurement of deferred income tax and current income tax which involved significant accounting judgments, estimates and assumptions, please refer to Note 5(5).
- f. UMC was granted income tax exemption for several periods with respect to income derived from the expansion of operations. The income tax exemption will expire on December 31, 2020.
- g. The information of the unused tax loss carry-forward for which no deferred income tax assets have been recognized was as follows:

	As of December 31,	
	2019	2018
Expiry period		
1~5 years	\$38,708,327	\$27,072,604
6~10 years	9,588,002	10,799,310
more than 10 years	-	5,043
Total	<u>\$48,296,329</u>	<u>\$37,876,957</u>

- h. As of December 31, 2019 and 2018, deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$2,881 million and NT\$5,964 million, respectively.
- i. As of December 31, 2019 and 2018, the taxable temporary differences of unrecognized deferred tax liabilities associated with investments in subsidiaries amounted to NT\$11,389 million and NT\$11,036 million, respectively.
- j. According to the amendments to the R.O.C. Income Tax Act, effective from 2018, the corporate income tax rate is raised from 17% to 20%, and the 10% undistributed earnings tax is lowered to 5%.

(24) Earnings Per Share

a. Earnings per share-basic

	For the years ended December 31,	
	2019	2018
Net income attributable to the parent company	\$9,707,614	\$7,072,990
Weighted-average number of ordinary shares for basic earnings per share (thousand shares)	11,785,108	12,103,880
Earnings per share-basic (NTD)	\$0.82	\$0.58

b. Earnings per share-diluted

	For the years ended December 31,	
	2019	2018
Net income attributable to the parent company	\$9,707,614	\$7,072,990
Effect of dilution		
Unsecured convertible bonds	289,121	283,349
Income attributable to stockholders of the parent	\$9,996,735	\$7,356,339
Weighted-average number of common stocks for basic earnings per share (thousand shares)	11,785,108	12,103,880
Effect of dilution		
Employees' compensation	90,047	137,511
Unsecured convertible bonds	1,295,729	1,243,599
Weighted-average number of common stocks after dilution (thousand shares)	13,170,884	13,484,990
Earnings per share-diluted (NTD)	\$0.76	\$0.55

(25) Reconciliation of Liabilities Arising from Financing Activities

For the year ended December 31, 2019:

Items	As of January 1, 2019	Cash Flows	Non-cash changes		As of December 31, 2019
			Foreign exchange	Others (Note A)	
Short-term loans	\$13,103,808	\$(993,723)	\$(368,507)	\$273,628	\$12,015,206
Long-term loans (current portion included)	30,826,215	3,876,991	(802,975)	1,843	33,902,074
Bonds payable (current portion included)	41,378,182	(2,500,000)	-	(96,766)	38,781,416
Guarantee deposits (current portion included)	665,793	252,269	(2,021)	(619,347)	296,694
Lease liabilities	6,006,457	(633,488)	(78,432)	736,488 (Note C)	6,031,025
Other financial liabilities-noncurrent	20,410,355	-	(698,127)	381,213	20,093,441

For the year ended December 31, 2018:

Items	As of January 1, 2018	Cash Flows	Non-cash changes		As of December 31, 2018
			Foreign exchange	Others (Note A)	
Short-term loans	\$25,445,540	\$(12,288,248)	\$(292,466)	\$238,982	\$13,103,808
Long-term loans (current portion included)	32,165,336	(1,880,197)	556,777	(15,701)	30,826,215
Bonds payable (current portion included)	48,517,631	(7,500,000)	-	360,551	41,378,182
Guarantee deposits (current portion included)	564,576	88,131	13,086	-	665,793
Other financial liabilities-noncurrent	20,486,119	-	(456,551)	380,787	20,410,355

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

Note B: Please refer to Note 9(5) for more details on other financial liabilities-noncurrent.

Note C: Including the impact from acquisition of a subsidiary.

(26) Business Combinations

UNITED SEMICONDUCTOR JAPAN CO., LTD. (USJC)

The Company exercised the call option of a joint venture agreement between FUJI SEMICONDUCTOR LIMITED (FSL) to acquire 84.1% ownership interest in MIE FUJITSU SEMICONDUCTOR LIMITED (MIFS) for JPY 54.4 billion on October 1, 2019. The Company previously held 15.9% of ownership interest in MIFS. MIFS became a wholly-owned subsidiary of the Company and was renamed as USJC upon completion of the acquisition. USJC is a 300mm fab in Japan that is currently manufacturing 90nm, 65nm and 40nm products. The fab fits the Company's specialty technology focus and long-term growth projections. USJC will increase the Company's foundry market share, provide business synergies and benefit from economies of scale while broadening the Company's comprehensive specialty and logic technologies to serve Japanese and international customers.

Consideration Transferred:

Cash	\$15,711,370
Fair value of previously held equity interest immediately before acquisition	2,303,988
Gains or losses on hedging instruments	2,572
Total	<u>\$18,017,930</u>

Cash flows analysis of acquisition:

Cash Consideration	\$15,711,370
Net cash acquired from the subsidiary	<u>(2,910,389)</u>
Net cash outflows from acquisition	<u>\$12,800,981</u>

The fair value of the identifiable assets and liabilities of USJC as of the date of acquisition were:

	Fair value recognized on the acquisition date
Assets	
Cash and cash equivalents	\$2,910,389
Accounts receivable	3,561,827
Inventories	2,428,616
Property, plant and equipment	11,497,618
Right-of-use assets	479,547
Intangible assets	1,318,754
Deferred tax assets	1,563,553
Others	230,431
	<u>23,990,735</u>
Liabilities	
Accounts payable	(3,170,323)
Other payables and payables on equipment	(1,962,119)
Lease liabilities	(479,547)
Others	(189,231)
	<u>(5,801,220)</u>
Total identifiable net assets	<u>\$18,189,515</u>
Gain on bargain purchase:	
Consideration transferred	\$18,017,930
Less: Fair value of identifiable net assets	(18,189,515)
Bargain purchase gain	<u>\$ (171,585)</u>

The fair value of the net identifiable assets acquired and liabilities assumed was in excess of the aggregate consideration transferred and the previously held ownership interest of 15.9% in USJC at the acquisition date, and the difference was recognized as bargain purchase gain. The previously held ownership interest of 15.9% in USJC was previously accounted for as financial assets at fair value through other comprehensive income, non-current. It was subsequently remeasured at fair value with the consideration for a minority interest discount on the acquisition date resulting in the bargain purchase gain. Upon the acquisition, the Company recognized a loss on disposal of NT375 million and the accumulated unrealized losses on the previously held ownership interest was reclassified from other comprehensive income to retained earnings.

Upon the acquisition, USJC contributed NT\$4,277 million of operating revenues and NT\$305 million to profit before tax from continuing operations of the Company, respectively. If the combination had taken place at the beginning of the year, operating revenues from the continuing operations would have been NT\$160,767 million and the profit before tax from continuing operations for the Company would have been NT\$6,535 million, respectively.

(27) Deconsolidation of Subsidiaries

UNISTARS CORP. (UNISTARS)

As UMC's subsidiary disposed of all of its shares of UNISTARS in December 2018, the Company lost control of UNISTARS, derecognizing the relevant assets and liabilities of UNISTARS at the date when the control is lost.

a. Derecognized assets and liabilities mainly consisted of:

Assets	
Cash and cash equivalents	\$14,430
Notes and accounts receivable	18,239
Inventories	46,717
Property, plant and equipment	45,515
Others	2,365
	<u>127,266</u>
Liabilities	
Short-term loans	(34,313)
Payables	(29,309)
Current portion of long-term liabilities	(11,899)
Long-term loans	(5,502)
Others	(2,872)
	<u>(83,895)</u>
Net assets of the subsidiary deconsolidated	<u><u>\$43,371</u></u>

b. Consideration received and loss recognized from the transaction:

Cash received	\$4,617
Less: Net assets of the subsidiary deconsolidated	(43,371)
Add: Non-controlling interests	7,074
Less: Goodwill	(176)
Loss on disposal of subsidiary	<u><u>\$(31,856)</u></u>

Loss on disposal of subsidiary for the year ended December 31, 2018 was recognized as other gains and losses in the consolidated statement of comprehensive income.

c. Analysis of net cash outflow arising from deconsolidation of the subsidiary:

Cash received	\$4,617
Net cash of subsidiary derecognized	(14,430)
Net cash outflow from deconsolidation	<u><u>\$(9,813)</u></u>

7. RELATED PARTY TRANSACTIONS

The following is a summary of transactions between the Company and related parties during the financial reporting periods:

(1) Name and Relationship of Related Parties

<u>Name of related parties</u>	<u>Relationship with the Company</u>
FARADAY TECHNOLOGY CORP. and its Subsidiaries	Associate
HSUN CHIEH CAPITAL CORP.	Associate
TRIKNIGHT CAPITAL CORPORATION	Associate
HSUN CHIEH INVESTMENT CO., LTD.	Associate
JINING SUNRICH SOLARENERGY CORPORATION	Joint venture's subsidiary
SILICON INTEGRATED SYSTEMS CORP.	The Company's director
PHOTRONICS DNP MASK CORPORATION	Other related parties
UNITEDVISION SEMICONDUCTOR CO., LTD.	Other related parties
UNISTARS CORPORATION	Other related parties
UPI SEMICONDUCTOR CORP.	Other related parties
CHUAN-FANG ZHUAN	Subsidiary's director

(2) Significant Related Party Transactions

a. Operating transactions

Operating revenues

	For the years ended December 31,	
	<u>2019</u>	<u>2018</u>
Associates	\$1,532,339	\$1,291,398
Joint ventures	-	4,277
Others	45,523	27,881
Total	<u><u>\$1,577,862</u></u>	<u><u>\$1,323,556</u></u>

Accounts receivable, net

	As of December 31,	
	2019	2018
Associates	\$278,702	\$134,646
Others	11,243	4,266
Total	<u>\$289,945</u>	<u>\$138,912</u>

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

Refund liabilities (classified under other current liabilities)

	As of December 31,	
	2019	2018
Associates	\$7,880	\$1,287
Others	48	71
Total	<u>\$7,928</u>	<u>\$1,358</u>

b. Significant asset transactions

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

	Trading Volume (In thousands of shares)	Transaction underlying	Purchase price
			For the year ended December 31, 2019
Associates	500	Stock of MATERIALS ANALYSIS TECHNOLOGY INC.	\$32,923
Associates	1,900	Stock of GEAR RADIO LTD.	37,211
Total			<u>\$70,134</u>

For the year ended December 31, 2018: None.

Acquisition of investments accounted for under the equity method

	Trading Volume (In thousands of shares)	Transaction underlying	Purchase price For the year ended December 31, 2019
Associates	72,000	Stock	\$720,000

	Trading Volume (In thousands of shares)	Transaction underlying	Purchase price For the year ended December 31, 2018
Associates	84,000	Stock	\$840,000

Acquisition of intangible assets

	Purchase price For the years ended December 31,	
	2019	2018
Associates	\$339,463	\$200,610

Disposal of subsidiary

For the year ended December 31, 2019: None.

	Trading Volume (In thousands of shares)	Transaction underlying	For the year ended December 31, 2018	
			Proceeds	Disposal (loss) gain
Others	46,168	Stock of UNISTARS CORPORATION	\$4,617	\$(31,856)

c. Others

Mask expenditure

	For the years ended December 31,	
	2019	2018
Others	\$2,346,263	\$1,750,088

Other payables of mask expenditure

	As of December 31,	
	2019	2018
Others	\$683,892	\$571,036

d. Key management personnel compensation

	For the years ended December 31,	
	2019	2018
Short-term employee benefits	\$271,135	\$387,294
Post-employment benefits	2,406	4,660
Termination benefits	3,415	-
Share-based payment	62,203	293,857
Others	578	435
Total	\$339,737	\$686,246

8. ASSETS PLEDGED AS COLLATERAL

The following table lists assets of the Company pledged as collateral:

As of December 31, 2019 and 2018

Items	Carrying Amount		Party to which asset(s) was pledged	Purpose of pledge
	2019	2018		
Refundable Deposits (Bank deposit and Time deposit)	\$811,035	\$961,198	Customs	Customs duty guarantee
Refundable Deposits (Time deposit)	348,117	237,358	Science Park Administration	Collateral for land lease
Refundable Deposits (Time deposit)	19,510	19,579	Science Park Administration	Collateral for dormitory lease
Refundable Deposits (Time deposit)	41,785	37,084	Liquefied Natural Gas Business Division, CPC Corporation, Taiwan	Energy resources guarantee
Refundable Deposits (Time deposit)	1,000,000	1,000,000	Bank of China	Bank performance guarantee

Items	Carrying Amount		Party to which asset(s) was pledged	Purpose of pledge
	2019	2018		
Buildings	\$5,381,590	\$5,823,938	Taiwan Cooperative Bank and Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Machinery and equipment	19,029,077	25,762,086	Taiwan Cooperative Bank, Mega International Commercial Bank and Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Right-of-use assets	292,120	-	Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Other noncurrent assets	-	309,108	Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Total	<u>\$26,923,234</u>	<u>\$34,150,351</u>		

9. SIGNIFICANT CONTINGENCIES AND UNRECOGNIZED CONTRACT COMMITMENTS

- (1) As of December 31, 2019, amounts available under unused letters of credit for importing machinery and equipment were NT\$0.1 billion.
- (2) As of December 31, 2019, the Company entrusted financial institutes to open performance guarantee, mainly related to the litigations and customs tax guarantee, amounting to NT\$1.7 billion.
- (3) The Company entered into several patent license agreements and development contracts of intellectual property for a total contract amount of approximately NT\$10.8 billion. As of December 31, 2019, the portion of royalties and development fees not yet recognized was NT\$1.4 billion.
- (4) The Company entered into several construction contracts for the expansion of its operations. As of December 31, 2019, these construction contracts amounted to approximately NT\$2.0 billion and the portion of the contracts not yet recognized was approximately NT\$0.4 billion.

- (5) The Board of Directors of UMC resolved in October 2014 to participate in a 3-way agreement with Xiamen Municipal People's Government and FUJIAN ELECTRONIC & INFORMATION GROUP to form a company which will focus on 12" wafer foundry services. As of December 31, 2019, the Company obtained R.O.C. government authority's approval for the investment and invested RMB 8.3 billion in USCXM, representing ownership interest of 65.22%. Furthermore, based on the agreement, UMC recognized a financial liability in other noncurrent liabilities-others for the purchase from the other investors of their investments in USCXM at their original investment cost plus interest 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.
- (6) On August 31, 2017, the Taichung District Prosecutors Office indicted UMC based on the Trade Secret Act of R.O.C., alleging that employees of UMC misappropriated the trade secrets of MICRON TECHNOLOGY, INC. ("MICRON"). On December 5, 2017, MICRON filed a civil action with similar cause against UMC with the United States District Court, Northern District of California. MICRON claimed entitlement to the actual damages, treble damages and relevant fees and requested the court to issue an order that enjoins UMC from using its trade secrets in question. The case is currently in progress and UMC has appointed counsels to prepare answers against these charges.

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

On November 1, 2018, the Department of Justice of the United States ("DOJ") unsealed an indictment against UMC, FUJIAN JINHUA INTEGRATED CIRCUIT CO., LTD. ("JINHUA"), and three individuals, including one current employee and two former employees of UMC, alleging that UMC and others conspired to steal trade secrets of MICRON, and used that information to develop technology that was subsequently transferred to JINHUA. On the same day, the DOJ filed a civil complaint enjoining the aforementioned defendants from exporting to the United States any products containing DRAM manufactured by UMC or JINHUA and preventing the defendants from transferring the trade secrets to anyone else.

The indictment and civil complaint are still on trial. UMC has appointed counsel to prepare answers against these charges. Besides, UMC has suspended the joint technology development activities with JINHUA. Given these litigations are still in the preliminary stages, UMC cannot assess the legal proceeding and probable outcome or impact.

(7) On March 14, 2019, a putative class action styled Meyer v. United Microelectronics Corporation and several executives, was filed under Securities Exchange Act of 1934 and Rule 10b-5 in the United States District Court for the Southern District of New York. The court appointed a lead plaintiff and approved lead plaintiff counsel on May 23, 2019. On September 27, 2019, UMC received the service of plaintiffs' amended complaint and appointed counsel to prepare the relevant procedures. Given this litigation is still in the preliminary stages, UMC cannot assess the legal proceeding and probable outcome or impact.

10. SIGNIFICANT DISASTER LOSS

None.

11. SIGNIFICANT SUBSEQUENT EVENTS

On February 11, 2020, the Board of Directors of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. resolved to participate in the capital injection of UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. in stages at a total investment amount of RMB 3.5 billion.

12. OTHERS

(1) Categories of financial instruments

Financial Assets	As of December 31,	
	2019	2018
Financial assets at fair value through profit or loss	\$14,021,473	\$12,084,297
Financial assets at fair value through other comprehensive income	14,723,232	11,585,477
Financial assets measured at amortized cost		
Cash and cash equivalents (excludes cash on hand)	95,486,403	83,655,648
Receivables	26,383,212	24,583,451
Refundable deposits	2,600,733	2,757,399
Other financial assets	2,353,066	2,320,037
Total	<u>\$155,568,119</u>	<u>\$136,986,309</u>

Financial Liabilities	As of December 31,	
	2019	2018
Financial liabilities measured at amortized cost		
Short-term loans	\$12,015,206	\$13,103,808
Payables	27,342,495	23,465,536
Guarantee deposits (current portion included)	296,694	665,793
Bonds payable (current portion included)	38,781,416	41,378,182
Long-term loans (current portion included)	33,902,074	30,826,215
Lease liabilities (Note)	6,031,025	-
Other financial liabilities	20,093,441	20,523,099
Total	<u>\$138,462,351</u>	<u>\$129,962,633</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

(2) Financial risk management objectives and policies

The Company's risk management objectives are to manage the market risk, credit risk and liquidity risk related to its operating activities. The Company identifies, measures and manages the aforementioned risks based on policy and risk preference.

The Company has established appropriate policies, procedures and internal controls for financial risk management. Before entering into significant financial activities, approval process by the Board of Directors and Audit Committee must be carried out based on related protocols and internal control procedures. The Company complies with its financial risk management policies at all times.

(3) Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risks comprise currency risk, interest rate risk and other price risk (such as equity price risk).

Foreign currency risk

The Company's exposure to the risk of changes in foreign exchange rates relates primarily to the Company's operating activities (when revenue or expense is denominated in a different currency from the Company's functional currency) and the Company's net investments in foreign subsidiaries.

The Company applies natural hedges on the foreign currency risk arising from purchases or sales, and utilizes spot or forward exchange contracts to manage foreign currency risk and the net effect of the risks related to monetary financial assets and liabilities is minor. The notional amounts of the foreign currency contracts are the same as the amount of the hedged items. In principle, the Company does not carry out any forward exchange contracts for uncertain commitments. The Company designates certain forward currency contracts as cash flow hedges to hedge its exposure to foreign currency exchange risk associated with certain highly probable forecast transactions. On the basis of assessment, the Company expects that the value of forward currency exchange contracts and the value of the hedged transactions will change systematically in opposite directions for given changes in foreign exchange rates. Hedge ineffectiveness in these hedging relationships mainly arises from the counterparties' credit risk, impacting the fair value movements of the hedging instruments and hedged items. No other sources of ineffectiveness emerged from these hedging relationships. Furthermore, as net investments in foreign subsidiaries are for strategic purposes, they are not hedged by the Company.

Certain forward exchange contracts designated by the Company to hedge foreign currency exchange rate risks associated with the purchase of additional shares of USJC in JPY, amounting to JPY 23 billion, expired prior to December 31, 2018. The cash flow hedge reserve in other components of equity, amounting to NT\$(3) million, was recognized as consideration for the ownership interest of 84.1% in USJC on October 1, 2019. Please refer to Note 6(26).

The foreign currency sensitivity analysis of the possible change in foreign exchange rates on the Company's profit is performed on significant monetary items denominated in foreign currencies as of the end of the reporting period. When NTD strengthens/weakens against USD by 10%, the profit for the years ended December 31, 2019 and 2018 decreases/increases by NT\$1,009 million and NT\$1,367 million, respectively. When RMB strengthens/weakens against USD by 10%, the profit for the years ended December 31, 2019 and 2018 increases/decreases by NT\$2,200 million and NT\$2,589 million, respectively.

Interest rate risk

The Company is exposed to interest rate risk arising from borrowing at floating interest rates. All of the Company's bonds have fixed interest rates and are measured at amortized cost. As such, changes in interest rates would not affect the future cash flows. On the other hand, as the interest rates of the Company's short-term and long-term bank loans are floating, changes in interest rates would affect the future cash flows but not the fair value. Please refer to Note 6(10), 6(11) and 6(12) for the range of interest rates of the Company's bonds and bank loans.

At the reporting dates, a change of 10 basis points of interest rate in a reporting period could cause the profit for the years ended December 31, 2019 and 2018 to decrease/increase by NT\$46 million and NT\$44 million, respectively.

Equity price risk

The Company's listed and unlisted equity securities are susceptible to market price risk arising from uncertainties about future performance of equity markets. The Company's equity investments are classified as financial assets at fair value through profit or loss and financial assets at fair value through other comprehensive income.

The sensitivity analysis for the equity instruments is based on the change in fair value as of the reporting date. A change of 5% in the price of the aforementioned financial assets at fair value through profit or loss of listed companies could increase/decrease the Company's profit for the years ended December 31, 2019 and 2018 by NT\$252 million and NT\$171 million, respectively. A change of 5% in the price of the aforementioned financial assets at fair value through other comprehensive income of listed companies could increase/decrease the Company's other comprehensive income for the years ended December 31, 2019 and 2018 by NT\$671 million and NT\$408 million, respectively.

(4) Credit risk management

The Company only trades with approved and creditworthy third parties. Where the Company trades with third parties which have less credit, it will request collateral from them. It is the Company's policy that all customers who wish to trade on credit terms are subject to credit verification procedures. In addition, notes and accounts receivable balances are monitored on an ongoing basis to decrease the Company's exposure to credit risk.

The Company mitigates the credit risks from financial institutions by limiting its counter parties to only reputable domestic or international financial institutions with good credit standing and spreading its holdings among various financial institutions. The Company's exposure to credit risk arising from the default of counter-parties is limited to the carrying amount of these instruments.

As of December 31, 2019 and 2018, accounts receivable from the top ten customers represent 44% and 54% of the total accounts receivable of the Company, respectively. The credit concentration risk of other accounts receivable is insignificant.

(5) Liquidity risk management

The Company's objectives are to maintain a balance between continuity of funding and flexibility through the use of cash and cash equivalents, bank loans, bonds and lease.

The table below summarizes the maturity profile of the Company's financial liabilities based on the contractual undiscounted payments and contractual maturity:

	As of December 31, 2019				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Short-term loans	\$12,211,621	\$-	\$-	\$-	\$12,211,621
Payables	26,490,911	600,686	15,020	-	27,106,617
Guarantee deposits	100,584	97,108	-	99,002	296,694
Bonds payable	20,659,607	10,590,265	8,689,971	-	39,939,843
Long-term loans	6,104,795	19,631,931	13,097,986	12,000	38,846,712
Lease liabilities	740,939	1,413,978	1,180,955	3,792,192	7,128,064
Other financial liabilities	-	12,668,287	8,445,826	-	21,114,113
Total	<u>\$66,308,457</u>	<u>\$45,002,255</u>	<u>\$31,429,758</u>	<u>\$3,903,194</u>	<u>\$146,643,664</u>

	As of December 31, 2018				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Short-term loans	\$13,171,811	\$-	\$-	\$-	\$13,171,811
Payables	22,994,059	199,788	-	-	23,193,847
Guarantee deposits	52,890	154,787	15,385	442,731	665,793
Bonds payable	3,000,855	23,187,913	8,484,393	8,563,021	43,236,182
Long-term loans	4,036,260	10,997,829	17,209,849	4,765,719	37,009,657
Other financial liabilities	112,744	-	17,477,984	4,369,730	21,960,458
Total	<u>\$43,368,619</u>	<u>\$34,540,317</u>	<u>\$43,187,611</u>	<u>\$18,141,201</u>	<u>\$139,237,748</u>

(6) Foreign currency risk management

UMC entered into forward exchange contracts for hedging the exchange rate risk arising from the net monetary assets or liabilities denominated in foreign currency. The details of forward exchange contracts entered into by UMC are summarized as follows:

As of December 31, 2019

None.

As of December 31, 2018

Type	Notional Amount	Contract Period
Forward exchange contracts	Sell USD 28 million	December 10, 2018~January 7, 2019

(7) Fair value of financial instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability, or in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Company.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities;
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable;
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

For assets and liabilities that are recognized in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

a. Assets and liabilities measured and recorded at fair value on a recurring basis:

	As of December 31, 2019			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Financial assets at fair value through profit or loss, current	\$668,476	\$-	\$54,318	\$722,794
Financial assets at fair value through profit or loss, noncurrent	4,737,027	340,255	8,221,397	13,298,679
Financial assets at fair value through other comprehensive income, noncurrent	13,417,308	-	1,305,924	14,723,232

	As of December 31, 2018			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Financial assets at fair value through profit or loss, current	\$493,481	\$34,969	\$-	\$528,450
Financial assets at fair value through profit or loss, noncurrent	3,612,243	44,597	7,899,007	11,555,847
Financial assets at fair value through other comprehensive income, noncurrent	8,166,277	-	3,419,200	11,585,477

Fair values of financial assets at fair value through profit or loss and financial assets at fair value through other comprehensive income that are categorized into level 1 are based on the quoted market prices in active markets. If there is no active market, the Company estimates the fair value by using the valuation techniques (income approach and market approach) in consideration of cash flow forecast, recent fund raising activities, valuation of similar companies, individual company's development, market conditions and other economic indicators. If there are restrictions on the sale or transfer of a financial asset, which are a characteristic of the asset, the fair value of the asset will be determined based on similar but unrestricted financial assets' quoted market price with appropriate discounts for the restrictions. To measure fair values, if the lowest level input that is significant to the fair value measurement is directly or indirectly observable, then the financial assets are classified as Level 2 of the fair value hierarchy, otherwise as Level 3.

During the years ended December 31, 2019 and 2018, there were no significant transfers between Level 1 and Level 2 fair value measurements.

Reconciliations for fair value measurement in Level 3 fair value hierarchy were as follows:

	Financial assets at fair value through profit or loss					Financial assets at fair value through other comprehensive income		
	Common stock	Preferred stock	Funds	Convertible bonds	Total	Common stock	Preferred stock	Total
As of January 1, 2019	\$3,077,691	\$2,971,528	\$1,849,788	\$-	\$7,899,007	\$3,235,174	\$184,026	\$3,419,200
Recognized in profit (loss)	(272,299)	273,047	(14,024)	6,145	(7,131)	-	-	-
Recognized in other comprehensive income (loss)	-	-	-	-	-	199,244	(8,532)	190,712
Acquisition	159,476	396,890	204,082	51,956	812,404	-	-	-
Disposal	(1,475)	(328,371)	-	-	(329,846)	(2,303,988)	-	(2,303,988)
Return of capital	(14,954)	-	-	-	(14,954)	-	-	-
Transfer to Level 3	-	-	-	49,706	49,706	-	-	-
Transfer out of Level 3	(53,300)	-	-	-	(53,300)	-	-	-
Exchange effect	(14,451)	(33,800)	(28,821)	(3,099)	(80,171)	-	-	-
As of December 31, 2019	<u>\$2,880,688</u>	<u>\$3,279,294</u>	<u>\$2,011,025</u>	<u>\$104,708</u>	<u>\$8,275,715</u>	<u>\$1,130,430</u>	<u>\$175,494</u>	<u>\$1,305,924</u>

	Financial assets at fair value through profit or loss					Financial assets at fair value through other comprehensive income		
	Common stock	Preferred stock	Funds	Option	Total	Common stock	Preferred stock	Total
As of January 1, 2018	\$3,832,537	\$2,994,294	\$1,183,940	\$31,605	\$8,042,376	\$3,350,694	\$233,326	\$3,584,020
Recognized in profit (loss)	(3,356)	(394,931)	69,827	(31,605)	(360,065)	-	-	-
Recognized in other comprehensive loss	-	-	-	-	-	(115,520)	(49,300)	(164,820)
Acquisition	140,338	630,626	577,347	-	1,348,311	-	-	-
Disposal	(468,337)	(310,025)	-	-	(778,362)	-	-	-
Return of capital	(22,954)	-	-	-	(22,954)	-	-	-
Transfer to Level 3	22,050	-	-	-	22,050	-	-	-
Transfer out of Level 3	(442,138)	-	-	-	(442,138)	-	-	-
Exchange effect	19,551	51,564	18,674	-	89,789	-	-	-
As of December 31, 2018	<u>\$3,077,691</u>	<u>\$2,971,528</u>	<u>\$1,849,788</u>	<u>\$-</u>	<u>\$7,899,007</u>	<u>\$3,235,174</u>	<u>\$184,026</u>	<u>\$3,419,200</u>

Recognized as part of profit (loss) above, the profit (loss) from financial assets still held by the Company as of December 31, 2019 and 2018 were NT\$(113) million and NT\$(203) million, respectively.

The Company's policy to recognize the transfer into and out of fair value hierarchy levels is based on the event or changes in circumstances that caused the transfer.

Significant unobservable inputs of fair value measurement in Level 3 fair value hierarchy were as follow:

As of December 31, 2019

Category of equity securities	Valuation technique	Significant unobservable inputs	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 discount for lack of marketability of the aforementioned fair values of unlisted stocks could decrease/increase the Company's profit (loss) for the year ended December 31, 2019 by NT\$267 million and NT\$191 million, respectively. Other comprehensive income (loss) for the year ended December 31, 2019 by NT\$87 million.

As of December 31, 2018

Category of equity securities	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	15%~50%	The greater degree of lack of marketability, the lower the estimated fair value is determined.	A change of 5% in the discount for lack of marketability of the aforementioned fair values of unlisted stocks could decrease/increase the Company's profit(loss) and other comprehensive income (loss) for the year ended December 31, 2018 by NT\$309 million and by NT\$241 million, respectively.

b. Assets and liabilities not recorded at fair value but for which fair value is disclosed:

The fair value of bonds payable is estimated by the market price or using a valuation model. The model uses market-based observable inputs including share price, volatility, credit spread and risk-free interest rates. The fair value of long-term loans is determined using discounted cash flow model, based on the Company's current incremental borrowing rates of similar loans.

The fair values of the Company's short-term financial instruments including cash and cash equivalents, receivables, refundable deposits, other financial assets-current, short-term loans, payables and guarantee deposits approximate their carrying amount due to their maturities within one year.

As of December 31, 2019

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$39,571,920	\$21,347,047	\$18,224,873	\$-	\$38,781,416
Long-term loans (current portion included)	33,902,074	-	33,902,074	-	33,902,074

As of December 31, 2018

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$41,714,368	\$23,929,019	\$17,785,349	\$-	\$41,378,182
Long-term loans (current portion included)	30,826,215	-	30,826,215	-	30,826,215

(8) Significant financial assets and liabilities denominated in foreign currencies

	As of December 31,					
	2019			2018		
	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)
<u>Financial Assets</u>						
<u>Monetary items</u>						
USD	\$1,692,380	30.03	\$50,822,171	\$1,536,283	30.67	\$47,117,775
JPY	29,531,053	0.2751	8,123,993	19,954,240	0.2764	5,515,352
EUR	3,795	33.54	127,266	2,669	35.01	93,450
SGD	66,197	22.28	1,474,870	34,325	22.41	769,217
RMB	5,262,546	4.30	22,607,898	4,089,229	4.45	18,184,800
<u>Non-Monetary items</u>						
USD	239,131	30.03	7,181,098	215,146	30.67	6,598,528
JPY	441,322	0.2751	121,408	8,466,263	0.2764	2,340,075
SGD	7,877	22.28	175,494	8,212	22.41	184,025
RMB	38,533	4.30	165,537	49,506	4.45	220,152
<u>Financial Liabilities</u>						
<u>Monetary items</u>						
USD	312,437	30.13	9,413,712	322,705	30.77	9,929,626
JPY	21,495,694	0.2792	6,001,598	3,875,144	0.2805	1,086,978
EUR	4,720	33.94	160,193	13,721	35.41	485,880
SGD	82,303	22.46	1,848,507	39,650	22.59	895,677
RMB	14,816,473	4.35	64,392,390	14,332,554	4.50	64,453,497
<u>The exchange gain or loss from monetary financial assets and liabilities</u>						
USD			(374,319)			635,992
JPY			568,061			39,116
EUR			6,208			8,133
SGD			(22,530)			4,473
RMB			(417,725)			(1,044,912)
Other			1,681			205

- (9) Significant intercompany transactions among consolidated entities for the years ended December 31, 2019 and 2018 are disclosed in Attachment 1.

(10) Capital management

The primary objective of the Company's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios to support its business and maximize the stockholders' value. The Company also ensures its ability to operate continuously to provide returns to stockholders and the interests of other related parties, while maintaining the optimal capital structure to reduce costs of capital.

To maintain or adjust the capital structure, the Company may adjust the dividend payment to stockholders, return capital to stockholders, issue new shares or dispose assets to redeem liabilities.

Similar to its peers, the Company monitors its capital based on debt to capital ratio. The ratio is calculated as the Company's net debt divided by its total capital. The net debt is derived by taking the total liabilities on the consolidated balance sheets minus cash and cash equivalents. The total capital consists of total equity (including capital, additional paid-in capital, retained earnings, other components of equity and non-controlling interests) plus net debt.

The Company's strategy, which is unchanged for the reporting periods, is to maintain a reasonable ratio in order to raise capital with reasonable cost. The debt to capital ratios as of December 31, 2019 and 2018 were as follows:

	As of December 31,	
	2019	2018
Total liabilities	\$162,972,943	\$158,068,415
Less: Cash and cash equivalents	(95,492,477)	(83,661,739)
Net debt	67,480,466	74,406,676
Total equity	207,214,422	206,536,491
Total capital	\$274,694,888	\$280,943,167
Debt to capital ratios	24.57%	26.48%

13. ADDITIONAL DISCLOSURES

(1) The following are additional disclosures for the Company and its affiliates as required by the R.O.C. Securities and Futures Bureau:

- a. Financing provided to others for the year ended December 31, 2019: Please refer to Attachment 2.
- b. Endorsement/Guarantee provided to others for the year ended December 31, 2019: Please refer to Attachment 3.
- c. Securities held as of December 31, 2019 (excluding subsidiaries, associates and joint venture): Please refer to Attachment 4.
- d. Individual securities acquired or disposed of with accumulated amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 5.
- e. Acquisition of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 6.
- f. Disposal of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 7.
- g. Related party transactions for purchases and sales amounts exceeding the lower of NT\$100 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 8.
- h. Receivables from related parties with amounts exceeding the lower of NT\$100 million or 20 percent of capital stock as of December 31, 2019: Please refer to Attachment 9.
- i. Names, locations and related information of investees as of December 31, 2019 (excluding investment in Mainland China): Please refer to Attachment 10.
- j. Financial instruments and derivative transactions: Please refer to Note 12.

(2) Investment in Mainland China

- a. Investee company name, main businesses and products, total amount of capital, method of investment, accumulated inflow and outflow of investments from Taiwan, net income (loss) of investee company, percentage of ownership, investment income (loss), carrying amount of investments, cumulated inward remittance of earnings and limits on investment in Mainland China: Please refer to Attachment 11.

- 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, 2, 3, 8 and 9.

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 is organized into business units based on its products and services. As of December 31, 2019, the Company had the following segments: wafer fabrication and new business. The operating segment information was prepared according to the accounting policies described in Note 4. 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. The Company maintains a diversified customer base across industries, including communication, consumer electronics, computer, memory and others, while continuing to focus on manufacturing for high growth, large volume applications, including networking, telecommunications, internet, multimedia, PCs and graphics. New business segment primarily includes researching, developing, manufacturing, and providing solar energy.

Reportable segment information for the years ended December 31, 2019 and 2018 were as follows:

	For the year ended December 31, 2019				
	Wafer Fabrication	New Business	Subtotal	Adjustment and Elimination	Consolidated
Operating revenues from external customers	\$148,123,306	\$78,335	\$148,201,641	\$-	\$148,201,641
Segment net income (loss), net of tax	6,156,681	(442,365)	5,714,316	414,451	6,128,767
Acquisition of property, plant and equipment	16,518,483	-	16,518,483	-	16,518,483
Acquisition of intangible assets	2,443,593	-	2,443,593	-	2,443,593
Cash payments for the principal portion of the lease liability	614,845	18,643	633,488	-	633,488
Depreciation	47,038,876	134,005	47,172,881	-	47,172,881
Share of profit or loss of associates and joint ventures	733,044	-	733,044	414,451	1,147,495
Income tax expense (benefit)	(414,104)	20,974	(393,130)	-	(393,130)
Impairment loss of non-financial assets	33,160	84,974	118,134	-	118,134

For the year ended December 31, 2018					
	Wafer			Adjustment and	
	Fabrication	New Business	Subtotal	Elimination	Consolidated
Operating revenues from external customers	\$151,023,932	\$228,639	\$151,252,571	\$-	\$151,252,571
Operating revenues from sales among intersegments	-	19,290	19,290	(19,290)	-
Segment net income (loss), net of tax	2,688,331	(602,809)	2,085,522	557,530	2,643,052
Acquisition of property, plant and equipment	19,589,770	305	19,590,075	-	19,590,075
Depreciation	49,777,242	171,347	49,948,589	-	49,948,589
Share of profit or loss of associates and joint ventures	(1,201,986)	(23,245)	(1,225,231)	557,530	(667,701)
Income tax expense (benefit)	(456,058)	(2,595)	(458,653)	-	(458,653)

As of December 31, 2019					
	Wafer			Adjustment and	
	Fabrication	New Business	Subtotal	Elimination	Consolidated
Segment assets	\$369,189,983	\$924,149	\$370,114,132	(Note) \$73,233	\$370,187,365
Segment liabilities	\$161,955,970	\$1,157,878	\$163,113,848	\$(140,905)	\$162,972,943

As of December 31, 2018					
	Wafer			Adjustment and	
	Fabrication	New Business	Subtotal	Elimination	Consolidated
Segment assets	\$363,529,040	\$1,263,368	\$364,792,408	\$(187,502)	\$364,604,906
Segment liabilities	\$157,000,054	\$1,068,722	\$158,068,776	\$(361)	\$158,068,415

Note: The adjustment primarily consisted of elimination entries for wafer fabrication segment's investments in new business segment that was accounted for under the equity method.

(2) Geographic non-current assets information

	As of December 31,	
	2019	2018
Taiwan	\$73,481,714	\$90,046,190
Singapore	15,191,880	16,881,746
China (includes Hong Kong)	63,622,327	73,627,957
USA	70,498	31,919
Europe	24,383	155,489
Japan	12,265,769	232
Others	3,309	-
Total	<u>\$164,659,880</u>	<u>\$180,743,533</u>

Non-current assets include property, plant and equipment, right-of-use assets, intangible assets, prepayment for equipment and other noncurrent assets.

(3) Major customers

Individual customers accounting for at least 10% of operating revenues for the years ended December 31, 2019 and 2018 were as follows:

	For the years ended December 31,	
	2019	2018
Customer A from wafer fabrication segment	<u>\$17,576,293</u>	<u>\$15,357,470</u>

ATTACHMENT 1 (Significant intercompany transactions between consolidated entities)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

For the year ended December 31, 2019

No. (Note 1)	Related party	Counterparty	Relationship with the Company (Note 2)	Transactions			Percentage of consolidated operating revenues or consolidated total assets (Note 4)
				Account	Amount	Collection periods (Note 3)	
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Sales	\$47,736,335	Net 60 days	32%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Accounts receivable	5,937,706	-	2%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Sales	3,933,964	Net 60 days	3%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Accounts receivable	608,622	-	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Sales	1,209,310	Net 30 days	1%
					(Note 5)		
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Accounts receivable	31,334	-	0%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Sales	745,226	Net 60 days	1%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	33,242	-	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Sales	152,012	Net 60 days	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	21,138	-	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Sales	250,736	Net 60 days	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Accounts receivable	51,150	-	0%

For the year ended December 31, 2018

No. (Note 1)	Related party	Counterparty	Relationship with the Company (Note 2)	Transactions			Percentage of consolidated operating revenues or consolidated total assets (Note 4)
				Account	Amount	Collection periods (Note 3)	
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Sales	\$57,107,585	Net 60 days	38%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Accounts receivable	7,312,272	-	2%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Sales	4,159,637	Net 60 days	3%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Accounts receivable	905,048	-	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Sales	1,356,567	Net 30 days	1%
					(Note 5)		
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Accounts receivable	48,163	-	0%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Sales	698,988	Net 60 days	0%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	120,678	-	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Sales	307,471	Net 60 days	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	35,161	-	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Sales	272,218	Net 60 days	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Accounts receivable	61,971	-	0%

Note 1: UMC and its subsidiaries are coded as follows:

1. UMC is coded "0".
2. The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: Transactions are categorized as follows:

1. The holding company to subsidiary.
2. Subsidiary to holding company.
3. Subsidiary to subsidiary.

Note 3: The sales price to the above related parties was determined through mutual agreement in reference to market conditions.

Note 4: The percentage with respect to the consolidated asset/liability for transactions of balance sheet items are based on each item's balance at period-end.
For profit or loss items, cumulative balances are used as basis.

Note 5: UMC authorized technology licenses to its subsidiary, UNITED SEMICONDUCTOR (XIAMEN) CO., LTD., in the amount of USD 0.35 billion which was recognized as deferred revenue.
Since it was a downstream transaction, the deferred revenue would be realized over time.

ATTACHMENT 2 (Financing provided to others for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

No. (Note 1)	Lender	Counter-party	Financial statement account	Related Party	Maximum balance for the period	Ending balance	Actual amount provided	Interest rate	Nature of financing	Amount of sales to (purchases from) counter-party	Reason for financing	Loss allowance	Collateral		Limit of financing amount for individual counter-party (Note2)	Limit of total financing amount (Note2)
													Item	Value		
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Other receivables - related parties	Yes	\$7,507,500	\$7,507,500	\$1,201,200	2.56%-3.06%	The need for short-term financing	\$-	Business turnover	\$-	None	\$-	\$20,680,436	\$82,721,743

TERA ENERGY DEVELOPMENT CO., LTD.

No. (Note 1)	Lender	Counter-party	Financial statement account	Related Party	Maximum balance for the period	Ending balance	Actual amount provided	Interest rate	Nature of financing	Amount of sales to (purchases from) counter-party	Reason for financing	Loss allowance	Collateral		Limit of financing amount for individual counter-party (Note3)	Limit of total financing amount (Note3)
													Item	Value		
1	TERA ENERGY DEVELOPMENT CO., LTD.	TIPPING POINT ENERGY COC PPA SPE-1,LLC	Other receivables	No	\$2,349	\$2,349	\$2,349	9.00%	Needs for operation	\$2,349	-	\$2,349	None	\$-	\$2,349	\$24,495

Note 1: The parent company and its subsidiaries are coded as follows:

- (i) The parent company is coded "0".
- (ii) The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: Limit of financing amount for individual counter-party shall not exceed 10% of the lender's net assets value as of the period.

Limit of total financing amount shall not exceed 40% of the Company's net asset value.

Note 3: Limit of financing amount for individual counter-party shall not exceed 10% of the lender's net assets value as of the period or the needed amount for operation, which is lower.

Limit of total financing amount shall not exceed 40% of latest financial statements of lender.

ATTACHMENT 3 (Endorsement/Guarantee provided to others for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

No. (Note 1)	Endorsor/Guarantor	Receiving party		Limit of guarantee/endorsement amount for receiving party (Note 3)	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 4)
		Company name	Relationship (Note 2)							
0	UNITED MICROELECTRONICS CORPORATION	NEXPOWER TECHNOLOGY CORP.	2	\$93,061,961	\$2,448,000	\$748,000 (Note 5)	\$747,900 (Note 5)	\$-	0.36%	\$93,061,961
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	2	93,061,961	15,105,090	13,933,920 (Note 6)	13,696,378 (Note 6)	-	6.74%	93,061,961

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

No. (Note 1)	Endorsor/Guarantor	Receiving party		Limit of guarantee/endorsement amount for receiving party (Note 7)	Maximum balance for the period	Ending balance	Actual amount provided	Amount of collateral guarantee/endorsement	Percentage of accumulated guarantee amount to net assets value from the latest financial statement	Limit of total guarantee/endorsement amount (Note 7)
		Company name	Relationship (Note 2)							
1	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	6	\$10,248,216	\$8,832,353	\$8,832,353	\$3,913,609	\$-	38.78%	\$10,248,216

Note 1: The parent company and its subsidiaries are coded as follows:

1. The parent company is coded "0".
2. The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: According to the "Guidelines Governing the Preparation of Financial Reports by Securities Issuers" issued by the R.O.C. Securities and Futures Bureau, receiving parties should be disclosed as one of the following:

1. A company with which it does business.
2. A company in which the public company directly and indirectly holds more than 50% of the voting shares.
3. A company that directly and indirectly holds more than 50 % of the voting shares in the public company.
4. A company in which the public company holds, directly or indirectly, 90% or more of the voting shares.
5. A company that fulfills its contractual obligations by providing mutual endorsements/guarantees for another company in the same industry or for joint builders for purposes of undertaking a construction project.
6. A company that all capital contributing shareholders make endorsements/ guarantees for their jointly invested company in proportion to their shareholding percentages.
7. Companies in the same industry provide among themselves joint and several security for a performance guarantee of a sales contract for pre-construction homes pursuant to the Consumer Protection Act for each other.

Note 3: The amount of endorsements/guarantees shall not exceed 45% of the net worth of endorsor/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 endorsor/guarantor.
2. The amount of endorsements/guarantees for a company which endorsor/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 endorsor/guarantor and the receiving party.

The aggregate amount of endorsements/guarantees that the Company as a whole is permitted to make shall not exceed 45% of the Company's net worth, and the aggregate amount of endorsements/guarantees for any single entity shall not exceed 45% of the Company's net worth.

Note 4: Limit of total guarantee/endorsement amount shall not exceed 45% of UMC's net assets value as of December 31, 2019.

Note 5: On December 24, 2014, the board of directors resolved to provide endorsement to NEXPOWER TECHNOLOGY CORP.'s syndicated loan from banks including Bank of Taiwan for the amount up to NT\$1,700 million, it has been fully repaid in January 2019.

On December 12, 2018, the board of directors resolved to increase the endorsement amounted to NT\$748 million. As of December 31, 2019, actual amount provided was NT\$748 million.

Note 6: On February 22, 2017, the board of directors resolved to guarantee UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.'s syndicated loan from banks including China Development Bank in the amount up to USD 310 million.

On March 7, 2018, the board of directors resolved to increase the endorsement amounted to USD 152 million, on October 24, 2018, the board of directors resolved to increase the endorsement amounted to USD 41 million.

On July 24, 2019, the board of directors resolved to decrease the endorsement amounted to USD 26 million, on December 18, 2019, the board of directors resolved to decrease the endorsement amounted to 13 millionTotal endorsement amount is up to USD 464 million.

As of December 31, 2019, actual amount provided was NT\$13,696 million.

Note 7: Limit of total endorsed/guaranteed amount shall not exceed 45% of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2019.

The amount of endorsements/guarantees for any single entity shall not exceed 45% of net worth of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2019.

The aggregate amount of endorsements/guarantees that the Company as a whole is permitted to make shall not exceed 45% of the Company's net worth, and the aggregate amount of endorsements/guarantees for any single entity shall not exceed 45% of the Company's net worth.

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

				December 31, 2019				Shares as collateral (thousand)
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock	ACTION ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, current	18,182	\$146,730	6.56	\$146,730	None
Fund	MILLERFUL NO.1 REAL ESTATE INVESTMENT TRUST	-	Financial assets at fair value through profit or loss, current	18,000	184,500	1.70	184,500	None
Stock	PIXART IMAGING, INC.	-	Financial assets at fair value through profit or loss, current	1,600	236,800	1.16	236,800	None
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, current	2,675	100,446	0.22	100,446	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	1,521,311	9.79	1,521,311	None
Stock	OCTTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,692	331,577	9.29	331,577	None
Stock	UNITED INDUSTRIAL GASES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	16,680	1,277,414	7.66	1,277,414	None
Stock	AMIC TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	5,627	-	4.71	-	None
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	12,521	152,878	4.35	152,878	None
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	20,483	769,125	1.68	769,125	None
Stock	EPISTAR CORP.	-	Financial assets at fair value through profit or loss, noncurrent	10,715	346,630	0.98	346,630	None
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,184	26,692	0.83	26,692	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	20,125	-	20,125	None
Stock	SILICON INTEGRATED SYSTEMS CORP.	The Company's director	Financial assets at fair value through other comprehensive income, noncurrent	105,356	961,898	19.73	961,898	None
Stock	UNIMICRON HOLDING LIMITED	-	Financial assets at fair value through other comprehensive income, noncurrent	20,000	795,795	17.00	795,795	None
Stock	UNIMICRON TECHNOLOGY CORP.	-	Financial assets at fair value through other comprehensive income, noncurrent	196,136	8,237,712	13.03	8,237,712	None
Stock	ITE TECH. INC.	-	Financial assets at fair value through other comprehensive income, noncurrent	13,960	616,333	8.67	616,333	None
Stock	NOVATEK MICROELECTRONICS CORP.	-	Financial assets at fair value through other comprehensive income, noncurrent	16,445	3,601,365	2.70	3,601,365	None
Stock-Preferred stock	MTIC HOLDINGS PTE. LTD.	-	Financial assets at fair value through other comprehensive income, noncurrent	12,000	175,494	-	175,494	None

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019				Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock	DARCHUN VENTURE CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,514	\$2,923	19.65	\$2,923	None
Stock	SOLARGATE TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	957	-	15.94	-	None
Fund	TRENDFORCE CAPITAL FUND SPC-TRENDFORCE CAPITAL FUND I SP	-	Financial assets at fair value through profit or loss, noncurrent	15	46,896	15.12	46,896	None
Stock	TRONC-E CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,800	-	14.49	-	None
Stock	CENTERA PHOTONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,750	124,875	13.76	124,875	None
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,500	17,125	10.23	17,125	None
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	10,719	52,522	9.12	52,522	None
Stock	MONTJADE ENGINEERING CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,800	18,504	8.18	18,504	None
Stock	NEW SMART TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	900	12,087	7.29	12,087	None
Stock	WIN WIN PRECISION TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,150	48,101	6.93	48,101	None
Stock	RISELINK VENTURE CAPITAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	526	6,574	6.67	6,574	None
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3	62,376	5.35	62,376	None
Stock	LICO TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	6,609	-	5.32	-	None
Stock	ACTI CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,968	10,232	5.31	10,232	None
Stock	ACT GENOMICS HOLDINGS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,600	34,535	5.12	34,535	None
Stock	MERIDIGEN BIOTECH CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,838	26,903	4.21	26,903	None
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,374	166,996	3.72	166,996	None
Stock	SOLID STATE SYSTEM CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,000	53,850	3.71	53,850	None
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	10,059	122,818	3.49	122,818	None
Stock	TAIWAN AULISA MEDICAL DEVICES TECHNOLOGIES, INC.	-	Financial assets at fair value through profit or loss, noncurrent	800	7,280	3.21	7,280	None
Stock	ANIMATION TECHNOLOGIES INC.	-	Financial assets at fair value through profit or loss, noncurrent	265	-	3.16	-	None
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,416	99,584	3.11	99,584	None
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	69,053	2.96	69,053	None
Stock	BRIGHT SHELAND INTERNATIONAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	41,160	2.88	41,160	None
Stock	TAIWAN SEMICONDUCTOR CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,741	320,130	2.70	320,130	None

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

				December 31, 2019					
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	Shares as collateral (thousand)	
Stock	WALTOP INTERNATIONAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	327	\$1,432	2.23	\$1,432	None	
Stock	CHITEC TECHNOLOGY CORP., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	600	24,060	2.15	24,060	None	
Fund	VERTEX V (C.I.) FUND L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	46,186	2.07	46,186	None	
Stock	MOBILE DEVICES INC.	-	Financial assets at fair value through profit or loss, noncurrent	261	-	1.96	-	None	
Stock	WIESON TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,141	4,564	1.71	4,564	None	
Stock	SOLAR APPLIED MATERIALS TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	8,000	179,600	1.61	179,600	None	
Stock	CRYSTALWISE TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,114	25,045	1.02	25,045	None	
Stock	NORATECH PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	9,540	0.95	9,540	None	
Stock	TAIWANJ PHARMACEUTICALS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	582	6,769	0.84	6,769	None	
Stock	POWERTEC ELECTROCHEMICAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	9,930	-	0.75	-	None	
Stock	TIGERAIR TAIWAN CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,300	65,260	0.65	65,260	None	
Stock	FUSHENG PRECISION CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	700	125,650	0.53	125,650	None	
Stock	LINTES TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	265	24,088	0.46	24,088	None	
Stock	QUASER MACHINE TOOLS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	200	9,370	0.44	9,370	None	
Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	21	3	0.02	3	None	
Stock-Preferred Stock	EJOULE INTERNATIONAL LIMITED	-	Financial assets at fair value through profit or loss, noncurrent	23,909	176,019	-	176,019	None	
Stock-Preferred Stock	FLOADIA CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2	121,408	-	121,408	None	
Stock-Preferred Stock	CEREBREX, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1	-	-	-	None	
Stock-Preferred Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	311	1,027	-	1,027	None	
Stock-Preferred Stock	ACEPODIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,449	30,030	-	30,030	None	
Stock-Preferred Stock	BRAVOTEK CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2,250	59,459	-	59,459	None	
Stock-Preferred Stock	GEAR RADIO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,900	37,087	-	37,087	None	
Convertible bonds	EPISIL-PRECISION INC.	-	Financial assets at fair value through profit or loss, noncurrent	125	13,900	-	13,900	None	
Stock	SHIN-ETSU HANDOTAI TAIWAN CO., LTD.	-	Financial assets at fair value through other comprehensive income, noncurrent	10,500	334,635	7.00	334,635	None	
Stock	UNITED MICROELECTRONICS CORP.	Parent company	Financial assets at fair value through other comprehensive income, noncurrent	16,079	264,495	0.14	264,495	None	
Stock	EMPASS TECHNOLOGY INC.	-	Prepayments for investments	200	10,000	-	N/A	None	
Stock	VALUE VALVES CO., LTD.	-	Prepayments for investments	40	3,987	-	N/A	None	

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

TLC CAPITAL CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019					Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value		
Convertible bonds	CLOUD MOMENT (CAYMAN) INC.	-	Financial assets at fair value through profit or loss, current	-	\$-	-	\$-		None
Fund	EVERYI CAPITAL ASIA FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	111,766	18.18	111,766		None
Stock	WINKING ENTERTAINMENT LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,433	41,853	15.35	41,853		None
Stock	BEAUTY ESSENTIALS INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	150,500	84,364	13.99	84,364		None
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	9	243,278	9.00	243,278		None
Stock	ACTI CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2,252	11,708	6.08	11,708		None
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,529	223,462	4.98	223,462		None
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	8,220	4.91	8,220		None
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	5,435	26,630	4.62	26,630		None
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2	53,465	4.58	53,465		None
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	181,831	4.24	181,831		None
Stock	SUNDIA MEDITECH GROUP	-	Financial assets at fair value through profit or loss, noncurrent	779	20,192	3.20	20,192		None
Stock	WIESON TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,829	7,314	2.74	7,314		None
Fund	H&QAP GREATER CHINA GROWTH FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	7,452	2.67	7,452		None
Stock	ENTEREX INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,127	19,328	1.02	19,328		None
Stock	HANDA PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	30,090	0.87	30,090		None
Stock	MATERIALS ANALYSIS TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	500	40,750	0.80	40,750		None
Stock	SIMPLO TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,422	431,012	0.77	431,012		None
Stock	TXC CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,978	93,559	0.64	93,559		None
Stock	LINTES TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	365	33,179	0.64	33,179		None
Stock	POWTEC ELECTROCHEMICAL CORP.(formerly POWERTEC ENERGY CORP.)	-	Financial assets at fair value through profit or loss, noncurrent	6,470	-	0.49	-		None
Stock	EVERGREEN STEEL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	35,000	0.25	35,000		None
Convertible bonds	SIGURD MICROELECTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	50	5,658	-	5,658		None
Convertible bonds	EPISIL-PRECISION INC.	-	Financial assets at fair value through profit or loss, noncurrent	100	11,120	-	11,120		None
Convertible bonds	TECHCENTIAL INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	100	10,060	-	10,060		None

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

TLC CAPITAL CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019				Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock-Preferred stock	YOUJIA GROUP LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,685	\$6,192	-	\$6,192	None
Stock-Preferred stock	ALO7 LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,377	194,971	-	194,971	None
Stock-Preferred stock	ADWO MEDIA HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	5,332	-	-	-	None
Stock-Preferred stock	IMO, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,519	-	-	-	None
Stock-Preferred stock	HIGHLANDER FINANCIAL GROUP CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	26,499	169,778	-	169,778	None
Stock-Preferred stock	X2 POWER TECHNOLOGIES LTD.	-	Financial assets at fair value through profit or loss, noncurrent	21,703	128,396	-	128,396	None
Stock-Preferred stock	GAME VIDEO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	279	178,037	-	178,037	None
Stock-Preferred stock	CLOUD MOMENT (CAYMAN) INC.	-	Financial assets at fair value through profit or loss, noncurrent	359	-	-	-	None
Stock-Preferred stock	PLAYNITRIDE INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,739	179,734	-	179,734	None
Stock-Preferred stock	EJOULE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	35,863	264,029	-	264,029	None
Stock-Preferred stock	TURNING POINT LASERS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,000	67,880	-	67,880	None
Stock-Preferred stock	ARTERY TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	770	104,054	-	104,054	None
Stock	VALUE VALVES CO., LTD.	-	Prepayments for investments	40	3,987	-	N/A	None

UMC CAPITAL CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019				Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Convertible bonds	SWIFTSTACK, INC.	-	Financial assets at fair value through profit or loss, current	- USD	916	- USD	916	None
Convertible bonds	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, current	- USD	190	- USD	190	None
Convertible bonds	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, current	- USD	703	- USD	703	None
Capital	TRANSLINK MANAGEMENT III, L.L.C.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	959	14.33 USD	959	None
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	16,371	11.47 USD	16,371	None
Stock	OCTTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	7,035 USD	11,608	9.76 USD	11,608	None
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	6,898	8.87 USD	6,898	None
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3 USD	2,077	5.35 USD	2,077	None
Stock	ALL-STARS SP IV LTD.	-	Financial assets at fair value through profit or loss, noncurrent	7 USD	7,123	5.03 USD	7,123	None

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UMC CAPITAL CORP.

				December 31, 2019						
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount		Percentage of ownership (%)	Fair value/ Net assets value		Shares as collateral (thousand)
Fund	TRANSLINK CAPITAL PARTNERS II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD	1,630	4.53	USD	1,630	None
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	4	USD	3,601	4.00	USD	3,601	None
Fund	GROVE VENTURES II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD	240	3.33	USD	240	None
Fund	SIERRA VENTURES XI, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD	2,695	1.76	USD	2,695	None
Fund	STORM VENTURES FUND V, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD	2,989	1.69	USD	2,989	None
Stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	80	USD	56	0.46	USD	56	None
Convertible bonds	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD	1,678	-	USD	1,678	None
Stock-Preferred stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,644	USD	6,631	-	USD	6,631	None
Stock-Preferred stock	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,052	USD	3,433	-	USD	3,433	None
Stock-Preferred stock	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,349	USD	2,092	-	USD	2,092	None
Stock-Preferred stock	ATSCALE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,520	USD	9,112	-	USD	9,112	None
Stock-Preferred stock	SENSIFREE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	614	USD	1,307	-	USD	1,307	None
Stock-Preferred stock	APPIER HOLDINGS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	64	USD	3,237	-	USD	3,237	None
Stock-Preferred stock	DCARD HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	27,819	USD	4,789	-	USD	4,789	None
Stock-Preferred stock	NEXTINPUT, INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,866	USD	1,386	-	USD	1,386	None
Stock-Preferred stock	SHOCARD, INC.	-	Financial assets at fair value through profit or loss, noncurrent	517	USD	133	-	USD	133	None
Stock-Preferred stock	GCT SEMICONDUCTOR, INC.	-	Financial assets at fair value through profit or loss, noncurrent	175	USD	51	-	USD	51	None
Stock-Preferred stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	12,241	USD	4,968	-	USD	4,968	None
Stock-Preferred stock	SIFOTONICS TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,500	USD	6,592	-	USD	6,592	None
Stock-Preferred stock	NEVO ENERGY, INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,980		-	-		-	None
Stock-Preferred stock	SWIFTSTACK, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,855	USD	1,165	-	USD	1,165	None
Stock-Preferred stock	NEXENTA SYSTEMS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,555		-	-		-	None
Stock-Preferred stock	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	9,461	USD	4,526	-	USD	4,526	None
Stock-Preferred stock	EAST VISION TECHNOLOGY LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,770		-	-		-	None
Stock-Preferred stock	RENIAC, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,287	USD	2,266	-	USD	2,266	None
Stock-Preferred stock	BLUESPACE.AI, INC.	-	Financial assets at fair value through profit or loss, noncurrent	174	USD	300	-	USD	300	None

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

TERA ENERGY DEVELOPMENT CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019				Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock	TIAN TAI PHOTOELECTRICITY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	375	\$5,561	1.18	\$5,561	None

NEXPOWER TECHNOLOGY CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019				Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock	PACIFIC-GREEN INTEGRATED TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	54	\$-	18.00	\$-	None

SINO PARAGON LIMITED

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019				Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Fund	SPARKLABS GLOBAL VENTURES FUND I, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	\$85,482	11.13	\$85,482	None
Fund	SPARKLABS KOREA FUND II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	33,499	5.00	33,499	None

UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019				Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Fund	LANHOR FUND	-	Financial assets at fair value through profit or loss, noncurrent	-	RMB 38,533	9.71	RMB 38,533	None

ATTACHMENT 5 (Individual securities acquired or disposed of with accumulated amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Type of securities	Name of the securities	Financial statement account	Counter-party	Relationship	Beginning balance		Addition		Disposal			Ending balance		
					Units (thousand)/ bonds/shares (thousand)	Amount (Note 1)	Units (thousand)/ bonds/shares (thousand)	Amount	Units (thousand)/ bonds/shares (thousand)	Amount	Cost	Gain (Loss) from disposal	Units (thousand)/ bonds/shares (thousand)	Amount (Note 1)
Stock	TRIKNIGHT CAPITAL CORPORATION	Investments accounted for under the equity method	Purchase of newly issued shares	Associate	168,000	\$1,520,575	72,000	\$720,000	-	\$-	\$-	\$-	237,000	\$2,281,631 (Note 2)
Stock	UNITED SEMICONDUCTOR JAPAN CO., LTD.	Investments accounted for under the equity method	FUJITSU SEMICONDUCTOR LIMITED	-	18,447	2,220,103	97,800	15,711,370	-	-	-	-	116,247	17,515,233 (Note 3)

Note 1 : The amounts of beginning and ending balances of financial assets at fair value through other comprehensive income, noncurrent are recorded at the prevailing market prices. The amounts of beginning and ending balances of investments accounted for under the equity method include adjustments under the equity method.

Note 2 : The ending balance includes share of profit of associates and joint ventures of \$71,056 thousand and capital reduction of NT\$(30,000) thousand.

Note 3 : The previously held ownership interest of 15.9% in UNITED SEMICONDUCTOR JAPAN CO., LTD. (Before the name was changed to MIE FUJITSU SEMICONDUCTOR LIMITED) was treated as disposal and requisition upon completion of the acquisition of remaining ownership interest of 84.1% on October 1, 2019, which was reclassified changes in fair value \$84 thousand from financial assets at fair value through other comprehensive, noncurrent to investments accounted for under equity method. The ending balance includes bargain purchase gain of \$171,585 thousand resulted from the acquisition, gains or losses on hedging instruments of \$2,572 thousand, share of profit of associates and joint ventures of \$270,787 thousand and exchange differences on translation of foreign operations adjustment under equity method of \$(945,069) thousand.

ATTACHMENT 6 (Acquisition of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

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
None												

ATTACHMENT 7 (Disposal of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

Names of properties	Transaction date	Date of original acquisition	Carrying amount	Transaction amount	Status of proceeds collection	Gain (Loss) from disposal	Counter-party	Relationship	Reason of disposal	Price reference	Other commitments
None											

ATTACHMENT 8 (Related party transactions for purchases and sales amounts exceeding the lower of NT\$100 million or 20 percent of capital stock for the year ended December 31, 2019)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Counter-party	Relationship	Transactions				Details of non-arm's length transaction		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	\$47,736,335	39 %	Net 60 days	N/A	N/A	\$5,937,706	29 %	
UMC GROUP JAPAN	Subsidiary	Sales	3,933,964	3 %	Net 60 days	N/A	N/A	608,622	3 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary	Sales	1,209,310	1 %	Net 30 days	N/A	N/A	31,334	0 %	
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	805,385	1 %	Month-end 60 days	N/A	N/A	85,373	0 %	

UMC GROUP (USA)

Counter-party	Relationship	Transactions				Details of non-arm's length transaction		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	USD 1,504,518	98 %	Net 60 days	N/A	N/A	USD 197,973	99 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Associate	Purchases	USD 23,335	2 %	Net 60 days	N/A	N/A	USD 1,109	1 %	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	USD 4,937	0 %	Net 60 days	N/A	N/A	USD 705	0 %	

UMC GROUP JAPAN

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	JPY 12,877,097	94 %	Net 60 days	N/A	N/A	JPY 2,310,603	93 %	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	JPY 849,777	6 %	Net 60 days	N/A	N/A	JPY 186,971	7 %	

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
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	RMB 121,132	5 %	Net 45 days	N/A	N/A	RMB 31,635	8 %	
UMC GROUP JAPAN	Associate	Sales	RMB 56,029	2 %	Net 60 days	N/A	N/A	RMB 11,906	3 %	
UMC GROUP (USA)	Associate	Sales	RMB 33,968	1 %	Net 60 days	N/A	N/A	RMB 4,920	1 %	

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	RMB 166,527	9 %	Net 60 days	N/A	N/A	RMB 7,738	2 %	

ATTACHMENT 9 (Receivables from related parties with amounts exceeding the lower of NT\$100 million or 20 percent of capital stock as of December 31, 2019)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Counter-party	Relationship	Ending balance				Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable	Other receivables	Total		Amount	Collection status		
UMC GROUP (USA)	Subsidiary	\$-	\$5,937,706	\$7,469	\$5,945,175	7.21	\$-	-	\$5,945,175	\$-
UMC GROUP JAPAN	Subsidiary	-	608,622	13,671	622,293	5.20	40,320	Collection in subsequent period	305,829	11,180

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

Counter-party	Relationship	Ending balance				Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable	Other receivables	Total		Amount	Collection status		
FARADAY TECHNOLOGY CORP.	Associate	\$- RMB	31,635	\$- RMB	31,635	5.94	RMB 3,525	Collection in subsequent period	RMB 31,635	\$-

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note		
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount					
UMC GROUP (USA)	USA	IC Sales	USD	16,438	USD	16,438	16,438	100.00	\$1,755,033	\$77,135	\$77,135	
UNITED MICROELECTRONICS (EUROPE) B.V.	The Netherlands	Marketing support activities	USD	5,421	USD	5,421	9	100.00	142,378	2,803	2,803	
UMC CAPITAL CORP.	Cayman Islands	Investment holding	USD	81,500	USD	81,500	71,663	100.00	3,756,049	342,966	342,966	
GREEN EARTH LIMITED	Samoa	Investment holding	USD	977,000	USD	977,000	977,000	100.00	11,643,953	(5,124,276)	(5,124,276)	
TLC CAPITAL CO., LTD.	Taipei City, Taiwan	Venture capital		4,610,000		4,610,000	397,956	100.00	4,273,912	24,565	24,565	
UMC INVESTMENT (SAMOA) LIMITED	Samoa	Investment holding	USD	1,520	USD	1,520	1,520	100.00	42,022	(886)	(886)	
FORTUNE VENTURE CAPITAL CORP.	Taipei City, Taiwan	Consulting and planning for venture capital		3,440,053		4,160,053	401,734	100.00	4,398,331	(119,265)	(128,750)	
UMC GROUP JAPAN	Japan	IC Sales	JPY	60,000	JPY	60,000	1	100.00	95,116	47,467	47,467	
UMC KOREA CO., LTD.	Korea	Marketing support activities	KRW	550,000	KRW	550,000	110	100.00	20,499	979	979	
OMNI GLOBAL LIMITED	Samoa	Investment holding	USD	4,300	USD	4,300	4,300	100.00	590,702	31,312	31,312	
SINO PARAGON LIMITED	Samoa	Investment holding	USD	2,600	USD	2,600	2,600	100.00	121,840	940	940	
BEST ELITE INTERNATIONAL LIMITED	British Virgin Islands	Investment holding	USD	309,102	USD	309,102	664,966	100.00	23,183,005	870,821	870,821	
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Japan	Sales and manufacturing of integrated circuits	JPY	64,421,068	JPY	9,999,974	116,247	100.00	17,515,233	270,787	270,787	Note
WAVETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits		1,894,660		1,707,482	144,948	79.83	260,035	(279,115)	(221,978)	
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries		5,956,791		5,956,791	33,998	47.75	(140,850)	(420,302)	(200,700)	
MTIC HOLDINGS PTE. LTD.	Singapore	Investment holding	SGD	12,000	SGD	12,000	12,000	45.44	18,157	13,131	(24,195)	
UNITECH CAPITAL INC.	British Virgin Islands	Investment holding	USD	21,000	USD	21,000	21,000	42.00	642,660	212,066	89,068	
TRIKNIGHT CAPITAL CORPORATION	Taipei City, Taiwan	Investment holding		2,370,000		1,680,000	237,000	40.00	2,281,631	177,640	71,056	
HSUN CHIEH INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding		336,241		336,241	277,280	36.49	4,378,193	2,643,852	962,222	
YANN YUAN INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding		2,300,000		2,300,000	46,000	30.87	3,829,934	166,098	51,278	
FARADAY TECHNOLOGY CORPORATION	Hsinchu City, Taiwan	Design of application-specific integrated circuit		38,918		38,918	34,240	13.78	1,470,499	(107,860)	(14,859)	

Note: The UNITED SEMICONDUCTOR JAPAN CO., LTD. became consolidated entity on October 1, 2019.

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	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	18,655	100.00	\$61,238	\$(22,063)	\$(22,063)	
PURIUMFIL INC.	Hsinchu City, Taiwan	Chemicals and filtration products & Microcontamination control service	10,000	-	1,000	44.45	7,164	(6,380)	(2,835)	
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	1,688,630	1,688,630	23,827	33.46	(98,710)	\$(420,302)	(140,654)	
WINAICO IMMOBILIEN GMBH	Germany	Solar project	EUR 5,900	EUR 5,900	5,900	32.78	-	-	-	
UNITED LED CORPORATION HONG KONG LIMITED	Hongkong	Investment holding	USD 22,500	USD 22,500	22,500	25.14	121,973	(165,087)	(41,502)	
CLIENTRON CORP.	Xinbei City, Taiwan	Thin client	277,508	283,439	13,932	21.90	276,866	249,901	47,315	
WAVETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	8,856	8,856	1,194	0.66	3,424	(279,115)	(1,875)	

TLC CAPITAL CO., LTD.

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	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	900	100.00	\$10,264	\$(3,560)	\$(3,560)	
HSUN CHIEH CAPITAL CORP.	Samoa	Investment holding	USD 6,000	USD 6,000	6,000	30.00	122,060	(133,431)	(37,044)	
VSENSE CO., LTD.	Taipei City, Taiwan	Medical devices, measuring equipment, reagents and consumables	95,916	95,916	4,251	25.90	592	(34,224)	(9,110)	
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	888,019	888,019	8,645	12.14	(35,816)	(420,302)	(51,035)	
YUNG LI INVESTMENTS, INC.	Taipei City, Taiwan	Investment holding	-	22,581	-	-	-	(1)	(0)	

UMC CAPITAL CORP.

			Initial Investment		Investment as of December 31, 2019										
Investee company	Address	Main businesses and products			Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company	Investment income (loss) recognized	Note					
			Ending balance	Beginning balance											
UMC CAPITAL (USA)	USA	Investment holding	USD	200	USD	200	200	100.00	USD	552	USD	6	USD	6	
TRANSLINK CAPITAL PARTNERS I, L.P.	Cayman Islands	Investment holding	USD	4,036	USD	4,036	-	10.38	USD	5,742	USD	21,843	USD	1,815	

TERA ENERGY DEVELOPMENT CO., LTD.

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	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	750	100.00	\$38,469	\$7,443	\$7,443
WINAICO IMMOBILIEN GMBH	Germany	Solar project	EUR	2,160	EUR	2,160	2,160	12.00	-	-	-
WINAICO SOLAR PROJEKT 1 GMBH	Germany	Solar project		-	EUR	1,120	-	-	-	-	-

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

WAVETEK MICROELECTRONICS CORPORATION

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			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 INVESTMENT (SAMOA) LIMITED	Samoa	Investment holding	USD 1,500	USD 1,500	1,500	100.00	\$2,124	\$(6,920)	\$(6,920)	

WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED

			Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
Investee company	Address	Main businesses and products	Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
WAVETEK MICROELECTRONICS CORPORATION (USA)	USA	Sales and marketing service	USD 60	USD 60	60	100.00	\$2,777	\$237	\$237	

NEXPOWER TECHNOLOGY CORP.

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
SOCIALNEX ITALIA 1 S.R.L.	Italy	Photovoltaic power plant	-	EUR 3,637	-	-	\$-	\$(89,915)	\$(89,915)	Note

Note : SOCIALNEX ITALIA 1 S.R.L. was disposed in November 2019.

BEST ELITE INTERNATIONAL LIMITED

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
INFOSHINE TECHNOLOGY LIMITED	British Virgin Islands	Investment holding	USD 354,000	USD 354,000	-	100.00	\$23,113,468	\$877,676	\$877,676	

INFOSHINE TECHNOLOGY LIMITED

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			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	\$23,113,468	\$877,676	\$877,676	

OMNI GLOBAL LIMITED

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019				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 MICROTECHNOLOGY CORPORATION (NEW YORK)	USA	Research & Development	USD	950	USD	950	0	100.00	\$30,256	\$20	\$20	
UNITED MICROTECHNOLOGY CORPORATION (CALIFORNIA)	USA	Research & Development	USD	1,000	USD	1,000	0	100.00	35,164	1,583	1,583	
ECP VITA PTE. LTD.	Singapore	Insurance	USD	9,000	USD	9,000	9,000	100.00	536,647	29,580	29,580	
UMC TECHNOLOGY JAPAN CO., LTD.	Japan	Semiconductor manufacturing technology development and consulting services	JPY	35,000	JPY	35,000	4	100.00	8,908	(169)	(169)	

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

GREEN EARTH LIMITED

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
UNITED MICROCHIP CORPORATION	Cayman	Investment holding	USD 974,050	USD 974,050	974,050	100.00	\$11,617,342	\$(5,124,809)	\$(5,124,809)	

ATTACHMENT 11 (Investment in Mainland China as of December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

					Investment flows										
Investee company	Main businesses and products	Total amount of paid-in capital		Method of investment (Note 1)	Accumulated outflow of investment from Taiwan as of January 1, 2019	Outflow	Inflow	Accumulated outflow of investment from Taiwan as of December 31, 2019	Net income (loss) of investee company	Percentage of ownership	Investment income (loss) recognized (Note 2)	Carrying amount as of December 31, 2019	Accumulated inward remittance of earnings as of December 31, 2019		
UNITRUTH ADVISOR (SHANGHAI) CO., LTD.	Investment Holding and advisory	(USD	\$24,024 800)	(ii)SOARING CAPITAL CORP.	(USD	\$24,024 800)	\$-	\$-	(USD	\$24,024 800)	\$(3,529)	100.00%	\$(3,529) (iii)	\$10,058	\$-
EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	(USD	22,523 750)	(ii)EVERRICH ENERGY INVESTMENT (HK) LIMITED	(USD	22,523 750)	-	-	22,523 (USD	750)	7,505	100.00%	7,505 (iii)	37,979	131,892 (USD 4,392)
UNITED LED CORPORATION	Research, manufacturing and sales in LED epitaxial wafers	(USD	2,522,520 84,000)	(ii)UNITED LED CORPORATION HONG KONG LIMITED	(USD	608,108 20,250)	-	-	608,108 (USD	20,250)	(RMB (159,094) (37,033))	25.14%	(RMB (39,996) (9,310)) (ii)	(RMB 106,657 24,827)	-
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Sales and manufacturing of integrated circuits	(RMB	13,768,740 3,205,014)	(ii)OAKWOOD ASSOCIATES LIMITED	(USD	9,282,333 309,102)	-	-	9,282,333 (USD	309,102)	(RMB 872,462 203,087)	98.14% (Note 4)	(RMB 856,193 199,300) (ii)	(RMB 22,349,119 5,202,309)	-
UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Design support of integrated circuits	(RMB	128,880 30,000)	(iii)HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	-	-	-	-	35,412 (RMB	8,243)	98.14%	(RMB 34,750 8,089) (iii)	(RMB 219,139 51,010)	-	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Sales and manufacturing of integrated circuits	(RMB	54,549,723 12,697,794)	(ii)UNITED MICROCHIP CORPORATION and (iii)HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	(USD	28,977,929 964,966) (Note5)	-	-	28,977,929 (USD	964,966) (RMB (9,694,611) (2,256,660))	64.95%	(RMB (6,296,372) (1,465,636)) (ii)	(RMB 14,947,752 3,479,458)	-	
Accumulated investment in Mainland China as of December 31, 2019		Investment amounts authorized by Investment Commission, MOEA			Upper limit on investment										
\$38,914,917 (USD 1,295,868)		\$48,880,582 (USD 1,627,725)			\$124,082,614										