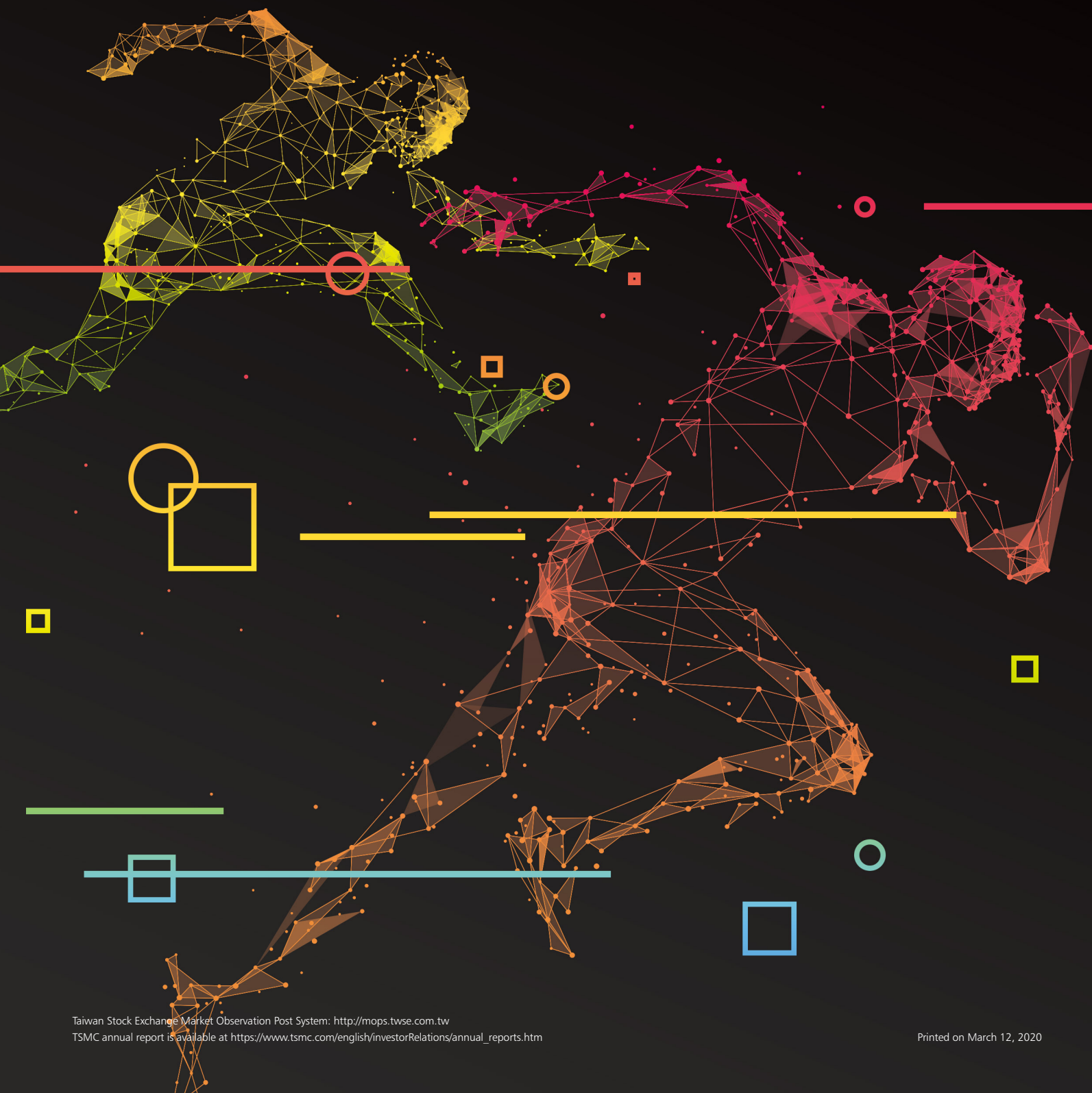




TSMC Annual Report 2019 (II) Financial Statements



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**Taiwan Semiconductor Manufacturing
Company Limited and Subsidiaries**

**Consolidated Financial Statements for the
Years Ended December 31, 2019 and 2018 and
Independent Auditors' Report**

REPRESENTATION LETTER

The entities that are required to be included in the combined financial statements of Taiwan Semiconductor Manufacturing Company Limited as of and for the year ended December 31, 2019, under the Criteria Governing the Preparation of Affiliation Reports, Consolidated Business Reports and Consolidated Financial Statements of Affiliated Enterprises are the same as those included in the consolidated financial statements prepared in conformity with the International Financial Reporting Standard 10, "Consolidated Financial Statements." In addition, the information required to be disclosed in the combined financial statements is included in the consolidated financial statements. Consequently, Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries do not prepare a separate set of combined financial statements.

Very truly yours,

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LIMITED

By

MARK LIU
Chairman

February 11, 2020

INDEPENDENT AUDITORS' REPORT

The Board of Directors and Shareholders
Taiwan Semiconductor Manufacturing Company Limited

Opinion

We have audited the accompanying consolidated financial statements of Taiwan Semiconductor Manufacturing Company Limited and its subsidiaries (the "Company"), which comprise the consolidated balance sheets as of December 31, 2019 and 2018, and the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and the notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2019 and 2018, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China.

Basis for Opinion

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

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the year ended December 31, 2019. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters for the Company's consolidated financial statements for the year ended December 31, 2019 are stated as follows:

Property, plant and equipment (PP&E) – commencement of depreciation related to PP&E classified as equipment under installation and construction in progress (EUI/CIP)

Refer to Notes 4, 5 and 14 to the consolidated financial statements.

The Company's evaluation of when to commence depreciation of EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgements and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner. Changes in these assumptions could have a significant impact on when depreciation is recognized.

Given the subjectivity in determining the date to commence depreciation of EUI/CIP, performing audit procedures to evaluate the reasonableness of the Company's judgements and assumptions required a high degree of auditor judgement. Consequently, the validity of commencement of depreciation related to PP&E classified as EUI/CIP is identified as a key audit matter.

Our audit procedures related to the evaluation of when to commence depreciation of EUI/CIP included the following, among others:

1. We read the Company's policy and understand the criteria used to determine when to commence depreciation.
2. We tested the effectiveness of the controls over the evaluation of when to commence depreciation of EUI/CIP.
3. We sampled EUI/CIP at year end and performed the following for each selection:
 - a. Evaluated whether the selection did not meet the criteria specified by the Company for commencement of depreciation.
 - b. Observed the assets and evaluated their status at year end.
4. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation during the year.
5. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation subsequent to year end.

Other Matter

We have also audited the parent company only financial statements of Taiwan Semiconductor Manufacturing Company Limited as of and for the years ended December 31, 2019 and 2018 on which we have issued an unmodified opinion.

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

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRS, IAS, IFRIC, and SIC endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Company's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

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

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

1. Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.
5. Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
6. Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

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

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements for the year ended December 31, 2019 and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors' report are Mei Yen Chiang and Yu Feng Huang.



Deloitte & Touche
Taipei, Taiwan
Republic of China

February 11, 2020

Notice to Readers

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

For the convenience of readers, the independent auditors' report and the accompanying consolidated financial statements have been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors' report and consolidated financial statements shall prevail.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED BALANCE SHEETS (In Thousands of New Taiwan Dollars)

	December 31, 2019		December 31, 2018	
	Amount	%	Amount	%
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	\$ 455,399,336	20	\$ 577,814,601	28
Financial assets at fair value through profit or loss (Note 7)	326,839	-	3,504,590	-
Financial assets at fair value through other comprehensive income (Note 8)	127,396,577	6	99,561,740	5
Financial assets at amortized cost (Note 9)	299,884	-	14,277,615	1
Hedging financial assets (Note 10)	25,884	-	23,497	-
Notes and accounts receivable, net (Note 11)	138,908,589	6	128,613,391	6
Receivables from related parties (Note 33)	862,070	-	584,412	-
Other receivables from related parties (Note 33)	51,653	-	65,028	-
Inventories (Notes 5 and 12)	82,981,196	4	103,230,976	5
Other financial assets (Note 34)	11,041,091	-	18,597,448	1
Other current assets	5,320,795	-	5,406,423	-
Total current assets	<u>822,613,914</u>	<u>36</u>	<u>951,679,721</u>	<u>46</u>
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income (Note 8)	4,124,337	-	3,910,681	-
Financial assets at amortized cost (Note 9)	7,348,914	-	7,528,277	-
Investments accounted for using equity method (Note 13)	18,698,788	1	17,865,838	1
Property, plant and equipment (Notes 5 and 14)	1,352,377,405	60	1,072,050,279	51
Right-of-use assets (Notes 5 and 15)	17,232,402	1	-	-
Intangible assets (Notes 5 and 16)	20,653,028	1	17,002,137	1
Deferred income tax assets (Notes 5 and 27)	17,928,358	1	16,806,387	1
Refundable deposits	2,084,968	-	1,700,071	-
Other noncurrent assets	1,742,918	-	1,584,647	-
Total noncurrent assets	<u>1,442,191,118</u>	<u>64</u>	<u>1,138,448,317</u>	<u>54</u>
TOTAL	<u>\$ 2,264,805,032</u>	<u>100</u>	<u>\$ 2,090,128,038</u>	<u>100</u>
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans (Notes 17 and 30)	\$ 118,522,290	5	\$ 88,754,640	4
Financial liabilities at fair value through profit or loss (Note 7)	982,349	-	40,825	-
Hedging financial liabilities (Note 10)	1,798	-	155,832	-
Accounts payable	38,771,066	2	32,980,933	2
Payables to related parties (Note 33)	1,434,900	-	1,376,499	-
Salary and bonus payable	16,272,353	1	14,471,372	1
Accrued profit sharing bonus to employees and compensation to directors and supervisors (Note 29)	23,648,903	1	23,981,154	1
Payables to contractors and equipment suppliers	140,810,703	6	43,133,659	2
Cash dividends payable (Note 21)	129,651,902	6	-	-
Income tax payable (Notes 5 and 27)	32,466,156	1	38,987,053	2
Long-term liabilities - current portion (Notes 18 and 30)	31,800,000	1	34,900,000	2
Accrued expenses and other current liabilities (Notes 5, 15, 20, 22 and 30)	56,373,281	3	61,760,619	3
Total current liabilities	<u>590,735,701</u>	<u>26</u>	<u>340,542,586</u>	<u>17</u>
NONCURRENT LIABILITIES				
Bonds payable (Notes 18 and 30)	25,100,000	1	56,900,000	3
Deferred income tax liabilities (Notes 5 and 27)	344,393	-	233,284	-
Lease liabilities (Notes 5, 15 and 30)	15,041,833	1	-	-
Net defined benefit liability (Note 19)	9,182,496	-	9,651,405	-
Guarantee deposits (Notes 20 and 30)	176,904	-	3,353,378	-
Others	2,128,279	-	1,950,989	-
Total noncurrent liabilities	<u>51,973,905</u>	<u>2</u>	<u>72,089,056</u>	<u>3</u>
Total liabilities	<u>642,709,606</u>	<u>28</u>	<u>412,631,642</u>	<u>20</u>
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 21)	259,303,805	11	259,303,805	12
Capital surplus (Note 21)	56,339,709	3	56,315,932	3
Retained earnings (Note 21)				
Appropriated as legal capital reserve	311,146,899	14	276,033,811	13
Appropriated as special capital reserve	10,675,106	-	26,907,527	1
Unappropriated earnings	1,011,512,974	45	1,073,706,503	52
	<u>1,333,334,979</u>	<u>59</u>	<u>1,376,647,841</u>	<u>66</u>
Others (Note 21)	(27,568,369)	(1)	(15,449,913)	(1)
Equity attributable to shareholders of the parent	1,621,410,124	72	1,676,817,665	80
NON - CONTROLLING INTERESTS	<u>685,302</u>	<u>-</u>	<u>678,731</u>	<u>-</u>
Total equity	<u>1,622,095,426</u>	<u>72</u>	<u>1,677,496,396</u>	<u>80</u>
TOTAL	<u>\$ 2,264,805,032</u>	<u>100</u>	<u>\$ 2,090,128,038</u>	<u>100</u>

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

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

	2019		2018	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 22, 33 and 39)	\$1,069,985,448	100	\$1,031,473,557	100
COST OF REVENUE (Notes 5, 12, 29, 33 and 37)	<u>577,286,947</u>	<u>54</u>	<u>533,487,516</u>	<u>52</u>
GROSS PROFIT BEFORE REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO ASSOCIATES	492,698,501	46	497,986,041	48
REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO ASSOCIATES	<u>3,395</u>	<u>-</u>	<u>(111,788)</u>	<u>-</u>
GROSS PROFIT	<u>492,701,896</u>	<u>46</u>	<u>497,874,253</u>	<u>48</u>
OPERATING EXPENSES (Notes 5, 29 and 33)				
Research and development	91,418,746	8	85,895,569	8
General and administrative	21,737,210	2	20,265,883	2
Marketing	<u>6,348,626</u>	<u>1</u>	<u>5,987,828</u>	<u>1</u>
Total operating expenses	<u>119,504,582</u>	<u>11</u>	<u>112,149,280</u>	<u>11</u>
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 14, 15, 23 and 29)	<u>(496,224)</u>	<u>-</u>	<u>(2,101,449)</u>	<u>-</u>
INCOME FROM OPERATIONS (Note 39)	<u>372,701,090</u>	<u>35</u>	<u>383,623,524</u>	<u>37</u>
NON-OPERATING INCOME AND EXPENSES				
Share of profits of associates	2,844,222	-	3,057,781	-
Other income (Note 24)	16,606,669	1	14,852,814	2
Foreign exchange gain, net (Note 36)	2,095,217	-	2,438,171	-
Finance costs (Note 25)	(3,250,847)	-	(3,051,223)	-
Other gains and losses, net (Note 26)	<u>(1,151,015)</u>	<u>-</u>	<u>(3,410,804)</u>	<u>-</u>
Total non-operating income and expenses	<u>17,144,246</u>	<u>1</u>	<u>13,886,739</u>	<u>2</u>
INCOME BEFORE INCOME TAX	389,845,336	36	397,510,263	39
INCOME TAX EXPENSE (Notes 5 and 27)	<u>44,501,527</u>	<u>4</u>	<u>46,325,857</u>	<u>5</u>
NET INCOME	<u>345,343,809</u>	<u>32</u>	<u>351,184,406</u>	<u>34</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

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

	2019		2018	
	Amount	%	Amount	%
OTHER COMPREHENSIVE INCOME (LOSS)				
(Notes 5, 19, 21 and 27)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	\$ 253,895	-	\$ (861,162)	-
Unrealized gain/(loss) on investments in equity instruments at fair value through other comprehensive income	334,327	-	(3,309,089)	-
Gain (loss) on hedging instruments	(109,592)	-	40,975	-
Share of other comprehensive loss of associates	(18,271)	-	(14,217)	-
Income tax benefit (expense) related to items that will not be reclassified subsequently	(20,992)	-	195,729	-
	<u>439,367</u>	<u>-</u>	<u>(3,947,764)</u>	<u>-</u>
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	(14,689,107)	(1)	14,562,386	1
Unrealized gain/(loss) on investments in debt instruments at fair value through other comprehensive income	2,566,373	-	(870,906)	-
Share of other comprehensive income (loss) of associates	(140,195)	-	93,260	-
	<u>(12,262,929)</u>	<u>(1)</u>	<u>13,784,740</u>	<u>1</u>
Other comprehensive income (loss) for the year, net of income tax	<u>(11,823,562)</u>	<u>(1)</u>	<u>9,836,976</u>	<u>1</u>
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	<u>\$ 333,520,247</u>	<u>31</u>	<u>\$ 361,021,382</u>	<u>35</u>
NET INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	\$ 345,263,668	32	\$ 351,130,884	34
Non-controlling interests	<u>80,141</u>	<u>-</u>	<u>53,522</u>	<u>-</u>
	<u>\$ 345,343,809</u>	<u>32</u>	<u>\$ 351,184,406</u>	<u>34</u>
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	\$ 333,440,460	31	\$ 360,965,015	35
Non-controlling interests	<u>79,787</u>	<u>-</u>	<u>56,367</u>	<u>-</u>
	<u>\$ 333,520,247</u>	<u>31</u>	<u>\$ 361,021,382</u>	<u>35</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

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

	<u>2019</u>	<u>2018</u>
	Income Attributable to Shareholders of the Parent	Income Attributable to Shareholders of the Parent
EARNINGS PER SHARE (NT\$, Note 28)		
Basic earnings per share	<u>\$ 13.32</u>	<u>\$ 13.54</u>
Diluted earnings per share	<u>\$ 13.32</u>	<u>\$ 13.54</u>

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

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In Thousands of New Taiwan Dollars)

	Equity, Attributable to Shareholders of the Parent										Total	Non-controlling Interests	Total Equity		
	Capital Stock - Common Stock			Retained Earnings		Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income		Others		Total					
	Shares (In Thousands)	Amount	Capital Surplus	Legal Capital Reserve	Special Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income					Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation
BALANCE, JANUARY 1, 2018	25,930,380	\$ 259,303,805	\$ 56,309,536	\$ 241,722,663	\$ -	\$ 993,095,668	\$ 1,234,918,331	\$ (26,697,680)	\$ (524,915)	\$ 4,226	\$ (10,290)	\$ (27,228,659)	\$ 1,523,303,013	\$ 702,452	\$ 1,524,005,465
Appropriations of earnings	-	-	-	-	-	(34,311,148)	-	-	-	-	-	-	-	-	-
Legal capital reserve	-	-	-	34,311,148	26,907,527	(26,907,527)	(207,443,044)	-	-	-	-	-	(207,443,044)	-	(207,443,044)
Special capital reserve	-	-	-	-	26,907,527	(26,907,527)	(207,443,044)	-	-	-	-	-	(207,443,044)	-	(207,443,044)
Cash dividends to shareholders	-	-	-	34,311,148	-	(26,907,527)	(207,443,044)	-	-	-	-	-	(207,443,044)	-	(207,443,044)
Total	-	-	-	34,311,148	26,907,527	(26,907,527)	(207,443,044)	-	-	-	-	-	(207,443,044)	-	(207,443,044)
Net income in 2018	-	-	-	-	-	351,130,884	351,130,884	-	-	-	-	-	351,130,884	53,522	351,184,406
Other comprehensive income (loss) in 2018, net of income tax	-	-	-	-	-	(765,274)	(765,274)	14,655,333	(4,097,465)	41,537	-	10,599,405	9,834,131	2,845	9,836,976
Total comprehensive income (loss) in 2018	-	-	-	-	-	350,365,610	350,365,610	14,655,333	(4,097,465)	41,537	-	10,599,405	360,965,015	2,845	361,021,382
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	(1,193,056)	(1,193,056)	-	1,193,056	-	-	1,193,056	-	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(22,162)	-	(22,162)	-	-	(22,162)
Adjustments to share of changes in equities of associates	-	-	(6,420)	-	-	-	-	-	-	-	8,447	8,447	2,027	-	2,027
From share of changes in equities of subsidiaries	-	-	2,681	-	-	-	-	-	-	-	-	-	2,681	(2,681)	-
Donation from shareholders	-	-	10,135	-	-	-	-	-	-	-	-	-	10,135	6	10,141
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	(77,413)	(77,413)
BALANCE, DECEMBER 31, 2018	25,930,380	\$ 259,303,805	\$ 56,315,932	\$ 276,033,811	\$ 26,907,527	\$ 1,073,706,503	\$ 1,376,647,841	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)	\$ 1,676,817,665	\$ 678,731	\$ 1,677,496,396
Appropriations of earnings	-	-	-	-	-	(35,113,088)	-	-	-	-	-	-	-	-	-
Legal capital reserve	-	-	-	35,113,088	(16,232,421)	16,232,421	(388,955,707)	-	-	-	-	-	(388,955,707)	-	(388,955,707)
Special capital reserve	-	-	-	-	(16,232,421)	16,232,421	(388,955,707)	-	-	-	-	-	(388,955,707)	-	(388,955,707)
Cash dividends to shareholders	-	-	-	35,113,088	-	(16,232,421)	(407,836,374)	-	-	-	-	-	(388,955,707)	-	(388,955,707)
Total	-	-	-	35,113,088	(16,232,421)	16,232,421	(407,836,374)	-	-	-	-	-	(388,955,707)	-	(388,955,707)
Net income in 2019	-	-	-	-	-	345,263,668	345,263,668	-	-	-	-	-	345,263,668	801,141	345,343,809
Other comprehensive income (loss) in 2019, net of income tax	-	-	-	-	-	162,118	162,118	(14,829,053)	2,898,483	(109,697)	-	(12,040,267)	(11,823,208)	(354)	(11,823,562)
Total comprehensive income (loss) in 2019	-	-	-	-	-	345,880,727	345,880,727	(14,829,053)	2,898,483	(109,697)	-	(12,040,267)	333,440,460	797,787	333,520,247
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	162,118	162,118	-	(162,118)	-	-	(162,118)	-	-	-
Basis adjustment for gain on hedging instruments	-	-	-	-	-	-	-	-	-	82,276	-	82,276	82,276	-	82,276
Adjustments to share of changes in equities of associates	-	-	19,414	-	-	-	-	-	-	-	1,653	1,653	21,067	192	21,259
From share of changes in equities of subsidiaries	-	-	370	-	-	-	-	-	-	-	-	-	370	(370)	-
Donation from shareholders	-	-	3,993	-	-	-	-	-	-	-	-	-	3,993	13	4,006
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	(73,051)	(73,051)
BALANCE, DECEMBER 31, 2019	25,930,380	\$ 259,303,805	\$ 56,339,709	\$ 311,146,899	\$ 10,675,106	\$ 1,011,512,971	\$ 1,333,334,972	\$ (26,871,400)	\$ (692,952)	\$ (3,820)	\$ (190)	\$ (27,568,369)	\$ 1,621,410,124	\$ 685,302	\$ 1,622,095,426

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	\$ 389,845,336	\$ 397,510,263
Adjustments for:		
Depreciation expense	281,411,832	288,124,897
Amortization expense	5,472,409	4,421,405
Expected credit losses recognized (reversal) on investments in debt instruments	1,714	(2,383)
Finance costs	3,250,847	3,051,223
Share of profits of associates	(2,844,222)	(3,057,781)
Interest income	(16,189,374)	(14,694,456)
Share-based compensation	2,818	-
Loss on disposal or retirement of property, plant and equipment, net	949,965	1,005,644
Loss (gain) on disposal of intangible assets, net	2,377	(436)
Impairment loss (reversal of impairment loss) on property, plant and equipment	(301,384)	423,468
Loss on financial instruments at fair value through profit or loss, net	955,723	358,156
Loss (gain) on disposal of investments in debt instruments at fair value through other comprehensive income, net	(537,835)	989,138
Loss from disposal of subsidiaries	4,598	-
Unrealized (realized) gross profit on sales to associates	(3,395)	111,788
Loss (gain) on foreign exchange, net	(5,228,218)	2,916,659
Dividend income	(417,295)	(158,358)
Loss (gain) arising from fair value hedges, net	(13,091)	2,386
Gain on lease modification	(2,075)	-
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	848,750	480,109
Notes and accounts receivable, net	(18,119,552)	(13,271,268)
Receivables from related parties	(277,658)	599,712
Other receivables from related parties	13,375	106,030
Inventories	20,249,780	(29,369,975)
Other financial assets	3,383,500	(4,601,295)
Other current assets	(76,263)	(513,051)
Other noncurrent assets	-	152,555
Accounts payable	5,860,068	4,540,583
Payables to related parties	58,401	(279,857)
Salary and bonus payable	1,800,981	216,501
Accrued profit sharing bonus to employees and compensation to directors and supervisors	(332,251)	562,019
Accrued expenses and other current liabilities	(2,372,032)	(20,226,384)
Net defined benefit liability	(215,014)	(60,461)
Cash generated from operations	667,182,815	619,336,831
Income taxes paid	(52,044,071)	(45,382,523)
Net cash generated by operating activities	<u>615,138,744</u>	<u>573,954,308</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2019	2018
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial instruments at fair value through profit or loss	\$ (124,748)	\$ (310,478)
Financial assets at fair value through other comprehensive income	(257,558,240)	(96,412,786)
Financial assets at amortized cost	(313,958)	(2,294,098)
Property, plant and equipment	(460,422,150)	(315,581,881)
Intangible assets	(9,329,869)	(7,100,306)
Proceeds from disposal or redemption of:		
Financial instruments at fair value through profit or loss - debt instruments	2,418,153	487,216
Financial assets at fair value through other comprehensive income	230,444,486	86,639,322
Financial assets at amortized cost	14,349,190	2,032,442
Property, plant and equipment	287,318	181,450
Intangible assets	-	492
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	1,107	127,878
Derecognition of hedging financial instruments	(436,606)	250,538
Interest received	16,874,985	14,660,388
Proceeds from government grants - property, plant and equipment	2,565,338	-
Proceeds from government grants - land use right and others	850,623	-
Other dividends received	320,242	158,358
Dividends received from investments accounted for using equity method	1,718,954	3,262,910
Refundable deposits paid	(1,465,766)	(2,227,541)
Refundable deposits refunded	<u>1,019,294</u>	<u>1,857,188</u>
Net cash used in investing activities	<u>(458,801,647)</u>	<u>(314,268,908)</u>
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase in short-term loans	31,804,302	23,922,975
Repayment of bonds	(34,900,000)	(58,024,900)
Repayment of the principal portion of lease liabilities	(2,930,589)	-
Interest paid	(3,597,145)	(3,233,331)
Guarantee deposits received	62,203	1,668,887
Guarantee deposits refunded	(701,269)	(1,948,106)
Cash dividends	(259,303,805)	(207,443,044)
Donation from shareholders	4,006	10,141
Decrease in non-controlling interests	<u>(75,869)</u>	<u>(77,413)</u>
Net cash used in financing activities	<u>(269,638,166)</u>	<u>(245,124,791)</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2019	2018
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	\$ <u>(9,114,196)</u>	\$ <u>9,862,296</u>
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(122,415,265)	24,422,905
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	<u>577,814,601</u>	<u>553,391,696</u>
CASH AND CASH EQUIVALENTS, END OF YEAR	<u>\$ 455,399,336</u>	<u>\$ 577,814,601</u>

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

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018

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

1. GENERAL

Taiwan Semiconductor Manufacturing Company Limited (TSMC), a Republic of China (R.O.C.) corporation, was incorporated on February 21, 1987. TSMC is a dedicated foundry in the semiconductor industry which engages mainly in the manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

On September 5, 1994, TSMC's shares were listed on the Taiwan Stock Exchange (TWSE). On October 8, 1997, TSMC listed some of its shares of stock on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs).

The address of its registered office and principal place of business is No. 8, Li-Hsin Rd. 6, Hsinchu Science Park, Taiwan. The principal operating activities of TSMC's subsidiaries are described in Note 4.

2. THE AUTHORIZATION OF FINANCIAL STATEMENTS

The accompanying consolidated financial statements were approved and authorized for issue by the Board of Directors on February 11, 2020.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS

- a. Initial application of the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) (collectively, "IFRSs") endorsed and issued into effect by the Financial Supervisory Commission (FSC)

Except for the following, the initial application of the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRSs endorsed and issued into effect by the FSC did not have a significant effect on TSMC and its subsidiaries' (collectively as the "Company") accounting policies:

- 1) IFRS 16 "Leases"

IFRS 16 sets out the accounting standards for leases that supersedes IAS 17 "Leases", IFRIC 4 "Determining whether an Arrangement contains a Lease", and a number of related interpretations. Refer to Note 4 for information relating to the relevant accounting policies.

Definition of a lease

The Company applies the guidance of IFRS 16 in determining whether contracts are, or contain, a lease only to contracts entered into (or changed) on or after January 1, 2019. Contracts identified as containing a lease under IAS 17 and IFRIC 4 are not reassessed and are accounted for in accordance with the transitional provisions under IFRS 16.

The Company as lessee

Except for payments for short-term leases which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases on the consolidated balance sheets. On the consolidated statements of comprehensive income, the Company presents the depreciation expense charged on right-of-use assets separately from the interest expense accrued on lease liabilities, which is computed using the effective interest method. On the consolidated statements of cash flows, cash payments for both the principal portion and the interest portion of lease liabilities are classified within financing activities.

The Company applies IFRS 16 retrospectively with the cumulative effect of the initial application recognized at the date of initial application but does not restate comparative information.

Leases agreements classified as operating leases under IAS 17, except for short-term leases, are measured at the present value of the remaining lease payments, discounted using the lessee's incremental borrowing rate on January 1, 2019. Right-of-use assets are measured at an amount equal to the lease liabilities, adjusted by the amount of any prepaid or accrued lease payments. Right-of-use assets are subject to impairment testing under IAS 36.

The Company applied the following practical expedients to measure right-of-use assets and lease liabilities on January 1, 2019:

- a) The Company applied a single discount rate to a portfolio of leases with reasonably similar characteristics to measure lease liabilities.
- b) The Company accounted for those leases for which the lease term ends on or before December 31, 2019 as short-term leases.
- c) Except for lease payments, the Company excluded incremental costs of obtaining the lease from right-of-use assets on January 1, 2019.
- d) The Company determined lease terms (e.g. lease periods) based on the projected status on January 1, 2019, to measure lease liabilities.

The weighted average lessee's incremental borrowing rate used by the Company to calculate lease liabilities recognized on January 1, 2019 is 1.46%. The reconciliation between the lease liabilities recognized and the future minimum lease payments of non-cancellable operating lease on December 31, 2018 is presented as follows:

The future minimum lease payments of non-cancellable operating lease on December 31, 2018	\$ 20,849,585
Less: Recognition exemption for short-term leases	<u>(3,189,821)</u>
Undiscounted gross amounts on January 1, 2019	<u>\$ 17,659,764</u>
Discounted using the incremental borrowing rate on January 1, 2019	\$ 16,465,599
Add: Adjustments as a result of a different treatment of extension and purchase options	<u>3,438,016</u>
Lease liabilities recognized on January 1, 2019	<u>\$ 19,903,615</u>

The Company as lessor

Except for sublease transactions, the Company does not make any adjustments for leases in which it is a lessor, and accounts for those leases under IFRS 16 starting from January 1, 2019. On the basis of the remaining contractual terms and conditions on January 1, 2019, all of the Company's subleases are classified as operating leases.

Impact on assets, liabilities and equity on January 1, 2019

	Carrying Amount as of December 31, 2018	Adjustments Arising from Initial Application	Adjusted Carrying Amount as of January 1, 2019
Other current assets	\$ 5,406,423	\$ (118,242)	\$ 5,288,181
Right-of-use assets	-	20,082,875	20,082,875
Other noncurrent assets	1,584,647	<u>(77,171)</u>	1,507,476
Total effect on assets		<u>\$ 19,887,462</u>	
Accrued expenses and other current liabilities	61,760,619	\$ 2,627,334	64,387,953
Lease liabilities - noncurrent	-	17,269,317	17,269,317
Other noncurrent liabilities	1,950,989	<u>(9,189)</u>	1,941,800
Total effect on liabilities		<u>\$ 19,887,462</u>	
Total effect on equity		<u>\$ -</u>	

- b. Amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers for application starting from 2020 and the IFRSs issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2020

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Amendments to IFRS 3 "Definition of a Business"	January 1, 2020 (Note 1)
Amendments to IFRS 9, IAS 39 and IFRS 7 "Interest Rate Benchmark Reform"	January 1, 2020 (Note 2)
Amendments to IAS 1 and IAS 8 "Definition of Material"	January 1, 2020 (Note 3)

Note 1: The Company shall apply these amendments to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020 and to asset acquisitions that occur on or after the beginning of that period.

Note 2: The Company shall apply these amendments retrospectively for annual reporting periods beginning on or after January 1, 2020.

Note 3: The Company shall apply these amendments prospectively for annual reporting periods beginning on or after January 1, 2020.

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

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

As of the date the accompanying consolidated financial statements were authorized for issue, the Company continues in evaluating the impact on its financial position and financial performance as a result of the initial adoption of the aforementioned standards or interpretations. The related impact will be disclosed when the Company completes the evaluation.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

For the convenience of readers, the accompanying consolidated financial statements have been translated into English from the original Chinese version prepared and used in the R.O.C. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language consolidated financial statements shall prevail.

Statement of Compliance

The accompanying consolidated financial statements have been prepared in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRSs endorsed by the FSC with the effective dates (collectively, “Taiwan-IFRSs”).

Basis of Preparation

The accompanying consolidated financial statements have been prepared on the historical cost basis except for financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

Basis of Consolidation

The basis for the consolidated financial statements

The consolidated financial statements incorporate the financial statements of TSMC and entities controlled by TSMC (its subsidiaries).

Income and expenses of subsidiaries acquired or disposed of are included in the consolidated statement of comprehensive income from the effective date of acquisition and up to the effective date of disposal, as appropriate. Total comprehensive income of subsidiaries is attributed to the shareholders of the parent and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with those used by the Company.

All intra-group transactions, balances, income and expenses are eliminated in full on consolidation.

Changes in the Company’s ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Company’s interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the

fair value of the consideration paid or received is recognized directly in equity and attributed to shareholders of the parent.

When the Company loses control of a subsidiary, a gain or loss is recognized in profit or loss and is calculated as the difference between:

- a. the aggregate of the fair value of consideration received and the fair value of any retained interest at the date when control is lost; and
- b. the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interest.

The Company shall account for all amounts recognized in other comprehensive income in relation to the subsidiary on the same basis as would be required if the Company had directly disposed of the related assets and liabilities.

The fair value of any investment retained in the former subsidiary at the date when control is lost is regarded as the cost on initial recognition of an investment in an associate.

The subsidiaries in the consolidated financial statements

The detail information of the subsidiaries at the end of reporting period was as follows:

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership		Note	
				December 31, 2019	December 31, 2018		
TSMC	TSMC North America	Selling and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	100%	100%	-	
	TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	100%	100%	a)	
	TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	100%	100%	a)	
	TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	100%	100%	a)	
	TSMC Partners, Ltd. (TSMC Partners)	Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	Tortola, British Virgin Islands	100%	100%	a)	
	TSMC Global, Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	100%	100%	-	
	TSMC China Company Limited (TSMC China)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	100%	100%	-	
	TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	100%	100%	b)	
	VisEra Technologies Company Ltd. (VisEra Tech)	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	Hsin-Chu, Taiwan	87%	87%	-	
	TSMC Partners	VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	98%	98%	a)
VentureTech Alliance Fund III, L.P. (VTAF III)		Investing in new start-up technology companies	Cayman Islands	98%	98%	a)	
TSMC Solar Europe GmbH		Selling of solar related products and providing customer service	Hamburg, Germany	-	100%	a), c)	
TSMC Development, Inc. (TSMC Development)		Investing in companies involved in the manufacturing related business in the semiconductor industry	Delaware, U.S.A.	100%	100%	-	
TSMC Technology, Inc. (TSMC Technology)		Engineering support activities	Delaware, U.S.A.	100%	100%	a)	
TSMC Design Technology Canada Inc. (TSMC Canada)		Engineering support activities	Ontario, Canada	100%	100%	a)	
InveStar Semiconductor Development Fund, Inc. (ISDF)		Investing in new start-up technology companies	Cayman Islands	97%	97%	a), d)	
InveStar Semiconductor Development Fund, Inc. (II) LDC. (ISDF II)		Investing in new start-up technology companies	Cayman Islands	97%	97%	a), d)	
TSMC Development		WaferTech, LLC (WaferTech)	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	Washington, U.S.A.	100%	100%	-
VTAF III		Growth Fund Limited (Growth Fund)	Investing in new start-up technology companies	Cayman Islands	100%	100%	a)

Note a: This is an immaterial subsidiary for which the consolidated financial statements are not audited by the Company's independent auditors.

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

Note c: TSMC Solar Europe GmbH has completed the liquidation procedures in March 2019.

Note d: The subsidiary is under liquidation procedures.

Foreign Currencies

The financial statements of each individual consolidated entity were expressed in the currency which reflected its primary economic environment (functional currency). The functional currency of TSMC and presentation currency of the consolidated financial statements are both New Taiwan Dollars (NT\$). In preparing the consolidated financial statements, the operating results and financial positions of each consolidated entity are translated into NT\$.

In preparing the financial statements of each individual consolidated entity, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Such exchange differences are recognized in profit or loss in the year in which they arise. Non-monetary items measured at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising on the retranslation of non-monetary items are included in profit or loss for the year except for exchange differences arising on the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which case, the exchange differences are also recognized directly in other comprehensive income. Non-monetary items that are measured in terms of historical cost in foreign currencies are not retranslated.

For the purposes of presenting consolidated financial statements, the assets and liabilities of the Company's foreign operations are translated into NT\$ using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity (attributed to non-controlling interests as appropriate).

Classification of Current and Noncurrent Assets and Liabilities

Current assets are assets held for trading purposes and assets expected to be converted to cash, sold or consumed within one year from the end of the reporting period. Current liabilities are obligations incurred for trading purposes and obligations expected to be settled within one year from the end of the reporting period. Assets and liabilities that are not classified as current are noncurrent assets and liabilities, respectively.

Cash Equivalents

Cash equivalents, for the purpose of meeting short-term cash commitments, consist of highly liquid time deposits and investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Financial Instruments

Financial assets and liabilities shall be recognized when the Company becomes a party to the contractual provisions of the instruments.

Financial assets and liabilities are initially recognized at fair values. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial Assets

The classification of financial assets depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Regular way purchases or sales of financial assets are recognized and derecognized on a trade date or settlement date basis for which financial assets were classified in the same way, respectively. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

a. Category of financial assets and measurement

Financial assets are classified into the following categories: financial assets at FVTPL, investments in debt instruments and equity instruments at FVTOCI, and financial assets at amortized cost.

1) Financial asset at FVTPL

For certain financial assets which include debt instruments that do not meet the criteria of amortized cost or FVTOCI, it is mandatorily required to measure them at FVTPL. Any gain or loss arising from remeasurement is recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest earned on the financial asset.

2) Investments in debt instruments at FVTOCI

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of collecting contractual cash flows and selling the financial assets, are measured at FVTOCI.

Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment gains or losses on investments in debt instruments at FVTOCI are recognized in profit or loss. Other changes in the carrying amount of these debt instruments are recognized in other comprehensive income and will be reclassified to profit or loss when these debt instruments are disposed.

3) Investments in equity instruments at FVTOCI

On initial recognition, the Company may irrevocably designate investments in equity investments that is not held for trading as at FVTOCI.

Investments in equity instruments at FVTOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity.

Dividends on these investments in equity instruments at FVTOCI are recognized in profit or loss when the Company's right to receive the dividends is established, unless the Company's rights clearly represent a recovery of part of the cost of the investment.

4) Measured at amortized cost

Cash and cash equivalents, debt instrument investments, notes and accounts receivable (including related parties), other receivables and refundable deposits are measured at amortized cost.

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of holding financial assets in order to collect contractual cash flows, are measured at amortized cost.

Subsequent to initial recognition, financial assets measured at amortized cost are measured at amortized cost, which equals to carrying amount determined by the effective interest method less any impairment loss.

b. Impairment of financial assets

At the end of each reporting period, a loss allowance for expected credit loss is recognized for financial assets at amortized cost (including accounts receivable) and for investments in debt instruments that are measured at FVTOCI.

The loss allowance for accounts receivable is measured at an amount equal to lifetime expected credit losses. For financial assets at amortized cost and investments in debt instruments that are measured at FVTOCI, when the credit risk on the financial instrument has not increased significantly since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from possible default events of a financial instrument within 12 months after the reporting date. If, on the other hand, there has been a significant increase in credit risk since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from all possible default events over the expected life of a financial instrument.

The Company recognizes an impairment loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in other comprehensive income and does not reduce the carrying amount of the financial asset.

c. Derecognition of financial assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the financial asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset to another entity.

On derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. On derecognition of an investment in a debt instrument at FVTOCI, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss. However, on derecognition of an investment in an equity instrument at FVTOCI, the cumulative gain or loss that had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

Financial Liabilities and Equity Instruments

Classification as debt or equity

Debt and equity instruments issued by the Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Financial liabilities

Financial liabilities are subsequently measured either at amortized cost using effective interest method or at FVTPL.

Financial liabilities are classified as at fair value through profit or loss when the financial liability is either held for trading or is designated as at fair value through profit or loss.

Financial liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

Financial liabilities other than those held for trading purposes and designated as at FVTPL are subsequently measured at amortized cost at the end of each reporting period.

Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

Derivative Financial Instruments

Derivative financial instruments are initially recognized at fair value at the date the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative financial instrument is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

Hedge Accounting

a. Fair value hedge

The Company designates certain hedging instruments, such as interest rate futures contracts, to partially hedge against the fair value change caused by interest rates fluctuation in the Company's fixed income investments. Changes in the fair value of hedging instrument that are designated and qualify as fair value hedges are recognized in profit or loss immediately, together with any changes in the fair value of the hedged items that are attributable to the hedged risk.

b. Cash flow hedge

The Company designates certain hedging instruments, such as forward exchange contracts and foreign currency deposits, to partially hedge its foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The effective portion of changes in the fair value of hedging instruments is recognized in other comprehensive income. When the forecast transactions actually take place, the associated gains or losses that were recognized in other comprehensive income are removed from equity and included in the initial cost of the hedged items. The gains or losses from hedging instruments relating to the ineffective portion are recognized immediately in profit or loss.

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

Inventories

Inventories are stated at the lower of cost or net realizable value. Inventories are recorded at standard cost and adjusted to approximate weighted-average cost at the end of the reporting period. Net realizable value

represents the estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale.

Investments Accounted for Using Equity Method

Investments accounted for using the equity method are investments in associates.

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

The operating results and assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting. Under the equity method, an investment in an associate is initially recognized in the consolidated statements of financial position at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the associate as well as the distribution received. The Company also recognizes its share in the changes in the equities of associates.

Any excess of the cost of acquisition over the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

The Company discontinues the use of the equity method from the date when the Company ceases to have significant influence over an associate. When the Company retains an interest in the former associate, the Company measures the retained interest at fair value at that date. The difference between the carrying amount of the associate at the date the equity method was discontinued, and the fair value of any retained interest and any proceeds from disposing of a part interest in the associate is included in the determination of the gain or loss on disposal of the associate. In addition, the Company shall account for all amounts recognized in other comprehensive income in relation to that associate on the same basis as would be required if the associate had directly disposed of the related assets or liabilities. If the Company's ownership interest in an associate is reduced as a result of disposal, but the investment continues to be an associate, the Company should reclassify to profit or loss only a proportionate amount of the gain or loss previously recognized in other comprehensive income.

When the Company subscribes to additional shares in an associate at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Company's proportionate interest in the net assets of the associate. The Company records such a difference as an adjustment to investments with the corresponding amount charged or credited to capital surplus. If the Company's ownership interest is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

When a consolidated entity transacts with an associate, profits and losses resulting from the transactions with the associate are recognized in the Company's consolidated financial statements only to the extent of interests in the associate that are not owned by the Company.

Property, Plant and Equipment

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment. Costs include any incremental costs that are directly attributable to the construction or acquisition of the item of property, plant and equipment.

Property, plant and equipment in the course of construction for production, supply or administrative purposes are carried at cost, less any recognized impairment loss. Such assets are classified to the appropriate categories of property, plant and equipment when completed and ready for intended use. Depreciation of these assets, on the same basis as other identical categories of property, plant and equipment, commences when the assets are available for their intended use.

Depreciation is recognized so as to write off the cost of the assets less their residual values over their useful lives, and it is computed using the straight-line method mainly over the following estimated useful lives: land improvements - 20 years; buildings (assets used by the Company and assets subject to operating leases) - 10 to 20 years; machinery and equipment - 5 years; and office equipment - 5 years. The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimates accounted for on a prospective basis. Land is not depreciated.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the assets. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognized in profit or loss.

Leases

2019

For a contract that contains a lease component and non-lease component, the Company may elect to account for the lease and non-lease components as a single lease component.

The Company as lessor

Rental income from operating lease is recognized on a straight-line basis over the term of the lease.

The Company as lessee

Except for payments for low-value asset leases and short-term leases (leases of machinery and equipment and others) which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases at the commencement date of the lease.

Right-of-use assets are measured at cost. The cost of right-of-use assets comprises the initial measurement of lease liabilities adjusted for lease payments made at or before the commencement date, plus an estimate of costs needed to restore the underlying assets. Subsequent measurement is calculated as cost less accumulated depreciation and accumulated impairment loss and adjusted for changes in lease liabilities as a result of lease term modifications or other related factors. Right-of-use assets are presented separately in the consolidated balance sheets.

Right-of-use assets are depreciated using the straight-line method from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms. If the lease transfers ownership of the underlying assets to the Company by the end of the lease terms or if the cost of right-of-use assets reflects that the Company will exercise a purchase option, the Company depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are measured at the present value of the lease payments. Lease payments comprise fixed payments, variable lease payments which depend on an index or a rate and the exercise price of a purchase option if the Company is reasonably certain to exercise that option. The lease payments are discounted using the lessee's incremental borrowing rates.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, the Company remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. Lease liabilities are presented on a separate line in the consolidated balance sheets.

Variable lease payments that do not depend on an index or a rate are recognized as expenses in the periods in which they are incurred.

2018

Leases are classified as finance lease whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

The Company as lessor

Rental income from operating leases is recognized on a straight-line basis over the term of the lease.

The Company as lessee

Operating lease payments are recognized as an expense on a straight-line basis over the lease term.

Intangible Assets

Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

Other intangible assets

Other separately acquired intangible assets with finite useful lives are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized using the straight-line method over the following estimated useful lives: Technology license fees - the estimated life of the technology or the term of the technology transfer contract; software and system design costs - 3 years or contract period; patent and others - the economic life or contract period. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets

Goodwill

Goodwill is not amortized and instead is tested for impairment annually, or more frequently when there is an indication that the cash generating unit may be impaired. For the purpose of impairment testing, goodwill is allocated to each of the Company's cash-generating units or groups of cash-generating units that are expected to benefit from the synergies of the combination. If the recoverable amount of a cash-generating unit is less than its carrying amount, the difference is allocated first to reduce the carrying amount of any goodwill allocated to such cash generating unit and then to the other assets of the cash generating unit pro rata based on the carrying amount of each asset in the cash generating unit. Any impairment loss for goodwill is

recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

Tangible assets, right-of-use assets and other intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets (property, plant and equipment), right-of-use assets and other intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

When an impairment loss subsequently reverses, the carrying amount of the asset or a cash-generating unit is increased to the revised estimate of its recoverable amount, but the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

Guarantee Deposit

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

Revenue Recognition

The Company recognizes revenue when performance obligations are satisfied. The performance obligations are satisfied when customers obtain control of the promised goods which is generally when the goods are delivered to the customers' specified locations.

Revenue from sale of goods is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms to recognize refund liabilities, which is classified under accrued expenses and other current liabilities.

In principle, payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month of when the invoice is issued. Due to the short term nature of the receivables from sale of goods with the immaterial discounted effect, the Company measures them at the original invoice amounts without discounting.

Employee Benefits

Short-term employee benefits

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for service rendered by employees.

Retirement benefits

For defined contribution retirement benefit plans, payments to the benefit plan are recognized as an expense when the employees have rendered service entitling them to the contribution. For defined benefit retirement benefit plans, the cost of providing benefit is recognized based on actuarial calculations.

Defined benefit costs (including service cost, net interest and rereasurement) under the defined benefit retirement benefit plans are determined using the Projected Unit Credit Method. Service cost (including current service cost), and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Rereasurement, comprising actuarial gains and losses and the return on plan assets (excluding interest), is recognized in other comprehensive income in the period in which they occur. Rereasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability represents the actual deficit in the Company's defined benefit plan.

Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

Current tax

Income tax on unappropriated earnings (excluding earnings from foreign consolidated subsidiaries) is expensed in the year the shareholders approved the appropriation of earnings which is the year subsequent to the year the earnings are generated.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, net operating loss carryforwards and tax credits for research and development expenses to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered. The deferred tax assets which originally not recognized is also reviewed at the end of each reporting period and recognized to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the year in which the liability is settled or the asset is realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Current and deferred tax for the year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity, respectively.

Government Grants

Government grants are not recognized until there is reasonable assurance that the Company will comply with the conditions attaching to them and that the grants will be received.

Government grants whose primary condition is that the Company should purchase, construct or otherwise acquire noncurrent assets (mainly including land use right and depreciable assets) are recognized as a deduction from the carrying amount of the related assets and recognized as a reduced depreciation or amortization charge in profit or loss over the contract period or useful lives of the related assets. Government grants that are receivables as compensation for expenses already incurred are deducted from incurred expenses in the period in which they become receivables.

5. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY

In the application of the aforementioned Company's accounting policies, the Company is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimate is revised if the revision affects only that year, or in the year of the revision and future years if the revision affects both current and future years.

Critical Accounting Judgments

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied.

Commencement of Depreciation Related to Property, Plant and Equipment Classified as Equipment under Installation and Construction in Progress (EUI/CIP)

As described in Note 4, commencement of depreciation related to EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgements and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner.

Judgments on Lease Terms

In determining a lease term, the Company considers all facts and circumstances that create an economic incentive to exercise or not to exercise an option, including any expected changes in facts and circumstances

from the commencement date until the exercise date of the option. Main factors considered include contractual terms and conditions covered by the optional periods, and the importance of the underlying asset to the lessee's operations, etc. The lease term is reassessed if a significant change in circumstances that are within the control of the Company occurs.

Key Sources of Estimation and Uncertainty

Estimation of Sales Returns and Allowances

Sales returns and other allowance is estimated and recorded based on historical experience and in consideration of different contractual terms. The amount is deducted from revenue in the same period the related revenue is recorded. The Company periodically reviews the reasonableness of the estimates.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses estimate to determine the net realizable value of inventory at the end of each reporting period.

The Company estimates the net realizable value of inventory for normal waste, obsolescence and unmarketable items at the end of reporting period and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is determined mainly based on assumptions of future demand within a specific time horizon.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible assets, right-of-use assets and intangible assets other than goodwill, the Company determines the independent cash flows, useful lives, expected future revenue and expenses related to the specific asset groups with the consideration of the nature of semiconductor industry. Any change in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Realization of Deferred Income Tax Assets

Deferred tax assets are recognized to the extent that it is probable that future taxable profits will be available against which those deferred tax assets can be utilized. Assessment of the realization of the deferred tax assets requires subjective judgment and estimate, including the future revenue growth and profitability, tax holidays, the amount of tax credits can be utilized and feasible tax planning strategies. Any changes in the global economic environment, the industry trends and relevant laws and regulations could result in significant adjustments to the deferred tax assets.

Determination of Lessees' Incremental Borrowing Rates

In determining a lessee's incremental borrowing rate used in discounting lease payments, the Company mainly takes into account the market risk-free rates, the estimated lessee's credit spreads and secured status in a similar economic environment.

6. CASH AND CASH EQUIVALENTS

	December 31, 2019	December 31, 2018
Cash and deposits in banks	\$ 452,734,378	\$ 575,825,502
Government bonds	2,188,149	-
Commercial paper	476,809	759,499
Repurchase agreements collateralized by corporate bonds	<u>-</u>	<u>1,229,600</u>
	<u>\$ 455,399,336</u>	<u>\$ 577,814,601</u>

Deposits in banks consisted of highly liquid time deposits that were readily convertible to known amounts of cash and were subject to an insignificant risk of changes in value.

7. FINANCIAL ASSETS AND LIABILITIES AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31, 2019	December 31, 2018
<u>Financial assets</u>		
Mandatorily measured at FVTPL		
Forward exchange contracts	\$ 162,155	\$ 85,303
Convertible bonds	123,759	-
Agency mortgage-backed securities	<u>40,925</u>	<u>3,419,287</u>
	<u>\$ 326,839</u>	<u>\$ 3,504,590</u>
<u>Financial liabilities</u>		
Held for trading		
Forward exchange contracts	<u>\$ 982,349</u>	<u>\$ 40,825</u>

The Company entered into forward exchange contracts to manage exposures due to fluctuations of foreign exchange rates. These forward exchange contracts did not meet the criteria for hedge accounting. Therefore, the Company did not apply hedge accounting treatment for these forward exchange contracts.

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
<u>December 31, 2019</u>		
Sell NT\$/Buy EUR	January 2020 to June 2020	NT\$84,690,438/EUR2,509,000
Sell NT\$/Buy JPY	January 2020 to March 2020	NT\$23,737,589/JPY85,600,000
Sell US\$/Buy JPY	January 2020	US\$6,209/JPY678,000
Sell US\$/Buy RMB	January 2020	US\$497,000/RMB3,493,919
Sell US\$/Buy NT\$	January 2020 to March 2020	US\$26,000/NT\$786,989
Sell JPY/Buy US\$	January 2020 to February 2020	JPY57,471,581/US\$526,368
<u>December 31, 2018</u>		
Sell NT\$/Buy EUR	January 2019 to March 2019	NT\$18,545,854/EUR527,000
Sell NT\$/Buy JPY	January 2019 to March 2019	NT\$4,757,858/JPY17,200,000
Sell US\$/Buy EUR	January 2019	US\$495/EUR434
Sell US\$/Buy JPY	January 2019	US\$175,591/JPY19,389,014
Sell US\$/Buy RMB	January 2019	US\$318,000/RMB2,188,747
Sell US\$/Buy NT\$	January 2019 to February 2019	US\$127,000/NT\$3,908,635
Sell RMB/Buy US\$	January 2019	RMB667,539/US\$97,000

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	December 31, 2019	December 31, 2018
Investments in debt instruments at FVTOCI		
Agency bonds/Agency mortgage-backed securities	\$ 51,966,460	\$ 31,288,762
Corporate bonds	51,790,045	40,753,582
Government bonds	12,824,223	11,151,359
Asset-backed securities	10,815,849	15,670,295
Commercial paper	-	107,590
	<u>127,396,577</u>	<u>98,971,588</u>
Investments in equity instruments at FVTOCI		
Non-publicly traded equity investments	4,124,337	3,910,681
Publicly traded stocks	-	590,152
	<u>4,124,337</u>	<u>4,500,833</u>
	<u>\$ 131,520,914</u>	<u>\$ 103,472,421</u>
Current	\$ 127,396,577	\$ 99,561,740
Noncurrent	<u>4,124,337</u>	<u>3,910,681</u>
	<u>\$ 131,520,914</u>	<u>\$ 103,472,421</u>

These investments in equity instruments are held for medium to long-term purposes and therefore are accounted for as FVTOCI.

For the years ended December 31, 2019 and 2018, as the Company adjusted its investment portfolio or the non-publicly traded investee was merged, equity investments designated at FVTOCI were divested for NT\$873,470 thousand and NT\$840,605 thousand, respectively. The related other equity-unrealized gain/loss on financial assets at FVTOCI of NT\$156,770 thousand and NT\$1,193,056 thousand were transferred to increase and decrease retained earnings, respectively.

For dividends from equity investments designated as at FVTOCI recognized, please refer to Note 24. All the dividends are from investments held at the end of the reporting period.

As of December 31, 2019 and 2018, the cumulative loss allowance for expected credit loss of NT\$35,596 thousand and NT\$29,723 thousand are recognized under investments in debt instruments at FVTOCI, respectively. Refer to Note 32 for information relating to their credit risk management and expected credit loss.

9. FINANCIAL ASSETS AT AMORTIZED COST

	December 31, 2019	December 31, 2018
Corporate bonds	\$ 7,651,727	\$ 19,519,941
Commercial paper	-	2,294,098
Less: Allowance for impairment loss	<u>(2,929)</u>	<u>(8,147)</u>
	<u>\$ 7,648,798</u>	<u>\$ 21,805,892</u>
Current	\$ 299,884	\$ 14,277,615
Noncurrent	<u>7,348,914</u>	<u>7,528,277</u>
	<u>\$ 7,648,798</u>	<u>\$ 21,805,892</u>

Refer to Note 32 for information relating to credit risk management and expected credit loss for financial assets at amortized cost.

10. HEDGING FINANCIAL INSTRUMENTS

	December 31, 2019	December 31, 2018
<u>Financial assets- current</u>		
Fair value hedges		
Interest rate futures contracts	\$ 22,380	\$ -
Cash flow hedges		
Forward exchange contracts	<u>3,504</u>	<u>23,497</u>
	<u>\$ 25,884</u>	<u>\$ 23,497</u>
<u>Financial liabilities- current</u>		
Fair value hedges		
Interest rate futures contracts	\$ -	\$ 153,891
Cash flow hedges		
Forward exchange contracts	<u>1,798</u>	<u>1,941</u>
	<u>\$ 1,798</u>	<u>\$ 155,832</u>

Fair value hedge

The Company entered into interest rate futures contracts, which are used to partially hedge against the fair value changes caused by interest rates fluctuation in the Company's fixed income investments. The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%.

On the basis of economic relationships, the Company expects that the value of the interest rate futures contracts and the value of the hedged financial assets will change in opposite directions in response to movements in interest rates.

The main source of hedge ineffectiveness in these hedging relationships is the credit risk of the hedged financial assets, which is not reflected in the fair value of the interest rate futures contracts. No other sources of ineffectiveness emerged from these hedging relationships. Amount of hedge ineffectiveness recognized in profit or loss is classified under other gains and losses.

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

December 31, 2019

Hedging Instruments	Contract Amount (US\$ in Thousands)	Maturity
US treasury bonds interest rate futures contracts	US\$122,200	March 2020

Hedged Items	Asset Carrying Amount	Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	\$ 7,364,727	\$ (22,380)
<u>December 31, 2018</u>		

Hedging Instruments	Contract Amount (US\$ in Thousands)	Maturity
US treasury bonds interest rate futures contracts	US\$330,300	March 2019

Hedged Items	Asset Carrying Amount	Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	\$ 23,229,530	\$ (13,508)

The effect for the years ended December 31, 2019 and 2018 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness Years Ended December 31	
	2019	2018
Hedging Instruments		
US treasury bonds interest rate futures contracts	\$ (164,740)	\$ 11,460
Hedged Items		
Financial assets at FVTOCI	<u>177,831</u>	<u>(13,846)</u>
	<u>\$ 13,091</u>	<u>\$ (2,386)</u>

Cash flow hedge

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

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

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty's own credit risk on the fair value of forward exchange contracts and foreign currency deposits. No other sources of ineffectiveness emerged from these hedging relationships. For the years ended December 31, 2019 and 2018, refer to Note 21(d) for gain or loss arising from changes in the fair value of hedging instruments and the amount transferred to initial carrying amount of hedged items.

The following tables summarize the information relating to the hedges for foreign currency risk.

December 31, 2019

Hedging Instruments	Contract Amount (In Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	NT\$1,342,392 /EUR40,000	January 2020	\$ (3,820)

December 31, 2018

Hedging Instruments	Contract Amount (In Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	NT\$ 3,917,657 /EUR 112,000	February 2019 to April 2019	\$ 23,601

The effect for the years ended December 31, 2019 and 2018 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2019	2018
Hedging Instruments		
Forward exchange contracts	\$ (109,592)	\$ 34,563
Foreign currency deposits	<u>-</u>	<u>6,412</u>
	<u>\$ (109,592)</u>	<u>\$ 40,975</u>
Hedged Items		
Forecast transaction (capital expenditures)	<u>\$ 109,592</u>	<u>\$ (40,975)</u>

11. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2019	December 31, 2018
At amortized cost		
Notes and accounts receivable	\$ 135,978,049	\$ 125,025,575
Less: Loss allowance	<u>(325,325)</u>	<u>(7,253)</u>
	135,652,724	125,018,322
At FVTOCI	<u>3,255,865</u>	<u>3,595,069</u>
	<u>\$ 138,908,589</u>	<u>\$ 128,613,391</u>

The Company signed a contract with the bank to sell certain accounts receivable without recourse and transaction cost required. These accounts receivable are classified as at FVTOCI because they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets.

In principle, the payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month when the invoice is issued. Aside from recognizing impairment loss for credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels with consideration of factors of historical loss ratios and customers' financial conditions, competitiveness and business outlook. For accounts receivable past due over 90 days without collaterals or guarantees, the Company recognizes loss allowance at full amount.

Aging analysis of notes and accounts receivable

	December 31, 2019	December 31, 2018
Not past due	\$ 126,134,762	\$ 113,126,484
Past due		
Past due within 30 days	13,082,080	15,006,461
Past due 31-60 days	12,794	472,833
Past due 61-120 days	1,033	9,451
Past due over 121 days	3,245	5,415
Less: Loss allowance	<u>(325,325)</u>	<u>(7,253)</u>
	<u>\$ 138,908,589</u>	<u>\$ 128,613,391</u>

All of the Company's accounts receivable classified as at FVTOCI were not past due.

Movements of the loss allowance for accounts receivable

	Years Ended December 31	
	2019	2018
Balance, beginning of year	\$ 7,253	\$ 226,968
Provision (Reversal)	318,290	(219,714)
Effect of exchange rate changes	<u>(218)</u>	<u>(1)</u>
Balance, end of year	<u>\$ 325,325</u>	<u>\$ 7,253</u>

For the years ended December 31, 2019 and 2018, the changes in loss allowance were mainly due to the variations in the expected credit loss ratios and the balance of accounts receivable of different risk levels.

12. INVENTORIES

	December 31, 2019	December 31, 2018
Finished goods	\$ 8,924,541	\$ 11,329,802
Work in process	51,969,105	72,071,861
Raw materials	16,552,275	15,233,877
Supplies and spare parts	<u>5,535,275</u>	<u>4,595,436</u>
	<u>\$ 82,981,196</u>	<u>\$ 103,230,976</u>

Reversal of write-down of inventories resulting from the increase in net realizable value and write-down of inventories to net realizable value were included in the cost of revenue, as illustrated below:

	Years Ended December 31	
	2019	2018
Inventory losses (reversal of write-down of inventories)	<u>\$ (1,983,048)</u>	<u>\$ 1,259,472</u>

The aforementioned inventory losses (reversal of write-down of inventories) exclude wafer contamination losses and computer virus outbreak losses. Please refer to related losses in Note 37.

13. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	\$ 9,027,572	\$ 9,006,126	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	6,502,174	5,772,815	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	1,846,145	1,764,607	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	1,284,377	1,299,423	35%	35%
Mutual-Pak	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	New Taipei, Taiwan	38,520	22,867	28%	39%
			<u>\$ 18,698,788</u>	<u>\$ 17,865,838</u>		

As of December 31, 2019 and 2018, no investments in associates are individually material to the Company. Please refer to the consolidated statements of comprehensive income for recognition of share of both profit (loss) and other comprehensive income (loss) of associates that are not individually material.

The market prices of the investments accounted for using the equity method in publicly traded stocks calculated by the closing price at the end of the reporting period are summarized as follows. The closing price represents the quoted price in active markets, the level 1 fair value measurement.

Name of Associate	December 31, 2019	December 31, 2018
VIS	<u>\$ 36,812,923</u>	<u>\$ 27,621,298</u>
GUC	<u>\$ 11,251,774</u>	<u>\$ 9,617,699</u>
Xintec	<u>\$ 8,958,195</u>	<u>\$ 3,783,585</u>

14. PROPERTY, PLANT AND EQUIPMENT

2019

	December 31, 2019
Assets used by the Company	\$1,352,313,861
Assets subject to operating leases	<u>63,544</u>
	<u><u>\$1,352,377,405</u></u>

a. Assets used by the Company

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

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

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

b. Assets subject to operating leases

	Buildings
<u>Cost</u>	
Balance at January 1, 2019	<u>\$ 562,610</u>
Balance at December 31, 2019	<u>\$ 562,610</u>
<u>Accumulated depreciation</u>	
Balance at January 1, 2019	\$ 474,899
Additions	<u>24,167</u>
Balance at December 31, 2019	<u>\$ 499,066</u>
Carrying amounts at December 31, 2019	<u>\$ 63,544</u>

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

The maturity analysis of operating lease payments receivable for the buildings is as follows:

	December 31, 2019
Year 1	\$ 18,450
Year 2	16,992
Year 3	<u>16,992</u>
	<u>\$ 52,434</u>

2018

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Cost</u>						
Balance at January 1, 2018	\$ 3,983,243	\$ 379,134,613	\$ 2,487,752,265	\$ 42,391,516	\$ 167,353,490	\$ 3,080,615,127
Additions	-	40,396,404	247,042,281	6,773,376	5,812,340	300,024,401
Disposals or retirements	-	(410,891)	(5,972,482)	(790,793)	-	(7,174,166)
Effect of exchange rate changes	<u>28,110</u>	<u>(405,841)</u>	<u>(61,937)</u>	<u>8,180</u>	<u>(254,841)</u>	<u>(686,329)</u>
Balance at December 31, 2018	<u>\$ 4,011,353</u>	<u>\$ 418,714,285</u>	<u>\$ 2,728,760,127</u>	<u>\$ 48,382,279</u>	<u>\$ 172,910,989</u>	<u>\$ 3,372,779,033</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2018	\$ 510,498	\$ 194,446,521	\$ 1,795,448,842	\$ 27,666,944	\$ -	\$ 2,018,072,805
Additions	20,900	24,293,366	258,195,315	5,615,316	-	288,124,897
Disposals or retirements	-	(398,955)	(4,773,589)	(789,993)	-	(5,962,537)
Impairment	-	-	423,468	-	-	423,468
Effect of exchange rate changes	<u>19,177</u>	<u>33,210</u>	<u>(15,128)</u>	<u>32,862</u>	<u>-</u>	<u>70,121</u>
Balance at December 31, 2018	<u>\$ 550,575</u>	<u>\$ 218,374,142</u>	<u>\$ 2,049,278,908</u>	<u>\$ 32,525,129</u>	<u>\$ -</u>	<u>\$ 2,300,728,754</u>
Carrying amounts at December 31, 2018	<u>\$ 3,460,778</u>	<u>\$ 200,340,143</u>	<u>\$ 679,481,219</u>	<u>\$ 15,857,150</u>	<u>\$ 172,910,989</u>	<u>\$ 1,072,050,279</u>

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

For the year ended December 31, 2018, the Company recognized an impairment loss of NT\$423,468 thousand for certain machinery and equipment that was assessed to have no future use, and the recoverable amount of certain machinery and equipment was nil. Such impairment loss was recognized in other operating income and expenses.

15. LEASE ARRANGEMENTS

2019

a. Right-of-use assets

	December 31, 2019
<u>Carrying amounts</u>	
Land	\$ 14,064,036
Buildings	2,351,809
Machinery and equipment	775,809
Office equipment	<u>40,748</u>
	<u>\$ 17,232,402</u>
	Year Ended December 31, 2019
Additions to right-of-use assets	<u>\$ 1,032,985</u>
	Year Ended December 31, 2019
Depreciation of right-of-use assets	
Land	\$ 957,065
Buildings	458,772
Machinery and equipment	1,184,374
Office equipment	<u>22,453</u>
	<u>\$ 2,622,664</u>
Income from subleasing right-of-use assets (classified under other operating income and expenses, net)	<u>\$ 55,026</u>

b. Lease liabilities

	December 31, 2019
<u>Carrying amounts</u>	
Current portion (classified under accrued expenses and other current liabilities)	\$ 2,275,084
Noncurrent portion	<u>15,041,833</u>
	<u>\$ 17,316,917</u>

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2019
Land	0.67%-2.14%
Buildings	0.67%-3.88%
Machinery and equipment	3.24%
Office equipment	0.64%-3.88%

c. Material terms of right-of-use assets

The Company leases land and buildings mainly for the use of plants and offices with lease terms of 1 to 36 years. The lease contracts for land located in the R.O.C. specify that lease payments will be adjusted every 2 years on the basis of changes in announced land value prices. The Company does not have purchase options to acquire the leasehold land and buildings at the end of the lease terms.

The Company leases machinery and equipment for use in operation with lease terms of 2 years. The Company has purchase options to acquire leasehold machinery and equipment at the end of the lease terms.

d. Subleases of right-of-use assets

The Company subleases its right-of-use assets for buildings under operating leases with lease terms of 1 to 5 years.

The maturity analysis of lease payments receivable under operating subleases is as follows:

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

e. Other lease information

	Year Ended December 31, 2019
Expenses relating to short-term leases	<u>\$ 5,007,057</u>
Expenses relating to low-value asset leases	<u>\$ 492</u>
Expenses relating to variable lease payments not included in the measurement of lease liabilities	<u>\$ 195,062</u>
	Year Ended December 31, 2019
Total cash outflow for leases	<u>\$ 7,724,421</u>

2018

The Company's major operating leases are arrangements on several parcels of land, machinery and equipment and office premises.

The Company expensed the lease payments as follows:

	Year Ended December 31, 2018
Minimum lease payments	<u>\$ 4,243,091</u>

Future minimum lease payments under non-cancellable operating leases are as follows:

	December 31, 2018
Not later than 1 year	\$ 5,824,119
Later than 1 year and not later than 5 years	5,834,884
Later than 5 years	<u>9,190,582</u>
	<u>\$ 20,849,585</u>

16. INTANGIBLE ASSETS

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

(Continued)

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
<u>Cost</u>					
Balance at January 1, 2018	\$ 5,648,702	\$ 10,443,257	\$ 25,186,218	\$ 5,716,146	\$ 46,994,323
Additions	-	533,669	4,601,885	1,969,439	7,104,993
Disposals or retirements	-	-	(186,671)	(31,183)	(217,854)
Effect of exchange rate changes	146,786	(2,468)	(6,949)	2,122	139,491
Balance at December 31, 2018	<u>\$ 5,795,488</u>	<u>\$ 10,974,458</u>	<u>\$ 29,594,483</u>	<u>\$ 7,656,524</u>	<u>\$ 54,020,953</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2018	\$ -	\$ 7,694,857	\$ 20,376,693	\$ 4,747,633	\$ 32,819,183
Additions	-	1,063,616	2,835,265	522,524	4,421,405
Disposals or retirements	-	-	(186,615)	(31,183)	(217,798)
Effect of exchange rate changes	-	(2,468)	(1,845)	339	(3,974)
Balance at December 31, 2018	<u>\$ -</u>	<u>\$ 8,756,005</u>	<u>\$ 23,023,498</u>	<u>\$ 5,239,313</u>	<u>\$ 37,018,816</u>
Carrying amounts at December 31, 2018	<u>\$ 5,795,488</u>	<u>\$ 2,218,453</u>	<u>\$ 6,570,985</u>	<u>\$ 2,417,211</u>	<u>\$ 17,002,137</u>

(Concluded)

The Company's goodwill has been tested for impairment at the end of the annual reporting period and the recoverable amount is determined based on the value in use. The value in use was calculated based on the cash flow forecast from the financial budgets covering the future five-year period, and the Company used annual discount rates of 8.0% and 9.0% in its test of impairment as of December 31, 2019 and 2018, respectively, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2019 and 2018, the Company did not recognize any impairment loss on goodwill.

17. SHORT-TERM LOANS

	December 31, 2019	December 31, 2018
Unsecured loans		
Amount	<u>\$ 118,522,290</u>	<u>\$ 88,754,640</u>
Original loan content		
US\$ (in thousands)	\$ 2,370,000	\$ 2,610,000
EUR (in thousands)	1,410,000	242,000
Annual interest rate	0.01%-2.22%	0.01%-3.22%
Maturity date	Due by May 2020	Due by January 2019

18. BONDS PAYABLE

	December 31, 2019	December 31, 2018
Domestic unsecured bonds	\$ 56,900,000	\$ 91,800,000
Less: Current portion	<u>(31,800,000)</u>	<u>(34,900,000)</u>
	<u>\$ 25,100,000</u>	<u>\$ 56,900,000</u>

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
100-1	B	September 2011 to September 2018	\$ 7,500,000	1.63%	Bullet repayment; interest payable annually
100-2	B	January 2012 to January 2019	7,000,000	1.46%	The same as above
101-1	B	August 2012 to August 2019	9,000,000	1.40%	The same as above
101-2	B	September 2012 to September 2019	9,000,000	1.39%	The same as above
101-3	-	October 2012 to October 2022	4,400,000	1.53%	The same as above
101-4	A	January 2013 to January 2018	10,600,000	1.23%	The same as above
	B	January 2013 to January 2020	10,000,000	1.35%	The same as above
	C	January 2013 to January 2023	3,000,000	1.49%	The same as above
102-1	A	February 2013 to February 2018	6,200,000	1.23%	The same as above
	B	February 2013 to February 2020	11,600,000	1.38%	The same as above
	C	February 2013 to February 2023	3,600,000	1.50%	The same as above
102-2	A	July 2013 to July 2020	10,200,000	1.50%	The same as above
	B	July 2013 to July 2023	3,500,000	1.70%	The same as above
102-3	B	August 2013 to August 2019	8,500,000	1.52%	The same as above
102-4	C	September 2013 to March 2019	1,400,000	1.60%	Bullet repayment; interest payable annually (interest for the six months prior to maturity will accrue on the basis of actual days and be repayable at maturity)
	D	September 2013 to March 2021	2,600,000	1.85%	The same as above
	E	September 2013 to March 2023	5,400,000	2.05%	The same as above
	F	September 2013 to September 2023	2,600,000	2.10%	Bullet repayment; interest payable annually

The major terms of overseas unsecured bonds are as follows:

Issuance Period	Total Amount (US\$ in Thousands)	Coupon Rate	Repayment and Interest Payment
April 2013 to April 2018	US\$1,150,000	1.625%	Bullet repayment; interest payable semi-annually

19. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

The plan under the R.O.C. Labor Pension Act (the “Act”) is deemed a defined contribution plan. Pursuant to the Act, TSMC and VisEra Tech have made monthly contributions equal to 6% of each employee’s monthly salary to employees’ pension accounts. Furthermore, TSMC North America, TSMC China, TSMC Nanjing, TSMC Europe, TSMC Canada and TSMC Technology also make monthly contributions at certain percentages of the basic salary of their employees. Accordingly, the Company recognized expenses of NT\$2,609,733 thousand and NT\$2,568,945 thousand for the years ended December 31, 2019 and 2018, respectively.

b. Defined benefit plans

TSMC has defined benefit plans under the R.O.C. Labor Standards Law that provide benefits based on an employee’s length of service and average monthly salary for the six-month period prior to retirement. The Company contributes an amount equal to 2% of salaries paid each month to their respective pension funds (the Funds), which are administered by the Labor Pension Fund Supervisory Committee (the Committee) and deposited in the Committee’s name in the Bank of Taiwan. Before the end of each year, the Company assesses the balance in the Funds. If the amount of the balance in the Funds is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company is required to fund the difference in one appropriation that should be made before the end of March of the next year. The Funds are operated and managed by the government’s designated authorities; as such, the Company does not have any right to intervene in the investments of the Funds.

Amounts recognized in respect of these defined benefit plans were as follows:

	Years Ended December 31	
	2019	2018
Current service cost	\$ 135,645	\$ 137,758
Net interest expense	123,951	144,108
Components of defined benefit costs recognized in profit or loss	<u>259,596</u>	<u>281,866</u>
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(124,344)	(71,288)
Actuarial loss (gain) arising from experience adjustments	(438,009)	334,630
Actuarial gain arising from changes in demographic assumptions	(233,239)	-
Actuarial loss arising from changes in financial assumptions	<u>541,697</u>	<u>597,820</u>
Components of defined benefit costs recognized in other comprehensive income	<u>(253,895)</u>	<u>861,162</u>
Total	<u>\$ 5,701</u>	<u>\$ 1,143,028</u>

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

	Years Ended December 31	
	2019	2018
Cost of revenue	\$ 157,845	\$ 177,772
Research and development expenses	72,686	79,143
General and administrative expenses	25,063	20,591
Marketing expenses	<u>4,002</u>	<u>4,360</u>
	<u>\$ 259,596</u>	<u>\$ 281,866</u>

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

	December 31, 2019	December 31, 2018
Present value of defined benefit obligation	\$ 13,484,090	\$ 13,662,684
Fair value of plan assets	<u>(4,301,594)</u>	<u>(4,011,279)</u>
Net defined benefit liability	<u>\$ 9,182,496</u>	<u>\$ 9,651,405</u>

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

	Years Ended December 31	
	2019	2018
Balance, beginning of year	\$ 13,662,684	\$ 12,774,593
Current service cost	135,645	137,758
Interest expense	175,401	207,804
Remeasurement:		
Actuarial loss (gain) arising from experience adjustments	(438,009)	334,630
Actuarial gain arising from changes in demographic assumptions	(233,239)	-
Actuarial loss arising from changes in financial assumptions	541,697	597,820
Benefits paid from plan assets	(344,131)	(274,326)
Benefits paid directly by the Company	<u>(15,958)</u>	<u>(115,595)</u>
Balance, end of year	<u>\$ 13,484,090</u>	<u>\$ 13,662,684</u>

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

	Years Ended December 31	
	2019	2018
Balance, beginning of year	\$ 4,011,279	\$ 3,923,889
Interest income	51,450	63,696
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	124,344	71,288
Contributions from employer	458,652	226,732
Benefits paid from plan assets	<u>(344,131)</u>	<u>(274,326)</u>
Balance, end of year	<u>\$ 4,301,594</u>	<u>\$ 4,011,279</u>

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

	December 31, 2019	December 31, 2018
Cash	\$ 713,204	\$ 756,126
Equity instruments	2,313,828	2,148,040
Debt instruments	<u>1,274,562</u>	<u>1,107,113</u>
	<u>\$ 4,301,594</u>	<u>\$ 4,011,279</u>

The actuarial valuations of the present value of the defined benefit obligation were carried out by qualified actuaries. The principal assumptions of the actuarial valuation were as follows:

	Measurement Date	
	December 31, 2019	December 31, 2018
Discount rate	0.90%	1.30%
Future salary increase rate	3.00%	3.00%

Through the defined benefit plans under the R.O.C. Labor Standards Law, the Company is exposed to the following risks:

- 1) Investment risk: The pension funds are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the government's designated authorities or under the mandated management. However, under the R.O.C. Labor Standards Law, the rate of return on assets shall not be less than the average interest rate on a two-year time deposit published by the local banks and the government is responsible for any shortfall in the event that the rate of return is less than the required rate of return.
- 2) Interest risk: A decrease in the government bond interest rate will increase the present value of the defined benefit obligation; however, this will be partially offset by an increase in the return on the debt investments of the plan assets.

Assuming a hypothetical decrease in interest rate at the end of the reporting period contributed to a decrease of 0.5% in the discount rate and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT\$724,963 thousand and NT\$921,750 thousand as of December 31, 2019 and 2018, respectively.

- 3) Salary risk: The present value of the defined benefit obligation is calculated by reference to the future salaries of plan participants. As such, an increase in the salary of the plan participants will increase the present value of the defined benefit obligation.

Assuming the expected salary rate increases by 0.5% at the end of the reporting period and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT\$706,502 thousand and NT\$901,629 thousand as of December 31, 2019 and 2018, respectively.

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

Furthermore, in presenting the above sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation liability.

The Company expects to make contributions of NT\$230,864 thousand to the defined benefit plans in the next year starting from December 31, 2019. The weighted average duration of the defined benefit obligation is 10 years.

20. GUARANTEE DEPOSITS

	December 31, 2019	December 31, 2018
Capacity guarantee	\$ 1,499,400	\$ 9,289,628
Receivables guarantee	-	653,686
Others	<u>230,481</u>	<u>245,731</u>
	<u>\$ 1,729,881</u>	<u>\$ 10,189,045</u>
Current portion (classified under accrued expenses and other current liabilities)	\$ 1,552,977	\$ 6,835,667
Noncurrent portion	<u>176,904</u>	<u>3,353,378</u>
	<u>\$ 1,729,881</u>	<u>\$ 10,189,045</u>

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

21. EQUITY

a. Capital stock

	December 31, 2019	December 31, 2018
Authorized shares (in thousands)	<u>28,050,000</u>	<u>28,050,000</u>
Authorized capital	<u>\$ 280,500,000</u>	<u>\$ 280,500,000</u>
Issued and paid shares (in thousands)	<u>25,930,380</u>	<u>25,930,380</u>
Issued capital	<u>\$ 259,303,805</u>	<u>\$ 259,303,805</u>

A holder of issued common shares with par value of NT\$10 per share is entitled to vote and to receive dividends.

The authorized shares include 500,000 thousand shares allocated for the exercise of employee stock options.

As of December 31, 2019, 1,065,122 thousand ADSs of TSMC were traded on the NYSE. The number of common shares represented by the ADSs was 5,325,610 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2019	December 31, 2018
Additional paid-in capital	\$ 24,184,939	\$ 24,184,939
From merger	22,804,510	22,804,510
From convertible bonds	8,892,847	8,892,847
From share of changes in equities of subsidiaries	121,843	121,473
From share of changes in equities of associates	302,234	282,820
Donations	<u>33,336</u>	<u>29,343</u>
	<u>\$ 56,339,709</u>	<u>\$ 56,315,932</u>

Under the relevant laws, the capital surplus generated from donations and the excess of the issuance price over the par value of capital stock (including the stock issued for new capital, mergers and convertible bonds) may be used to offset a deficit; in addition, when the Company has no deficit, such capital surplus may be distributed as cash dividends or stock dividends up to a certain percentage of TSMC's paid-in capital. The capital surplus from share of changes in equities of subsidiaries and associates and dividend of a claim extinguished by a prescription may be used to offset a deficit; however, when generated from issuance of restricted shares for employees, such capital surplus may not be used for any purpose.

c. Retained earnings and dividend policy

The amendments to TSMC's Articles of Incorporation had been approved by TSMC's shareholders in its meeting held on June 5, 2019, which stipulate that earnings distribution may be made on a quarterly basis after the close of each quarter. Distribution of earnings by way of cash dividends should be approved by TSMC's Board of Directors and reported to TSMC's shareholders in its meeting.

TSMC's amended Articles of Incorporation provide that, when allocating earnings, TSMC shall first estimate and reserve the taxes to be paid, offset its losses, set aside a legal capital reserve at 10% of the remaining earnings (until the accumulated legal capital reserve equals TSMC's paid-in capital), then set aside a special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge. Any balance left over shall be allocated according to relevant laws and the TSMC's Articles of Incorporation.

TSMC's Articles of Incorporation also provide that profits of TSMC may be distributed by way of cash dividend and/or stock dividend. However, distribution of earnings shall be made preferably by way of cash dividend. Distribution of earnings may also be made by way of stock dividend, provided that the ratio for stock dividend shall not exceed 50% of the total distribution.

The reserve may be used to offset a deficit, or be distributed as dividends in cash or stocks for the portion in excess of 25% of the paid-in capital if the Company incurs no loss.

Pursuant to existing regulations, the Company is required to set aside additional special capital reserve equivalent to the net debit balance of the other components of stockholders' equity, such as the accumulated balance of foreign currency translation reserve, unrealized valuation gain or loss from fair value through other comprehensive income financial assets, unrealized valuation gain or loss from available-for-sale financial assets, gain or loss from changes in fair value of hedging instruments in cash flow hedges, etc. For the subsequent decrease in the deduction amount to stockholders' equity, any special reserve appropriated may be reversed to the extent that the net debit balance reverses.

The appropriations of 2018 and 2017 earnings have been approved by TSMC's shareholders in its meetings held on June 5, 2019 and June 5, 2018, respectively. The appropriations and cash dividends per share were as follows:

	Appropriation of Earnings		Cash Dividends Per Share (NT\$)	
	For Fiscal Year 2018	For Fiscal Year 2017	For Fiscal Year 2018	For Fiscal Year 2017
Legal capital reserve	<u>\$ 35,113,088</u>	<u>\$ 34,311,148</u>		
Special capital reserve	<u>\$ (11,459,458)</u>	<u>\$ 26,907,527</u>		
Cash dividends to shareholders	<u>\$207,443,044</u>	<u>\$207,443,044</u>	\$8.0	\$8.0

The appropriations of 2019 earnings for each quarter have been approved by TSMC's Board of Directors in its meeting. The appropriations and cash dividends per share were as follows:

Resolution Date of TSMC's Board of Directors in its meeting	Fourth Quarter of 2019 February 11, 2020	Third Quarter of 2019 November 12, 2019	Second Quarter of 2019 August 13, 2019	First Quarter of 2019 June 5, 2019
Special capital reserve	<u>\$ 16,893,073</u>	<u>\$ 3,289,166</u>	<u>\$ (3,338,190)</u>	<u>\$ (4,723,939)</u>
Cash dividends to shareholders	<u>\$ 64,825,951</u>	<u>\$ 64,825,951</u>	<u>\$ 64,825,951</u>	<u>\$ 51,860,761</u>
Cash dividends per share (NT\$)	<u>\$ 2.5</u>	<u>\$ 2.5</u>	<u>\$ 2.5</u>	<u>\$ 2.0</u>

d. Others

Changes in others were as follows:

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

	Year Ended December 31, 2018				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	\$ (26,697,680)	\$ (524,915)	\$ 4,226	\$ (10,290)	\$ (27,228,659)
Exchange differences arising on translation of foreign operations	14,562,073	-	-	-	14,562,073
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	(3,311,621)	-	-	(3,311,621)
Debt instruments	-	(1,858,054)	-	-	(1,858,054)
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	1,193,056	-	-	1,193,056
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	989,138	-	-	989,138
Loss allowance adjustments from debt instruments	-	(1,990)	-	-	(1,990)
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	40,975	-	40,975
Transferred to initial carrying amount of hedged items	-	-	(22,162)	-	(22,162)
Share of other comprehensive income (loss) of associates	93,260	(6,766)	-	-	86,494
Share of unearned stock-based employee compensation of associates	-	-	-	8,447	8,447
Income tax effect	-	91,828	562	-	92,390
Balance, end of year	<u>\$ (12,042,347)</u>	<u>\$ (3,429,324)</u>	<u>\$ 23,601</u>	<u>\$ (1,843)</u>	<u>\$ (15,449,913)</u>

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

22. NET REVENUE

a. Disaggregation of revenue from contracts with customers

Product	Years Ended December 31	
	2019	2018
Wafer	\$ 927,317,351	\$ 911,296,364
Others	<u>142,668,097</u>	<u>120,177,193</u>
	<u>\$ 1,069,985,448</u>	<u>\$ 1,031,473,557</u>

Geography	Years Ended December 31	
	2019	2018
Taiwan	\$ 84,255,256	\$ 78,260,773
United States	634,713,043	632,821,464
China	208,101,401	175,794,228
Europe, the Middle East and Africa	67,568,157	71,068,438
Japan	57,468,605	58,125,879
Others	<u>17,878,986</u>	<u>15,402,775</u>
	<u>\$ 1,069,985,448</u>	<u>\$ 1,031,473,557</u>

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

Platform	Years Ended December 31	
	2019	2018
Smartphone	\$ 523,612,863	\$ 466,452,280
High Performance Computing	315,822,311	341,910,195
Internet of Things	86,342,707	65,091,314
Automotive	47,914,518	51,709,787
Digital Consumer Electronics	53,733,395	58,470,179
Others	<u>42,559,654</u>	<u>47,839,802</u>
	<u>\$1,069,985,448</u>	<u>\$1,031,473,557</u>

Resolution	Years Ended December 31	
	2019	2018
7-nanometer	\$ 249,548,139	\$ 81,680,746
10-nanometer	23,266,355	96,989,486
16-nanometer	186,700,858	187,370,567
20-nanometer	9,535,831	23,618,466
28-nanometer	149,578,719	178,440,396
40/45-nanometer	93,366,285	101,801,017
65-nanometer	69,250,008	76,122,259
90-nanometer	25,624,251	36,652,061
0.11/0.13 micron	22,947,287	20,677,658
0.15/0.18 micron	77,564,492	81,182,646
0.25 micron and above	<u>19,935,126</u>	<u>26,761,062</u>
Wafer revenue	<u>\$ 927,317,351</u>	<u>\$ 911,296,364</u>

Starting the first quarter of 2019, the Company reported its net revenue breakdown by platform, instead of by application. The Company believes this change better represents the Company's results.

Commencing in 2018, the Company began to break down the net revenue by product, by geography, by resolution and by customer based on a new method which associates most estimated sales returns and allowances with individual sales transactions, as opposed to the previous method which allocated sales returns and allowances based on the aforementioned gross revenue. The Company believes the new method provides a more relevant breakdown than the previous one.

b. Contract balances

	December 31, 2019	December 31, 2018	January 1, 2018
Contract liabilities (classified under accrued expenses and other current liabilities)	<u>\$ 6,784,323</u>	<u>\$ 4,684,024</u>	<u>\$ 32,434,829</u>

The changes in the contract liability balances primarily result from the timing difference between the satisfaction of performance obligation and the customer's payment.

The Company recognized revenue from the beginning balance of contract liability, which amounted to NT\$3,876,603 thousand and NT\$31,769,970 thousand for the years ended December 31, 2019 and 2018, respectively.

c. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms, which amounted to NT\$36,211,421 thousand and NT\$55,405,973 thousand for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019 and 2018, the aforementioned refund liabilities amounted to NT\$19,620,159 thousand and NT\$22,672,634 thousand (classified under accrued expenses and other current liabilities), respectively.

23. OTHER OPERATING INCOME AND EXPENSES, NET

	Years Ended December 31	
	2019	2018
Loss on disposal or retirement of property, plant and equipment, net	\$ (949,965)	\$ (1,005,644)
Reversal of impairment loss (impairment loss) on property, plant and equipment	301,384	(423,468)
Others	<u>152,357</u>	<u>(672,337)</u>
	<u>\$ (496,224)</u>	<u>\$ (2,101,449)</u>

24. OTHER INCOME

	Years Ended December 31	
	2019	2018
Interest income		
Bank deposits	\$ 11,454,032	\$ 10,310,738
Financial assets at FVTPL	339,480	382,673
Financial assets at FVTOCI	3,476,192	3,078,604
Financial assets at amortized cost	<u>919,670</u>	<u>922,441</u>
	16,189,374	14,694,456
Dividend income	<u>417,295</u>	<u>158,358</u>
	<u>\$ 16,606,669</u>	<u>\$ 14,852,814</u>

25. FINANCE COSTS

	Years Ended December 31	
	2019	2018
Interest expense		
Bank loans	\$ 1,869,335	\$ 1,417,287
Corporate bonds	1,139,935	1,633,775
Lease liabilities	240,927	-
Others	<u>650</u>	<u>161</u>
	<u>\$ 3,250,847</u>	<u>\$ 3,051,223</u>

26. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2019	2018
Gain (loss) on disposal of financial assets, net		
Investments in debt instruments at FVTOCI	\$ 537,835	\$ (989,138)
Loss on disposal of subsidiaries	(4,598)	-
Loss on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	(2,360,699)	(2,293,895)
Gain (loss) arising from fair value hedges, net	13,091	(2,386)
The reversal (accrual) of expected credit loss of financial assets		
Investments in debt instruments at FVTOCI	(6,879)	1,990
Financial assets at amortized cost	5,165	393
Other gains (losses), net	<u>665,070</u>	<u>(127,768)</u>
	<u>\$ (1,151,015)</u>	<u>\$ (3,410,804)</u>

27. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2019	2018
Current income tax expense		
Current tax expense recognized in the current year	\$ 45,411,178	\$ 51,710,319
Income tax adjustments on prior years	196,882	(989,984)
Other income tax adjustments	<u>(41,465)</u>	<u>152,884</u>
	<u>45,566,595</u>	<u>50,873,219</u>
Deferred income tax benefit		
Effect of tax rate changes	-	(1,474,808)
The origination and reversal of temporary differences	<u>(1,065,068)</u>	<u>(3,072,554)</u>
	<u>(1,065,068)</u>	<u>(4,547,362)</u>
Income tax expense recognized in profit or loss	<u>\$ 44,501,527</u>	<u>\$ 46,325,857</u>

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

	Years Ended December 31	
	2019	2018
Income before tax	<u>\$ 389,845,336</u>	<u>\$ 397,510,263</u>
Income tax expense at the statutory rate	\$ 79,053,188	\$ 80,865,915
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	(4,180,168)	2,539,966
Tax-exempt income	(39,808,121)	(54,543,521)
Additional income tax under the Alternative Minimum Tax Act	10,367,916	21,455,854
Additional income tax on unappropriated earnings	5,903,794	7,420,479

(Continued)

	Years Ended December 31	
	2019	2018
Effect of tax rate changes on deferred income tax	\$ -	\$ (1,474,808)
The origination and reversal of temporary differences	(1,065,068)	(3,072,554)
Income tax credits	<u>(5,925,431)</u>	<u>(6,028,374)</u>
	44,346,110	47,162,957
Income tax adjustments on prior years	196,882	(989,984)
Other income tax adjustments	<u>(41,465)</u>	<u>152,884</u>
Income tax expense recognized in profit or loss	<u>\$ 44,501,527</u>	<u>\$ 46,325,857</u> (Concluded)

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

In 2018, the Income Tax Law in the R.O.C. was amended and, starting from 2018, the corporate income tax rate was adjusted from 17% to 20%. In addition, the tax rate for 2018 unappropriated earnings was reduced from 10% to 5%.

For other jurisdictions, taxes are calculated using the applicable tax rate for each individual jurisdiction.

b. Income tax expense recognized in other comprehensive income

	Years Ended December 31	
	2019	2018
Deferred income tax benefit (expense)		
Related to remeasurement of defined benefit obligation	\$ (30,468)	\$ 103,339
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	9,476	91,828
Related to gain/loss on cash flow hedges	<u>-</u>	<u>562</u>
	<u>\$ (20,992)</u>	<u>\$ 195,729</u>

c. Deferred income tax balance

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

	December 31, 2019	December 31, 2018
<u>Deferred income tax assets</u>		
Temporary differences		
Depreciation	\$ 13,547,220	\$ 11,839,221
Refund liability	2,150,352	2,594,003
Net defined benefit liability	1,016,248	1,084,874
Unrealized loss on inventories	469,430	750,995
Deferred compensation cost	323,093	271,711
Investments in equity instruments at FVTOCI	65,740	56,191
Others	<u>356,275</u>	<u>209,392</u>
	<u>\$ 17,928,358</u>	<u>\$ 16,806,387</u> (Continued)

**December 31,
2019** **December 31,
2018**

Deferred income tax liabilities

Temporary differences
Unrealized exchange gains
Others

	\$ (333,606)	\$ (61,677)
	(10,787)	(171,607)
	\$ (344,393)	\$ (233,284)

(Concluded)

Year Ended December 31, 2019

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

Deferred income tax liabilities

Temporary differences
Unrealized exchange gains
Others

	\$ (61,677)	\$ (271,929)	\$ -	\$ -	\$ (333,606)
	(171,607)	160,820	-	-	(10,787)
	\$ (233,284)	\$ (111,109)	\$ -	\$ -	\$ (344,393)

Year Ended December 31, 2018

	Balance, Beginning of Year	Recognized in			Balance, End of Year
		Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	
<u>Deferred income tax assets</u>					
Temporary differences					
Depreciation	\$ 8,401,266	\$ 3,430,421	\$ -	\$ 7,534	\$ 11,839,221
Refund liability	1,637,713	954,976	-	1,314	2,594,003
Net defined benefit liability	975,324	6,211	103,339	-	1,084,874
Unrealized loss on inventories	629,442	120,644	-	909	750,995
Deferred compensation cost	266,521	(4,718)	-	9,908	271,711
Investments in equity instruments at FVTOCI	-	-	56,191	-	56,191
Others	195,197	7,106	-	7,089	209,392
	\$ 12,105,463	\$ 4,514,640	\$ 159,530	\$ 26,754	\$ 16,806,387

Deferred income tax liabilities

Temporary differences
Unrealized exchange gains
Investments in equity instruments
at FVTOCI
Others

	\$ (169,480)	\$ 107,803	\$ -	\$ -	\$ (61,677)
	(95,421)	-	95,421	-	-
	(37,304)	(75,081)	(59,222)	-	(171,607)
	\$ (302,205)	\$ 32,722	\$ 36,199	\$ -	\$ (233,284)

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

As of December 31, 2019 and 2018, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$33,445,504 thousand and NT\$20,060,918 thousand, respectively.

- e. Unused tax-exemption information

As of December 31, 2019, the profits generated from the following projects of TSMC are exempt from income tax for a five-year period:

	Tax-exemption Period
Construction and expansion of 2009 by TSMC	2018 to 2022

- f. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2019 and 2018, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT\$131,085,673 thousand and NT\$112,893,001 thousand, respectively.

- g. Income tax examination

The tax authorities have examined income tax returns of TSMC through 2017. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

28. EARNINGS PER SHARE

	Years Ended December 31	
	2019	2018
Basic EPS	<u>\$ 13.32</u>	<u>\$ 13.54</u>
Diluted EPS	<u>\$ 13.32</u>	<u>\$ 13.54</u>

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT\$)
<u>Year Ended December 31, 2019</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 345,263,668</u>	<u>25,930,380</u>	<u>\$ 13.32</u>
<u>Year Ended December 31, 2018</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 351,130,884</u>	<u>25,930,380</u>	<u>\$ 13.54</u>

29. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2019	2018
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	\$ 256,530,964	\$ 264,804,741
Recognized in operating expenses	24,856,701	23,292,299
Recognized in other operating income and expenses	<u>24,167</u>	<u>27,857</u>
	<u>\$ 281,411,832</u>	<u>\$ 288,124,897</u>
b. Amortization of intangible assets		
Recognized in cost of revenue	\$ 3,069,901	\$ 2,073,480
Recognized in operating expenses	<u>2,402,508</u>	<u>2,347,925</u>
	<u>\$ 5,472,409</u>	<u>\$ 4,421,405</u>
c. Research and development costs expensed as incurred	<u>\$ 91,418,746</u>	<u>\$ 85,895,569</u>
d. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	\$ 2,609,733	\$ 2,568,945
Defined benefit plans	<u>259,596</u>	<u>281,866</u>
	2,869,329	2,850,811
Other employee benefits	<u>107,115,281</u>	<u>105,364,132</u>
	<u>\$ 109,984,610</u>	<u>\$ 108,214,943</u>
Employee benefits expense summarized by function		
Recognized in cost of revenue	\$ 64,701,955	\$ 63,597,704
Recognized in operating expenses	<u>45,282,655</u>	<u>44,617,239</u>
	<u>\$ 109,984,610</u>	<u>\$ 108,214,943</u>

According to TSMC's Articles of Incorporation, TSMC shall allocate compensation to directors and profit sharing bonus to employees of TSMC not more than 0.3% and not less than 1% of annual profits during the period, respectively.

TSMC accrued profit sharing bonus to employees based on a percentage of net income before income tax, profit sharing bonus to employees and compensation to directors during the period, which amounted to NT\$23,165,745 thousand and NT\$23,570,040 thousand for the years ended December 31, 2019 and 2018, respectively; compensation to directors was expensed based on estimated amount payable. If there is a change in the proposed amounts after the annual consolidated financial statements are authorized for issue, the differences are recorded as a change in accounting estimate.

TSMC's profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,165,745 thousand and NT\$360,404 thousand in cash for 2019, respectively, profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,570,040 thousand and NT\$349,272 thousand in cash for 2018, respectively, and profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,019,082 thousand and NT\$368,919 thousand in cash for 2017, respectively, had been approved by the Board of Directors of TSMC held on February 11, 2020, February 19, 2019 and February 13, 2018,

respectively. There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2019, 2018 and 2017, respectively.

The information about the appropriations of TSMC's profit sharing bonus to employees and compensation to directors is available at the Market Observation Post System website.

30. CASH FLOW INFORMATION

a. Non-cash transactions

	Years Ended December 31	
	2019	2018
Additions of property, plant and equipment	\$ 564,283,073	\$ 300,024,401
Changes in other financial assets	472,504	1,555,387
Exchange of assets	(3,287,138)	-
Changes in payables to contractors and equipment suppliers	(100,964,013)	13,979,931
Transferred to initial carrying amount of hedged items	<u>(82,276)</u>	<u>22,162</u>
Payments for acquisition of property, plant and equipment	<u>\$ 460,422,150</u>	<u>\$ 315,581,881</u>
Acquisition of financial assets at FVTOCI	\$ 257,824,493	\$ 100,759,582
Changes in other financial assets	-	(23,775)
Changes in accrued expenses and other current liabilities	<u>(266,253)</u>	<u>(4,323,021)</u>
Payments for acquisition of financial assets at FVTOCI	<u>\$ 257,558,240</u>	<u>\$ 96,412,786</u>
Disposal of financial assets at FVTOCI	\$ 229,525,134	\$ 90,545,153
Changes in other financial assets	<u>919,352</u>	<u>(3,905,831)</u>
Proceeds from disposal of financial assets at FVTOCI	<u>\$ 230,444,486</u>	<u>\$ 86,639,322</u>

b. Reconciliation of liabilities arising from financing activities

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

	Balance as of January 1, 2018	Financing Cash Flow	Non-cash changes		Balance as of December 31, 2018
			Foreign Exchange Movement	Other Changes (Note)	
Short-term loans	\$ 63,766,850	\$ 23,922,975	\$ 1,064,815	\$ -	\$ 88,754,640
Guarantee deposits	16,080,619	(279,219)	423,545	(6,035,900)	10,189,045
Bonds payable	<u>150,201,122</u>	<u>(58,024,900)</u>	<u>(382,878)</u>	<u>6,656</u>	<u>91,800,000</u>
Total	<u>\$ 230,048,591</u>	<u>\$ (34,381,144)</u>	<u>\$ 1,105,482</u>	<u>\$ (6,029,244)</u>	<u>\$ 190,743,685</u>

Note: Other changes include guarantee deposits refunded to customers by offsetting related accounts receivable, financial cost of lease liabilities and amortization of bonds payable.

31. CAPITAL MANAGEMENT

The Company requires significant amounts of capital to build and expand its production facilities and acquire additional equipment. In consideration of the industry dynamics, the Company manages its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, capital asset purchases, research and development activities, dividend payments, debt service requirements and other business requirements associated with its existing operations over the next 12 months.

32. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2019	December 31, 2018
Financial assets		
FVTPL (Note 1)	\$ 326,839	\$ 3,504,590
FVTOCI (Note 2)	134,776,779	107,067,490
Hedging financial assets	25,884	23,497
Amortized cost (Note 3)	<u>612,740,640</u>	<u>745,585,774</u>
	<u>\$ 747,870,142</u>	<u>\$ 856,181,351</u>
Financial liabilities		
FVTPL (Note 4)	\$ 982,349	\$ 40,825
Hedging financial liabilities	1,798	155,832
Amortized cost (Note 5)	<u>533,581,640</u>	<u>318,475,704</u>
	<u>\$ 534,565,787</u>	<u>\$ 318,672,361</u>

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable (net), equity and debt investments.

Note 3: Including cash and cash equivalents, financial assets at amortized cost, notes and accounts receivable (including related parties), other receivables and refundable deposits.

Note 4: Held for trading.

Note 5: Including short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, cash dividends payable, accrued expenses and other current liabilities, bonds payable and guarantee deposits.

b. Financial risk management objectives

The Company seeks to ensure that sufficient cost-efficient funding is readily available when needed. The Company manages its exposure to foreign currency risk, interest rate risk, equity price risk, credit risk and liquidity risk with the objective to reduce the potentially adverse effects the market uncertainties may have on its financial performance.

The plans for material treasury activities are reviewed by Audit Committees and/or Board of Directors in accordance with procedures required by relevant regulations or internal controls. During the implementation of such plans, the corporate treasury function must comply with certain treasury procedures that provide guiding principles for overall financial risk management and segregation of duties.

c. Market risk

The Company is exposed to the financial market risks, primarily changes in foreign currency exchange rates, interest rates and equity investment prices. A portion of these risks is hedged.

Foreign currency risk

The majority of the Company's revenue is denominated in U.S. dollar and over one-half of its capital expenditures are denominated in currencies other than NT dollar, primarily in U.S. dollar, Japanese yen and Euro. As a result, any significant fluctuations to its disadvantage in exchange rate of NT dollar against such currencies, in particular a weakening of U.S. dollar against NT dollar, would have an adverse impact on the revenue and operating profit as expressed in NT dollar. The Company uses foreign currency derivative contracts, such as currency forwards or currency swaps, to protect against currency exchange rate risks associated with non-NT dollar-denominated assets and liabilities and certain forecasted transactions. The Company utilizes U.S. dollar denominated debt to partially offset currency risk arising from U.S. dollar denominated receivables for balance sheet hedges. These hedges reduce, but do not entirely eliminate, the financial impact on the Company caused by the effect of foreign currency exchange rate movements on the assets and liabilities.

Based on a sensitivity analysis performed on the Company's total monetary assets and liabilities for the years ended December 31, 2019 and 2018, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT\$2,137,338 thousand and NT\$506,369 thousand, respectively, and decreased its other comprehensive income by NT\$107,690 thousand and NT\$315,571 thousand, respectively, after taking into account hedges and offsetting positions.

Interest rate risk

The Company is exposed to interest rate risks primarily related to its investment portfolio and bank loans. Changes in interest rates affect the interest earned on the Company's cash and cash equivalents as well as fixed income securities and the fair value of those securities as well as the interest paid on its bank loans. Because all of the Company's bonds issued are fixed-rate and measured at amortized cost, changes in interest rates would not affect the cash flows and the fair value.

The Company's cash and cash equivalents as well as fixed income investments in both fixed- and floating-rate securities carry a degree of interest rate risk. The majority of the Company's fixed income investments are fixed-rate securities and classified as FVTOCI, and may have their fair value adversely affected due to a rise in interest rates, while cash and cash equivalents as well as floating-rate securities may generate less interest income than predicted if interest rates fall. The Company has entered, and may enter in the future, into interest rate futures to partially hedge the fair value change in its fixed income investments. However, these hedges can offset only a small portion of the financial impact from movements in interest rates.

Based on a sensitivity analysis performed on fixed income investments at the end of the reporting period, an interest rate increase of 100 basis points (1.00%) across all maturities would have decreased the fair value by NT\$3,517,424 thousand and NT\$2,697,715 thousand for the years ended December 31, 2019 and 2018, respectively. The decreases were composed of NT\$3,516,604 thousand decrease and NT\$2,449,954 thousand decrease in other comprehensive income, and NT\$820 thousand decrease and NT\$247,761 thousand decrease in net income for the years ended December 31, 2019 and 2018, respectively.

As for the Company's bank loans, all of them are floating-rate loans. A rise in interest rates may incur higher interest expense than predicted.

Other price risk

The Company is exposed to equity price risk arising from financial assets at FVTOCI.

Assuming a hypothetical decrease of 10% in prices of the equity investments at the end of the reporting period for the years ended December 31, 2019 and 2018, the other comprehensive income would have decreased by NT\$401,879 thousand and NT\$427,101 thousand, respectively.

d. Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial losses to the Company. The Company is exposed to credit risks from operating activities, primarily trade receivables, and from investing activities, primarily deposits, fixed-income investments and other financial instruments with banks. Credit risk is managed separately for business related and financial related exposures. As of the end of the reporting period, the Company's maximum credit risk exposure is equal to the carrying amount of financial assets.

Business related credit risk

The Company's trade receivables are from its customers worldwide. The majority of the Company's outstanding trade receivables are not covered by collaterals or guarantees. While the Company has procedures to monitor and manage credit risk exposure on trade receivables, there is no assurance such procedures will effectively eliminate losses resulting from its credit risk. This risk is heightened during periods when economic conditions worsen.

As of December 31, 2019 and 2018, the Company's ten largest customers accounted for 79% of accounts receivable in both years. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

The Company mitigates its financial credit risk by selecting counterparties with investment-grade credit ratings and by limiting the exposure to any individual counterparty. The Company regularly monitors and reviews the limit applied to counterparties and adjusts the limit according to market conditions and the credit standing of the counterparties.

The risk management of expected credit loss for financial assets at amortized cost and investments in debt instruments at FVTOCI is as follows:

The Company only invests in debt instruments that are rated as investment grade or higher. The credit rating information is supplied by external rating agencies. The Company assesses whether there has been a significant increase in credit risk since initial recognition by reviewing changes in external credit ratings, financial market conditions and material information of the bond issuers.

The Company assesses the 12-month expected credit loss and lifetime expected credit loss based on the probability of default and loss given default provided by external credit rating agencies. The current credit risk assessment policies are as follows:

Category	Description	Basis for Recognizing Expected Credit Loss	Expected Credit Loss Ratio
Performing	Credit rating on trade date and valuation date: (1) Within investment grade (2) Between BB+ and BB-	12 months expected credit loss	0-0.1%
Doubtful	Credit rating on trade date and valuation date: (1) From investment grade to non-investment grade (2) From BB+~BB- to B+~CCC-	Lifetime expected credit loss-not credit impaired	-
In default	Credit rating CC or below	Lifetime expected credit loss-credit impaired	-
Write-off	There is evidence indicating that the debtor is in severe financial difficulty and the Company has no realistic prospect of recovery	Amount is written off	-

For the years ended December 31, 2019 and 2018, the expected credit loss increases NT\$655 thousand and decreases NT\$1,040 thousand, respectively. The changes are mainly due to investment portfolio adjustment.

e. Liquidity risk management

The objective of liquidity risk management is to ensure the Company has sufficient liquidity to fund its business operations over the next 12 months. The Company manages its liquidity risk by maintaining adequate cash and cash equivalent, debt investment at FVTPL, financial assets at FVTOCI-current, and financial assets amortized at cost-current.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments, including principal and interest.

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
<u>December 31, 2019</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 118,562,641	\$ -	\$ -	\$ -	\$ 118,562,641
Accounts payable (including related parties)	40,205,966	-	-	-	40,205,966
Payables to contractors and equipment suppliers	140,810,703	-	-	-	140,810,703
Accrued expenses and other current liabilities	45,760,898	-	-	-	45,760,898
Bonds payable	32,338,853	7,777,715	18,203,601	-	58,320,169
Lease liabilities (including those classified under accrued expenses and other current liabilities)	2,475,177	2,782,860	2,484,478	10,947,730	18,690,245
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	1,552,977	121,047	55,501	356	1,729,881
	<u>381,707,215</u>	<u>10,681,622</u>	<u>20,743,580</u>	<u>10,948,086</u>	<u>424,080,503</u>

(Continued)

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	\$ 141,450,762	\$ -	\$ -	\$ -	\$ 141,450,762
Inflows	<u>(141,128,914)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(141,128,914)</u>
	321,848	-	-	-	321,848
	<u>\$ 382,029,063</u>	<u>\$ 10,681,622</u>	<u>\$ 20,743,580</u>	<u>\$ 10,948,086</u>	<u>\$ 424,402,351</u>
					(Concluded)

Additional information about the maturity analysis for lease liabilities:

	Less than 5 Years	5-10 Years	10-15 Years	15-20 Years	More Than 20 Years
Lease liabilities	<u>\$ 7,742,515</u>	<u>\$ 5,581,116</u>	<u>\$ 3,691,272</u>	<u>\$ 1,600,962</u>	<u>\$ 74,380</u>

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
<u>December 31, 2018</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 88,810,737	\$ -	\$ -	\$ -	\$ 88,810,737
Accounts payable (including related parties)	34,357,432	-	-	-	34,357,432
Payables to contractors and equipment suppliers	43,133,659	-	-	-	43,133,659
Accrued expenses and other current liabilities	50,240,928	-	-	-	50,240,928
Bonds payable	36,039,935	35,340,742	22,979,426	-	94,360,103
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	6,835,667	2,891,663	461,715	-	10,189,045
	<u>259,418,358</u>	<u>38,232,405</u>	<u>23,441,141</u>	<u>-</u>	<u>321,091,904</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	49,302,325	-	-	-	49,302,325
Inflows	<u>(49,393,679)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(49,393,679)</u>
	(91,354)	-	-	-	(91,354)
	<u>\$ 259,327,004</u>	<u>\$ 38,232,405</u>	<u>\$ 23,441,141</u>	<u>\$ -</u>	<u>\$ 321,000,550</u>

f. Fair value of financial instruments

1) Fair value measurements recognized in the consolidated balance sheets

Fair value measurements are grouped into Levels 1 to 3 based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The timing of transfers between levels within the fair value hierarchy is at the end of reporting period.

2) Fair value of financial instruments that are measured at fair value on a recurring basis

Fair value hierarchy

The following table presents the Company's financial assets and liabilities measured at fair value on a recurring basis:

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

	December 31, 2018			
	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>				
Mandatorily measured at FVTPL				
Agency mortgage-backed securities	\$ -	\$ 3,419,287	\$ -	\$ 3,419,287
Forward exchange contracts	-	85,303	-	85,303
	<u>\$ -</u>	<u>\$ 3,504,590</u>	<u>\$ -</u>	<u>\$ 3,504,590</u>
<u>Financial assets at FVTOCI</u>				
Investments in debt instruments				
Corporate bonds	\$ -	\$ 40,753,582	\$ -	\$ 40,753,582
Agency bonds/Agency mortgage-backed securities	-	31,288,762	-	31,288,762
Asset-backed securities	-	15,670,295	-	15,670,295
Government bonds	11,006,167	145,192	-	11,151,359
Commercial paper	-	107,590	-	107,590
Investments in equity instruments				
Non-publicly traded equity investments	-	-	3,910,681	3,910,681
Publicly traded stocks	590,152	-	-	590,152
Notes and accounts receivable, net	-	3,595,069	-	3,595,069
	<u>\$ 11,596,319</u>	<u>\$ 91,560,490</u>	<u>\$ 3,910,681</u>	<u>\$ 107,067,490</u>
<u>Hedging financial assets</u>				
Cash flow hedges				
Forward exchange contracts	<u>\$ -</u>	<u>\$ 23,497</u>	<u>\$ -</u>	<u>\$ 23,497</u>
<u>Financial liabilities at FVTPL</u>				
Held for trading				
Forward exchange contracts	<u>\$ -</u>	<u>\$ 40,825</u>	<u>\$ -</u>	<u>\$ 40,825</u>
<u>Hedging financial liabilities</u>				
Fair value hedges				
Interest rate futures contracts	\$ 153,891	\$ -	\$ -	\$ 153,891
Cash flow hedges				
Forward exchange contracts	-	1,941	-	1,941
	<u>\$ 153,891</u>	<u>\$ 1,941</u>	<u>\$ -</u>	<u>\$ 155,832</u>

Reconciliation of Level 3 fair value measurements of financial assets

The financial assets measured at Level 3 fair value were financial assets at FVTPL and equity investments classified as financial assets at FVTOCI. Reconciliations for the years ended December 31, 2019 and 2018 were as follows:

	Years Ended December 31	
	2019	2018
Balance, beginning of year	\$ 3,910,681	\$ 5,841,384
Additions	372,315	212,488
Recognized in other comprehensive income	129,497	(2,141,421)
Disposals and proceeds from return of capital of investments	(76,532)	(175,731)
Transfers out of level 3 (Note)	(43,610)	-
Effect of exchange rate changes	(83,451)	173,961
Balance, end of year	<u>\$ 4,208,900</u>	<u>\$ 3,910,681</u>

Note: The transfer from level 3 to level 2 is because observable market data became available for the equity investments.

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of financial assets and financial liabilities are determined as follows:

- The fair values of corporate bonds, agency bonds, agency mortgage-backed securities, asset-backed securities, government bonds, commercial papers and non-publicly traded equity investments are determined by quoted market prices provided by third party pricing services.
- Forward exchange contracts are measured using forward exchange rates and the discounted curves that are derived from quoted market prices.
- The fair value of accounts receivables classified as at FVTOCI are determined by the present value of future cash flows based on the discount rate that reflects the credit risk of counterparties.

Valuation techniques and assumptions used in Level 3 fair value measurement

The fair values of non-publicly traded equity investments are mainly determined by using the asset approach, income approach and market approach.

The asset approach takes into account the net asset value measured at the fair value by independent parties. On December 31, 2019 and 2018, the Company uses unobservable inputs derived from discount for lack of marketability by 10%. When other inputs remain equal, the fair value will decrease by NT\$34,843 thousand and NT\$31,420 thousand if discounts for lack of marketability increase by 1%.

The income approach utilizes discounted cash flows to determine the present value of the expected future economic benefits that will be derived from the investment. On December 31, 2019 and 2018, the Company uses unobservable inputs, which include expected returns, discount rate of 10%, discount for lack of marketability of 10%, and discounts for lack of control of 10%.

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

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

3) Fair value of financial instruments that are not measured at fair value

Except as detailed in the following table, the Company considers that the carrying amounts of financial instruments in the consolidated financial statements that are not measured at fair value approximate their fair values.

Fair value hierarchy

The table below sets out the fair value hierarchy for the Company's assets and liabilities which are not required to measure at fair value:

	December 31, 2019	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Corporate bonds	<u>\$ 7,648,798</u>	<u>\$ 7,718,731</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 56,900,000</u>	<u>\$ 57,739,115</u>
	December 31, 2018	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Corporate bonds	\$ 19,511,794	\$ 19,554,553
Commercial paper	<u>2,294,098</u>	<u>2,296,188</u>
	<u>\$ 21,805,892</u>	<u>\$ 21,850,741</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 91,800,000</u>	<u>\$ 93,171,255</u>

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair value of corporate bonds is determined by quoted market prices provided by third party pricing services.

The fair value of commercial paper is determined by the present value of future cash flows based on the discounted curves that are derived from the quoted market prices.

The fair value of the Company's bonds payable is determined by quoted market prices provided by third party pricing services.

33. RELATED PARTY TRANSACTIONS

Intercompany balances and transactions between TSMC and its subsidiaries, which are related parties of TSMC, have been eliminated upon consolidation; therefore those items are not disclosed in this note. The following is a summary of significant transactions between the Company and other related parties:

a. Related party name and categories

<u>Related Party Name</u>	<u>Related Party Categories</u>
GUC	Associates
VIS	Associates
SSMC	Associates
Xintec	Associates
TSMC Education and Culture Foundation	Other related parties
TSMC Charity Foundation	Other related parties

b. Net revenue

		<u>Years Ended December 31</u>	
		<u>2019</u>	<u>2018</u>
<u>Item</u>	<u>Related Party Categories</u>		
Net revenue from sale of goods	Associates	\$ 6,253,895	\$ 8,980,079
	Other related parties	<u>-</u>	<u>330</u>
		<u>\$ 6,253,895</u>	<u>\$ 8,980,409</u>
Net revenue from royalties	Associates	<u>\$ 183,583</u>	<u>\$ 362,259</u>

c. Purchases

		<u>Years Ended December 31</u>	
		<u>2019</u>	<u>2018</u>
<u>Related Party Categories</u>			
Associates		<u>\$ 6,301,417</u>	<u>\$ 8,809,533</u>

d. Receivables from related parties

		<u>December 31,</u>	<u>December 31,</u>
		<u>2019</u>	<u>2018</u>
<u>Item</u>	<u>Related Party Name/Categories</u>		
Receivables from related parties	GUC	\$ 741,898	\$ 481,934
	Xintec	<u>120,172</u>	<u>102,478</u>
		<u>\$ 862,070</u>	<u>\$ 584,412</u>

(Continued)

		December 31, 2019	December 31, 2018
<u>Item</u>	<u>Related Party Name/Categories</u>		
Other receivables from related parties	SSMC	\$ 46,506	\$ 53,780
	VIS	3,920	10,423
	Other associates	<u>1,227</u>	<u>825</u>
		<u>\$ 51,653</u>	<u>\$ 65,028</u>
			(Concluded)

e. Payables to related parties

		December 31, 2019	December 31, 2018
<u>Item</u>	<u>Related Party Name/Categories</u>		
Payables to related parties	Xintec	\$ 736,860	\$ 649,812
	SSMC	487,944	362,564
	VIS	153,977	357,080
	Others	<u>56,119</u>	<u>7,043</u>
		<u>\$ 1,434,900</u>	<u>\$ 1,376,499</u>

f. Others

		Years Ended December 31	
		2019	2018
<u>Item</u>	<u>Related Party Categories</u>		
Manufacturing expenses	Associates	<u>\$ 2,822,989</u>	<u>\$ 2,974,581</u>
Research and development expenses	Associates	<u>\$ 163,425</u>	<u>\$ 83,145</u>
General and administrative expenses	Other related parties	<u>\$ 120,000</u>	<u>\$ 120,756</u>

The sales prices and payment terms to related parties were not significantly different from those of sales to third parties. For other related party transactions, price and terms were determined in accordance with mutual agreements.

The Company leased factory and office from associates. The lease terms and prices were both determined in accordance with mutual agreements. The rental expenses were paid to associates monthly; the related expenses were both classified under manufacturing expenses.

g. Compensation of key management personnel

The compensation to directors and other key management personnel for the years ended December 31, 2019 and 2018 were as follows:

	Years Ended December 31	
	2019	2018
Short-term employee benefits	\$ 1,922,191	\$ 2,004,881
Post-employment benefits	<u>2,686</u>	<u>3,383</u>
	<u>\$ 1,924,877</u>	<u>\$ 2,008,264</u>

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

34. PLEDGED ASSETS

The Company provided certificate of deposits recorded in other financial assets as collateral mainly for building lease agreements. As of December 31, 2019 and 2018, the aforementioned other financial assets amounted to NT\$114,467 thousand and NT\$124,244 thousand, respectively.

35. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

Significant contingent liabilities and unrecognized commitments of the Company as of the end of the reporting period, excluding those disclosed in other notes, were as follows:

- a. Under a technical cooperation agreement with Industrial Technology Research Institute, the R.O.C. Government or its designee approved by TSMC can use up to 35% of TSMC's capacity provided TSMC's outstanding commitments to its customers are not prejudiced. The term of this agreement is for five years beginning from January 1, 1987 and is automatically renewed for successive periods of five years unless otherwise terminated by either party with one year prior notice. As of December 31, 2019, the R.O.C. Government did not invoke such right.
- b. Under a Shareholders Agreement entered into with Philips and EDB Investments Pte Ltd. on March 30, 1999, the parties formed a joint venture company, SSMC, which is an integrated circuit foundry in Singapore. TSMC's equity interest in SSMC was 32%. Nevertheless, in September 2006, Philips spun-off its semiconductor subsidiary which was renamed as NXP B.V. Further, TSMC and NXP B.V. purchased all the SSMC shares owned by EDB Investments Pte Ltd. pro rata according to the Shareholders Agreement on November 15, 2006. After the purchase, TSMC and NXP B.V. currently own approximately 39% and 61% of the SSMC shares, respectively. TSMC and NXP B.V. are required, in the aggregate, to purchase at least 70% of SSMC's capacity, but TSMC alone is not required to purchase more than 28% of the capacity. If any party defaults on the commitment and the capacity utilization of SSMC falls below a specific percentage of its capacity, the defaulting party is required to compensate SSMC for all related unavoidable costs. There was no default from the aforementioned commitment as of December 31, 2019.
- c. In February 2019, Innovative Foundry Technologies LLC ("IFT") filed a complaint in the U.S. District Court for the District of Delaware alleging that TSMC and TSMC Technology Inc. infringe five U.S. patents. IFT also filed a complaint in the U.S. International Trade Commission (the "ITC") alleging that TSMC, TSMC North America, TSMC Technology Inc., and other companies infringe the same patents. The ITC instituted an investigation in March 2019. Both parties agreed to end the dispute and the ITC terminated the investigation in October 2019. The pending litigation in the U.S. District Court for the District of Delaware was dismissed at the same time.

- d. On September 28, 2017, TSMC was contacted by the European Commission (the “Commission”), which has asked us for information and documents concerning alleged anti-competitive practices in relation to semiconductor sales. We are cooperating with the Commission to provide the requested information and documents. In light of the fact that this proceeding is still in its preliminary stage, it is premature to predict how the case will proceed, the outcome of the proceeding or its impact.
- e. TSMC entered into long-term purchase agreements of material with multiple suppliers. The relative minimum purchase quantity and price are specified in the agreements.
- f. TSMC entered into a long-term purchase agreement of equipment. The relative purchase quantity and price are specified in the agreement.
- g. TSMC entered into long-term energy purchase agreements with multiple suppliers. The relative purchase period, quantity and price are specified in the agreements.
- h. Amounts available under unused letters of credit as of December 31, 2019 and 2018 were NT\$59,976 thousand and NT\$70,702 thousand, respectively.

36. EXCHANGE RATE INFORMATION OF FOREIGN-CURRENCY FINANCIAL ASSETS AND LIABILITIES

The following information was summarized according to the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
<u>December 31, 2019</u>			
<u>Financial assets</u>			
Monetary items			
USD	\$ 4,725,056	29.988	\$ 141,694,967
USD	455,984	6.966(Note 2)	13,674,047
EUR	3,638	33.653	122,418
JPY	72,369,239	0.2751	19,908,778
<u>Financial liabilities</u>			
Monetary items			
USD	6,018,287	29.988	180,476,401
EUR	2,551,824	33.653	85,876,547
JPY	101,455,514	0.2751	27,910,412

(Continued)

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
<u>December 31, 2018</u>			
<u>Financial assets</u>			
Monetary items			
USD	\$ 4,618,566	30.740	\$ 141,974,734
USD	343,132	6.866 (Note 2)	10,547,875
EUR	7,561	35.22	266,307
JPY	490,635	0.2783	136,544
Non-monetary items			
HKD	144,567	3.93	568,150
<u>Financial liabilities</u>			
Monetary items			
USD	4,323,763	30.740	132,912,486
EUR	477,776	35.22	16,827,260
JPY	35,084,436	0.2783	9,763,999 (Concluded)

Note 1: Except as otherwise noted, exchange rate represents the number of NT dollar for which one foreign currency could be exchanged.

Note 2: The exchange rate represents the number of RMB for which one U.S. dollar could be exchanged.

Please refer to the consolidated statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss for the years ended December 31, 2019 and 2018, respectively. Since there were varieties of foreign currency transactions and functional currencies within the subsidiaries of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

37. SIGNIFICANT OPERATION LOSSES

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

The Company experienced a computer virus outbreak on August 3, 2018, which affected a number of computer systems and fab tools, and consequently impacted wafer production in Taiwan. All the impacted tools have been recovered by August 6, 2018. The Company recognized a loss of NT\$2,596,046 thousand related to this incident for the three months ended September 30, 2018, which was included in cost of revenue.

38. ADDITIONAL DISCLOSURES

Following are the additional disclosures required by the Securities and Futures Bureau for TSMC:

- a. Financings provided: Please see Table 1 attached;
- b. Endorsement/guarantee provided: Please see Table 2 attached;

- c. Marketable securities held (excluding investments in subsidiaries and associates): Please see Table 3 attached;
- d. Marketable securities acquired and disposed of at costs or prices of at least NT\$300 million or 20% of the paid-in capital: Please see Table 4 attached;
- e. Acquisition of individual real estate properties at costs of at least NT\$300 million or 20% of the paid-in capital: Please see Table 5 attached;
- f. Disposal of individual real estate properties at prices of at least NT\$300 million or 20% of the paid-in capital: None;
- g. Total purchases from or sales to related parties of at least NT\$100 million or 20% of the paid-in capital: Please see Table 6 attached;
- h. Receivables from related parties amounting to at least NT\$100 million or 20% of the paid-in capital: Please see Table 7 attached;
- i. Information about the derivative financial instruments transaction: Please see Notes 7 and 10;
- j. Others: The business relationship between the parent and the subsidiaries and significant transactions between them: Please see Table 8 attached;
- k. Names, locations, and related information of investees over which TSMC exercises significant influence (excluding information on investment in mainland China): Please see Table 9 attached;
- l. Information on investment in mainland China
 - 1) The name of the investee in mainland China, the main businesses and products, its issued capital, method of investment, information on inflow or outflow of capital, percentage of ownership, income (losses) of the investee, share of profits/losses of investee, ending balance, amount received as dividends from the investee, and the limitation on investee: Please see Table 10 attached.
 - 2) Significant direct or indirect transactions with the investee, its prices and terms of payment, unrealized gain or loss, and other related information which is helpful to understand the impact of investment in mainland China on financial reports: Please see Table 8 attached.

39. OPERATING SEGMENTS INFORMATION

- a. Operating segments, segment revenue and operating results

TSMC's chief operating decision makers periodically review operating results, focusing on operating income generated by foundry segment. Operating results are used for resource allocation and/or performance assessment. As a result, the Company has only one operating segment, the foundry segment. The foundry segment engages mainly in the manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

The basis for the measurement of income from operations is the same as that for the preparation of financial statements. Please refer to the consolidated statements of comprehensive income for the related segment revenue and operating results.

b. Geographic and major customers information were as follows:

1) Geographic information

Noncurrent Assets	December 31, 2019	December 31, 2018
Taiwan	\$1,344,352,664	\$1,039,471,321
United States	8,850,099	7,569,797
China	38,586,614	43,574,538
Europe, the Middle East and Africa	186,238	8,269
Japan	27,074	13,138
Others	<u>3,064</u>	<u>-</u>
	<u>\$1,392,005,753</u>	<u>\$1,090,637,063</u>

Noncurrent assets include property, plant and equipment, right-of-use assets, intangible assets and other noncurrent assets.

2) Major customers representing at least 10% of net revenue

	Years Ended December 31			
	2019		2018	
	Amount	%	Amount	%
Customer A	\$ 247,213,291	23	\$ 224,690,695	22
Customer B	152,876,885	14	83,885,616	8

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

FINANCINGS PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Financing Company	Counter-party	Financial Statement Account	Related Party	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Interest Rate	Nature for Financing (Note 4)	Transaction Amounts	Reason for Financing (Note 4)	Allowance for Bad Debt	Collateral		Financing Limits for Each Borrowing Company (Notes 1 and 2)	Financing Company's Total Financing Amount Limits (Notes 1 and 2)
													Item	Value		
1	TSMC China	TSMC Nanjing	Other receivables from related parties	Yes	\$ 44,497,852 (RMB 7,000,000)& (US\$ 479,000)	\$ 38,903,568 (RMB 6,000,000)& (US\$ 436,000)	\$ 24,102,968 (RMB 5,000,000)& (US\$ 86,000)	1.50-1.96%	The need for long-term financing	\$ -	Operating capital	\$ -	\$ -	\$ 57,358,467	\$ 57,358,467	
2	TSMC Global	TSMC	Other receivables from related parties	Yes	\$ 44,982,000 (US\$ 1,500,000)	\$ 29,988,000 (US\$ 1,000,000)	\$ 29,988,000 (US\$ 1,000,000)	0.00%	The need for short-term financing	\$ -	Operating capital	\$ -	\$ -	\$ 397,737,270	\$ 397,737,270	

Note 1: The total amount available for lending purpose shall not exceed the net worth of TSMC China. The total amount for lending to a company for funding for a short-term period shall not exceed ten percent (10%) of the net worth of TSMC China. In addition, the total amount lendable to any one borrower shall be no more than thirty percent (30%) of the borrower's net worth. The above restriction does not apply to the subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC. However, the total amount lendable to any such subsidiary of TSMC shall not exceed forty percent (40%) of the net worth of TSMC China. When there is a lending for funding needs by TSMC China to TSMC, or to the subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC, which are not located in Taiwan, the lending will not be subject to the restriction set forth in the above paragraph. Notwithstanding the foregoing, the aggregate amount available for lending to such borrowers and the total amount lendable to each of such borrowers still shall not exceed the net worth of TSMC China.

Note 2: The total amount available for lending purpose shall not exceed the net worth of TSMC Global. The total amount for lending to a company for funding for a short-term period shall not exceed ten percent (10%) of the net worth of TSMC Global. In addition, the total amount lendable to any one borrower shall be no more than thirty percent (30%) of the borrower's net worth. While TSMC, or its foreign subsidiaries in which TSMC directly or indirectly holds 100% of the voting shares will not be subject to this restriction, their total borrowing amount still shall not exceed the net worth of TSMC Global. Notwithstanding the foregoing, the aggregate amount available for lending to Taiwan companies other than TSMC shall not exceed forty percent (40%) of the net worth of TSMC Global.

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

Note 4: The restriction of the term of each loan for funding not exceeding one year shall not apply to inter-company loans for funding between offshore subsidiaries in which the Company holds, directly or indirectly, 100% of the voting shares.

TABLE 2

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

**ENDORSEMENTS/GUARANTEES PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)**

No.	Endorsee/ Guarantee Provider	Guaranteed Party		Limits on Endorsement/ Guarantee Amount Provided to Each Party (Notes 1 and 2)	Maximum Balance for the Period (US\$ in Thousands) (Note 3)	Ending Balance (US\$ in Thousands) (Note 3)	Amount Actually Drawn (US\$ in Thousands)	Amount of Endorsement/ Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Note 2)	Guarantee Provided by Parent Company	Guarantee Provided by A Subsidiary	Guarantee Provided to Subsidiaries in Mainland China
		Name	Nature of Relationship										
0	TSMC	TSMC North America	Subsidiary	\$ 405,352,531	\$ 2,495,400 (US\$ 83,213)	\$ 2,495,400 (US\$ 83,213)	\$ 2,495,400 (US\$ 83,213)	\$ -	0.15%	\$ 405,352,531	Yes	No	No

Note 1: The total amount of the guarantee provided by TSMC to any individual entity shall not exceed ten percent (10%) of TSMC's net worth, or the net worth of such entity. However, subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC are not subject to the above restrictions after the approval of the Board of Directors.

Note 2: The total amount of guarantee shall not exceed twenty-five percent (25%) of TSMC's net worth.

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES HELD
DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC	Non-publicly traded equity investments United Industrial Gases Co., Ltd.	-	Financial assets at fair value through other comprehensive income	21,230	\$ 468,428	10	\$ 468,428	
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	"	10,500	318,276	7	318,276	
	Global Investment Holding Inc.	-	"	11,124	81,529	6	81,529	
	W.K. Technology Fund IV	-	"	806	5,157	2	5,157	
	Crimson Asia Capital	-	"	-	2,621	1	2,621	
	Horizon Ventures Fund	-	"	-	1,100	12	1,100	
	Convertible bonds	-	"	-	-	-	-	
	Inpria Corporation	-	Financial assets at fair value through Profit or Loss	-	US\$ 4,127	-	US\$ 4,127	
	Non-publicly traded equity investments Shanghai Walden Venture Capital Enterprise	-	Financial assets at fair value through other comprehensive income	-	US\$ 10,380	6	US\$ 10,380	
	China Walden Venture Investments II, L.P.	-	"	-	US\$ 9,474	9	US\$ 9,474	
China Walden Venture Investments III, L.P.	-	"	-	US\$ 3,298	4	US\$ 3,298		
Tela Innovations	-	"	10,440	-	25	-		
Mcube Inc.	-	"	6,333	-	12	-		
TSMC Global	Corporate bond Bank of America Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 46,671	N/A	US\$ 46,671	
	Goldman Sachs Group Inc/The	-	"	-	US\$ 39,686	N/A	US\$ 39,686	
	Morgan Stanley	-	"	-	US\$ 39,419	N/A	US\$ 39,419	
	Citigroup Inc	-	"	-	US\$ 38,637	N/A	US\$ 38,637	
	AbbVie Inc	-	"	-	US\$ 31,425	N/A	US\$ 31,425	
	JPMorgan Chase & Co	-	"	-	US\$ 30,678	N/A	US\$ 30,678	
	AT&T Inc	-	"	-	US\$ 26,140	N/A	US\$ 26,140	
	CVS Health Corp	-	"	-	US\$ 22,242	N/A	US\$ 22,242	
	Bristol-Myers Squibb Co	-	"	-	US\$ 21,666	N/A	US\$ 21,666	
	Mitsubishi UFJ Financial Group Inc	-	"	-	US\$ 21,332	N/A	US\$ 21,332	
	Wells Fargo & Co	-	"	-	US\$ 21,303	N/A	US\$ 21,303	
	HSBC Holdings PLC	-	"	-	US\$ 20,102	N/A	US\$ 20,102	
	Apple Inc	-	"	-	US\$ 19,886	N/A	US\$ 19,886	
	Sumitomo Mitsui Financial Group Inc	-	"	-	US\$ 19,176	N/A	US\$ 19,176	
	Toronto-Dominion Bank/The	-	"	-	US\$ 18,018	N/A	US\$ 18,018	
	Credit Agricole SA/London	-	"	-	US\$ 14,904	N/A	US\$ 14,904	
	Verizon Communications Inc	-	"	-	US\$ 14,058	N/A	US\$ 14,058	
	BNP Paribas SA	-	"	-	US\$ 13,092	N/A	US\$ 13,092	
	UBS Group Funding Switzerland AG	-	"	-	US\$ 12,932	N/A	US\$ 12,932	
	Banco Santander SA	-	"	-	US\$ 12,837	N/A	US\$ 12,837	
United Technologies Corp	-	"	-	US\$ 12,108	N/A	US\$ 12,108		
ERAC USA Finance LLC	-	"	-	US\$ 11,904	N/A	US\$ 11,904		
Banque Federative du Credit Mutuel SA	-	"	-	US\$ 11,752	N/A	US\$ 11,752		

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	American International Group Inc	-	Financial assets at fair value through other comprehensive income	-	US\$ 11,423	N/A	US\$ 11,423	
	Equifax Inc	-	"	-	US\$ 11,001	N/A	US\$ 11,001	
	Ryder System Inc	-	"	-	US\$ 10,892	N/A	US\$ 10,892	
	BPCE SA	-	"	-	US\$ 10,887	N/A	US\$ 10,887	
	BAT Capital Corp	-	"	-	US\$ 10,843	N/A	US\$ 10,843	
	Reliance Standard Life Global Funding II	-	"	-	US\$ 10,682	N/A	US\$ 10,682	
	DTE Energy Co	-	"	-	US\$ 10,681	N/A	US\$ 10,681	
	Hewlett Packard Enterprise Co	-	"	-	US\$ 10,661	N/A	US\$ 10,661	
	Penske Truck Leasing Co Lp / PTL Finance Corp	-	"	-	US\$ 10,612	N/A	US\$ 10,612	
	International Business Machines Corp	-	"	-	US\$ 10,414	N/A	US\$ 10,414	
	Macquarie Group Ltd	-	"	-	US\$ 10,344	N/A	US\$ 10,344	
	Mizuho Financial Group Inc	-	"	-	US\$ 10,307	N/A	US\$ 10,307	
	Skandinaviska Enskilda Banken AB	-	"	-	US\$ 9,827	N/A	US\$ 9,827	
	Nordea Bank Abp	-	"	-	US\$ 9,458	N/A	US\$ 9,458	
	NextEra Energy Capital Holdings Inc	-	"	-	US\$ 9,420	N/A	US\$ 9,420	
	SMBC Aviation Capital Finance DAC	-	"	-	US\$ 9,414	N/A	US\$ 9,414	
	Fiserv Inc	-	"	-	US\$ 9,174	N/A	US\$ 9,174	
	Lloyds Banking Group PLC	-	"	-	US\$ 9,106	N/A	US\$ 9,106	
	Cox Communications Inc	-	"	-	US\$ 9,062	N/A	US\$ 9,062	
	Western Union Co/The	-	"	-	US\$ 8,991	N/A	US\$ 8,991	
	Tyson Foods Inc	-	"	-	US\$ 8,944	N/A	US\$ 8,944	
	PNC Bank NA	-	"	-	US\$ 8,913	N/A	US\$ 8,913	
	Suncorp-Metway Ltd	-	"	-	US\$ 8,869	N/A	US\$ 8,869	
	Bank of Montreal	-	"	-	US\$ 8,551	N/A	US\$ 8,551	
	Comcast Corp	-	"	-	US\$ 8,514	N/A	US\$ 8,514	
	Capital One NA	-	"	-	US\$ 8,484	N/A	US\$ 8,484	
	Midwest Connector Capital Co LLC	-	"	-	US\$ 8,412	N/A	US\$ 8,412	
	Santander UK PLC	-	"	-	US\$ 8,272	N/A	US\$ 8,272	
	Scentre Group Trust 1 / Scentre Group Trust 2	-	"	-	US\$ 8,248	N/A	US\$ 8,248	
	Metropolitan Life Global Funding I	-	"	-	US\$ 8,222	N/A	US\$ 8,222	
	Credit Suisse AG/New York NY	-	"	-	US\$ 8,031	N/A	US\$ 8,031	
	Athene Global Funding	-	"	-	US\$ 7,999	N/A	US\$ 7,999	
	Societe Generale SA	-	"	-	US\$ 7,825	N/A	US\$ 7,825	
	NatWest Markets PLC	-	"	-	US\$ 7,816	N/A	US\$ 7,816	
	Altria Group Inc	-	"	-	US\$ 7,805	N/A	US\$ 7,805	
	Dominion Energy Gas Holdings LLC	-	"	-	US\$ 7,681	N/A	US\$ 7,681	
	Air Lease Corp	-	"	-	US\$ 7,675	N/A	US\$ 7,675	
	Tencent Holdings Ltd	-	"	-	US\$ 7,612	N/A	US\$ 7,612	
	Microsoft Corp	-	"	-	US\$ 7,455	N/A	US\$ 7,455	
	BG Energy Capital PLC	-	"	-	US\$ 7,346	N/A	US\$ 7,346	
	Prudential Funding LLC	-	"	-	US\$ 7,333	N/A	US\$ 7,333	
	Fox Corp	-	"	-	US\$ 7,331	N/A	US\$ 7,331	
	BP Capital Markets America Inc	-	"	-	US\$ 7,280	N/A	US\$ 7,280	
	ANZ New Zealand Int'l Ltd/London	-	"	-	US\$ 7,259	N/A	US\$ 7,259	
	Jackson National Life Global Funding	-	"	-	US\$ 7,203	N/A	US\$ 7,203	
	Huntington Bancshares Inc/OH	-	"	-	US\$ 7,160	N/A	US\$ 7,160	
	Shire Acquisitions Investments Ireland DAC	-	"	-	US\$ 6,972	N/A	US\$ 6,972	
	Wells Fargo Bank NA	-	"	-	US\$ 6,958	N/A	US\$ 6,958	
	New York Life Global Funding	-	"	-	US\$ 6,947	N/A	US\$ 6,947	
	ING Groep NV	-	"	-	US\$ 6,874	N/A	US\$ 6,874	
	Kinder Morgan Energy Partners LP	-	"	-	US\$ 6,842	N/A	US\$ 6,842	
	Sun Trust Bank/Atlanta GA	-	"	-	US\$ 6,680	N/A	US\$ 6,680	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Daimler Finance North America LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 6,536	N/A	US\$ 6,536	
	Regions Financial Corp	-	"	-	US\$ 6,384	N/A	US\$ 6,384	
	Credit Suisse Group Funding Guernsey Ltd	-	"	-	US\$ 6,344	N/A	US\$ 6,344	
	General Dynamics Corp	-	"	-	US\$ 6,297	N/A	US\$ 6,297	
	Anheuser-Busch InBev Worldwide Inc	-	"	-	US\$ 6,276	N/A	US\$ 6,276	
	DNB Bank ASA	-	"	-	US\$ 6,252	N/A	US\$ 6,252	
	American Express Co	-	"	-	US\$ 6,239	N/A	US\$ 6,239	
	AIG Global Funding	-	"	-	US\$ 6,199	N/A	US\$ 6,199	
	Panasonic Corp	-	"	-	US\$ 6,104	N/A	US\$ 6,104	
	Canadian Imperial Bank of Commerce	-	"	-	US\$ 6,036	N/A	US\$ 6,036	
	Reckitt Benckiser Treasury Services PLC	-	"	-	US\$ 6,029	N/A	US\$ 6,029	
	Fortive Corp	-	"	-	US\$ 6,025	N/A	US\$ 6,025	
	Royal Bank of Canada	-	"	-	US\$ 6,010	N/A	US\$ 6,010	
	Macquarie Bank Ltd	-	"	-	US\$ 5,983	N/A	US\$ 5,983	
	Analog Devices Inc	-	"	-	US\$ 5,969	N/A	US\$ 5,969	
	Bank of Nova Scotia/The	-	"	-	US\$ 5,958	N/A	US\$ 5,958	
	WPP Finance 2010	-	"	-	US\$ 5,927	N/A	US\$ 5,927	
	Capital One Financial Corp	-	"	-	US\$ 5,848	N/A	US\$ 5,848	
	Roper Technologies Inc	-	"	-	US\$ 5,717	N/A	US\$ 5,717	
	Intesa Sanpaolo SpA	-	"	-	US\$ 5,678	N/A	US\$ 5,678	
	Barclays Bank PLC	-	"	-	US\$ 5,645	N/A	US\$ 5,645	
	Alabama Power Co	-	"	-	US\$ 5,623	N/A	US\$ 5,623	
	Anheuser-Busch InBev Finance Inc	-	"	-	US\$ 5,618	N/A	US\$ 5,618	
	Shell International Finance BV	-	"	-	US\$ 5,595	N/A	US\$ 5,595	
	Bayer US Finance II LLC	-	"	-	US\$ 5,510	N/A	US\$ 5,510	
	Cigna Corp	-	"	-	US\$ 5,475	N/A	US\$ 5,475	
	Sompo International Holdings Ltd	-	"	-	US\$ 5,275	N/A	US\$ 5,275	
	Takeda Pharmaceutical Co Ltd	-	"	-	US\$ 5,245	N/A	US\$ 5,245	
	Laboratory Corp of America Holdings	-	"	-	US\$ 5,230	N/A	US\$ 5,230	
	Lloyds Bank PLC	-	"	-	US\$ 5,202	N/A	US\$ 5,202	
	CNA Financial Corp	-	"	-	US\$ 5,173	N/A	US\$ 5,173	
	Cooperative Rabobank UA	-	"	-	US\$ 5,124	N/A	US\$ 5,124	
	BMW US Capital LLC	-	"	-	US\$ 5,112	N/A	US\$ 5,112	
	Saudi Arabian Oil Co	-	"	-	US\$ 5,096	N/A	US\$ 5,096	
	BB&T Corp	-	"	-	US\$ 5,041	N/A	US\$ 5,041	
	Thermo Fisher Scientific Inc	-	"	-	US\$ 5,029	N/A	US\$ 5,029	
	Five Corners Funding Trust	-	"	-	US\$ 4,888	N/A	US\$ 4,888	
	Enel Finance International NV	-	"	-	US\$ 4,888	N/A	US\$ 4,888	
	Vodafone Group PLC	-	"	-	US\$ 4,807	N/A	US\$ 4,807	
	Credit Suisse Group AG	-	"	-	US\$ 4,737	N/A	US\$ 4,737	
	Standard Chartered PLC	-	"	-	US\$ 4,717	N/A	US\$ 4,717	
	Principal Life Global Funding II	-	"	-	US\$ 4,693	N/A	US\$ 4,693	
	American Express Credit Corp	-	"	-	US\$ 4,676	N/A	US\$ 4,676	
	NiSource Inc	-	"	-	US\$ 4,583	N/A	US\$ 4,583	
	ABN AMRO Bank NV	-	"	-	US\$ 4,574	N/A	US\$ 4,574	
	Svenska Handelsbanken AB	-	"	-	US\$ 4,529	N/A	US\$ 4,529	
	Sempra Energy	-	"	-	US\$ 4,476	N/A	US\$ 4,476	
	Keurig Dr Pepper Inc	-	"	-	US\$ 4,463	N/A	US\$ 4,463	
	Eversource Energy	-	"	-	US\$ 4,456	N/A	US\$ 4,456	
	Welltower Inc	-	"	-	US\$ 4,444	N/A	US\$ 4,444	
	Fifth Third Bancorp	-	"	-	US\$ 4,398	N/A	US\$ 4,398	
	Truist Bank	-	"	-	US\$ 4,353	N/A	US\$ 4,353	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Westpac Banking Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 4,350	N/A	US\$ 4,350	
	Marrriott International Inc/MD	-	"	-	US\$ 4,334	N/A	US\$ 4,334	
	Duke Energy Corp	-	"	-	US\$ 4,262	N/A	US\$ 4,262	
	Verisk Analytics Inc	-	"	-	US\$ 4,200	N/A	US\$ 4,200	
	Husky Energy Inc	-	"	-	US\$ 4,182	N/A	US\$ 4,182	
	Exelon Corp	-	"	-	US\$ 4,087	N/A	US\$ 4,087	
	CenterPoint Energy Inc	-	"	-	US\$ 4,052	N/A	US\$ 4,052	
	Intercontinental Exchange Inc	-	"	-	US\$ 4,043	N/A	US\$ 4,043	
	Alimentation Couche-Tard Inc	-	"	-	US\$ 4,003	N/A	US\$ 4,003	
	HCP Inc	-	"	-	US\$ 3,989	N/A	US\$ 3,989	
	European Bank for Reconstruction & Development	-	"	-	US\$ 3,973	N/A	US\$ 3,973	
	GE Capital International Funding Co Unlimited Co	-	"	-	US\$ 3,953	N/A	US\$ 3,953	
	Citizens Bank NA/Providence RI	-	"	-	US\$ 3,912	N/A	US\$ 3,912	
	BOC Aviation Ltd	-	"	-	US\$ 3,901	N/A	US\$ 3,901	
	Volkswagen Group of America Finance LLC	-	"	-	US\$ 3,896	N/A	US\$ 3,896	
	Nationwide Building Society	-	"	-	US\$ 3,836	N/A	US\$ 3,836	
	MPLX LP	-	"	-	US\$ 3,795	N/A	US\$ 3,795	
	Monongahela Power Co	-	"	-	US\$ 3,717	N/A	US\$ 3,717	
	Asian Development Bank	-	"	-	US\$ 3,628	N/A	US\$ 3,628	
	Charles Schwab Corp/The	-	"	-	US\$ 3,524	N/A	US\$ 3,524	
	Dominion Energy Inc	-	"	-	US\$ 3,488	N/A	US\$ 3,488	
	Commonwealth Bank of Australia	-	"	-	US\$ 3,421	N/A	US\$ 3,421	
	KeyBank NA/Cleveland OH	-	"	-	US\$ 3,324	N/A	US\$ 3,324	
	WEC Energy Group Inc	-	"	-	US\$ 3,293	N/A	US\$ 3,293	
	General Electric Co	-	"	-	US\$ 3,250	N/A	US\$ 3,250	
	Walt Disney Co/The	-	"	-	US\$ 3,246	N/A	US\$ 3,246	
	ONE Gas Inc	-	"	-	US\$ 3,224	N/A	US\$ 3,224	
	Boeing Co/The	-	"	-	US\$ 3,214	N/A	US\$ 3,214	
	Nutrien Ltd	-	"	-	US\$ 3,188	N/A	US\$ 3,188	
	Hyundai Capital America	-	"	-	US\$ 3,187	N/A	US\$ 3,187	
	Inter-American Development Bank	-	"	-	US\$ 3,168	N/A	US\$ 3,168	
	AutoZone Inc	-	"	-	US\$ 3,167	N/A	US\$ 3,167	
	People's United Financial Inc	-	"	-	US\$ 3,117	N/A	US\$ 3,117	
	Textron Inc	-	"	-	US\$ 3,072	N/A	US\$ 3,072	
	McKesson Corp	-	"	-	US\$ 3,071	N/A	US\$ 3,071	
	Zions Bancorp NA	-	"	-	US\$ 3,070	N/A	US\$ 3,070	
	Ameren Corp	-	"	-	US\$ 3,049	N/A	US\$ 3,049	
	Rockwell Collins Inc	-	"	-	US\$ 3,040	N/A	US\$ 3,040	
	Oncor Electric Delivery Co LLC	-	"	-	US\$ 3,038	N/A	US\$ 3,038	
	DuPont de Nemours Inc	-	"	-	US\$ 3,037	N/A	US\$ 3,037	
	Xcel Energy Inc	-	"	-	US\$ 3,015	N/A	US\$ 3,015	
	Duke Energy Florida LLC	-	"	-	US\$ 3,002	N/A	US\$ 3,002	
	Cooperative Rabobank UA/NY	-	"	-	US\$ 2,980	N/A	US\$ 2,980	
	Canadian Natural Resources Ltd	-	"	-	US\$ 2,921	N/A	US\$ 2,921	
	Reynolds American Inc	-	"	-	US\$ 2,921	N/A	US\$ 2,921	
	Danske Bank A/S	-	"	-	US\$ 2,903	N/A	US\$ 2,903	
	MUFG Union Bank NA	-	"	-	US\$ 2,893	N/A	US\$ 2,893	
	RELX Capital Inc	-	"	-	US\$ 2,875	N/A	US\$ 2,875	
	Barriek Gold Corp	-	"	-	US\$ 2,862	N/A	US\$ 2,862	
	Royal Bank of Scotland Group PLC	-	"	-	US\$ 2,848	N/A	US\$ 2,848	
	Compass Bank	-	"	-	US\$ 2,794	N/A	US\$ 2,794	
	Ventas Realty LP	-	"	-	US\$ 2,771	N/A	US\$ 2,771	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Dow Chemical Co/The	-	Financial assets at fair value through other comprehensive income	-	US\$ 2,740	N/A	US\$ 2,740
	Public Service Enterprise Group Inc	-	"	-	US\$ 2,728	N/A	US\$ 2,728
	Nuveen Finance LLC	-	"	-	US\$ 2,717	N/A	US\$ 2,717
	John Deere Capital Corp	-	"	-	US\$ 2,698	N/A	US\$ 2,698
	Quest Diagnostics Inc	-	"	-	US\$ 2,695	N/A	US\$ 2,695
	Huntington National Bank/The	-	"	-	US\$ 2,668	N/A	US\$ 2,668
	Newcrest Finance Pty Ltd	-	"	-	US\$ 2,668	N/A	US\$ 2,668
	Enterprise Products Operating LLC	-	"	-	US\$ 2,622	N/A	US\$ 2,622
	Deutsche Telekom International Finance BV	-	"	-	US\$ 2,615	N/A	US\$ 2,615
	Exelon Generation Co LLC	-	"	-	US\$ 2,601	N/A	US\$ 2,601
	AvalonBay Communities Inc	-	"	-	US\$ 2,564	N/A	US\$ 2,564
	GlaxoSmithKline Capital PLC	-	"	-	US\$ 2,555	N/A	US\$ 2,555
	Seven & 1 Holdings Co Ltd	-	"	-	US\$ 2,550	N/A	US\$ 2,550
	UBS Group AG	-	"	-	US\$ 2,540	N/A	US\$ 2,540
	Barclays PLC	-	"	-	US\$ 2,527	N/A	US\$ 2,527
	Energy Corp	-	"	-	US\$ 2,527	N/A	US\$ 2,527
	Delta Air Lines 2007-1 Class A Pass Through Trust	-	"	-	US\$ 2,524	N/A	US\$ 2,524
	3M Co	-	"	-	US\$ 2,507	N/A	US\$ 2,507
	Simon Property Group LP	-	"	-	US\$ 2,494	N/A	US\$ 2,494
	Ventas Realty LP / Ventas Capital Corp	-	"	-	US\$ 2,450	N/A	US\$ 2,450
	Northrop Grumman Corp	-	"	-	US\$ 2,435	N/A	US\$ 2,435
	Berkshire Hathaway Energy Co	-	"	-	US\$ 2,424	N/A	US\$ 2,424
	Baidu Inc	-	"	-	US\$ 2,374	N/A	US\$ 2,374
	Berkshire Hathaway Inc	-	"	-	US\$ 2,373	N/A	US\$ 2,373
	Anthem Inc	-	"	-	US\$ 2,352	N/A	US\$ 2,352
	Eastman Chemical Co	-	"	-	US\$ 2,307	N/A	US\$ 2,307
	NBCUniversal Media LLC	-	"	-	US\$ 2,269	N/A	US\$ 2,269
	Cintas Corp No 2	-	"	-	US\$ 2,244	N/A	US\$ 2,244
	Marathon Petroleum Corp	-	"	-	US\$ 2,242	N/A	US\$ 2,242
	Aetna Inc	-	"	-	US\$ 2,235	N/A	US\$ 2,235
	Unum Group	-	"	-	US\$ 2,219	N/A	US\$ 2,219
	National Bank of Canada	-	"	-	US\$ 2,209	N/A	US\$ 2,209
	PSEG Power LLC	-	"	-	US\$ 2,193	N/A	US\$ 2,193
	Southern California Edison Co	-	"	-	US\$ 2,175	N/A	US\$ 2,175
	QUALCOMM Inc	-	"	-	US\$ 2,164	N/A	US\$ 2,164
	US Bank NAC Cincinnati OH	-	"	-	US\$ 2,163	N/A	US\$ 2,163
	Lincoln National Corp	-	"	-	US\$ 2,162	N/A	US\$ 2,162
	American Airlines 2013-2 Class A Pass Through Trust	-	"	-	US\$ 2,159	N/A	US\$ 2,159
	Suncor Energy Inc	-	"	-	US\$ 2,122	N/A	US\$ 2,122
	ASB Bank Ltd	-	"	-	US\$ 2,120	N/A	US\$ 2,120
	Ingersoll-Rand Luxembourg Finance SA	-	"	-	US\$ 2,099	N/A	US\$ 2,099
	San Diego Gas & Electric Co	-	"	-	US\$ 2,092	N/A	US\$ 2,092
	Woolworths Group Ltd	-	"	-	US\$ 2,072	N/A	US\$ 2,072
	WR Berkley Corp	-	"	-	US\$ 2,045	N/A	US\$ 2,045
	AstraZeneca PLC	-	"	-	US\$ 2,041	N/A	US\$ 2,041
	US Bancorp	-	"	-	US\$ 2,028	N/A	US\$ 2,028
	Pricoa Global Funding I	-	"	-	US\$ 2,015	N/A	US\$ 2,015
	Oracle Corp	-	"	-	US\$ 2,004	N/A	US\$ 2,004
	CK Hutchison International 16 Ltd	-	"	-	US\$ 1,984	N/A	US\$ 1,984
	Avangrid Inc	-	"	-	US\$ 1,960	N/A	US\$ 1,960
	Bank of New York Mellon Corp/The	-	"	-	US\$ 1,956	N/A	US\$ 1,956
	Kinder Morgan Inc/DE	-	"	-	US\$ 1,949	N/A	US\$ 1,949

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	CenterPoint Energy Resources Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,918	N/A	US\$ 1,918
	Australia & New Zealand Banking Group Ltd/New York NY	-	"	-	US\$ 1,906	N/A	US\$ 1,906
	Kroger Co/The	-	"	-	US\$ 1,904	N/A	US\$ 1,904
	BP Capital Markets PLC	-	"	-	US\$ 1,900	N/A	US\$ 1,900
	Sydney Airport Finance Co Pty Ltd	-	"	-	US\$ 1,886	N/A	US\$ 1,886
	Bank of New Zealand	-	"	-	US\$ 1,866	N/A	US\$ 1,866
	Discover Bank	-	"	-	US\$ 1,831	N/A	US\$ 1,831
	WestRock RKT LLC	-	"	-	US\$ 1,791	N/A	US\$ 1,791
	Philip Morris International Inc	-	"	-	US\$ 1,772	N/A	US\$ 1,772
	McCormick & Co Inc/MD	-	"	-	US\$ 1,760	N/A	US\$ 1,760
	Equinor ASA	-	"	-	US\$ 1,751	N/A	US\$ 1,751
	General Mills Inc	-	"	-	US\$ 1,744	N/A	US\$ 1,744
	Public Service Co of Oklahoma	-	"	-	US\$ 1,741	N/A	US\$ 1,741
	PPL Capital Funding Inc	-	"	-	US\$ 1,722	N/A	US\$ 1,722
	Wisconsin Public Service Corp	-	"	-	US\$ 1,711	N/A	US\$ 1,711
	ITC Holdings Corp	-	"	-	US\$ 1,670	N/A	US\$ 1,670
	Spectra Energy Partners LP	-	"	-	US\$ 1,661	N/A	US\$ 1,661
	Toyota Industries Corp	-	"	-	US\$ 1,657	N/A	US\$ 1,657
	Mondelez International Holdings Netherlands BV	-	"	-	US\$ 1,650	N/A	US\$ 1,650
	Southern Co/The	-	"	-	US\$ 1,643	N/A	US\$ 1,643
	Walgreens Boots Alliance Inc	-	"	-	US\$ 1,630	N/A	US\$ 1,630
	Brookfield Finance Inc	-	"	-	US\$ 1,604	N/A	US\$ 1,604
	UnitedHealth Group Inc	-	"	-	US\$ 1,601	N/A	US\$ 1,601
	Lyonell/Basel Industries NV	-	"	-	US\$ 1,593	N/A	US\$ 1,593
	Xylem Inc/NY	-	"	-	US\$ 1,572	N/A	US\$ 1,572
	Suntory Holdings Ltd	-	"	-	US\$ 1,572	N/A	US\$ 1,572
	Nestle Holdings Inc	-	"	-	US\$ 1,559	N/A	US\$ 1,559
	CK Hutchison International 19 Ltd	-	"	-	US\$ 1,538	N/A	US\$ 1,538
	NTT Finance Corp	-	"	-	US\$ 1,525	N/A	US\$ 1,525
	Trust F/1401	-	"	-	US\$ 1,523	N/A	US\$ 1,523
	Activision Blizzard Inc	-	"	-	US\$ 1,517	N/A	US\$ 1,517
	Public Service Electric & Gas Co	-	"	-	US\$ 1,516	N/A	US\$ 1,516
	KEB Hana Bank	-	"	-	US\$ 1,504	N/A	US\$ 1,504
	Guardian Life Global Funding	-	"	-	US\$ 1,502	N/A	US\$ 1,502
	Sinopec Group Overseas Development 2015 Ltd	-	"	-	US\$ 1,501	N/A	US\$ 1,501
	Georgia Power Co	-	"	-	US\$ 1,500	N/A	US\$ 1,500
	Mastercard Inc	-	"	-	US\$ 1,496	N/A	US\$ 1,496
	Realty Income Corp	-	"	-	US\$ 1,496	N/A	US\$ 1,496
	AIA Group Ltd	-	"	-	US\$ 1,488	N/A	US\$ 1,488
	Protective Life Global Funding	-	"	-	US\$ 1,461	N/A	US\$ 1,461
	Prudential Financial Inc	-	"	-	US\$ 1,458	N/A	US\$ 1,458
	HSBC Bank PLC	-	"	-	US\$ 1,438	N/A	US\$ 1,438
	Westlake Chemical Corp	-	"	-	US\$ 1,432	N/A	US\$ 1,432
	Texas Eastern Transmission LP	-	"	-	US\$ 1,415	N/A	US\$ 1,415
	Daiwa Securities Group Inc	-	"	-	US\$ 1,412	N/A	US\$ 1,412
	Citizens Financial Group Inc	-	"	-	US\$ 1,410	N/A	US\$ 1,410
	CNOOC Curtis Funding No 1 Pty Ltd	-	"	-	US\$ 1,390	N/A	US\$ 1,390
	Baker Hughes a GE Co LLC / Baker Hughes Co-Obligor Inc	-	"	-	US\$ 1,387	N/A	US\$ 1,387
	Permord Ricard SA	-	"	-	US\$ 1,357	N/A	US\$ 1,357
	Ameriprise Financial Inc	-	"	-	US\$ 1,355	N/A	US\$ 1,355
	Essex Portfolio LP	-	"	-	US\$ 1,343	N/A	US\$ 1,343
	Ontario Teachers' Cadillac Fairview Properties Trust	-	"	-	US\$ 1,326	N/A	US\$ 1,326

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Energy Arkansas LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,315	N/A	US\$ 1,315	
	JPMorgan Chase Bank NA	-	"	-	US\$ 1,304	N/A	US\$ 1,304	
	Interpublic Group of Cos Inc/The	-	"	-	US\$ 1,289	N/A	US\$ 1,289	
	American Electric Power Co Inc	-	"	-	US\$ 1,274	N/A	US\$ 1,274	
	Santander UK Group Holdings PLC	-	"	-	US\$ 1,228	N/A	US\$ 1,228	
	State Street Corp	-	"	-	US\$ 1,201	N/A	US\$ 1,201	
	Cardinal Health Inc	-	"	-	US\$ 1,201	N/A	US\$ 1,201	
	Aviation Capital Group LLC	-	"	-	US\$ 1,193	N/A	US\$ 1,193	
	Sprint Spectrum Co LLC / Sprint Spectrum Co II LLC / Sprint Spectrum Co III LLC	-	"	-	US\$ 1,192	N/A	US\$ 1,192	
	UDK Inc	-	"	-	US\$ 1,190	N/A	US\$ 1,190	
	Regions Bank/Birmingham AL	-	"	-	US\$ 1,178	N/A	US\$ 1,178	
	Magellan Midstream Partners LP	-	"	-	US\$ 1,162	N/A	US\$ 1,162	
	Johnson Controls International plc	-	"	-	US\$ 1,149	N/A	US\$ 1,149	
	Cleveland Electric Illuminating Co/The	-	"	-	US\$ 1,144	N/A	US\$ 1,144	
	TransCanada PipeLines Ltd	-	"	-	US\$ 1,140	N/A	US\$ 1,140	
	APT Pipelines Ltd	-	"	-	US\$ 1,139	N/A	US\$ 1,139	
	National Australia Bank Ltd/New York	-	"	-	US\$ 1,135	N/A	US\$ 1,135	
	Manulife Financial Corp	-	"	-	US\$ 1,122	N/A	US\$ 1,122	
	WP Carey Inc	-	"	-	US\$ 1,068	N/A	US\$ 1,068	
	CMS Energy Corp	-	"	-	US\$ 1,053	N/A	US\$ 1,053	
	Alexandria Real Estate Equities Inc	-	"	-	US\$ 1,051	N/A	US\$ 1,051	
	Union Pacific Corp	-	"	-	US\$ 1,042	N/A	US\$ 1,042	
	Baltimore Gas & Electric Co	-	"	-	US\$ 1,037	N/A	US\$ 1,037	
	Cigna Holding Co	-	"	-	US\$ 1,033	N/A	US\$ 1,033	
	DH Europe Finance II Sarl	-	"	-	US\$ 1,026	N/A	US\$ 1,026	
	Weyerhaeuser Co	-	"	-	US\$ 1,026	N/A	US\$ 1,026	
	Energy Mississippi LLC	-	"	-	US\$ 1,024	N/A	US\$ 1,024	
	Toyota Motor Credit Corp	-	"	-	US\$ 1,020	N/A	US\$ 1,020	
	Continental Airlines 2012-1 Class A Pass Through Trust	-	"	-	US\$ 1,020	N/A	US\$ 1,020	
	Loews Corp	-	"	-	US\$ 1,019	N/A	US\$ 1,019	
	Amazon.com Inc	-	"	-	US\$ 1,018	N/A	US\$ 1,018	
	Toyota Motor Finance Netherlands BV	-	"	-	US\$ 1,011	N/A	US\$ 1,011	
	Cop Nacional del Cobre de Chile	-	"	-	US\$ 1,011	N/A	US\$ 1,011	
	Republic Services Inc	-	"	-	US\$ 1,009	N/A	US\$ 1,009	
	Commonwealth Edison Co	-	"	-	US\$ 1,007	N/A	US\$ 1,007	
	Kimco Realty Corp	-	"	-	US\$ 1,007	N/A	US\$ 1,007	
	African Development Bank	-	"	-	US\$ 1,003	N/A	US\$ 1,003	
	UBS AG/Stamford CT	-	"	-	US\$ 1,001	N/A	US\$ 1,001	
	Gilead Sciences Inc	-	"	-	US\$ 998	N/A	US\$ 998	
	MetLife Inc	-	"	-	US\$ 996	N/A	US\$ 996	
	BBVA USA	-	"	-	US\$ 992	N/A	US\$ 992	
	British Airways 2013-1 Class A Pass Through Trust	-	"	-	US\$ 988	N/A	US\$ 988	
	Marsh & McLennan Cos Inc	-	"	-	US\$ 979	N/A	US\$ 979	
	Georgia-Pacific LLC	-	"	-	US\$ 925	N/A	US\$ 925	
	Mitsubishi UFJ Lease & Finance Co Ltd	-	"	-	US\$ 906	N/A	US\$ 906	
	Lockheed Martin Corp	-	"	-	US\$ 905	N/A	US\$ 905	
	MassMutual Global Funding II	-	"	-	US\$ 903	N/A	US\$ 903	
	CA Inc	-	"	-	US\$ 900	N/A	US\$ 900	
	CBS Corp	-	"	-	US\$ 887	N/A	US\$ 887	
	Coca-Cola Femsa SAB de CV	-	"	-	US\$ 878	N/A	US\$ 878	
	CNOOC Finance 2011 Ltd	-	"	-	US\$ 866	N/A	US\$ 866	
	Viterra Inc	-	"	-	US\$ 843	N/A	US\$ 843	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	ONEOK Partners LP	-	Financial assets at fair value through other comprehensive income	-	US\$ 824	N/A	US\$ 824	
	Sinopec Capital 2013 Ltd	-	"	-	US\$ 814	N/A	US\$ 814	
	Nationwide Financial Services Inc	-	"	-	US\$ 779	N/A	US\$ 779	
	AXIS Specialty Finance LLC	-	"	-	US\$ 762	N/A	US\$ 762	
	PayPal Holdings Inc	-	"	-	US\$ 755	N/A	US\$ 755	
	Pinnacle West Capital Corp	-	"	-	US\$ 751	N/A	US\$ 751	
	Warner Media LLC	-	"	-	US\$ 742	N/A	US\$ 742	
	BNZ International Funding Ltd/London	-	"	-	US\$ 724	N/A	US\$ 724	
	BAE Systems Holdings Inc	-	"	-	US\$ 705	N/A	US\$ 705	
	Phillips 66	-	"	-	US\$ 705	N/A	US\$ 705	
	Southern California Gas Co	-	"	-	US\$ 704	N/A	US\$ 704	
	Aon Corp	-	"	-	US\$ 665	N/A	US\$ 665	
	Digital Realty Trust LP	-	"	-	US\$ 657	N/A	US\$ 657	
	Ohio Power Co	-	"	-	US\$ 636	N/A	US\$ 636	
	Fifth Third Bank/Cincinnati OH	-	"	-	US\$ 635	N/A	US\$ 635	
	OneBeacon US Holdings Inc	-	"	-	US\$ 627	N/A	US\$ 627	
	Norfolk Southern Railway Co	-	"	-	US\$ 621	N/A	US\$ 621	
	RBC USA Holdco Corp	-	"	-	US\$ 614	N/A	US\$ 614	
	Aptriv Corp	-	"	-	US\$ 609	N/A	US\$ 609	
	Toledo Edison Co/The	-	"	-	US\$ 609	N/A	US\$ 609	
	Pioneer Natural Resources Co	-	"	-	US\$ 608	N/A	US\$ 608	
	American Water Capital Corp	-	"	-	US\$ 603	N/A	US\$ 603	
	Nissan Motor Acceptance Corp	-	"	-	US\$ 600	N/A	US\$ 600	
	Energy Inc	-	"	-	US\$ 593	N/A	US\$ 593	
	ViacomCBS Inc	-	"	-	US\$ 588	N/A	US\$ 588	
	Duke Energy Progress LLC	-	"	-	US\$ 575	N/A	US\$ 575	
	Swedbank AB	-	"	-	US\$ 575	N/A	US\$ 575	
	Continental Airlines 2007-1 Class A Pass Through Trust	-	"	-	US\$ 572	N/A	US\$ 572	
	ABC Inc	-	"	-	US\$ 550	N/A	US\$ 550	
	Juniper Networks Inc	-	"	-	US\$ 541	N/A	US\$ 541	
	Amgen Inc	-	"	-	US\$ 541	N/A	US\$ 541	
	Ingersoll-Rand Global Holding Co Ltd	-	"	-	US\$ 530	N/A	US\$ 530	
	Aflac Inc	-	"	-	US\$ 525	N/A	US\$ 525	
	Regency Centers Corp	-	"	-	US\$ 521	N/A	US\$ 521	
	salesforce.com Inc	-	"	-	US\$ 519	N/A	US\$ 519	
	TTX Co	-	"	-	US\$ 511	N/A	US\$ 511	
	Nomura Holdings Inc	-	"	-	US\$ 504	N/A	US\$ 504	
	Hanwha Energy USA Holdings Corp	-	"	-	US\$ 502	N/A	US\$ 502	
	PNC Financial Services Group Inc/The	-	"	-	US\$ 502	N/A	US\$ 502	
	Caterpillar Financial Services Corp	-	"	-	US\$ 502	N/A	US\$ 502	
	Danone SA	-	"	-	US\$ 500	N/A	US\$ 500	
	National Oilwell Varco Inc	-	"	-	US\$ 495	N/A	US\$ 495	
	Duke Energy Carolinas LLC	-	"	-	US\$ 465	N/A	US\$ 465	
	BAT International Finance PLC	-	"	-	US\$ 462	N/A	US\$ 462	
	United Overseas Bank Ltd	-	"	-	US\$ 462	N/A	US\$ 462	
	Narragansett Electric Co/The	-	"	-	US\$ 452	N/A	US\$ 452	
	Duke Realty LP	-	"	-	US\$ 425	N/A	US\$ 425	
	Liberty Property LP	-	"	-	US\$ 417	N/A	US\$ 417	
	Boston Properties LP	-	"	-	US\$ 413	N/A	US\$ 413	
	Newmont Goldcorp Corp	-	"	-	US\$ 408	N/A	US\$ 408	
	Eaton Electric Holdings LLC	-	"	-	US\$ 406	N/A	US\$ 406	
	Comerica Bank	-	"	-	US\$ 405	N/A	US\$ 405	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Southern Power Co	-	Financial assets at fair value through other comprehensive income	-	US\$ 404	N/A	US\$ 404
	Canadian Pacific Railway Co	-	"	-	US\$ 400	N/A	US\$ 400
	Fidelity National Information Services Inc	-	"	-	US\$ 399	N/A	US\$ 399
	AXA Equitable Holdings Inc	-	"	-	US\$ 393	N/A	US\$ 393
	Metropolitan Edison Co	-	"	-	US\$ 388	N/A	US\$ 388
	StantCorp Financial Group Inc	-	"	-	US\$ 386	N/A	US\$ 386
	Principal Financial Group Inc	-	"	-	US\$ 359	N/A	US\$ 359
	Continental Airlines 2000-1 Class A-1 Pass Through Trust	-	"	-	US\$ 312	N/A	US\$ 312
	Chubb INA Holdings Inc	-	"	-	US\$ 308	N/A	US\$ 308
	America Movil SAB de CV	-	"	-	US\$ 307	N/A	US\$ 307
	Alibaba Group Holding Ltd	-	"	-	US\$ 306	N/A	US\$ 306
	CommonSpirit Health	-	"	-	US\$ 303	N/A	US\$ 303
	Schlumberger Finance Canada Ltd	-	"	-	US\$ 300	N/A	US\$ 300
	Manufacturers & Traders Trust Co	-	"	-	US\$ 300	N/A	US\$ 300
	Eli Lilly & Co	-	"	-	US\$ 299	N/A	US\$ 299
	Home Depot Inc/The	-	"	-	US\$ 284	N/A	US\$ 284
	Southern Natural Gas Co LLC / Southern Natural Issuing Corp	-	"	-	US\$ 282	N/A	US\$ 282
	Archer-Daniels-Midland Co	-	"	-	US\$ 258	N/A	US\$ 258
	Bank of America NA	-	"	-	US\$ 257	N/A	US\$ 257
	Aon PLC	-	"	-	US\$ 252	N/A	US\$ 252
	Grupo Bimbo SAB de CV	-	"	-	US\$ 248	N/A	US\$ 248
	Telstra Corp Ltd	-	"	-	US\$ 209	N/A	US\$ 209
	US Airways 2013-1 Class A Pass Through Trust	-	"	-	US\$ 208	N/A	US\$ 208
	Halliburton Co	-	"	-	US\$ 207	N/A	US\$ 207
	Waste Management Inc	-	"	-	US\$ 207	N/A	US\$ 207
	QNB Finance Ltd	-	"	-	US\$ 201	N/A	US\$ 201
	WestRock MWV LLC	-	"	-	US\$ 200	N/A	US\$ 200
	Glencore Funding LLC	-	"	-	US\$ 185	N/A	US\$ 185
	Nucor Corp	-	"	-	US\$ 111	N/A	US\$ 111
	American Airlines 2011-1 Class A Pass Through Trust	-	"	-	US\$ 160,098	N/A	US\$ 161,794
	Wells Fargo & Co	-	Financial assets at amortized cost	-	US\$ 84,967	N/A	US\$ 85,578
	JPMorgan Chase & Co.	-	"	-	US\$ 9,996	N/A	US\$ 10,022
	Industrial and Commercial Bank of China	-	"	-			
	Government bond	-	"	-			
	United States Treasury Note/Bond	-	Financial assets at fair value through other comprehensive income	-	US\$ 419,942	N/A	US\$ 419,942
	Abu Dhabi Government International Bond	-	"	-	US\$ 3,501	N/A	US\$ 3,501
	United States Treasury Inflation Indexed Bonds	-	"	-	US\$ 2,830	N/A	US\$ 2,830
	Qatar Government International Bond	-	"	-	US\$ 1,372	N/A	US\$ 1,372
	Agency bonds/Agency mortgage-backed securities	-	"	-			
	Freddie Mac Multifamily Structured Pass Through Certificates	-	Financial assets at fair value through Profit or Loss	-	US\$ 1,365	N/A	US\$ 1,365
	Fannie Mae Pool	-	Financial assets at fair value through other comprehensive income	-	US\$ 761,352	N/A	US\$ 761,352
	Fannie Mae REMICS	-	"	-	US\$ 176,379	N/A	US\$ 176,379
	Freddie Mac REMICS	-	"	-	US\$ 164,994	N/A	US\$ 164,994
	Freddie Mac Gold Pool	-	"	-	US\$ 164,081	N/A	US\$ 164,081
	Ginnie Mae II Pool	-	"	-	US\$ 152,833	N/A	US\$ 152,833
	Freddie Mac Pool	-	"	-	US\$ 129,835	N/A	US\$ 129,835
	Fannie Mae or Freddie Mac	-	"	-	US\$ 56,856	N/A	US\$ 56,856
	Government National Mortgage Association	-	"	-	US\$ 54,891	N/A	US\$ 54,891
	Ginnie Mae	-	"	-	US\$ 33,108	N/A	US\$ 33,108

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Fannie Mae-Aces	-	Financial assets at fair value through other comprehensive income	-	US\$ 21,409	N/A	US\$ 21,409	
	Freddie Mac Strips	-	"	-	US\$ 3,041	N/A	US\$ 3,041	
	Federal Home Loan Bank Discount Notes	-	"	-	US\$ 2,696	N/A	US\$ 2,696	
	Freddie Mac Multifamily Structured Pass Through Certificates	-	"	-	US\$ 2,160	N/A	US\$ 2,160	
	Korea Hydro & Nuclear Power Co Ltd	-	"	-	US\$ 1,970	N/A	US\$ 1,970	
	Federal Farm Credit Banks Funding Corp	-	"	-	US\$ 1,099	N/A	US\$ 1,099	
	Denver City & County Housing Authority	-	"	-	US\$ 996	N/A	US\$ 996	
	Ginnie Mae I Pool	-	"	-	US\$ 970	N/A	US\$ 970	
	FHLMC-GNMA	-	"	-	US\$ 860	N/A	US\$ 860	
	Oregon Health & Science University	-	"	-	US\$ 789	N/A	US\$ 789	
	NCUA Guaranteed Notes Trust 2010-R2	-	"	-	US\$ 668	N/A	US\$ 668	
	FRESB 2019-SB61 Mortgage Trust	-	"	-	US\$ 667	N/A	US\$ 667	
	Freddie Mac Non Gold Pool	-	"	-	US\$ 499	N/A	US\$ 499	
	FRESB 2019-SB60 Mortgage Trust	-	"	-	US\$ 415	N/A	US\$ 415	
	NCUA Guaranteed Notes Trust 2010-R1	-	"	-	US\$ 222	N/A	US\$ 222	
	Fannie Mae Benchmark REMIC	-	"	-	US\$ 116	N/A	US\$ 116	
	Asset-backed securities							
	Hyundai Auto Receivables Trust 2017-A	-	Financial assets at fair value through other comprehensive income	-	US\$ 9,925	N/A	US\$ 9,925	
	Citibank Credit Card Issuance Trust	-	"	-	US\$ 7,321	N/A	US\$ 7,321	
	Citigroup Commercial Mortgage Trust 2014-GC21	-	"	-	US\$ 7,036	N/A	US\$ 7,036	
	CGDDB Commercial Mortgage Trust 2017-BIOC	-	"	-	US\$ 6,845	N/A	US\$ 6,845	
	Benchmark 2019-B11 Mortgage Trust	-	"	-	US\$ 6,248	N/A	US\$ 6,248	
	Ford Credit Auto Owner Trust 2017-A	-	"	-	US\$ 6,084	N/A	US\$ 6,084	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	"	-	US\$ 6,075	N/A	US\$ 6,075	
	UBS-Barclays Commercial Mortgage Trust 2012-C2	-	"	-	US\$ 6,070	N/A	US\$ 6,070	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C29	-	"	-	US\$ 6,041	N/A	US\$ 6,041	
	Ford Credit Auto Owner Trust 2016-REV1	-	"	-	US\$ 6,022	N/A	US\$ 6,022	
	CD 2019-CD8 Mortgage Trust	-	"	-	US\$ 5,924	N/A	US\$ 5,924	
	Wells Fargo Commercial Mortgage Trust 2019-C53	-	"	-	US\$ 5,678	N/A	US\$ 5,678	
	WFRBS Commercial Mortgage Trust 2013-C13	-	"	-	US\$ 5,648	N/A	US\$ 5,648	
	BFCMS 2018-TALL Mortgage Trust	-	"	-	US\$ 5,472	N/A	US\$ 5,472	
	COMM 2015-CGRE24 Mortgage Trust	-	"	-	US\$ 5,238	N/A	US\$ 5,238	
	Hyundai Auto Lease Securitization Trust 2018-A	-	"	-	US\$ 5,079	N/A	US\$ 5,079	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C30	-	"	-	US\$ 5,030	N/A	US\$ 5,030	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C10	-	"	-	US\$ 5,012	N/A	US\$ 5,012	
	Ford Credit Auto Owner Trust 2015-REV1	-	"	-	US\$ 4,922	N/A	US\$ 4,922	
	MRCD 2019-MARK Mortgage Trust	-	"	-	US\$ 4,705	N/A	US\$ 4,705	
	BANK 2019-BNK22	-	"	-	US\$ 4,518	N/A	US\$ 4,518	
	Hyundai Auto Receivables Trust 2016-B	-	"	-	US\$ 4,502	N/A	US\$ 4,502	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C7	-	"	-	US\$ 4,263	N/A	US\$ 4,263	
	Mercedes-Benz Auto Lease Trust 2019-B	-	"	-	US\$ 4,241	N/A	US\$ 4,241	
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	"	-	US\$ 4,180	N/A	US\$ 4,180	
	Hyundai Auto Receivables Trust 2016-A	-	"	-	US\$ 4,178	N/A	US\$ 4,178	
	GM Financial Consumer Automobile Receivables Trust 2018-1	-	"	-	US\$ 4,164	N/A	US\$ 4,164	
	UBS Commercial Mortgage Trust 2018-C10	-	"	-	US\$ 4,163	N/A	US\$ 4,163	
	JPMCC Commercial Mortgage Securities Trust 2017-JP7	-	"	-	US\$ 4,151	N/A	US\$ 4,151	
	BANK 2017-BNK6	-	"	-	US\$ 4,107	N/A	US\$ 4,107	
	BANK 2019-BNK5	-	"	-	US\$ 4,104	N/A	US\$ 4,104	
	BANK 2019-BNK17	-	"	-	US\$ 4,099	N/A	US\$ 4,099	
	BX Commercial Mortgage Trust 2018-IND	-	"	-	US\$ 3,992	N/A	US\$ 3,992	
	American Express Credit Account Master Trust	-	"	-	US\$ 3,804	N/A	US\$ 3,804	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Enterprise Fleet Financing 2019-2 LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 3,763	N/A	US\$ 3,763
	Barclays Commercial Mortgage Trust 2019-C5	-	"	-	US\$ 3,720	N/A	US\$ 3,720
	Citigroup Commercial Mortgage Trust 2019-C7	-	"	-	US\$ 3,685	N/A	US\$ 3,685
	BANK 2019-BNK23	-	"	-	US\$ 3,640	N/A	US\$ 3,640
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	-	"	-	US\$ 3,381	N/A	US\$ 3,381
	UBS-Barclays Commercial Mortgage Trust 2013-C6	-	"	-	US\$ 3,327	N/A	US\$ 3,327
	GS Mortgage Securities Trust 2012-GC6	-	"	-	US\$ 3,194	N/A	US\$ 3,194
	Ford Credit Auto Lease Trust 2019-B	-	"	-	US\$ 3,122	N/A	US\$ 3,122
	Toyota Auto Receivables 2017-A Owner Trust	-	"	-	US\$ 3,108	N/A	US\$ 3,108
	Nissan Auto Lease Trust 2017-B	-	"	-	US\$ 3,072	N/A	US\$ 3,072
	UBS-Barclays Commercial Mortgage Trust 2012-C3	-	"	-	US\$ 3,061	N/A	US\$ 3,061
	Toyota Auto Receivables 2018-D Owner Trust	-	"	-	US\$ 3,059	N/A	US\$ 3,059
	JP Morgan Chase Commercial Mortgage Securities Trust 2016-WIKI	-	"	-	US\$ 3,020	N/A	US\$ 3,020
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	"	-	US\$ 3,017	N/A	US\$ 3,017
	Citigroup Commercial Mortgage Trust 2016-P5	-	"	-	US\$ 3,008	N/A	US\$ 3,008
	GS Mortgage Securities Corp Trust 2018-R1VR	-	"	-	US\$ 3,003	N/A	US\$ 3,003
	GM Financial Consumer Automobile Receivables Trust 2017-2	-	"	-	US\$ 2,995	N/A	US\$ 2,995
	Morgan Stanley Capital I Trust 2017-H1	-	"	-	US\$ 2,966	N/A	US\$ 2,966
	Hyundai Auto Receivables Trust 2018-A	-	"	-	US\$ 2,915	N/A	US\$ 2,915
	Nissan Auto Lease Trust 2019-B	-	"	-	US\$ 2,885	N/A	US\$ 2,885
	Citigroup Commercial Mortgage Trust 2016-C3	-	"	-	US\$ 2,760	N/A	US\$ 2,760
	GS Mortgage Securities Trust 2013-GCJ12	-	"	-	US\$ 2,660	N/A	US\$ 2,660
	GS Mortgage Securities Trust 2011-GC3	-	"	-	US\$ 2,626	N/A	US\$ 2,626
	BANK 2019-BNK24	-	"	-	US\$ 2,606	N/A	US\$ 2,606
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	-	"	-	US\$ 2,536	N/A	US\$ 2,536
	ARI Fleet Lease Trust 2019-A	-	"	-	US\$ 2,408	N/A	US\$ 2,408
	Nissan Auto Lease Trust 2019-A	-	"	-	US\$ 2,350	N/A	US\$ 2,350
	UBS Commercial Mortgage Trust 2018-C11	-	"	-	US\$ 2,179	N/A	US\$ 2,179
	Morgan Stanley Capital I Trust 2018-H3	-	"	-	US\$ 2,134	N/A	US\$ 2,134
	BENCHMARK 2018-B4	-	"	-	US\$ 2,125	N/A	US\$ 2,125
	COMM 2013-CRE12 Mortgage Trust	-	"	-	US\$ 2,112	N/A	US\$ 2,112
	Ford Credit Auto Owner Trust 2019-A	-	"	-	US\$ 2,088	N/A	US\$ 2,088
	Citigroup Commercial Mortgage Trust 2017-P8	-	"	-	US\$ 2,059	N/A	US\$ 2,059
	JPMDB Commercial Mortgage Securities Trust 2017-C7	-	"	-	US\$ 2,044	N/A	US\$ 2,044
	WFRBS Commercial Mortgage Trust 2013-C17	-	"	-	US\$ 2,044	N/A	US\$ 2,044
	JPMBB Commercial Mortgage Securities Trust 2014-C19	-	"	-	US\$ 2,032	N/A	US\$ 2,032
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C31	-	"	-	US\$ 2,027	N/A	US\$ 2,027
	GM Financial Consumer Automobile 2017-1	-	"	-	US\$ 2,001	N/A	US\$ 2,001
	COMM 2014-CRE17 Mortgage Trust	-	"	-	US\$ 2,000	N/A	US\$ 2,000
	GS Mortgage Securities Trust 2014-GC22	-	"	-	US\$ 1,961	N/A	US\$ 1,961
	Mercedes-Benz Auto Lease Trust 2018-B	-	"	-	US\$ 1,961	N/A	US\$ 1,961
	GS Mortgage Securities Trust 2015-GC34	-	"	-	US\$ 1,905	N/A	US\$ 1,905
	Chesapeake Funding II LLC	-	"	-	US\$ 1,831	N/A	US\$ 1,831
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	-	"	-	US\$ 1,791	N/A	US\$ 1,791
	Citigroup Commercial Mortgage Trust 2015-GC35	-	"	-	US\$ 1,772	N/A	US\$ 1,772
	Morgan Stanley Capital I Trust 2019-H6	-	"	-	US\$ 1,647	N/A	US\$ 1,647
	GM Financial Automobile Leasing Trust 2019-1	-	"	-	US\$ 1,647	N/A	US\$ 1,647
	JPMBB Commercial Mortgage Securities Trust 2013-C12	-	"	-	US\$ 1,544	N/A	US\$ 1,544
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	"	-	US\$ 1,498	N/A	US\$ 1,498
	Morgan Stanley Bank of America Merrill Lynch Trust 2015-C24	-	"	-	US\$ 1,492	N/A	US\$ 1,492
	Citigroup Commercial Mortgage Trust 2015-GC27	-	"	-	US\$ 1,458	N/A	US\$ 1,458

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	WFRBS Commercial Mortgage Trust 2013-C14	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,454	N/A	US\$ 1,454	
	GS Mortgage Securities Trust 2014-GC24	-	"	-	US\$ 1,452	N/A	US\$ 1,452	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C12	-	"	-	US\$ 1,438	N/A	US\$ 1,438	
	Honda Auto Receivables 2017-3 Owner Trust	-	"	-	US\$ 1,425	N/A	US\$ 1,425	
	Wells Fargo Commercial Mortgage Trust 2016-C36	-	"	-	US\$ 1,403	N/A	US\$ 1,403	
	Benchmark 2019-B14 Mortgage Trust	-	"	-	US\$ 1,381	N/A	US\$ 1,381	
	Hertz Fleet Lease Funding LP	-	"	-	US\$ 1,372	N/A	US\$ 1,372	
	Hyundai Auto Receivables Trust 2019-B	-	"	-	US\$ 1,286	N/A	US\$ 1,286	
	Wells Fargo Commercial Mortgage Trust 2012-LC5	-	"	-	US\$ 1,268	N/A	US\$ 1,268	
	COMM 2013-LC6 Mortgage Trust	-	"	-	US\$ 1,238	N/A	US\$ 1,238	
	GS Mortgage Securities Trust 2019-GSA1	-	"	-	US\$ 1,233	N/A	US\$ 1,233	
	GS Mortgage Securities Corp II	-	"	-	US\$ 1,226	N/A	US\$ 1,226	
	GM Financial Automobile Leasing Trust 2019-4	-	"	-	US\$ 1,194	N/A	US\$ 1,194	
	JPMDB Commercial Mortgage Securities Trust 2016-C2	-	"	-	US\$ 1,192	N/A	US\$ 1,192	
	Benchmark 2019-B9 Mortgage Trust	-	"	-	US\$ 1,160	N/A	US\$ 1,160	
	Morgan Stanley Capital II Trust 2016-UB11	-	"	-	US\$ 1,105	N/A	US\$ 1,105	
	JPMCC Commercial Mortgage Securities Trust 2017-JP5	-	"	-	US\$ 1,073	N/A	US\$ 1,073	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C13	-	"	-	US\$ 1,048	N/A	US\$ 1,048	
	UBS-Barclays Commercial Mortgage Trust 2013-C5	-	"	-	US\$ 1,032	N/A	US\$ 1,032	
	COMM 2015-PC1 Mortgage Trust	-	"	-	US\$ 1,032	N/A	US\$ 1,032	
	WFRBS Commercial Mortgage Trust 2011-C4	-	"	-	US\$ 1,027	N/A	US\$ 1,027	
	Ford Credit Auto Lease Trust 2019-A	-	"	-	US\$ 1,013	N/A	US\$ 1,013	
	BMW Vehicle Lease Trust 2019-1	-	"	-	US\$ 1,012	N/A	US\$ 1,012	
	Ford Credit Auto Owner Trust 2017-REV1	-	"	-	US\$ 998	N/A	US\$ 998	
	Benchmark 2019-B15 Mortgage Trust	-	"	-	US\$ 998	N/A	US\$ 998	
	BECMS MORTGAGE TRUST 2017-C1	-	"	-	US\$ 959	N/A	US\$ 959	
	Chigroup Commercial Mortgage Trust 2013-GC11	-	"	-	US\$ 951	N/A	US\$ 951	
	Chigroup Commercial Mortgage Trust 2014-GC23	-	"	-	US\$ 918	N/A	US\$ 918	
	COMM 2012-CCRE5 Mortgage Trust	-	"	-	US\$ 916	N/A	US\$ 916	
	Cantor Commercial Real Estate Lending 2019-CF1	-	"	-	US\$ 830	N/A	US\$ 830	
	280 Park Avenue 2017-280P Mortgage Trust	-	"	-	US\$ 823	N/A	US\$ 823	
	GM Financial Automobile Leasing Trust 2019-2	-	"	-	US\$ 798	N/A	US\$ 798	
	Ford Credit Auto Lease Trust	-	"	-	US\$ 759	N/A	US\$ 759	
	GM Financial Automobile Leasing Trust 2018-1	-	"	-	US\$ 759	N/A	US\$ 759	
	Morgan Stanley Bank of America Merrill Lynch Trust 2015-C20	-	"	-	US\$ 756	N/A	US\$ 756	
	GM Financial Consumer Automobile Receivables Trust 2018-2	-	"	-	US\$ 741	N/A	US\$ 741	
	Toyota Auto Receivables 2016-B Owner Trust	-	"	-	US\$ 720	N/A	US\$ 720	
	COMM 2015-CCRE22 Mortgage Trust	-	"	-	US\$ 703	N/A	US\$ 703	
	Wells Fargo Commercial Mortgage Trust 2015-NXS3	-	"	-	US\$ 702	N/A	US\$ 702	
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	"	-	US\$ 701	N/A	US\$ 701	
	COMM 2013-CCRE8 Mortgage Trust	-	"	-	US\$ 696	N/A	US\$ 696	
	CFRE Commercial Mortgage Trust 2011-C1	-	"	-	US\$ 650	N/A	US\$ 650	
	GM Financial Automobile Leasing Trust 2019-3	-	"	-	US\$ 620	N/A	US\$ 620	
	Mercedes-Benz Auto Lease Trust 2019-A	-	"	-	US\$ 603	N/A	US\$ 603	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-WLDN	-	"	-	US\$ 597	N/A	US\$ 597	
	JPMDB Commercial Mortgage Securities Trust 2019-COR6	-	"	-	US\$ 576	N/A	US\$ 576	
	Chigroup Commercial Mortgage Trust 2014-GC19	-	"	-	US\$ 510	N/A	US\$ 510	
	DBUBS 2011-LC2 Mortgage Trust	-	"	-	US\$ 506	N/A	US\$ 506	
	CD 2016-CD2 Mortgage Trust	-	"	-	US\$ 485	N/A	US\$ 485	
	Nissan Auto Receivables 2019-C Owner Trust	-	"	-	US\$ 482	N/A	US\$ 482	
	Mercedes-Benz Auto Lease Trust 2018-A	-	"	-	US\$ 465	N/A	US\$ 465	
	GS Mortgage Securities Trust 2014-GC26	-	"	-				

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	GM Financial Consumer Automobile Receivables Trust 2019-3	-	Financial assets at fair value through other comprehensive income	-	US\$ 443	N/A	US\$ 443	
	Hyundai Auto Lease Securitization Trust 2017-C	-	"	-	US\$ 410	N/A	US\$ 410	
	WFRBS Commercial Mortgage Trust 2014-C25	-	"	-	US\$ 408	N/A	US\$ 408	
	Ford Credit Auto Lease Trust 2017-B	-	"	-	US\$ 380	N/A	US\$ 380	
	Hyundai Auto Receivables Trust 2015-C	-	"	-	US\$ 365	N/A	US\$ 365	
	GM Financial Automobile Leasing Trust 2018-2	-	"	-	US\$ 351	N/A	US\$ 351	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C5	-	"	-	US\$ 350	N/A	US\$ 350	
	COMM 2015-CCRE26 Mortgage Trust	-	"	-	US\$ 349	N/A	US\$ 349	
	GM Financial Automobile Leasing Trust 2018-3	-	"	-	US\$ 339	N/A	US\$ 339	
	JPMBB Commercial Mortgage Securities Trust 2015-C31	-	"	-	US\$ 325	N/A	US\$ 325	
	Ford Credit Auto Owner Trust 2017-B	-	"	-	US\$ 301	N/A	US\$ 301	
	Toyota Auto Receivables 2018-B Owner Trust	-	"	-	US\$ 283	N/A	US\$ 283	
	BMW Vehicle Lease Trust 2017-2	-	"	-	US\$ 189	N/A	US\$ 189	
	COMM 2015-DC1 Mortgage Trust	-	"	-	US\$ 180	N/A	US\$ 180	
	Wells Fargo Commercial Mortgage Trust 2015-NXS1	-	"	-	US\$ 103	N/A	US\$ 103	
	Wells Fargo Commercial Mortgage Trust 2015-SG1	-	"	-	US\$ 100	N/A	US\$ 100	
	COMM 2014-CCRE15 Mortgage Trust	-	"	-	US\$ 46	N/A	US\$ 46	
	Nissan Auto Receivables 2016-B Owner Trust	-	"	-	US\$ 36	N/A	US\$ 36	
	WFRBS Commercial Mortgage Trust 2011-C5	-	"	-	US\$ 31	N/A	US\$ 31	
	GS Mortgage Securities Trust 2010-C2	-	"	-	US\$ 21	N/A	US\$ 21	
Morgan Stanley Bank of America Merrill Lynch Trust 2014-C18	-	"	-	US\$ 20	N/A	US\$ 20		
GS Mortgage Securities Trust 2010-C1	-	"	-	US\$ 9	N/A	US\$ 9		
VTAF II	Non-publicly traded equity investments Primavera Capital Fund II L.P.	-	Financial assets at fair value through other comprehensive income	-	US\$ 78,403	4	US\$ 78,403	
	Non-publicly traded equity investments Sentelic	-	Financial assets at fair value through other comprehensive income	1,019	US\$ 1,307	4	US\$ 1,307	
	Aether Systems, Inc.	-	"	1,085	US\$ 362	20	US\$ 362	
	5V Technologies, Inc.	-	"	4	-	2	-	
VTAF III	Non-publicly traded equity investments Liquid.Leds Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US\$ 800	14	US\$ 800	
	Neocomix, Inc.	-	"	4,147	US\$ 174	-	US\$ 174	
Growth Fund	Non-publicly traded equity investments Innovium, Inc.	-	Financial assets at fair value through other comprehensive income	230	US\$ 1,560	-	US\$ 1,560	
	Innovium, Inc.	-	"	221	US\$ 1,501	-	US\$ 1,501	
	CNEX Labs, Inc.	-	"	237	US\$ 775	-	US\$ 775	
	Astera Labs, Inc.	-	"	127	US\$ 250	-	US\$ 250	

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES ACQUIRED AND DISPOSED OF AT COSTS OR PRICES OF AT LEAST NTS300 MILLION OR 20% OF THE PAID-IN CAPITAL FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal		Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount
TSMC	Commercial paper Taiwan Power Company	Financial assets at amortized cost	-	-	180	\$ 1,795,261	-	\$ -	180	\$ 1,800,000	-	\$ -
	CPC Corporation, Taiwan	"	-	-	50	498,837	-	-	50	500,000	-	-
	Publicly traded stocks Semiconductor Manufacturing International Corporation	Financial assets at fair value through other comprehensive income	-	-	21,105	568,150	-	-	21,105	775,282	252,307	-
TSMC Global	Corporate bond Bank of America Corp	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 44,755	-	US\$ 26,624	-	US\$ 26,924	27	US\$ 46,084
	Citigroup Inc	"	-	-	-	US\$ 28,602	-	US\$ 27,307	-	US\$ 21,481	95	US\$ 35,512
	AbbVie Inc	"	-	-	-	US\$ 11,504	-	US\$ 36,780	-	US\$ 17,687	111	US\$ 31,425
	AT&T Inc	"	-	-	-	US\$ 23,123	-	US\$ 16,412	-	US\$ 14,343	125	US\$ 26,140
	Goldman Sachs Group Inc/The	"	-	-	-	US\$ 17,619	-	US\$ 12,935	-	US\$ 5,709	6	US\$ 25,789
	CVS Health Corp	"	-	-	-	US\$ 27,238	-	US\$ 25,647	-	US\$ 31,861	551	US\$ 22,242
	Bristol-Myers Squibb Co	"	-	-	-	US\$ -	-	US\$ 25,338	-	US\$ 4,409	67	US\$ 21,666
	Mitsubishi UFJ Financial Group Inc	"	-	-	-	US\$ 9,547	-	US\$ 13,962	-	US\$ 2,670	24	US\$ 21,332
	JPMorgan Chase & Co	"	-	-	-	US\$ 16,577	-	US\$ 14,544	-	US\$ 10,973	(1)	US\$ 20,825
	Morgan Stanley	"	-	-	-	US\$ 19,581	-	US\$ 17,212	-	US\$ 16,990	116	US\$ 20,421
	HSBC Holdings PLC	"	-	-	-	US\$ 15,571	-	US\$ 13,265	-	US\$ 9,205	131	US\$ 20,102
	Apple Inc	"	-	-	-	US\$ 12,585	-	US\$ 10,796	-	US\$ 3,939	(58)	US\$ 19,886
	Sumitomo Mitsui Financial Group Inc	"	-	-	-	US\$ 10,008	-	US\$ 16,956	-	US\$ 8,327	39	US\$ 19,176
	Toronto-Dominion Bank/The	"	-	-	-	US\$ 5,000	-	US\$ 17,437	-	US\$ 7,765	96	US\$ 15,017
	Verizon Communications Inc	"	-	-	-	US\$ 15,927	-	US\$ 9,920	-	US\$ 12,478	31	US\$ 14,058
	Wells Fargo & Co	"	-	-	-	US\$ 576	-	US\$ 11,967	-	US\$ 813	(2)	US\$ 11,864
	Morgan Stanley	"	-	-	-	US\$ 8,928	-	US\$ 10,113	-	US\$ 7,610	147	US\$ 11,837
	Banque Federative du Credit Mutuel SA	"	-	-	-	US\$ 4,028	-	US\$ 11,726	-	US\$ 4,096	8	US\$ 11,752
	American International Group Inc	"	-	-	-	US\$ 10,737	-	US\$ 10,471	-	US\$ 10,247	34	US\$ 11,423
	Equifax Inc	"	-	-	-	US\$ 174	-	US\$ 10,748	-	US\$ -	-	US\$ 11,001
	Ryder System Inc	"	-	-	-	US\$ 4,778	-	US\$ 11,957	-	US\$ 6,218	97	US\$ 10,892
	International Business Machines Corp	"	-	-	-	US\$ -	-	US\$ 13,545	-	US\$ 3,265	(1)	US\$ 10,414
	NexEra Energy Capital Holdings Inc	"	-	-	-	US\$ 4,706	-	US\$ 15,881	-	US\$ 11,397	31	US\$ 9,420
Fiserv Inc	"	-	-	-	US\$ 1,455	-	US\$ 12,324	-	US\$ 4,902	132	US\$ 9,174	
Comcast Corp	"	-	-	-	US\$ 18,894	-	US\$ 3,773	-	US\$ 14,933	481	US\$ 8,514	
JPMorgan Chase & Co	"	-	-	-	US\$ 25,423	-	US\$ 5,887	-	US\$ 23,845	108	US\$ 7,849	
Anheuser-Busch InBev Worldwide Inc	"	-	-	-	US\$ -	-	US\$ 11,641	-	US\$ 6,093	269	US\$ 6,276	
American Express Co	"	-	-	-	US\$ 4,547	-	US\$ 10,414	-	US\$ 9,023	133	US\$ 6,239	
Walt Disney Co/The	"	-	-	-	US\$ -	-	US\$ 10,719	-	US\$ 7,387	(41)	US\$ 3,246	
Hyundai Capital America	"	-	-	-	US\$ 6,644	-	US\$ 8,783	-	US\$ 12,403	70	US\$ 3,187	

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)
TSMC Global	AXA Equitable Holdings Inc	Financial assets at fair value through other comprehensive income	-	-	US\$ 5,662	-	US\$ 6,917	-	US\$ 12,532	US\$ 12,265	US\$ 267	-	US\$ 393
	Ford Motor Credit Co LLC	"	-	-	US\$ 10,153	-	US\$ -	-	US\$ 10,252	US\$ 10,454	US\$ (202)	-	US\$ -
	European Investment Bank	"	-	-	US\$ 3,903	-	US\$ 7,177	-	US\$ 11,181	US\$ 11,123	US\$ 58	-	US\$ -
	Wells Fargo & Co	Financial assets at amortized cost	-	-	US\$ 149,941	-	US\$ 10,187	-	US\$ -	US\$ -	US\$ -	-	US\$ 160,098
	JPMorgan Chase & Co.	"	-	-	US\$ 124,948	-	US\$ -	-	US\$ 40,000	US\$ 40,000	US\$ -	-	US\$ 84,967
	Goldman Sachs Group, Inc.	"	-	-	US\$ 99,900	-	US\$ -	-	US\$ 100,000	US\$ 100,000	US\$ -	-	US\$ -
	Bank of Nova Scotia	"	-	-	US\$ 49,976	-	US\$ -	-	US\$ 50,000	US\$ 50,000	US\$ -	-	US\$ -
	Commonwealth Bank of Australia	"	-	-	US\$ 49,994	-	US\$ -	-	US\$ 50,000	US\$ 50,000	US\$ -	-	US\$ -
	Westpac Banking Corp.	"	-	-	US\$ 99,987	-	US\$ -	-	US\$ 100,000	US\$ 100,000	US\$ -	-	US\$ -
	National Australia Bank	"	-	-	US\$ 49,994	-	US\$ -	-	US\$ 50,000	US\$ 50,000	US\$ -	-	US\$ -
	Government bond	"	-	-	US\$ 283,314	-	US\$ 1,330,414	-	US\$ 1,201,895	US\$ 1,197,309	US\$ 4,586	-	US\$ 419,942
	United States Treasury Note/Bond	Financial assets at fair value through other comprehensive income	-	-	US\$ 2,248	-	US\$ 30,306	-	US\$ 30,583	US\$ 30,575	US\$ 8	-	US\$ -
	United States Treasury Bill	"	-	-	US\$ -	-	US\$ 50,193	-	US\$ 50,290	US\$ 50,290	US\$ -	-	US\$ -
	United States Cash Management	"	-	-	US\$ 68,164	-	US\$ -	-	US\$ 68,186	US\$ 68,239	US\$ (53)	-	US\$ -
	United States Treasury Floating Rate Note	"	-	-	US\$ -	-	US\$ -	-	US\$ -	US\$ -	US\$ -	-	US\$ -
	Agency bonds/Agency mortgage-backed securities	Financial assets at fair value through other comprehensive income	-	-	US\$ -	-	US\$ 43,868	-	US\$ 448	US\$ 460	US\$ (12)	-	US\$ 43,455
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 41,510	-	US\$ 1,017	US\$ 1,047	US\$ (30)	-	US\$ 40,438
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 30,338	-	US\$ 917	US\$ 941	US\$ (24)	-	US\$ 29,463
	GNMA II Pool MA6155	"	-	-	US\$ -	-	US\$ 27,922	-	US\$ 3,870	US\$ 3,876	US\$ (6)	-	US\$ 23,932
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 24,616	-	US\$ 1,759	US\$ 1,855	US\$ (96)	-	US\$ 22,981
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 23,956	-	US\$ 1,506	US\$ 1,572	US\$ (66)	-	US\$ 22,677
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 22,063	-	US\$ 1,716	US\$ 1,771	US\$ (55)	-	US\$ 20,518
	FNMA TBA 30 Yr 4.5	"	-	-	US\$ -	-	US\$ 466,768	-	US\$ 446,909	US\$ 446,629	US\$ 280	-	US\$ 20,165
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 21,757	-	US\$ 2,297	US\$ 2,329	US\$ (32)	-	US\$ 19,901
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 20,910	-	US\$ 1,702	US\$ 1,770	US\$ (68)	-	US\$ 19,392
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 18,806	-	US\$ -	US\$ -	US\$ -	-	US\$ 18,834
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,929	-	US\$ 1,965	US\$ 2,050	US\$ (85)	-	US\$ 18,011
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 18,859	-	US\$ 1,475	US\$ 1,582	US\$ (107)	-	US\$ 17,529
	FNMA TBA 30 Yr 4	"	-	-	US\$ -	-	US\$ 251,219	-	US\$ 233,880	US\$ 233,875	US\$ 5	-	US\$ 17,372
	GNMA II Pool MA6090	"	-	-	US\$ -	-	US\$ 17,117	-	US\$ 155	US\$ 161	US\$ (6)	-	US\$ 16,840
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 19,605	-	US\$ 3,315	US\$ 3,436	US\$ (121)	-	US\$ 16,230
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 16,126	-	US\$ -	US\$ -	US\$ -	-	US\$ 16,122
	GNMA II TBA 30 Yr 3	"	-	-	US\$ -	-	US\$ 206,260	-	US\$ 191,534	US\$ 191,171	US\$ 363	-	US\$ 15,095
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 15,995	-	US\$ 1,319	US\$ 1,349	US\$ (30)	-	US\$ 14,828
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 17,665	-	US\$ 3,584	US\$ 3,755	US\$ (171)	-	US\$ 13,966
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 13,217	-	US\$ -	US\$ -	US\$ -	-	US\$ 13,261
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 14,044	-	US\$ 1,028	US\$ 1,028	US\$ (24)	-	US\$ 13,152
	GNMA II Pool MA5264	"	-	-	US\$ -	-	US\$ 16,635	-	US\$ 3,686	US\$ 3,832	US\$ (146)	-	US\$ 12,793
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 12,611	-	US\$ -	US\$ -	US\$ -	-	US\$ 12,628
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 13,778	-	US\$ 1,615	US\$ 1,636	US\$ (21)	-	US\$ 12,480
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 12,394	-	US\$ 148	US\$ 158	US\$ (10)	-	US\$ 12,281
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 14,112	-	US\$ 2,091	US\$ 2,197	US\$ (106)	-	US\$ 11,962
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 12,515	-	US\$ 1,472	US\$ 1,497	US\$ (25)	-	US\$ 11,248
	GNMA II TBA 30 Yr 3.5	"	-	-	US\$ 1,157	-	US\$ 270,651	-	US\$ 261,544	US\$ 261,292	US\$ 252	-	US\$ 10,517

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)
TSMC Global	Fannie Mae	Financial assets at fair value through other comprehensive income	-	-	US\$ 1,889	-	US\$ 10,203	-	US\$ 1,938	US\$ 1,918	US\$ 20	-	US\$ 10,258
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,110	-	US\$ 38	US\$ 39	US\$ (1)	-	US\$ 10,057
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,205	-	US\$ 471	US\$ 486	US\$ (15)	-	US\$ 9,703
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 11,094	-	US\$ 1,529	US\$ 1,594	US\$ (65)	-	US\$ 9,596
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,064	-	US\$ 642	US\$ 652	US\$ (10)	-	US\$ 9,384
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,212	-	US\$ 1,100	US\$ 1,118	US\$ (18)	-	US\$ 9,306
	FNMA TBA 30 Yr 3.5	"	-	-	US\$ -	-	US\$ 622,622	-	US\$ 613,991	US\$ 613,385	US\$ 606	-	US\$ 9,259
	Fannie Mae	"	-	-	US\$ 9,370	-	US\$ 9,467	-	US\$ 10,271	US\$ 10,267	US\$ 4	-	US\$ 8,700
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 28,050	-	US\$ 19,505	US\$ 19,498	US\$ 7	-	US\$ 8,538
	GNMA II TBA 30 Yr 4.5	"	-	-	US\$ 587	-	US\$ 37,238	-	US\$ 30,291	US\$ 30,323	US\$ (32)	-	US\$ 7,496
	Fannie Mae-Aces	"	-	-	US\$ -	-	US\$ 11,110	-	US\$ 4,196	US\$ 4,077	US\$ 119	-	US\$ 7,112
	Fannie Mae	"	-	-	US\$ 11,146	-	US\$ 6,657	-	US\$ 11,945	US\$ 11,922	US\$ 23	-	US\$ 6,200
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 21,042	-	US\$ 16,462	US\$ 16,381	US\$ 81	-	US\$ 4,705
	FNMA TBA 30 Yr 5	"	-	-	US\$ 24,761	-	US\$ 112,529	-	US\$ 133,871	US\$ 133,727	US\$ 144	-	US\$ 3,603
	FNMA TBA 15 Yr 3	"	-	-	US\$ -	-	US\$ 142,803	-	US\$ 138,801	US\$ 138,711	US\$ 90	-	US\$ 3,073
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 23,067	-	US\$ 20,672	US\$ 20,453	US\$ 219	-	US\$ 2,673
	Fannie Mae-Aces	"	-	-	US\$ -	-	US\$ 19,910	-	US\$ 18,513	US\$ 17,849	US\$ 664	-	US\$ 2,181
	FNMA TBA 30 Yr 3	"	-	-	US\$ -	-	US\$ 274,335	-	US\$ 272,691	US\$ 272,314	US\$ 377	-	US\$ 2,028
	FNMA Pool BM4493	"	-	-	US\$ 16,915	-	US\$ 1,795	-	US\$ 17,390	US\$ 17,262	US\$ 128	-	US\$ 1,588
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	US\$ -	-	US\$ 33,864	-	US\$ 33,705	US\$ 32,603	US\$ 1,102	-	US\$ 1,321
	Government National Mortgage Association	"	-	-	US\$ 16,485	-	US\$ 860	-	US\$ 17,209	US\$ 16,942	US\$ 267	-	US\$ 763
	Government National Mortgage Association	"	-	-	US\$ 10,590	-	US\$ 665	-	US\$ 10,652	US\$ 10,728	US\$ (76)	-	US\$ 640
	Fannie Mae or Freddie Mac	"	-	-	US\$ 360	-	US\$ 11,135	-	US\$ 11,138	US\$ 11,127	US\$ 11	-	US\$ 367
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,951	-	US\$ 20,336	US\$ 19,929	US\$ 407	-	US\$ -
	Government National Mortgage Association	"	-	-	US\$ 15,253	-	US\$ -	-	US\$ 15,929	US\$ 15,671	US\$ 258	-	US\$ -
	Government National Mortgage Association	"	-	-	US\$ 12,897	-	US\$ -	-	US\$ 13,248	US\$ 13,269	US\$ (21)	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 11,390	-	US\$ 11,544	US\$ 11,369	US\$ 175	-	US\$ -
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	US\$ -	-	US\$ 9,824	-	US\$ 10,426	US\$ 9,819	US\$ 607	-	US\$ -
	FED HM LN PC Pool G61603	"	-	-	US\$ 25,515	-	US\$ -	-	US\$ 25,966	US\$ 25,627	US\$ 339	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,788	-	US\$ 19,817	US\$ 19,783	US\$ 34	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 19,993	-	US\$ 20,102	US\$ 19,993	US\$ 109	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 31,117	-	US\$ 30,924	US\$ 31,115	US\$ (191)	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,999	-	US\$ 20,332	US\$ 19,982	US\$ 350	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 14,988	-	US\$ 15,037	US\$ 14,987	US\$ 50	-	US\$ -
	FNMA Pool BM4495	"	-	-	US\$ 27,324	-	US\$ -	-	US\$ 28,065	US\$ 27,635	US\$ 430	-	US\$ -
	FED HM LN PC Pool G61592	"	-	-	US\$ 21,507	-	US\$ -	-	US\$ 21,673	US\$ 21,448	US\$ 225	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 23,009	-	US\$ 23,035	US\$ 23,003	US\$ 32	-	US\$ -
	FED HM LN PC Pool G61654	"	-	-	US\$ 18,555	-	US\$ -	-	US\$ 18,883	US\$ 18,606	US\$ 277	-	US\$ -
	GNMA II Pool MA5468	"	-	-	US\$ 17,490	-	US\$ -	-	US\$ 17,460	US\$ 17,591	US\$ (131)	-	US\$ -
	Fannie Mae-Aces	"	-	-	US\$ -	-	US\$ 10,575	-	US\$ 11,022	US\$ 10,560	US\$ 462	-	US\$ -
	FNMA Pool CA2169	"	-	-	US\$ 13,859	-	US\$ -	-	US\$ 13,966	US\$ 13,892	US\$ 74	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 9,743	-	US\$ -	-	US\$ 9,881	US\$ 10,148	US\$ (267)	-	US\$ -
	FED HM LN PC Pool G61553	"	-	-	US\$ 15,045	-	US\$ -	-	US\$ 15,177	US\$ 15,109	US\$ 68	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 10,296	-	US\$ 10,337	US\$ 10,289	US\$ 48	-	US\$ -
	FHLMC TBA 30 Yr 3	"	-	-	US\$ 15	-	US\$ 51,813	-	US\$ 52,028	US\$ 51,828	US\$ 200	-	US\$ -
	FNMA TBA 15 Yr 3.5	"	-	-	US\$ 2,020	-	US\$ 48,272	-	US\$ 50,364	US\$ 50,283	US\$ 81	-	US\$ -

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)		
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)	Amount
TSMC Global	Fannie Mae or Freddie Mac	Financial assets at fair value through other comprehensive income	-	-	-	US\$ -	-	US\$ 13,314	-	US\$ 13,301	US\$ 13,314	US\$ -	-	US\$ -
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 76,846	-	US\$ 76,925	US\$ 76,846	US\$ -	79	US\$ -
	Freddie Mac Gold Pool	"	-	-	-	US\$ -	-	US\$ 16,687	-	US\$ 16,832	US\$ 16,668	US\$ -	164	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 24,951	-	US\$ 25,391	US\$ 24,902	US\$ -	489	US\$ -
	Freddie Mac Gold Pool	"	-	-	-	US\$ -	-	US\$ 14,610	-	US\$ 14,728	US\$ 14,594	US\$ -	134	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 61,366	-	US\$ 61,130	US\$ 61,332	US\$ -	(202)	US\$ -
	GNMA II TBA 30 Yr 5	"	-	-	-	US\$ 12,209	-	US\$ 38,655	-	US\$ 50,926	US\$ 50,878	US\$ -	48	US\$ -
	FNMA Pool CA2352	"	-	-	-	US\$ 25,130	-	US\$ 25,104	-	US\$ 25,104	US\$ 25,104	US\$ -	57	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 15,430	-	US\$ 15,615	US\$ 15,461	US\$ -	154	US\$ -
	GNMA II TBA 30 Yr 4	"	-	-	-	US\$ 2,129	-	US\$ 61,671	-	US\$ 63,840	US\$ 63,791	US\$ -	49	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 21,932	-	US\$ 22,196	US\$ 21,977	US\$ -	219	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 40,059	-	US\$ -	-	US\$ 41,005	US\$ 41,421	US\$ -	(416)	US\$ -
	FNMA Pool BMI1948	"	-	-	-	US\$ 26,046	-	US\$ -	-	US\$ 26,835	US\$ 26,938	US\$ -	(103)	US\$ -
	Freddie Mac Gold Pool	"	-	-	-	US\$ -	-	US\$ 15,441	-	US\$ 15,631	US\$ 15,460	US\$ -	171	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 16,982	-	US\$ 17,040	US\$ 16,958	US\$ -	82	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 12,893	-	US\$ 13,190	US\$ 12,889	US\$ -	301	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 26,015	-	US\$ 26,560	US\$ 26,015	US\$ -	545	US\$ -
	FNMA Pool BM4681	"	-	-	-	US\$ 31,784	-	US\$ -	-	US\$ 32,259	US\$ 31,819	US\$ -	440	US\$ -
	Freddie Mae Multifamily Structured Pass Through Certificates	"	-	-	-	US\$ 513	-	US\$ 10,877	-	US\$ 11,560	US\$ 11,380	US\$ -	180	US\$ -
	Asset-backed securities	Financial assets at fair value through other comprehensive income	-	-	-	US\$ -	-	US\$ 9,921	-	US\$ -	US\$ -	US\$ -	-	US\$ 9,925
	Hyundai Auto Receivables Trust	"	-	-	-	US\$ 68,487	-	US\$ 2,693	-	US\$ 64,194	US\$ 64,146	US\$ -	48	US\$ 7,321
	Citibank Credit Card Issuance Trust	"	-	-	-	US\$ 27,285	-	US\$ 1,300	-	US\$ 26,647	US\$ 26,678	US\$ -	(31)	US\$ 2,070
	American Express Credit Account Master Trust	"	-	-	-	US\$ 8,861	-	US\$ 2,055	-	US\$ 10,143	US\$ 10,116	US\$ -	27	US\$ 865
	American Express Credit Account Master Trust	"	-	-	-	US\$ 37,495	-	US\$ 868	-	US\$ 38,510	US\$ 38,529	US\$ -	(19)	US\$ -
	Discover Card Execution Note Trust	"	-	-	-	US\$ 26,702	-	US\$ -	-	US\$ 26,696	US\$ 26,748	US\$ -	(52)	US\$ -
	Ford Credit Floorplan Master Owner Trust A	"	-	-	-	US\$ 43,604	-	US\$ -	-	US\$ 43,763	US\$ 43,697	US\$ -	66	US\$ -
	Chase Issuance Trust	"	-	-	-	US\$ -	-	US\$ -	-	US\$ -	US\$ -	US\$ -	-	US\$ -

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

(Concluded)

TABLE 5

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

ACQUISITION OF INDIVIDUAL REAL ESTATE PROPERTIES AT COSTS OF AT LEAST NT\$300 MILLION OR 20% OF THE PAID-IN CAPITAL FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab	September 11, 2018 to August 12, 2019	\$ 1,008,210	Monthly settlement by the construction progress and acceptance	KEDGE Construction Co., Ltd.	-	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None	
	Fab	March 25, 2019	888,800	Monthly settlement by the construction progress and acceptance	PAN ASIA Corp.	-	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None	
	Fab	June 27, 2019 to October 2, 2019	348,935	Based on the terms in the purchase order	Fu Tsu Construction Co., Ltd.	-	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None	
	Fab	November 12, 2019	74,800,000	Based on the terms in the purchase order	72 counterparties, including: Lead-Fu Industrials Corporation San Fu Chemical Co., Ltd. Chenfull International Co., Ltd. Shihlin Electric & Engineering Corporation TASA Construction Corporation China Steel Structure Co., Ltd. Capital Machinery Limited Fu Tsu Construction Co., Ltd. Mandatech Interiors Inc. Techgo Industrial Co., Ltd. Ovivo Taiwan Co., Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Zhao-Cheng Corp.	-	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None	

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms		
							Owner	Relationships	Transfer Date	Amount					
TSMC	Fab				JJmr-Clean-Air Solution Tech.Services Co., Ltd. Mega Union Technology Incorporated Amp-Power Machine International Enterprise Co., Ltd. Marketech International Corp. ABB Ltd. Siemens Limited Huang Luei Process Industry Co., Ltd. Jusun Instruments Co., Ltd. Weltall Technology Corporation Allis Electric Co., Ltd. Air Liquide Far Eastern Ltd. L&K Engineering Co., Ltd. Hsieh Kun Co., Ltd. Taiwan Puritic Corp. Solomon Technology Corporation Exyte Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Evergreen Steel Corporation Atlas Copco Taiwan Ltd. Trusval Technology Co., Ltd. Yangtech Engineering Co., Ltd. Schneider Electric Taiwan Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Swift Engineering Co., Ltd. Chen Yuan International Co., Ltd. Uangyih-Tech Industrial Co., Ltd. Kedge Construction Co., Ltd. Taiwan Gleno Enterprise Co., Ltd.										

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab				Unelectra International Corp. JG Environmental Technology Co., Ltd. Fortune Electric Co., Ltd. Desiccant Technology Corporation Organo Technology Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) Da-Cin Construction Co., Ltd. Wholetech System Hitech Limited United Integrated Services Co., Ltd. Hantech Engineering Co., Ltd. Kinetics Technology Corporation Versum Materials Taiwan Co., Ltd. Confederate Technology Co., Ltd. Atlas Technology Corp. Accudevice Co., Ltd.								

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

TOTAL PURCHASES FROM OR SALES TO RELATED PARTIES OF AT LEAST NT\$100 MILLION OR 20% OF THE PAID-IN CAPITAL FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Transaction Details			Abnormal Transaction		Notes/Accounts Payable or Receivable		Note
			Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)	
TSMC	TSMC North America GUC	Subsidiary Associate	Sales	\$ 636,441,507	58	Net 30 days from invoice date (Note)	-	(Note)	\$ 81,732,281	62
			Sales	4,024,495	-	Net 30 days from the end of the month of when invoice is issued	-	-	458,292	-
	TSMC Nanjing	Subsidiary	Purchases	16,970,404	18	Net 30 days from the end of the month of when invoice is issued	-	-	(1,266,002)	3
			Purchases	16,584,706	17	Net 30 days from the end of the month of when invoice is issued	-	-	(1,538,971)	4
	WaferTech	Indirect subsidiary	Purchases	6,864,201	7	Net 30 days from the end of the month of when invoice is issued	-	-	(1,097,625)	3
	S5MC	Associate	Purchases	3,208,817	4	Net 30 days from the end of the month of when invoice is issued	-	-	(487,944)	1
VIS	Associate	Purchases	3,092,600	3	Net 30 days from the end of the month of when invoice is issued	-	-	(153,977)	-	
TSMC North America	GUC	Associate of TSMC	Sales	1,628,944 (US\$ 52,821)	-	Net 30 days from invoice date	-	-	283,472 (US\$ 9,453)	-
VisEra Tech	Xintec	Associate of TSMC	Sales	571,537	17	Net 30 days from the end of the month of when invoice is issued	-	-	120,172	18

Note : The tenor is 30 days from TSMC's invoice date or determined by the payment terms granted to its clients by TSMC North America.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NTS100 MILLION OR 20% OF THE PAID-IN CAPITAL
DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue		Amounts Received in Subsequent Period	Allowance for Bad Debts
					Amount	Action Taken		
TSMC	TSMC North America TSMC Nanjing GUC	Subsidiary Subsidiary Associate	\$ 82,535,007 101,559 458,292	48 Note 2 38	\$ 1,109,577 -	- -	\$ 30,688,822 -	\$ -
TSMC North America	GUC	Associate of TSMC	284,674 (US\$ 9,493)	45	24,377 (US\$ 813)	-	24,377 (US\$ 813)	-
TSMC China	TSMC Nanjing TSMC	The same parent company Parent company	24,200,839 (RMB 5,621,827) 1,538,971 (RMB 357,502)	Note 2 32	- -	- -	- -	- -
TSMC Nanjing	TSMC	Parent company	1,266,002 (RMB 294,092)	19	-	-	-	-
VisEra Tech	Xintec	Associate of TSMC	120,172	36	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	249,993 (US\$ 8,336)	Note 2	-	-	-	-
WaferTech	TSMC	The ultimate parent of the Company	1,097,625 (US\$ 36,602)	59	598,169 (US\$ 19,947)	-	598,169 (US\$ 19,947)	-

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

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

TABLE 8

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INTERCOMPANY RELATIONSHIPS AND SIGNIFICANT INTERCOMPANY TRANSACTIONS
FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars)

No.	Company Name	Counter Party	Nature of Relationship (Note 1)	Intercompany Transactions			Percentage of Consolidated Net Revenue or Total Assets			
				Financial Statements Item	Amount	Terms (Note 2)				
0	TSMC	TSMC North America	1	Net revenue from sale of goods	\$ 636,441,507	-	59%			
				Receivables from related parties	81,732,281	-	4%			
				Other receivables from related parties	802,726	-	-			
				Marketing expenses - commission	228,535	-	-			
				Marketing expenses - commission	439,147	-	-			
				Purchases	16,584,706	-	2%			
				Marketing expenses - commission	170,743	-	-			
				Payables to related parties	1,538,971	-	-			
				Purchases	16,970,404	-	2%			
				Proceeds from disposal of property, plant and equipment	1,096,516	-	-			
1	TSMC China	TSMC Nanjing	1	Other receivables from related parties	101,559	-	-			
				Payables to related parties	1,266,002	-	-			
				Research and development expenses	323,216	-	-			
				Research and development expenses	2,438,466	-	-			
				Payables to related parties	249,993	-	-			
				Purchases	6,864,201	-	1%			
				Payables to related parties	1,097,625	-	-			
				Other receivables from related parties	24,200,839	-	1%			

Note 1: No. 1 represents the transactions from parent company to subsidiary.
No. 3 represents the transactions between subsidiaries.

Note 2: The sales prices and payment terms of intercompany sales are not significantly different from those to third parties. For other intercompany transactions, prices and terms are determined in accordance with mutual agreements.

TABLE 9

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEE OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2019			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2019 (Foreign Currencies in Thousands)	December 31, 2018 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC	TSMC Global TSMC Partners	Tortola, British Virgin Islands Tortola, British Virgin Islands	Investment activities Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	\$ 355,162,309 31,456,130	\$ 355,162,309 31,456,130	11 988,268	100 100	\$ 397,737,270 53,388,267	\$ 11,592,187 2,202,709	Subsidiary Subsidiary	
	VIS	Hsin-Chu, Taiwan	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	10,180,677	464,223	28	9,027,572	1,654,799	Associate	
	SSMC	Singapore	Manufacturing and selling of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	6,502,174	2,286,743	Associate	
	TSMC North America	San Jose, California, U.S.A.	Selling and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	4,569,825	416,366	Subsidiary	
	VisEra Tech	Hsin-Chu, Taiwan	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	5,005,171	5,005,171	253,120	87	4,541,741	613,841	Subsidiary	
	Xintec	Taoyuan, Taiwan	Water level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	1,846,145	181,978	Associate	
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	1,284,377	633,467	Associate	
	TSMC Europe VTAF III	Amsterdam, the Netherlands Cayman Islands	Customer service and supporting activities Investing in new start-up technology companies	15,749 1,318,846	15,749 1,308,244	- -	100 98	462,479 231,504	37,621 1,168	Subsidiary Subsidiary	
	TSMC Japan	Yokohama, Japan	Customer service and supporting activities	83,760	83,760	6	100	142,620	3,254	Subsidiary	
	VTAF II	Cayman Islands	Investing in new start-up technology companies	260,300	278,800	-	98	75,095	(3,409)	Subsidiary	
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	80	100	40,727	2,196	Subsidiary	
	TSMC Solar Europe GmbH	Hamburg, Germany	Selling of solar related products and providing customer service	-	25,266	-	-	-	-	Subsidiary	
TSMC Partners	TSMC Development	Delaware, U.S.A.	Investing in companies involved in the manufacturing related business in the semiconductor industry	17,601,121 (US\$ 586,939)	17,601,121 (US\$ 586,939)	-	100	29,825,099 (US\$ 994,568)	1,338,673 (US\$ 43,339)	Subsidiary	
	TSMC Technology	Delaware, U.S.A.	Engineering support activities	428,289 (US\$ 14,282)	428,289 (US\$ 14,282)	-	100	670,538 (US\$ 22,360)	100,661 (US\$ 3,264)	Subsidiary	
	TSMC Canada	Ontario, Canada	Engineering support activities	68,972 (US\$ 2,300)	68,972 (US\$ 2,300)	2,300	100	239,150 (US\$ 7,975)	30,494 (US\$ 987)	Subsidiary	
	ISDF	Cayman Islands	Investing in new start-up technology companies	-	14,250 (US\$ 475)	583	97	-	10 (US\$ -)	Subsidiary	
VTAF III	ISDF II	Cayman Islands	Investing in new start-up technology companies	-	-	9,299	97	-	-	Subsidiary	
	Growth Fund	Cayman Islands	Investing in new start-up technology companies	75,083 (US\$ 2,504)	64,587 (US\$ 2,154)	-	100	124,648 (US\$ 4,157)	(1,351) (US\$ (44))	Subsidiary	
	Mutual-Pak	New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	47,781 (US\$ 1,593)	47,781 (US\$ 1,593)	4,693	28	38,520 (US\$ 1,285)	20,941 (US\$ 671)	Associate	

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2019			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2019 (Foreign Currencies in Thousands)	December 31, 2018 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC Development	WaferTech	Washington, U.S.A	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	\$ -	\$ -	293,637	100	4,402,646 (US\$ - 146,814)	843,483 (US\$ - 27,326)	Note 2 Subsidiary	

Note 1: The share of profits/losses of investee includes the effect of unrealized gross profit on intercompany transactions.

Note 2: The share of profits/losses of the investee company is not reflected herein as such amount is already included in the share of profits/losses of the investor company.

(Concluded)

TABLE 10

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR YEAR ENDED DECEMBER 31, 2019

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

Investee Company	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Accumulated Outflow of Investment from Taiwan as of January 1, 2019 (US\$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2019 (US\$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of December 31, 2019	Accumulated Inward Remittance of Earnings as of December 31, 2019
					Outflow (US\$ in Thousands)	Inflow						
TSMC China	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	\$ 18,939,667 (RMB 4,502,080)	Note 1	\$ 18,939,667 (US\$ 596,000)	\$ -	\$ -	\$ 18,939,667 (US\$ 596,000)	\$ 4,037,216	100%	\$ 4,070,094 (Note 2)	\$ 57,289,154	\$ -
TSMC Nanjing	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	30,521,412 (RMB 6,650,119)	Note 1	30,521,412 (US\$ 1,000,000)	-	-	30,521,412 (US\$ 1,000,000)	1,289,672	100%	1,213,021 (Note 2)	21,364,939	-

Accumulated Investment in Mainland China as of December 31, 2019 (US\$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US\$ in Thousands)	Upper Limit on Investment
\$ 49,461,079 (US\$ 1,596,000)	\$ 119,412,667 (US\$ 3,596,000)	\$ 973,257,256 (Note 3)

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

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

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

**Taiwan Semiconductor Manufacturing
Company Limited**

**Parent Company Only Financial Statements for the
Years Ended December 31, 2019 and 2018 and
Independent Auditors' Report**

INDEPENDENT AUDITORS' REPORT

The Board of Directors and Shareholders
Taiwan Semiconductor Manufacturing Company Limited

Opinion

We have audited the accompanying parent company only financial statements of Taiwan Semiconductor Manufacturing Company Limited (the "Company"), which comprise the parent company only balance sheets as of December 31, 2019 and 2018, and the parent company only statements of comprehensive income, changes in equity and cash flows for the years then ended, and the notes to the parent company only financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying parent company only financial statements present fairly, in all material respects, the accompanying parent company only financial position of the Company as of December 31, 2019 and 2018, and its parent company only financial performance and its parent company only cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers.

Basis for Opinion

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

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the parent company only financial statements for the year ended December 31, 2019. These matters were addressed in the context of our audit of the parent company only financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters for the Company's parent company only financial statements for the year ended December 31, 2019 are stated as follows:

Property, plant and equipment (PP&E) – commencement of depreciation related to PP&E classified as equipment under installation and construction in progress (EUI/CIP)

Refer to Notes 4, 5 and 12 to the parent company only financial statements.

The Company's evaluation of when to commence depreciation of EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgements and assumptions about the conditions necessary for the

assets to be capable of operating in the intended manner. Changes in these assumptions could have a significant impact on when depreciation is recognized.

Given the subjectivity in determining the date to commence depreciation of EUI/CIP, performing audit procedures to evaluate the reasonableness of the Company's judgements and assumptions required a high degree of auditor judgement. Consequently, the validity of commencement of depreciation related to PP&E classified as EUI/CIP is identified as a key audit matter.

Our audit procedures related to the evaluation of when to commence depreciation of EUI/CIP included the following, among others:

1. We read the Company's policy and understand the criteria used to determine when to commence depreciation.
2. We tested the effectiveness of the controls over the evaluation of when to commence depreciation of EUI/CIP.
3. We sampled EUI/CIP at year end and performed the following for each selection:
 - a. Evaluated whether the selection did not meet the criteria specified by the Company for commencement of depreciation.
 - b. Observed the assets and evaluated their status at year end.
4. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation during the year.
5. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation subsequent to year end.

Responsibilities of Management and Those Charged with Governance for the Parent Company Only Financial Statements

Management is responsible for the preparation and fair presentation of the parent company only financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers, and for such internal control as management determines is necessary to enable the preparation of parent company only financial statements that are free from material misstatement, whether due to fraud or error.

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

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Company's financial reporting process.

Auditors' Responsibilities for the Audit of the Parent Company Only Financial Statements

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

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

1. Identify and assess the risks of material misstatement of the parent company only financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the parent company only financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.
5. Evaluate the overall presentation, structure and content of the parent company only financial statements, including the disclosures, and whether the parent company only financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
6. Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the parent company only financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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

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

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the parent company only financial statements for the year ended December 31, 2019 and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors' report are Mei Yen Chiang and Yu Feng Huang.



Deloitte & Touche
Taipei, Taiwan
Republic of China

February 11, 2020



Notice to Readers

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

For the convenience of readers, the independent auditors' report and the accompanying financial statements have been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors' report and financial statements shall prevail.

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY BALANCE SHEETS

(In Thousands of New Taiwan Dollars)

ASSETS	December 31, 2019		December 31, 2018	
	Amount	%	Amount	%
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	\$ 141,450,698	6	\$ 240,202,525	12
Financial assets at fair value through profit or loss (Note 7)	27,481	-	54,115	-
Financial assets at fair value through other comprehensive income	-	-	568,150	-
Financial assets at amortized cost	-	-	2,294,098	-
Hedging financial assets (Note 8)	3,504	-	23,497	-
Notes and accounts receivable, net (Note 9)	49,124,933	2	36,685,389	2
Receivables from related parties (Note 31)	82,194,501	4	86,452,584	4
Other receivables from related parties (Note 31)	968,123	-	1,234,662	-
Inventories (Notes 5 and 10)	76,263,851	4	98,088,160	5
Other financial assets	358,245	-	178,008	-
Other current assets	4,726,789	-	4,184,918	-
Total current assets	<u>355,118,125</u>	<u>16</u>	<u>469,966,106</u>	<u>23</u>
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income	877,110	-	963,610	-
Investments accounted for using equity method (Note 11)	558,503,889	24	549,560,884	26
Property, plant and equipment (Notes 5 and 12)	1,310,900,634	57	1,025,286,941	49
Right-of-use assets (Notes 5 and 13)	15,030,020	1	-	-
Intangible assets (Notes 5 and 14)	16,271,444	1	12,429,930	1
Deferred income tax assets (Notes 5 and 25)	16,728,622	1	15,586,674	1
Refundable deposits and others	2,046,228	-	1,666,863	-
Total noncurrent assets	<u>1,920,357,947</u>	<u>84</u>	<u>1,605,494,902</u>	<u>77</u>
TOTAL	<u>\$ 2,275,476,072</u>	<u>100</u>	<u>\$ 2,075,461,008</u>	<u>100</u>
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans (Notes 15 and 28)	\$ 148,510,290	7	\$ 91,982,340	4
Financial liabilities at fair value through profit or loss (Note 7)	982,302	-	30,232	-
Hedging financial liabilities (Note 8)	1,798	-	1,941	-
Accounts payable	36,029,135	2	30,472,292	2
Payables to related parties (Note 31)	5,716,635	-	4,546,752	-
Salary and bonus payable	14,215,161	1	12,442,707	1
Accrued profit sharing bonus to employees and compensation to directors (Note 27)	23,526,149	1	23,919,312	1
Payables to contractors and equipment suppliers	139,754,491	6	41,279,910	2
Cash dividends payable (Note 19)	129,651,902	6	-	-
Income tax payable (Notes 5 and 25)	32,241,052	1	38,706,990	2
Long-term liabilities - current portion (Notes 16 and 28)	31,800,000	1	34,900,000	2
Accrued expenses and other current liabilities (Notes 5, 13, 18, 20, 28 and 31)	43,111,632	2	49,778,042	2
Total current liabilities	<u>605,540,547</u>	<u>27</u>	<u>328,060,518</u>	<u>16</u>
NONCURRENT LIABILITIES				
Bonds payable (Notes 16 and 28)	25,100,000	1	56,900,000	3
Deferred income tax liabilities (Notes 5 and 25)	333,606	-	233,284	-
Lease liabilities (Notes 5, 13 and 28)	13,300,263	1	-	-
Net defined benefit liability (Note 17)	9,182,496	-	9,651,405	1
Guarantee deposits (Notes 18 and 28)	170,446	-	3,346,648	-
Others	438,590	-	451,488	-
Total noncurrent liabilities	<u>48,525,401</u>	<u>2</u>	<u>70,582,825</u>	<u>4</u>
Total liabilities	<u>654,065,948</u>	<u>29</u>	<u>398,643,343</u>	<u>20</u>
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 19)	259,303,805	11	259,303,805	12
Capital surplus (Note 19)	56,339,709	2	56,315,932	3
Retained earnings (Note 19)				
Appropriated as legal capital reserve	311,146,899	14	276,033,811	13
Appropriated as special capital reserve	10,675,106	-	26,907,527	1
Unappropriated earnings	1,011,512,974	45	1,073,706,503	52
	<u>1,333,334,979</u>	<u>59</u>	<u>1,376,647,841</u>	<u>66</u>
Others (Note 19)	(27,568,369)	(1)	(15,449,913)	(1)
Total equity	<u>1,621,410,124</u>	<u>71</u>	<u>1,676,817,665</u>	<u>80</u>
TOTAL	<u>\$ 2,275,476,072</u>	<u>100</u>	<u>\$ 2,075,461,008</u>	<u>100</u>

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

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME (In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2019		2018	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 20 and 31)	\$1,059,646,793	100	\$1,023,925,713	100
COST OF REVENUE (Notes 5, 10, 27, 31 and 34)	<u>579,507,047</u>	<u>55</u>	<u>530,861,166</u>	<u>52</u>
GROSS PROFIT BEFORE REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO SUBSIDIARIES AND ASSOCIATES	480,139,746	45	493,064,547	48
REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO SUBSIDIARIES AND ASSOCIATES	<u>3,395</u>	<u>-</u>	<u>(109,046)</u>	<u>-</u>
GROSS PROFIT	<u>480,143,141</u>	<u>45</u>	<u>492,955,501</u>	<u>48</u>
OPERATING EXPENSES (Notes 5, 27 and 31)				
Research and development	90,482,815	8	84,944,461	8
General and administrative	20,353,327	2	19,113,298	2
Marketing	<u>3,231,777</u>	<u>-</u>	<u>3,201,670</u>	<u>-</u>
Total operating expenses	<u>114,067,919</u>	<u>10</u>	<u>107,259,429</u>	<u>10</u>
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 12, 13, 21 and 27)	<u>(151,230)</u>	<u>-</u>	<u>(1,668,234)</u>	<u>-</u>
INCOME FROM OPERATIONS	<u>365,923,992</u>	<u>35</u>	<u>384,027,838</u>	<u>38</u>
NON-OPERATING INCOME AND EXPENSES				
Share of profits of subsidiaries and associates (Note 11)	22,906,788	2	12,509,959	1
Other income (Note 22)	2,180,251	-	2,005,107	-
Foreign exchange gain, net (Note 33)	1,994,370	-	1,927,029	-
Finance costs (Note 23)	(3,191,609)	-	(2,903,454)	-
Other gains and losses (Note 24)	<u>(1,068,573)</u>	<u>-</u>	<u>(1,368,326)</u>	<u>-</u>
Total non-operating income and expenses	<u>22,821,227</u>	<u>2</u>	<u>12,170,315</u>	<u>1</u>
INCOME BEFORE INCOME TAX	388,745,219	37	396,198,153	39
INCOME TAX EXPENSE (Notes 5 and 25)	<u>43,481,551</u>	<u>4</u>	<u>45,067,269</u>	<u>5</u>
NET INCOME	<u>345,263,668</u>	<u>33</u>	<u>351,130,884</u>	<u>34</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME

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

	2019		2018	
	Amount	%	Amount	%
OTHER COMPREHENSIVE INCOME (LOSS)				
(Notes 5, 17, 19 and 25)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	\$ 253,895	-	\$ (861,162)	-
Unrealized gain/(loss) on investments in equity instruments at fair value through other comprehensive income	121,740	-	(1,189,957)	-
Gain (loss) on hedging instruments	(109,592)	-	40,975	-
Share of other comprehensive income (loss) of subsidiaries and associates	194,524	-	(2,135,880)	-
Income tax benefit (expense) related to items that will not be reclassified subsequently	(20,992)	-	195,729	-
	<u>439,575</u>	<u>-</u>	<u>(3,950,295)</u>	<u>-</u>
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	(14,698,117)	(2)	14,578,483	1
Share of other comprehensive income (loss) of subsidiaries and associates	2,435,334	-	(794,057)	-
	<u>(12,262,783)</u>	<u>(2)</u>	<u>13,784,426</u>	<u>1</u>
Other comprehensive income (loss) for the year, net of income tax	<u>(11,823,208)</u>	<u>(2)</u>	<u>9,834,131</u>	<u>1</u>
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	<u>\$ 333,440,460</u>	<u>31</u>	<u>\$ 360,965,015</u>	<u>35</u>
EARNINGS PER SHARE (NT\$, Note 26)				
Basic earnings per share	<u>\$ 13.32</u>		<u>\$ 13.54</u>	
Diluted earnings per share	<u>\$ 13.32</u>		<u>\$ 13.54</u>	

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

Taiwan Semiconductor Manufacturing Company Limited
PARENT COMPANY ONLY STATEMENTS OF CHANGES IN EQUITY
(In Thousands of New Taiwan Dollars)

	Capital Stock - Common Stock		Retained Earnings			Others				Total Equity		
	Shares (In Thousands)	Amount	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments		Unearned Stock-based Employee Compensation	Total
BALANCE, JANUARY 1, 2018	25,930,380	\$ 259,303,805	\$ 241,722,663	\$ -	\$ 993,195,668	\$ 1,234,918,331	\$ (26,697,680)	\$ (524,915)	\$ 4,226	\$ (10,290)	\$ (27,228,659)	\$ 1,523,303,013
Appropriations of prior year's earnings	-	-	34,311,148	-	(34,311,148)	-	-	-	-	-	-	-
Legal capital reserve	-	-	-	26,907,527	(26,907,527)	-	-	-	-	-	-	-
Special capital reserve	-	-	34,311,148	-	(207,443,044)	(207,443,044)	-	-	-	-	-	(207,443,044)
Cash dividends to shareholders	-	-	-	26,907,527	(208,661,719)	(207,443,044)	-	-	-	-	-	(207,443,044)
Total	-	-	-	-	351,130,884	351,130,884	-	-	-	-	-	351,130,884
Net income in 2018	-	-	-	-	(765,274)	(765,274)	14,655,333	(4,097,465)	41,537	-	10,599,405	9,834,131
Other comprehensive income (loss) in 2018, net of income tax	-	-	-	-	350,365,610	350,365,610	14,655,333	(4,097,465)	41,537	-	10,599,405	360,965,015
Total comprehensive income (loss) in 2018	-	-	-	-	(1,193,056)	(1,193,056)	-	1,193,056	-	-	1,193,056	-
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	-	-	-	(22,162)	-	(22,162)	(22,162)
Basis adjustment for gain (loss) on hedging instruments	-	-	-	-	-	-	-	-	-	8,447	8,447	2,027
Adjustments to share of changes in equities of associates	-	-	-	-	-	-	-	-	-	-	-	2,681
From share of changes in equities of subsidiaries	-	-	-	-	-	-	-	-	-	-	-	10,135
Donation from shareholders	-	-	-	-	-	-	-	-	-	-	-	1,676,817,665
BALANCE, DECEMBER 31, 2018	25,930,380	\$ 259,303,805	\$ 276,033,811	\$ 26,907,527	\$ 1,073,706,503	\$ 1,376,647,841	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)	\$ 1,676,817,665
Appropriations of prior year's earnings	-	-	35,113,088	-	(35,113,088)	-	-	-	-	-	-	-
Legal capital reserve	-	-	-	16,232,421	(16,232,421)	-	-	-	-	-	-	-
Special capital reserve	-	-	35,113,088	-	(388,955,707)	(388,955,707)	-	-	-	-	-	(388,955,707)
Cash dividends to shareholders	-	-	-	16,232,421	(407,836,374)	(388,955,707)	-	-	-	-	-	(388,955,707)
Total	-	-	-	-	345,263,668	345,263,668	-	-	-	-	-	345,263,668
Net income in 2019	-	-	-	-	217,059	217,059	(14,829,053)	2,898,483	(109,697)	-	(12,040,262)	(11,823,208)
Other comprehensive income (loss) in 2019, net of income tax	-	-	-	-	345,480,727	345,480,727	(14,829,053)	2,898,483	(109,697)	-	(12,040,262)	333,440,460
Total comprehensive income (loss) in 2019	-	-	-	-	162,118	162,118	-	(162,118)	-	-	(162,118)	-
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	-	-	-	82,276	-	82,276	82,276
Basis adjustment for gain (loss) on hedging instruments	-	-	-	-	-	-	-	-	-	1,653	1,653	21,067
Adjustments to share of changes in equities of associates	-	-	-	-	-	-	-	-	-	-	-	370
From share of changes in equities of subsidiaries	-	-	-	-	-	-	-	-	-	-	-	3,993
Donation from shareholders	-	-	-	-	-	-	-	-	-	-	-	3,993
BALANCE, DECEMBER 31, 2019	25,930,380	\$ 259,303,805	\$ 311,146,899	\$ 10,675,106	\$ 1,011,519,974	\$ 1,333,334,979	\$ (26,871,400)	\$ (692,859)	\$ (3,820)	\$ (1,990)	\$ (27,568,569)	\$ 1,621,410,124

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

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	\$ 388,745,219	\$ 396,198,153
Adjustments for:		
Depreciation expense	267,464,543	274,340,540
Amortization expense	5,338,886	4,352,847
Finance costs	3,191,609	2,903,454
Share of profits of subsidiaries and associates	(22,906,788)	(12,509,959)
Interest income	(2,002,877)	(1,847,202)
Loss on disposal or retirement of property, plant and equipment, net	582,289	557,598
Gain on disposal of intangible assets, net	(6,183)	(5,933)
Impairment loss (reversal of impairment loss) on property, plant and equipment	(301,384)	423,468
Loss (gain) on financial instruments at fair value through profit or loss, net	18,291	(17,729)
Gain on disposal of investments accounted for using equity method, net	(15,200)	-
Unrealized (realized) gross profit on sales to subsidiaries and associates	(3,395)	109,046
Gain (loss) on foreign exchange, net	(6,289,978)	2,732,445
Dividend income	(177,374)	(157,905)
Gain on lease modification	(2,555)	-
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	964,207	301,714
Notes and accounts receivable, net	(20,264,116)	(15,821,089)
Receivables from related parties	4,258,083	5,689,253
Other receivables from related parties	442,439	216,794
Inventories	21,824,309	(27,790,715)
Other financial assets	(211,869)	(26,762)
Other current assets	(515,166)	(1,685,193)
Accounts payable	5,626,778	4,839,526
Payables to related parties	1,169,883	(282,912)
Salary and bonus payable	1,772,454	159,386
Accrued profit sharing bonus to employees and compensation to directors	(393,163)	531,310
Accrued expenses and other current liabilities	(3,618,263)	(21,092,059)
Net defined benefit liability	(215,014)	(60,461)
Cash generated from operations	644,475,665	612,057,615
Income taxes paid	(51,043,594)	(43,956,272)
Net cash generated by operating activities	<u>593,432,071</u>	<u>568,101,343</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2019	2018
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial assets at amortized cost	\$ -	\$ (2,294,098)
Property, plant and equipment	(450,287,869)	(298,099,157)
Intangible assets	(9,252,712)	(6,885,163)
Proceeds from disposal or redemption of:		
Financial assets at fair value through other comprehensive income	775,282	651,971
Property, plant and equipment	1,118,338	4,707,118
Intangible assets	-	15,881
Proceeds from return of capital of financial assets carried at cost	2,300,000	-
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	1,107	3,456
Derecognition of hedging financial instruments	(93,536)	57,954
Interest received	2,016,735	1,815,330
Other dividends received	177,374	157,905
Dividends received from investments accounted for using equity method	2,225,194	3,769,150
Refundable deposits paid	(1,447,188)	(2,218,292)
Refundable deposits refunded	<u>1,007,262</u>	<u>1,762,043</u>
Net cash used in investing activities	<u>(451,460,013)</u>	<u>(296,555,902)</u>
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase in short-term loans	59,615,602	27,154,770
Repayment of bonds	(34,900,000)	(24,300,000)
Repayment of the principal portion of lease liabilities	(2,630,308)	-
Interest paid	(3,536,180)	(2,957,663)
Guarantee deposits received	23,063	1,625,526
Guarantee deposits refunded	(4,061)	(120,717)
Cash dividends	(259,303,805)	(207,443,044)
Payment of partial acquisition of interests in subsidiaries	(10,602)	(64,633,400)
Proceeds from partial disposal of interests in subsidiaries	18,500	144,676
Donation from shareholders	<u>3,906</u>	<u>10,095</u>
Net cash used in financing activities	<u>(240,723,885)</u>	<u>(270,519,757)</u>
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(98,751,827)	1,025,684
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	<u>240,202,525</u>	<u>239,176,841</u>
CASH AND CASH EQUIVALENTS, END OF YEAR	<u>\$ 141,450,698</u>	<u>\$ 240,202,525</u>

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

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited

NOTES TO PARENT COMPANY ONLY FINANCIAL STATEMENTS FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2018

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

1. GENERAL

Taiwan Semiconductor Manufacturing Company Limited (the “Company” or “TSMC”), a Republic of China (R.O.C.) corporation, was incorporated on February 21, 1987. The Company is a dedicated foundry in the semiconductor industry which engages mainly in the manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

On September 5, 1994, the Company’s shares were listed on the Taiwan Stock Exchange (TWSE). On October 8, 1997, the Company listed some of its shares of stock on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs).

The address of its registered office and principal place of business is No. 8, Li-Hsin Rd. 6, Hsinchu Science Park, Taiwan.

2. THE AUTHORIZATION OF FINANCIAL STATEMENTS

The accompanying parent company only financial statements were approved and authorized for issue by the Board of Directors on February 11, 2020.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS

- a. Initial application of the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) (collectively, “IFRSs”) endorsed and issued into effect by the Financial Supervisory Commission (FSC)

Except for the following, the initial application of the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRSs endorsed and issued into effect by the FSC did not have a significant effect on the Company’s accounting policies:

- 1) IFRS 16 “Leases”

IFRS 16 sets out the accounting standards for leases that supersedes IAS 17 “Leases”, IFRIC 4 “Determining whether an Arrangement contains a Lease”, and a number of related interpretations. Refer to Note 4 for information relating to the relevant accounting policies.

Definition of a lease

The Company applies the guidance of IFRS 16 in determining whether contracts are, or contain, a lease only to contracts entered into (or changed) on or after January 1, 2019. Contracts identified as containing a lease under IAS 17 and IFRIC 4 are not reassessed and are accounted for in accordance with the transitional provisions under IFRS 16.

The Company as lessee

Except for payments for short-term leases which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases on the parent company only balance sheets. On the parent company only statements of comprehensive income, the Company presents the depreciation expense charged on right-of-use assets separately from the interest expense accrued on lease liabilities, which is computed using the effective interest method. On the parent company only statements of cash flows, cash payments for both the principal portion and the interest portion of lease liabilities are classified within financing activities.

The Company applies IFRS 16 retrospectively with the cumulative effect of the initial application recognized at the date of initial application but does not restate comparative information.

Leases agreements classified as operating leases under IAS 17, except for short-term leases, are measured at the present value of the remaining lease payments, discounted using the lessee's incremental borrowing rate on January 1, 2019. Right-of-use assets are measured at an amount equal to the lease liabilities, adjusted by the amount of any prepaid or accrued lease payments. Right-of-use assets are subject to impairment testing under IAS 36.

The Company applied the following practical expedients to measure right-of-use assets and lease liabilities on January 1, 2019:

- a) The Company applied a single discount rate to a portfolio of leases with reasonably similar characteristics to measure lease liabilities.
- b) The Company accounted for those leases for which the lease term ends on or before December 31, 2019 as short-term leases.
- c) Except for lease payments, the Company excluded incremental costs of obtaining the lease from right-of-use assets on January 1, 2019.
- d) The Company determined lease terms (e.g. lease periods) based on the projected status on January 1, 2019, to measure lease liabilities.

The weighted average lessee's incremental borrowing rate used by the Company to calculate lease liabilities recognized on January 1, 2019 is 1.25%. The reconciliation between the lease liabilities recognized and the future minimum lease payments of non-cancellable operating lease on December 31, 2018 is presented as follows:

The future minimum lease payments of non-cancellable operating lease on December 31, 2018	\$ 18,721,881
Less: Recognition exemption for short-term leases	<u>(3,163,562)</u>
Undiscounted gross amounts on January 1, 2019	<u>\$ 15,558,319</u>
Discounted using the incremental borrowing rate on January 1, 2019	\$ 14,652,188
Add: Adjustments as a result of a different treatment of extension and purchase options	<u>3,106,390</u>
Lease liabilities recognized on January 1, 2019	<u>\$ 17,758,578</u>

The Company as lessor

Except for sublease transactions, the Company does not make any adjustments for leases in which it is a lessor, and accounts for those leases under IFRS 16 starting from January 1, 2019. On the basis of the remaining contractual terms and conditions on January 1, 2019, all of the Company's subleases are classified as operating leases.

Impact on assets, liabilities and equity on January 1, 2019

	Carrying Amount as of December 31, 2018	Adjustments Arising from Initial Application	Adjusted Carrying Amount as of January 1, 2019
Other current assets	\$ 4,184,918	\$ (6,783)	\$ 4,178,135
Right-of-use assets	-	17,831,257	17,831,257
Refundable deposits and others	1,666,863	<u>(966)</u>	1,665,897
Total effect on assets		<u>\$ 17,823,508</u>	
Accrued expenses and other current liabilities	49,778,042	\$ 2,347,167	52,125,209
Lease liabilities - noncurrent	-	15,411,411	15,411,411
Other noncurrent liabilities	451,488	<u>64,930</u>	516,418
Total effect on liabilities		<u>\$ 17,823,508</u>	
Total effect on equity		<u>\$ -</u>	

- b. Amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers for application starting from 2020 and the IFRSs issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2020

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Amendments to IFRS 3 "Definition of a Business"	January 1, 2020 (Note 1)
Amendments to IFRS 9, IAS 39 and IFRS 7 "Interest Rate Benchmark Reform"	January 1, 2020 (Note 2)
Amendments to IAS 1 and IAS 8 "Definition of Material"	January 1, 2020 (Note 3)

Note 1: The Company shall apply these amendments to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020 and to asset acquisitions that occur on or after the beginning of that period.

Note 2: The Company shall apply these amendments retrospectively for annual reporting periods beginning on or after January 1, 2020.

Note 3: The Company shall apply these amendments prospectively for annual reporting periods beginning on or after January 1, 2020.

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

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 10 and IAS 28 “Sale or Contribution of Assets between an Investor and its Associate or Joint Venture”	To be determined by IASB
Amendments to IAS 1 “Classification of Liabilities as Current or Non-current”	January 1, 2022

As of the date the accompanying parent company only financial statements were authorized for issue, the Company continues in evaluating the impact on its financial position and financial performance as a result of the initial adoption of the aforementioned standards or interpretations. The related impact will be disclosed when the Company completes the evaluation.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

For the convenience of readers, the accompanying parent company only financial statements have been translated into English from the original Chinese version prepared and used in the R.O.C. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language parent company only financial statements shall prevail.

Statement of Compliance

The accompanying parent company only financial statements have been prepared in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers (the “Accounting Standards Used in Preparation of the Parent Company Only Financial Statements”).

Basis of Preparation

The accompanying parent company only financial statements have been prepared on the historical cost basis except for financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

When preparing the parent company only financial statements, the Company account for subsidiaries and associates by using the equity method. In order to agree with the amount of net income, other comprehensive income and equity attributable to shareholders of the parent in the consolidated financial statements, the differences of the accounting treatment between the parent company only basis and the consolidated basis are adjusted under the heading of investments accounted for using equity method, share of profits of subsidiaries and associates and share of other comprehensive income of subsidiaries and associates in the parent company only financial statements.

Foreign Currencies

In preparing the parent company only financial statements, transactions in currencies other than the entity’s functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Such exchange differences are recognized in profit or loss in the year in which they arise. Non-monetary items measured at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising on the retranslation of non-monetary items are included in profit or loss for the year except for exchange differences arising on the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which case, the exchange differences are also recognized directly in other comprehensive income. Non-monetary items that are measured in terms of historical cost in foreign currencies are not retranslated.

For the purposes of presenting parent company only financial statements, the assets and liabilities of the Company's foreign operations are translated into NT\$ using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity.

Classification of Current and Noncurrent Assets and Liabilities

Current assets are assets held for trading purposes and assets expected to be converted to cash, sold or consumed within one year from the end of the reporting period. Current liabilities are obligations incurred for trading purposes and obligations expected to be settled within one year from the end of the reporting period. Assets and liabilities that are not classified as current are noncurrent assets and liabilities, respectively.

Cash Equivalents

Cash equivalents, for the purpose of meeting short-term cash commitments, consist of highly liquid time deposits and investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Financial Instruments

Financial assets and liabilities shall be recognized when the Company becomes a party to the contractual provisions of the instruments.

Financial assets and liabilities are initially recognized at fair values. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial Assets

The classification of financial assets depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Regular way purchases or sales of financial assets are recognized and derecognized on a trade date or settlement date basis for which financial assets were classified in the same way, respectively. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

a. Category of financial assets and measurement

Financial assets are classified into the following categories: financial assets at FVTPL, investments in debt instruments and equity instruments at FVTOCI, and financial assets at amortized cost.

1) Financial asset at FVTPL

For certain financial assets which include debt instruments that do not meet the criteria of amortized cost or FVTOCI, it is mandatorily required to measure them at FVTPL. Any gain or loss arising from remeasurement is recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest earned on the financial asset.

2) Investments in debt instruments at FVTOCI

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of collecting contractual cash flows and selling the financial assets, are measured at FVTOCI.

Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment gains or losses on investments in debt instruments at FVTOCI are recognized in profit or loss. Other changes in the carrying amount of these debt instruments are recognized in other comprehensive income and will be reclassified to profit or loss when these debt instruments are disposed.

3) Investments in equity instruments at FVTOCI

On initial recognition, the Company may irrevocably designate investments in equity investments that is not held for trading as at FVTOCI.

Investments in equity instruments at FVTOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity.

Dividends on these investments in equity instruments at FVTOCI are recognized in profit or loss when the Company's right to receive the dividends is established, unless the Company's rights clearly represent a recovery of part of the cost of the investment.

4) Measured at amortized cost

Cash and cash equivalents, debt instrument investments, notes and accounts receivable (including related parties), other receivables and refundable deposits are measured at amortized cost.

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of holding financial assets in order to collect contractual cash flows, are measured at amortized cost.

Subsequent to initial recognition, financial assets measured at amortized cost are measured at amortized cost, which equals to carrying amount determined by the effective interest method less any impairment loss.

b. Impairment of financial assets

At the end of each reporting period, a loss allowance for expected credit loss is recognized for financial assets at amortized cost (including accounts receivable) and for investments in debt instruments that are measured at FVTOCI.

The loss allowance for accounts receivable is measured at an amount equal to lifetime expected credit losses. For financial assets at amortized cost and investments in debt instruments that are measured at FVTOCI, when the credit risk on the financial instrument has not increased significantly since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from possible default events of a financial instrument within 12 months after the reporting date. If, on the other hand, there has been a significant increase in credit risk since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from all possible default events over the expected life of a financial instrument.

The Company recognizes an impairment loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized

in other comprehensive income and does not reduce the carrying amount of the financial asset.

c. **Derecognition of financial assets**

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the financial asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset to another entity.

On derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. On derecognition of an investment in a debt instrument at FVTOCI, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss. However, on derecognition of an investment in an equity instrument at FVTOCI, the cumulative gain or loss that had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

Financial Liabilities and Equity Instruments

Classification as debt or equity

Debt and equity instruments issued by the Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Financial liabilities

Financial liabilities are subsequently measured either at amortized cost using effective interest method or at FVTPL.

Financial liabilities are classified as at fair value through profit or loss when the financial liability is either held for trading or is designated as at fair value through profit or loss.

Financial liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

Financial liabilities other than those held for trading purposes and designated as at FVTPL are subsequently measured at amortized cost at the end of each reporting period.

Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

Derivative Financial Instruments

Derivative financial instruments are initially recognized at fair value at the date the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative financial instrument is

designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

Hedge Accounting

Cash flow hedge

The Company designates certain hedging instruments, such as forward exchange contracts and foreign currency deposits, to partially hedge its foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The effective portion of changes in the fair value of hedging instruments is recognized in other comprehensive income. When the forecast transactions actually take place, the associated gains or losses that were recognized in other comprehensive income are removed from equity and included in the initial cost of the hedged items. The gains or losses from hedging instruments relating to the ineffective portion are recognized immediately in profit or loss.

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

Inventories

Inventories are stated at the lower of cost or net realizable value. Inventories are recorded at standard cost and adjusted to approximate weighted-average cost at the end of the reporting period. Net realizable value represents the estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale.

Investments Accounted for Using Equity Method

Investments accounted for using the equity method include investments in subsidiaries and associates.

Investment in subsidiaries

A subsidiary is an entity that is controlled by the Company.

Under the equity method, an investment in a subsidiary is initially recognized at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the subsidiary as well as the distribution received. The Company also recognized its share in the changes in the equity of subsidiaries.

Changes in the Company's ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. Any difference between the carrying amount of the subsidiary and the fair value of the consideration paid or received is recognized directly in equity.

When the Company loses control of a subsidiary, any retained investment of the former subsidiary is measured at the fair value at that date. A gain or loss is recognized in profit or loss and calculated as the difference between (a) the aggregate of the fair value of consideration received and the fair value of any retained interest at the date when control is lost; and (b) the previous carrying amount of the investments in such subsidiary. In addition, the Company shall account for all amounts previously recognized in other comprehensive income in relation to the subsidiary on the same basis as would be required if the subsidiary had directly disposed of the related assets and liabilities.

When the Company transacts with its subsidiaries, profits and losses resulting from the transactions with the subsidiaries are recognized in the Company's parent company only financial statements only to the extent of interests in the subsidiaries that are not owned by the Company.

Investment in associates

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

The operating results and assets and liabilities of associates are incorporated in these parent company only financial statements using the equity method of accounting. Under the equity method, an investment in an associate is initially recognized in the statement of financial position at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the associate as well as the distribution received. The Company also recognizes its share in the changes in the equities of associates.

Any excess of the cost of acquisition over the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

The Company discontinues the use of the equity method from the date when the Company ceases to have significant influence over an associate. When the Company retains an interest in the former associate, the Company measures the retained interest at fair value at that date. The difference between the carrying amount of the associate at the date the equity method was discontinued, and the fair value of any retained interest and any proceeds from disposing of a part interest in the associate is included in the determination of the gain or loss on disposal of the associate. In addition, the Company shall account for all amounts recognized in other comprehensive income in relation to that associate on the same basis as would be required if the associate had directly disposed of the related assets or liabilities. If the Company's ownership interest in an associate is reduced as a result of disposal, but the investment continues to be an associate, the Company should reclassify to profit or loss only a proportionate amount of the gain or loss previously recognized in other comprehensive income.

When the Company subscribes to additional shares in an associate at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Company's proportionate interest in the net assets of the associate. The Company records such a difference as an adjustment to investments with the corresponding amount charged or credited to capital surplus. If the Company's ownership interest is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

When the Company transacts with an associate, profits and losses resulting from the transactions with the associate are recognized in the Company's parent company only financial statements only to the extent of interests in the associate that are not owned by the Company.

Property, Plant and Equipment

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment. Costs include any incremental costs that are directly attributable to the construction or acquisition of the item of property, plant and equipment.

Property, plant and equipment in the course of construction for production, supply or administrative purposes are carried at cost, less any recognized impairment loss. Such assets are classified to the appropriate categories of property, plant and equipment when completed and ready for intended use. Depreciation of these assets, on the same basis as other identical categories of property, plant and equipment, commences when the assets are available for their intended use.

Depreciation is recognized so as to write off the cost of the assets less their residual values over their useful lives, and it is computed using the straight-line method mainly over the following estimated useful lives: buildings (assets used by the Company and assets subject to operating leases) - 10 to 20 years; machinery and equipment - 5 years; and office equipment - 5 years. The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimates accounted for on a prospective basis. Land is not depreciated.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the assets. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognized in profit or loss.

Leases

2019

For a contract that contains a lease component and non-lease component, the Company may elect to account for the lease and non-lease components as a single lease component.

The Company as lessor

Rental income from operating lease is recognized on a straight-line basis over the term of the lease.

The Company as lessee

Except for short-term leases (leases of machinery and equipment and others) which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases at the commencement date of the lease.

Right-of-use assets are measured at cost. The cost of right-of-use assets comprises the initial measurement of lease liabilities adjusted for lease payments made at or before the commencement date, plus an estimate of costs needed to restore the underlying assets. Subsequent measurement is calculated as cost less accumulated depreciation and accumulated impairment loss and adjusted for changes in lease liabilities as a result of lease term modifications or other related factors. Right-of-use assets are presented separately in the parent company only balance sheets.

Right-of-use assets are depreciated using the straight-line method from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms. If the lease transfers ownership of the underlying assets to the Company by the end of the lease terms or if the cost of right-of-use assets reflects that the Company will exercise a purchase option, the Company depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are measured at the present value of the lease payments. Lease payments comprise fixed payments, variable lease payments which depend on an index or a rate and the exercise price of a purchase option if the Company is reasonably certain to exercise that option. The lease payments are discounted using the lessee's incremental borrowing rates.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, the Company remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. Lease liabilities are presented on a separate line in the parent company only balance sheets.

Variable lease payments that do not depend on an index or a rate are recognized as expenses in the periods in which they are incurred.

2018

Leases are classified as finance lease whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

The Company as lessor

Rental income from operating leases is recognized on a straight-line basis over the term of the lease.

The Company as lessee

Operating lease payments are recognized as an expense on a straight-line basis over the lease term.

Intangible Assets

Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

Other intangible assets

Other separately acquired intangible assets with finite useful lives are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized using the straight-line method over the following estimated useful lives: Technology license fees - the estimated life of the technology or the term of the technology transfer contract; software and system design costs - 3 years or contract period; patent and others - the economic life or contract period. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets

Goodwill

Goodwill is not amortized and instead is tested for impairment annually, or more frequently when there is an indication that the cash generating unit may be impaired. For the purpose of impairment testing, goodwill is allocated to each of the Company's cash generating units or groups of cash-generating units that are expected to benefit. If the recoverable amount of a cash generating unit is less than its carrying amount, the difference is allocated first to reduce the carrying amount of any goodwill allocated to such cash-generating unit and then to the other assets of the cash generating unit pro rata based on the carrying amount of each asset in the

cash generating unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

Tangible assets, right-of-use assets and other intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets (property, plant and equipment), right-of-use assets and other intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

When an impairment loss subsequently reverses, the carrying amount of the asset or a cash-generating unit is increased to the revised estimate of its recoverable amount, but the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

Guarantee Deposit

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

Revenue Recognition

The Company recognizes revenue when performance obligations are satisfied. The performance obligations are satisfied when customers obtain control of the promised goods which is generally when the goods are delivered to the customers' specified locations.

Revenue from sale of goods is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms to recognize refund liabilities, which is classified under accrued expenses and other current liabilities.

In principle, payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month of when the invoice is issued. Due to the short term nature of the receivables from sale of goods with the immaterial discounted effect, the Company measures them at the original invoice amounts without discounting.

Employee Benefits

Short-term employee benefits

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for service rendered by employees.

Retirement benefits

For defined contribution retirement benefit plans, payments to the benefit plan are recognized as an expense when the employees have rendered service entitling them to the contribution. For defined benefit retirement benefit plans, the cost of providing benefit is recognized based on actuarial calculations.

Defined benefit costs (including service cost, net interest and rereasurement) under the defined benefit retirement benefit plans are determined using the Projected Unit Credit Method. Service cost (including current service cost), and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Rereasurement, comprising actuarial gains and losses and the return on plan assets (excluding interest), is recognized in other comprehensive income in the period in which they occur. Rereasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability represents the actual deficit in the Company's defined benefit plan.

Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

Current tax

Income tax on unappropriated earnings is expensed in the year the shareholders approved the appropriation of earnings which is the year subsequent to the year the earnings are generated.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the parent company only financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, net operating loss carryforwards and tax credits for research and development expenses to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered. The deferred tax assets which originally not recognized is also reviewed at the end of each reporting period and recognized to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the year in which the liability is settled or the asset is realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Current and deferred tax for the year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity, respectively.

5. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY

In the application of the aforementioned Company's accounting policies, the Company is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimate is revised if the revision affects only that year, or in the year of the revision and future years if the revision affects both current and future years.

Critical Accounting Judgments

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied.

Commencement of Depreciation Related to Property, Plant and Equipment Classified as Equipment under Installation and Construction in Progress (EUI/CIP)

As described in Note 4, commencement of depreciation related to EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgements and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner.

Judgments on Lease Terms

In determining a lease term, the Company considers all facts and circumstances that create an economic incentive to exercise or not to exercise an option, including any expected changes in facts and circumstances from the commencement date until the exercise date of the option. Main factors considered include contractual terms and conditions covered by the optional periods, and the importance of the underlying asset to the lessee's operations, etc. The lease term is reassessed if a significant change in circumstances that are within the control of the Company occurs.

Key Sources of Estimation and Uncertainty

Estimation of Sales Returns and Allowances

Sales returns and other allowance is estimated and recorded based on historical experience and in consideration of different contractual terms. The amount is deducted from revenue in the same period the related revenue is recorded. The Company periodically reviews the reasonableness of the estimates.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses estimate to determine the net realizable value of inventory at the end of each reporting period.

The Company estimates the net realizable value of inventory for normal waste, obsolescence and unmarketable items at the end of reporting period and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is determined mainly based on assumptions of future demand within a specific time horizon.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible assets, right-of-use assets and intangible assets other than goodwill, the Company determines the independent cash flows, useful lives, expected future revenue and expenses related to the specific asset groups with the consideration of the nature of semiconductor industry. Any change in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Realization of Deferred Income Tax Assets

Deferred tax assets are recognized to the extent that it is probable that future taxable profits will be available against which those deferred tax assets can be utilized. Assessment of the realization of the deferred tax assets requires subjective judgment and estimate, including the future revenue growth and profitability, tax holidays, the amount of tax credits can be utilized and feasible tax planning strategies. Any changes in the global economic environment, the industry trends and relevant laws and regulations could result in significant adjustments to the deferred tax assets.

Determination of Lessees' Incremental Borrowing Rates

In determining a lessee's incremental borrowing rate used in discounting lease payments, the Company mainly takes into account the market risk-free rates, the estimated lessee's credit spreads and secured status in a similar economic environment.

6. CASH AND CASH EQUIVALENTS

	December 31, 2019	December 31, 2018
Cash and deposits in banks	\$ 141,450,698	\$ 238,473,857
Repurchase agreements collateralized by corporate bonds	-	1,229,600
Commercial paper	-	499,068
	<u>\$ 141,450,698</u>	<u>\$ 240,202,525</u>

Deposits in banks consisted of highly liquid time deposits that were readily convertible to known amounts of cash and were subject to an insignificant risk of changes in value.

7. FINANCIAL ASSETS AND LIABILITIES AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31, 2019	December 31, 2018
<u>Financial assets</u>		
Mandatorily measured at FVTPL		
Forward exchange contracts	<u>\$ 27,481</u>	<u>\$ 54,115</u>
<u>Financial liabilities</u>		
Held for trading		
Forward exchange contracts	<u>\$ 982,302</u>	<u>\$ 30,232</u>

The Company entered into forward exchange contracts to manage exposures due to fluctuations of foreign exchange rates. These forward exchange contracts did not meet the criteria for hedge accounting. Therefore, the Company did not apply hedge accounting treatment for these forward exchange contracts.

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
<u>December 31, 2019</u>		
Sell NT\$/Buy EUR	January 2020 to June 2020	NT\$84,690,438/EUR2,509,000
Sell NT\$/Buy JPY	January 2020 to March 2020	NT\$23,737,589/JPY85,600,000
Sell JPY/Buy US\$	January 2020 to February 2020	JPY57,471,581/US\$526,368
<u>December 31, 2018</u>		
Sell NT\$/Buy EUR	January 2019 to March 2019	NT\$18,545,854/EUR527,000
Sell NT\$/Buy JPY	January 2019 to March 2019	NT\$4,757,858/JPY17,200,000
Sell US\$/Buy JPY	January 2019	US\$162,834/JPY17,976,014
Sell US\$/Buy NT\$	January 2019	US\$110,000/NT\$3,386,459

8. HEDGING FINANCIAL INSTRUMENTS

	December 31, 2019	December 31, 2018
<u>Financial assets- current</u>		
Cash flow hedges		
Forward exchange contracts	<u>\$ 3,504</u>	<u>\$ 23,497</u>
<u>Financial liabilities- current</u>		
Cash flow hedges		
Forward exchange contracts	<u>\$ 1,798</u>	<u>\$ 1,941</u>

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

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

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty's own credit risk on the fair value of forward exchange contracts and foreign currency deposits. No other sources of ineffectiveness emerged from these hedging relationships. For the years ended December 31, 2019 and 2018, refer to Note 19(d) for gain or loss arising from changes in the fair value of hedging instruments and the amount transferred to initial carrying amount of hedged items.

The following tables summarize the information relating to the hedges for foreign currency risk.

December 31, 2019

Hedging Instruments	Contract Amount (In Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	NT\$1,342,392/EUR40,000	January 2020	\$ (3,820)

December 31, 2018

Hedging Instruments	Contract Amount (In Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	NT\$3,917,657/EUR112,000	February 2019 to April 2019	\$ 23,601

The effect for the years ended December 31, 2019 and 2018 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31 2019	2018
Hedging Instruments		
Forward exchange contracts	\$(109,592)	\$ 34,563
Foreign currency deposits	-	6,412
	<u>\$(109,592)</u>	<u>\$ 40,975</u>
Hedged Items		
Forecast transaction (capital expenditures)	<u>\$ 109,592</u>	<u>\$ (40,975)</u>

9. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2019	December 31, 2018
At amortized cost		
Notes and accounts receivable	\$ 46,188,113	\$ 33,097,452
Less: Loss allowance	<u>(319,045)</u>	<u>(7,132)</u>
	45,869,068	33,090,320
At FVTOCI	<u>3,255,865</u>	<u>3,595,069</u>
	<u>\$ 49,124,933</u>	<u>\$ 36,685,389</u>

The Company signed a contract with the bank to sell certain accounts receivable without recourse and transaction cost required. These accounts receivable are classified as at FVTOCI because they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets.

In principle, the payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month when the invoice is issued. Aside from recognizing impairment loss for credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels with consideration of factors of historical loss ratios and customers' financial conditions, competitiveness and business outlook. For accounts receivable past due over 90 days without collaterals or guarantees, the Company recognizes loss allowance at full amount.

Aging analysis of notes and accounts receivable

	December 31, 2019	December 31, 2018
Not past due	\$ 43,374,378	\$ 29,258,313
Past due		
Past due within 30 days	6,054,771	6,956,366
Past due 31-60 days	10,864	464,879
Past due 61-120 days	720	7,548
Past due over 121 days	3,245	5,415
Less: Loss allowance	<u>(319,045)</u>	<u>(7,132)</u>
	<u>\$ 49,124,933</u>	<u>\$ 36,685,389</u>

All of the Company's accounts receivable classified as at FVTOCI were not past due.

Movements of the loss allowance for accounts receivable

	<u>Years Ended December 31</u>	
	2019	2018
Balance, beginning of year	\$ 7,132	\$ 224,352
Provision (Reversal)	<u>311,913</u>	<u>(217,220)</u>
Balance, end of year	<u>\$ 319,045</u>	<u>\$ 7,132</u>

For the years ended December 31, 2018 and 2019, the changes in loss allowance were mainly due to the variations in the expected credit loss ratios and the balance of accounts receivable of different risk levels.

10. INVENTORIES

	December 31, 2019	December 31, 2018
Finished goods	\$ 8,533,179	\$ 10,920,351
Work in process	49,268,466	70,405,998
Raw materials	15,046,116	14,110,534
Supplies and spare parts	<u>3,416,090</u>	<u>2,651,277</u>
	<u>\$ 76,263,851</u>	<u>\$ 98,088,160</u>

Reversal of write-down of inventories resulting from the increase in net realizable value and write-down of inventories to net realizable value were included in the cost of revenue, as illustrated below:

	<u>Years Ended December 31</u>	
	2019	2018
Inventory losses (reversal of write-down of inventories)	<u>\$ (2,071,888)</u>	<u>\$ 1,098,915</u>

The aforementioned inventory losses (reversal of write-down of inventories) exclude wafer contamination losses and computer virus outbreak losses. Please refer to related losses in Note 34.

11. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

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

	December 31, 2019	December 31, 2018
Subsidiaries	\$ 539,843,621	\$ 531,717,913
Associates	<u>18,660,268</u>	<u>17,842,971</u>
	<u>\$ 558,503,889</u>	<u>\$ 549,560,884</u>

a. Investments in subsidiaries

Subsidiaries consisted of the following:

Subsidiaries	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
TSMC Global Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	\$ 397,737,270	\$ 393,577,931	100%	100%
TSMC China Company Limited (TSMC China)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	57,289,154	55,466,911	100%	100%
TSMC Partners, Ltd. (TSMC Partners)	Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	Tortola, British Virgin Islands	53,388,267	52,339,094	100%	100%
TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	21,364,939	20,601,413	100%	100%
TSMC North America	Selling and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	4,569,825	4,269,393	100%	100%

(Continued)

Subsidiaries	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
VisEra Technologies Company Ltd. (VisEra Tech)	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	Hsinchu, Taiwan	\$ 4,541,741	\$ 4,531,929	87%	87%
TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	462,479	445,828	100%	100%
VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in new start-up technology companies	Cayman Islands	231,504	194,660	98%	98%
TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	142,620	141,136	100%	100%
VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	75,095	128,758	98%	98%
TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	40,727	40,966	100%	100%
TSMC Solar Europe GmbH	Selling of solar related products and providing customer service	Hamburg, Germany	-	(20,106)	-	100%
			<u>\$ 539,843,621</u>	<u>\$ 531,717,913</u>		

(Concluded)

To lower the hedging cost, in 2018, the Company increased its investment in TSMC Global for the amount of NT\$62,272,080 thousand. This project was approved by the Investment Commission, Ministry of Economic Affairs, R.O.C. (MOEA).

In 2018, the Company increased its investment in TSMC Nanjing for the amount of NT\$2,361,320 thousand. This project was approved by the Investment Commission, MOEA.

TSMC Solar Europe GmbH has completed the liquidation procedures in March 2019.

b. Investments in associates

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	\$ 9,027,572	\$ 9,006,126	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	6,502,174	5,772,815	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	1,846,145	1,764,607	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	<u>1,284,377</u>	<u>1,299,423</u>	35%	35%
			<u>\$ 18,660,268</u>	<u>\$ 17,842,971</u>		

As of December 31, 2019 and 2018, no investments in associates are individually material to the Company. Please refer to the parent company only statements of comprehensive income for recognition of share of both profit (loss) and other comprehensive income (loss) of associates that are not individually material.

The market prices of the investments accounted for using the equity method in publicly traded stocks calculated by the closing price at the end of the reporting period are summarized as follows. The closing price represents the quoted price in active markets, the level 1 fair value measurement.

Name of Associate	December 31, 2019	December 31, 2018
VIS	<u>\$ 36,812,923</u>	<u>\$ 27,621,298</u>
GUC	<u>\$ 11,251,774</u>	<u>\$ 9,617,699</u>
Xintec	<u>\$ 8,958,195</u>	<u>\$ 3,783,585</u>

12. PROPERTY, PLANT AND EQUIPMENT

2019

	December 31, 2019
Assets used by the Company	\$1,310,882,220
Assets subject to operating leases	<u>18,414</u>
	<u>\$1,310,900,634</u>

a. Assets used by the Company

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

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

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

b. Assets subject to operating leases

	Buildings
<u>Cost</u>	
Balance at January 1, 2019	<u>\$ 494,582</u>
Balance at December 31, 2019	<u>\$ 494,582</u>
<u>Accumulated depreciation</u>	
Balance at January 1, 2019	\$ 457,657
Additions	<u>18,511</u>
Balance at December 31, 2019	<u>\$ 476,168</u>
Carrying amounts at December 31, 2019	<u>\$ 18,414</u>

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

The maturity analysis of operating lease payments receivable for the buildings is as follows:

	December 31, 2019
Year 1	<u>\$ 1,458</u>
<u>2018</u>	

	Land	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Cost</u>						
Balance at January 1, 2018	\$ 3,212,000	\$ 357,391,050	\$ 2,369,226,722	\$ 39,403,217	\$ 144,776,878	\$ 2,914,009,867
Additions	-	24,665,225	231,468,189	5,036,411	26,500,451	287,670,276
Disposals or retirements	-	(410,891)	(15,065,446)	(716,942)	-	(16,193,279)
Balance at December 31, 2018	<u>\$ 3,212,000</u>	<u>\$ 381,645,384</u>	<u>\$ 2,585,629,465</u>	<u>\$ 43,722,686</u>	<u>\$ 171,277,329</u>	<u>\$ 3,185,486,864</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2018	\$ -	\$ 176,623,784	\$ 1,695,482,201	\$ 25,547,912	\$ -	\$ 1,897,653,897
Additions	-	22,534,543	246,686,584	5,119,413	-	274,340,540
Disposals or retirements	-	(398,955)	(11,102,618)	(716,409)	-	(12,217,982)
Impairment	-	-	423,468	-	-	423,468
Balance at December 31, 2018	<u>\$ -</u>	<u>\$ 198,759,372</u>	<u>\$ 1,931,489,635</u>	<u>\$ 29,950,916</u>	<u>\$ -</u>	<u>\$ 2,160,199,923</u>
Carrying amounts at December 31, 2018	<u>\$ 3,212,000</u>	<u>\$ 182,886,012</u>	<u>\$ 654,139,830</u>	<u>\$ 13,771,770</u>	<u>\$ 171,277,329</u>	<u>\$ 1,025,286,941</u>

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

For the year ended December 31, 2018, the Company recognized an impairment loss of NT\$423,468 thousand for certain machinery and equipment that was assessed to have no future use, and the recoverable amount of certain machinery and equipment was nil. Such impairment loss was recognized in other operating income and expenses.

13. LEASE ARRANGEMENTS

2019

a. Right-of-use assets

	December 31, 2019
<u>Carrying amounts</u>	
Land	\$ 13,830,199
Buildings	402,836
Machinery and equipment	775,809
Office equipment	<u>21,176</u>
	<u>\$ 15,030,020</u>
	Year Ended December 31, 2019
Additions to right-of-use assets	<u>\$ 639,879</u>
	Year Ended December 31, 2019
Depreciation of right-of-use assets	
Land	\$ 944,052
Buildings	105,873
Machinery and equipment	1,184,374
Office equipment	<u>10,154</u>
	<u>\$ 2,244,453</u>
Income from subleasing right-of-use assets (classified under other operating income and expenses, net)	<u>\$ 44,796</u>

b. Lease liabilities

	December 31, 2019
<u>Carrying amounts</u>	
Current portion (classified under accrued expenses and other current liabilities)	\$ 1,843,556
Noncurrent portion	<u>13,300,263</u>
	<u>\$ 15,143,819</u>

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2019
Land	0.67%-0.94%
Buildings	0.67%-0.71%
Machinery and equipment	3.24%
Office equipment	0.64%-0.71%

c. Material terms of right-of-use assets

The Company leases land and buildings mainly for the use of plants and offices with lease terms of 2 to 22 years. The lease contracts for land located in the R.O.C. specify that lease payments will be adjusted every 2 years on the basis of changes in announced land value prices. The Company does not have purchase options to acquire the leasehold land and buildings at the end of the lease terms.

The Company leases machinery and equipment for use in operation with lease terms of 2 years. The Company has purchase options to acquire leasehold machinery and equipment at the end of the lease terms.

d. Subleases of right-of-use assets

The Company subleases its right-of-use assets for buildings under operating leases with lease terms of 1 year.

The maturity analysis of lease payments receivable under operating subleases is as follows:

	December 31, 2019
Year 1	<u>\$ 50,862</u>

e. Other lease information

	Year Ended December 31, 2019
Expenses relating to short-term leases	<u>\$ 4,991,637</u>
Expenses relating to variable lease payments not included in the measurement of lease liabilities	<u>\$ 158,375</u>
	Year Ended December 31, 2019
Total cash outflow for leases	<u>\$ 7,324,585</u>

2018

The Company's major operating leases are arrangements on several parcels of land and machinery and equipment.

The Company expensed the lease payments as follows:

	Year Ended December 31, 2018
Minimum lease payments	<u>\$ 3,773,364</u>

Future minimum lease payments under non-cancellable operating leases are as follows:

	December 31, 2018
Not later than 1 year	\$ 5,510,729
Later than 1 year and not later than 5 years	4,957,770
Later than 5 years	<u>8,253,382</u>
	<u>\$ 18,721,881</u>

14. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
<u>Cost</u>					
Balance at January 1, 2019	\$ 1,567,756	\$ 10,921,844	\$ 29,140,011	\$ 7,607,537	\$ 49,237,148
Additions	-	4,879,562	3,639,706	663,509	9,182,777
Disposals or retirements	-	-	(260,904)	-	(260,904)
Balance at December 31, 2019	<u>\$ 1,567,756</u>	<u>\$ 15,801,406</u>	<u>\$ 32,518,813</u>	<u>\$ 8,271,046</u>	<u>\$ 58,159,021</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2019	\$ -	\$ 8,703,391	\$ 22,863,319	\$ 5,240,508	\$ 36,807,218
Additions	-	1,066,834	3,610,902	661,150	5,338,886
Disposals or retirements	-	-	(258,527)	-	(258,527)
Balance at December 31, 2019	<u>\$ -</u>	<u>\$ 9,770,225</u>	<u>\$ 26,215,694</u>	<u>\$ 5,901,658</u>	<u>\$ 41,887,577</u>
Carrying amounts at December 31, 2019	<u>\$ 1,567,756</u>	<u>\$ 6,031,181</u>	<u>\$ 6,303,119</u>	<u>\$ 2,369,388</u>	<u>\$ 16,271,444</u>
<u>Cost</u>					
Balance at January 1, 2018	\$ 1,567,756	\$ 10,388,175	\$ 24,963,709	\$ 5,590,392	\$ 42,510,032
Additions	-	533,669	4,361,894	2,017,145	6,912,708
Disposals or retirements	-	-	(185,592)	-	(185,592)
Balance at December 31, 2018	<u>\$ 1,567,756</u>	<u>\$ 10,921,844</u>	<u>\$ 29,140,011</u>	<u>\$ 7,607,537</u>	<u>\$ 49,237,148</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2018	\$ -	\$ 7,639,775	\$ 20,282,457	\$ 4,717,673	\$ 32,639,905
Additions	-	1,063,616	2,766,396	522,835	4,352,847
Disposals or retirements	-	-	(185,534)	-	(185,534)
Balance at December 31, 2018	<u>\$ -</u>	<u>\$ 8,703,391</u>	<u>\$ 22,863,319</u>	<u>\$ 5,240,508</u>	<u>\$ 36,807,218</u>
Carrying amounts at December 31, 2018	<u>\$ 1,567,756</u>	<u>\$ 2,218,453</u>	<u>\$ 6,276,692</u>	<u>\$ 2,367,029</u>	<u>\$ 12,429,930</u>

The Company's goodwill has been tested for impairment at the end of the annual reporting period and the recoverable amount is determined based on the value in use. The value in use was calculated based on the cash flow forecast from the financial budgets covering the future five-year period, and the Company used annual discount rates of 8.0% and 9.0% in its test of impairment as of December 31, 2019 and 2018, respectively, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2019 and 2018, the Company did not recognize any impairment loss on goodwill.

15. SHORT-TERM LOANS

	December 31, 2019	December 31, 2018
Unsecured loans	\$ 118,522,290	\$ 88,754,640
Related parties unsecured loans	<u>29,988,000</u>	<u>3,227,700</u>
	<u>\$ 148,510,290</u>	<u>\$ 91,982,340</u>
Original loan content		
US\$ (in thousands)	\$ 3,370,000	\$ 2,715,000
EUR(in thousands)	1,410,000	242,000
Annual interest rate	0%-2.22%	0.01%-3.22%
Maturity date	Due by July 2020	Due by April 2019

The borrowing rates from loans between the Company and related parties should be determined by mutual consent as the loan are repayable on related parties' demand.

16. BONDS PAYABLE

	December 31, 2019	December 31, 2018
Domestic unsecured bonds	\$ 56,900,000	\$ 91,800,000
Less: Current portion	<u>(31,800,000)</u>	<u>(34,900,000)</u>
	<u>\$ 25,100,000</u>	<u>\$ 56,900,000</u>

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
100-1	B	September 2011 to September 2018	\$ 7,500,000	1.63%	Bullet repayment; interest payable annually
100-2	B	January 2012 to January 2019	7,000,000	1.46%	The same as above
101-1	B	August 2012 to August 2019	9,000,000	1.40%	The same as above
101-2	B	September 2012 to September 2019	9,000,000	1.39%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
101-3	-	October 2012 to October 2022	\$ 4,400,000	1.53%	Bullet repayment; interest payable annually
101-4	A	January 2013 to January 2018	10,600,000	1.23%	The same as above
	B	January 2013 to January 2020	10,000,000	1.35%	The same as above
	C	January 2013 to January 2023	3,000,000	1.49%	The same as above
102-1	A	February 2013 to February 2018	6,200,000	1.23%	The same as above
	B	February 2013 to February 2020	11,600,000	1.38%	The same as above
	C	February 2013 to February 2023	3,600,000	1.50%	The same as above
102-2	A	July 2013 to July 2020	10,200,000	1.50%	The same as above
	B	July 2013 to July 2023	3,500,000	1.70%	The same as above
102-3	B	August 2013 to August 2019	8,500,000	1.52%	The same as above
102-4	C	September 2013 to March 2019	1,400,000	1.60%	Bullet repayment; interest payable annually (interest for the six months prior to maturity will accrue on the basis of actual days and be repayable at maturity)
	D	September 2013 to March 2021	2,600,000	1.85%	The same as above
	E	September 2013 to March 2023	5,400,000	2.05%	The same as above
	F	September 2013 to September 2023	2,600,000	2.10%	Bullet repayment; interest payable annually

(Concluded)

17. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

The plan under the R.O.C. Labor Pension Act (the “Act”) is deemed a defined contribution plan. Pursuant to the Act, the Company has made monthly contributions equal to 6% of each employee’s monthly salary to employees’ pension accounts. Accordingly, the Company recognized expenses of NT\$2,063,508 thousand and NT\$2,028,928 thousand for the years ended December 31, 2019 and 2018, respectively.

b. Defined benefit plans

The Company has defined benefit plans under the R.O.C. Labor Standards Law that provide benefits based on an employee's length of service and average monthly salary for the six-month period prior to retirement. The Company contributes an amount equal to 2% of salaries paid each month to their respective pension funds (the Funds), which are administered by the Labor Pension Fund Supervisory Committee (the Committee) and deposited in the Committee's name in the Bank of Taiwan. Before the end of each year, the Company assesses the balance in the Funds. If the amount of the balance in the Funds is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company is required to fund the difference in one appropriation that should be made before the end of March of the next year. The Funds are operated and managed by the government's designated authorities; as such, the Company does not have any right to intervene in the investments of the Funds.

Amounts recognized in respect of these defined benefit plans were as follows:

	Years Ended December 31	
	2019	2018
Current service cost	\$ 135,645	\$ 137,758
Net interest expense	<u>123,951</u>	<u>144,108</u>
Components of defined benefit costs recognized in profit or loss	<u>259,596</u>	<u>281,866</u>
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(124,344)	(71,288)
Actuarial loss (gain) arising from experience adjustments	(438,009)	334,630
Actuarial gain arising from changes in demographic assumptions	(233,239)	-
Actuarial loss arising from changes in financial assumptions	<u>541,697</u>	<u>597,820</u>
Components of defined benefit costs recognized in other comprehensive income	<u>(253,895)</u>	<u>861,162</u>
Total	<u>\$ 5,701</u>	<u>\$ 1,143,028</u>

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

	Years Ended December 31	
	2019	2018
Cost of revenue	\$ 157,845	\$ 177,772
Research and development expenses	72,686	79,143
General and administrative expenses	25,063	20,591
Marketing expenses	<u>4,002</u>	<u>4,360</u>
	<u>\$ 259,596</u>	<u>\$ 281,866</u>

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

	December 31, 2019	December 31, 2018
Present value of defined benefit obligation	\$ 13,484,090	\$ 13,662,684
Fair value of plan assets	<u>(4,301,594)</u>	<u>(4,011,279)</u>
Net defined benefit liability	<u>\$ 9,182,496</u>	<u>\$ 9,651,405</u>

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

	Years Ended December 31	
	2019	2018
Balance, beginning of year	\$ 13,662,684	\$ 12,774,593
Current service cost	135,645	137,758
Interest expense	175,401	207,804
Remeasurement:		
Actuarial loss (gain) arising from experience adjustments	(438,009)	334,630
Actuarial gain arising from changes in demographic assumptions	(233,239)	-
Actuarial loss arising from changes in financial assumptions	541,697	597,820
Benefits paid from plan assets	(344,131)	(274,326)
Benefits paid directly by the Company	<u>(15,958)</u>	<u>(115,595)</u>
Balance, end of year	<u>\$ 13,484,090</u>	<u>\$ 13,662,684</u>

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

	Years Ended December 31	
	2019	2018
Balance, beginning of year	\$ 4,011,279	\$ 3,923,889
Interest income	51,450	63,696
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	124,344	71,288
Contributions from employer	458,652	226,732
Benefits paid from plan assets	<u>(344,131)</u>	<u>(274,326)</u>
Balance, end of year	<u>\$ 4,301,594</u>	<u>\$ 4,011,279</u>

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

	December 31, 2019	December 31, 2018
Cash	\$ 713,204	\$ 756,126
Equity instruments	2,313,828	2,148,040
Debt instruments	<u>1,274,562</u>	<u>1,107,113</u>
	<u>\$ 4,301,594</u>	<u>\$ 4,011,279</u>

The actuarial valuations of the present value of the defined benefit obligation were carried out by qualified actuaries. The principal assumptions of the actuarial valuation were as follows:

	Measurement Date	
	December 31, 2019	December 31, 2018
Discount rate	0.90%	1.30%
Future salary increase rate	3.00%	3.00%

Through the defined benefit plans under the R.O.C. Labor Standards Law, the Company is exposed to the following risks:

- 1) Investment risk: The pension funds are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the government's designated authorities or under the mandated management. However, under the R.O.C. Labor Standards Law, the rate of return on assets shall not be less than the average interest rate on a two-year time deposit published by the local banks and the government is responsible for any shortfall in the event that the rate of return is less than the required rate of return.
- 2) Interest risk: A decrease in the government bond interest rate will increase the present value of the defined benefit obligation; however, this will be partially offset by an increase in the return on the debt investments of the plan assets.

Assuming a hypothetical decrease in interest rate at the end of the reporting period contributed to a decrease of 0.5% in the discount rate and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT\$724,963 thousand and NT\$921,750 thousand as of December 31, 2019 and 2018, respectively.

- 3) Salary risk: The present value of the defined benefit obligation is calculated by reference to the future salaries of plan participants. As such, an increase in the salary of the plan participants will increase the present value of the defined benefit obligation.

Assuming the expected salary rate increases by 0.5% at the end of the reporting period and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT\$706,502 thousand and NT\$901,629 thousand as of December 31, 2019 and 2018, respectively.

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

Furthermore, in presenting the above sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation liability.

The Company expects to make contributions of NT\$230,864 thousand to the defined benefit plans in the next year starting from December 31, 2019. The weighted average duration of the defined benefit obligation is 10 years.

18. GUARANTEE DEPOSITS

	December 31, 2019	December 31, 2018
Capacity guarantee	\$ 1,499,400	\$ 9,289,628
Others	<u>191,352</u>	<u>205,020</u>
	<u>\$ 1,690,752</u>	<u>\$ 9,494,648</u>
Current portion (classified under accrued expenses and other current liabilities)	\$ 1,520,306	\$ 6,148,000
Noncurrent portion	<u>170,446</u>	<u>3,346,648</u>
	<u>\$ 1,690,752</u>	<u>\$ 9,494,648</u>

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

19. EQUITY

a. Capital stock

	December 31, 2019	December 31, 2018
Authorized shares (in thousands)	<u>28,050,000</u>	<u>28,050,000</u>
Authorized capital	<u>\$ 280,500,000</u>	<u>\$ 280,500,000</u>
Issued and paid shares (in thousands)	<u>25,930,380</u>	<u>25,930,380</u>
Issued capital	<u>\$ 259,303,805</u>	<u>\$ 259,303,805</u>

A holder of issued common shares with par value of NT\$10 per share is entitled to vote and to receive dividends.

The authorized shares include 500,000 thousand shares allocated for the exercise of employee stock options.

As of December 31, 2019, 1,065,122 thousand ADSs of the Company were traded on the NYSE. The number of common shares represented by the ADSs was 5,325,610 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2019	December 31, 2018
Additional paid-in capital	\$ 24,184,939	\$ 24,184,939
From merger	22,804,510	22,804,510
From convertible bonds	8,892,847	8,892,847
From share of changes in equities of subsidiaries	121,843	121,473
From share of changes in equities of associates	302,234	282,820
Donations	<u>33,336</u>	<u>29,343</u>
	<u>\$ 56,339,709</u>	<u>\$ 56,315,932</u>

Under the relevant laws, the capital surplus generated from donations and the excess of the issuance price over the par value of capital stock (including the stock issued for new capital, mergers and convertible bonds) may be used to offset a deficit; in addition, when the Company has no deficit, such capital surplus may be distributed as cash dividends or stock dividends up to a certain percentage of the Company's paid-in capital. The capital surplus from share of changes in equities of subsidiaries and associates and dividend of a claim extinguished by a prescription may be used to offset a deficit; however, when generated from issuance of restricted shares for employees, such capital surplus may not be used for any purpose.

c. Retained earnings and dividend policy

The amendments to the Company's Articles of Incorporation had been approved by the Company's shareholders in its meeting held on June 5, 2019, which stipulate that earnings distribution may be made on a quarterly basis after the close of each quarter. Distribution of earnings by way of cash dividends should be approved by the Company's Board of Directors and reported to the Company's shareholders in its meeting.

The Company's amended Articles of Incorporation provide that, when allocating earnings, the Company shall first estimate and reserve the taxes to be paid, offset its losses, set aside a legal capital reserve at 10% of the remaining earnings (until the accumulated legal capital reserve equals the Company's paid-in

capital), then set aside a special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge. Any balance left over shall be allocated according to relevant laws and the Company's Articles of Incorporation.

The Company's Articles of Incorporation also provide that profits of the Company may be distributed by way of cash dividend and/or stock dividend. However, distribution of earnings shall be made preferably by way of cash dividend. Distribution of earnings may also be made by way of stock dividend, provided that the ratio for stock dividend shall not exceed 50% of the total distribution.

The reserve may be used to offset a deficit, or be distributed as dividends in cash or stocks for the portion in excess of 25% of the paid-in capital if the Company incurs no loss.

Pursuant to existing regulations, the Company is required to set aside additional special capital reserve equivalent to the net debit balance of the other components of stockholders' equity, such as the accumulated balance of foreign currency translation reserve, unrealized valuation gain or loss from fair value through other comprehensive income financial assets, unrealized valuation gain or loss from available-for-sale financial assets, gain or loss from changes in fair value of hedging instruments in cash flow hedges, etc. For the subsequent decrease in the deduction amount to stockholders' equity, any special reserve appropriated may be reversed to the extent that the net debit balance reverses.

The appropriations of 2018 and 2017 earnings have been approved by the Company's shareholders in its meetings held on June 5, 2019 and June 5, 2018, respectively. The appropriations and cash dividends per share were as follows:

	Appropriation of Earnings		Cash Dividends Per Share (NT\$)	
	For Fiscal Year 2018	For Fiscal Year 2017	For Fiscal Year 2018	For Fiscal Year 2017
Legal capital reserve	<u>\$ 35,113,088</u>	<u>\$ 34,311,148</u>		
Special capital reserve	<u>\$ (11,459,458)</u>	<u>\$ 26,907,527</u>		
Cash dividends to shareholders	<u>\$207,443,044</u>	<u>\$207,443,044</u>	\$8.0	\$8.0

The appropriations of 2019 earnings for each quarter have been approved by the Company's Board of Directors in its meeting. The appropriations and cash dividends per share were as follows:

Resolution date of TSMC's Board of Directors in its meeting	Fourth Quarter of 2019 February 11, 2020	Third Quarter of 2019 November 12, 2019	Second Quarter of 2019 August 13, 2019	First Quarter of 2019 June 5, 2019
Special capital reserve	<u>\$ 16,893,073</u>	<u>\$ 3,289,166</u>	<u>\$ (3,338,190)</u>	<u>\$ (4,723,939)</u>
Cash dividends to shareholders	<u>\$ 64,825,951</u>	<u>\$ 64,825,951</u>	<u>\$ 64,825,951</u>	<u>\$ 51,860,761</u>
Cash dividends per share(NT\$)	<u>\$ 2.5</u>	<u>\$ 2.5</u>	<u>\$ 2.5</u>	<u>\$ 2.0</u>

d. Others

Changes in others were as follows:

	Year Ended December 31, 2019				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)
Exchange differences arising on translation of foreign operations	(14,698,117)	-	-	-	(14,698,117)
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	121,740	-	-	121,740
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(162,118)	-	-	(162,118)
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	(109,592)	-	(109,592)
Transferred to initial carrying amount of hedged items	-	-	82,276	-	82,276
Share of other comprehensive income (loss) of subsidiaries and associates	(130,936)	2,767,267	(105)	-	2,636,226
Share of unearned stock-based employee compensation of subsidiaries and associates	-	-	-	1,653	1,653
Income tax effect	-	9,476	-	-	9,476
Balance, end of year	<u>\$ (26,871,400)</u>	<u>\$ (692,959)</u>	<u>\$ (3,820)</u>	<u>\$ (190)</u>	<u>\$ (27,568,369)</u>
	Year Ended December 31, 2018				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	\$ (26,697,680)	\$ (524,915)	\$ 4,226	\$ (10,290)	\$ (27,228,659)
Exchange differences arising on translation of foreign operations	14,578,483	-	-	-	14,578,483
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	(1,189,957)	-	-	(1,189,957)
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	1,193,056	-	-	1,193,056
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	40,975	-	40,975
Transferred to initial carrying amount of hedged items	-	-	(22,162)	-	(22,162)
Share of other comprehensive income (loss) of subsidiaries and associates	76,850	(2,999,336)	-	-	(2,922,486)
Share of unearned stock-based employee compensation of subsidiaries and associates	-	-	-	8,447	8,447
Income tax effect	-	91,828	562	-	92,390
Balance, end of year	<u>\$ (12,042,347)</u>	<u>\$ (3,429,324)</u>	<u>\$ 23,601</u>	<u>\$ (1,843)</u>	<u>\$ (15,449,913)</u>

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

20. NET REVENUE

a. Disaggregation of revenue from contracts with customers

Product	Years Ended December 31	
	2019	2018
Wafer	\$ 921,095,318	\$ 906,992,422
Others	<u>138,551,475</u>	<u>116,933,291</u>
	<u>\$1,059,646,793</u>	<u>\$1,023,925,713</u>

Geography	Years Ended December 31	
	2019	2018
Taiwan	\$ 84,255,256	\$ 78,260,773
United States	628,365,912	626,493,249
China	208,101,401	175,794,228
Europe, the Middle East and Africa	67,568,157	71,068,438
Japan	57,468,605	58,125,879
Others	<u>13,887,462</u>	<u>14,183,146</u>
	<u>\$1,059,646,793</u>	<u>\$1,023,925,713</u>

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

Platform	Years Ended December 31	
	2019	2018
Smartphone	\$ 518,553,492	\$ 462,957,802
High Performance Computing	312,770,702	339,165,302
Internet of Things	85,508,427	64,622,380
Automotive	47,451,547	51,477,572
Digital Consumer Electronics	53,214,200	58,168,903
Others	<u>42,148,425</u>	<u>47,533,754</u>
	<u>\$1,059,646,793</u>	<u>\$1,023,925,713</u>

Resolution	Years Ended December 31	
	2019	2018
7-nanometer	\$ 245,690,772	\$ 81,146,571
10-nanometer	22,860,307	96,600,008
16-nanometer	191,214,471	186,415,724
20-nanometer	9,357,161	23,412,787
28-nanometer	147,286,987	177,484,309
40/45-nanometer	92,227,266	101,481,881
65-nanometer	68,263,047	75,734,952
90-nanometer	25,296,617	36,543,823
0.11/0.13 micron	22,639,549	20,638,247
0.15/0.18 micron	76,565,220	80,886,264
0.25 micron and above	<u>19,693,921</u>	<u>26,647,856</u>
Wafer revenue	<u>\$ 921,095,318</u>	<u>\$ 906,992,422</u>

Starting the first quarter of 2019, the Company reported its net revenue breakdown by platform, instead of by application. The Company believes this change better represents the Company's results.

b. Contract balances

	December 31, 2019	December 31, 2018	January 1, 2018
Contract liabilities (classified under accrued expenses and other current liabilities)	<u>\$ 4,095,915</u>	<u>\$ 2,740,649</u>	<u>\$ 31,078,331</u>

The changes in the contract liability balances primarily result from the timing difference between the satisfaction of performance obligation and the customer's payment.

The Company recognized revenue from the beginning balance of contract liability, which amounted to NT\$2,192,221 thousand and NT\$30,742,181 thousand for the years ended December 31, 2019 and 2018, respectively.

c. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms, which amounted to NT\$33,893,735 thousand and NT\$53,382,673 thousand for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019 and 2018, the aforementioned refund liabilities amounted to NT\$17,673,937 thousand and NT\$21,199,032 thousand (classified under accrued expenses and other current liabilities), respectively.

21. OTHER OPERATING INCOME AND EXPENSES, NET

	Years Ended December 31	
	2019	2018
Loss on disposal or retirement of property, plant and equipment, net	\$ (582,289)	\$ (557,598)
Reversal of impairment loss (impairment loss) on property, plant and equipment	301,384	(423,468)
Others	<u>129,675</u>	<u>(687,168)</u>
	<u>\$ (151,230)</u>	<u>\$ (1,668,234)</u>

22. OTHER INCOME

	Years Ended December 31	
	2019	2018
Interest income		
Bank deposits	\$ 1,998,705	\$ 1,845,471
Financial assets at amortized cost	<u>4,172</u>	<u>1,731</u>
	2,002,877	1,847,202
Dividend income	<u>177,374</u>	<u>157,905</u>
	<u>\$ 2,180,251</u>	<u>\$ 2,005,107</u>

23. FINANCE COSTS

	Years Ended December 31	
	2019	2018
Interest expense		
Bank loans	\$ 1,869,335	\$ 1,417,287
Corporate bonds	1,139,935	1,485,486
Lease liabilities	181,390	-
Related parties	454	681
Others	<u>495</u>	<u>-</u>
	<u>\$ 3,191,609</u>	<u>\$ 2,903,454</u>

24. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2019	2018
Loss on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	\$ (1,361,538)	\$ (1,498,856)
Gain on disposal of investments accounted for using equity method, net	15,200	-
Other gains (losses), net	<u>277,765</u>	<u>130,530</u>
	<u>\$ (1,068,573)</u>	<u>\$ (1,368,326)</u>

25. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2019	2018
Current income tax expense		
Current tax expense recognized in the current year	\$ 44,184,422	\$ 50,511,247
Income tax adjustments on prior years	224,691	(963,356)
Other income tax adjustments	<u>135,056</u>	<u>149,771</u>
	<u>44,544,169</u>	<u>49,697,662</u>
Deferred income tax benefit		
Effect of tax rate changes	-	(1,466,706)
The origination and reversal of temporary differences	<u>(1,062,618)</u>	<u>(3,163,687)</u>
	<u>(1,062,618)</u>	<u>(4,630,393)</u>
Income tax expense recognized in profit or loss	<u>\$ 43,481,551</u>	<u>\$ 45,067,269</u>

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

	Years Ended December 31	
	2019	2018
Income before tax	<u>\$ 388,745,219</u>	<u>\$ 396,198,153</u>
Income tax expense at the statutory rate	\$ 77,749,044	\$ 79,239,631
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	(4,124,417)	2,636,232
Tax-exempt income	(39,808,121)	(54,234,074)
Additional income tax under the Alternative Minimum Tax Act	10,367,916	21,455,854
Additional income tax on unappropriated earnings	5,903,794	7,420,479
Effect of tax rate changes on deferred income tax	-	(1,466,706)
The origination and reversal of temporary differences	(1,062,618)	(3,163,687)
Income tax credits	<u>(5,903,794)</u>	<u>(6,006,875)</u>
	43,121,804	45,880,854
Income tax adjustments on prior years	224,691	(963,356)
Other income tax adjustments	<u>135,056</u>	<u>149,771</u>
Income tax expense recognized in profit or loss	<u>\$ 43,481,551</u>	<u>\$ 45,067,269</u>

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

In 2018, the Income Tax Law in the R.O.C. was amended and, starting from 2018, the corporate income tax rate was adjusted from 17% to 20%. In addition, the tax rate for 2018 unappropriated earnings was reduced from 10% to 5%.

b. Income tax expense recognized in other comprehensive income

	Years Ended December 31	
	2019	2018
Deferred income tax benefit (expense)		
Related to rereasurement of defined benefit obligation	\$ (30,468)	\$ 103,339
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	9,476	91,828
Related to gain/loss on cash flow hedges	<u>-</u>	<u>562</u>
	<u>\$ (20,992)</u>	<u>\$ 195,729</u>

c. Deferred income tax balance

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

	December 31, 2019	December 31, 2018
Deferred income tax assets		
Temporary differences		
Depreciation	\$ 12,927,764	\$ 11,177,890
Refund liability	2,120,873	2,543,884
Net defined benefit liability	1,016,248	1,084,874
Unrealized loss on inventories	437,327	723,835
Investments in equity instruments at FVTOCI	65,667	56,191
Others	<u>160,743</u>	<u>-</u>
	<u>\$ 16,728,622</u>	<u>\$ 15,586,674</u>
Deferred income tax liabilities		
Temporary differences		
Unrealized exchange gains	\$ (333,606)	\$ (61,677)
Others	<u>-</u>	<u>(171,607)</u>
	<u>\$ (333,606)</u>	<u>\$ (233,284)</u>

	Year Ended December 31, 2019			
	Balance, Beginning of Year	Recognized in		Balance, End of Year
		Profit or Loss	Other Comprehensive Income	
Deferred income tax assets				
Temporary differences				
Depreciation	\$ 11,177,890	\$ 1,749,874	\$ -	\$ 12,927,764
Refund liability	2,543,884	(423,011)	-	2,120,873
Net defined benefit liability	1,084,874	(38,158)	(30,468)	1,016,248
Unrealized loss on inventories	723,835	(286,508)	-	437,327
Investments in equity instruments at FVTOCI	56,191	-	9,476	65,667
Others	<u>-</u>	<u>160,743</u>	<u>-</u>	<u>160,743</u>
	<u>\$ 15,586,674</u>	<u>\$ 1,162,940</u>	<u>\$ (20,992)</u>	<u>\$ 16,728,622</u>
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	\$ (61,677)	\$ (271,929)	\$ -	\$ (333,606)
Others	<u>(171,607)</u>	<u>171,607</u>	<u>-</u>	<u>-</u>
	<u>\$ (233,284)</u>	<u>\$ (100,322)</u>	<u>\$ -</u>	<u>\$ (333,606)</u>

	Year Ended December 31, 2018			Balance, End of Year
	Balance, Beginning of Year	Recognized in		
		Profit or Loss	Other Comprehensive Income	
Deferred income tax assets				
Temporary differences				
Depreciation	\$ 7,668,535	\$ 3,509,355	\$ -	\$ 11,177,890
Refund liability	1,580,979	962,905	-	2,543,884
Net defined benefit liability	975,324	6,211	103,339	1,084,874
Unrealized loss on inventories	604,635	119,200	-	723,835
Investments in equity instruments at FVTOCI	-	-	56,191	56,191
	<u>\$ 10,829,473</u>	<u>\$ 4,597,671</u>	<u>\$ 159,530</u>	<u>\$ 15,586,674</u>
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	\$ (169,480)	\$ 107,803	\$ -	\$ (61,677)
Investments in equity instruments at FVTOCI	(95,421)	-	95,421	-
Others	(37,304)	(75,081)	(59,222)	(171,607)
	<u>\$ (302,205)</u>	<u>\$ 32,722</u>	<u>\$ 36,199</u>	<u>\$ (233,284)</u>

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

As of December 31, 2019 and 2018, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$33,445,504 thousand and NT\$20,060,918 thousand, respectively.

- e. Unused tax-exemption information

As of December 31, 2019, the profits generated from the following projects of the Company are exempt from income tax for a five-year period:

Tax-exemption Period

Construction and expansion of 2009 2018 to 2022

- f. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2019 and 2018, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT\$131,085,673 thousand and NT\$112,893,001 thousand, respectively.

- g. Income tax examination

The tax authorities have examined income tax returns of the Company through 2017. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

26. EARNINGS PER SHARE

	Years Ended December 31	
	2019	2018
Basic EPS	<u>\$ 13.32</u>	<u>\$ 13.54</u>
Diluted EPS	<u>\$ 13.32</u>	<u>\$ 13.54</u>

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT\$)
<u>Year Ended December 31, 2019</u>			
Basic/Diluted EPS			
Net income available to common shareholders	<u>\$ 345,263,668</u>	<u>25,930,380</u>	<u>\$13.32</u>
<u>Year Ended December 31, 2018</u>			
Basic/Diluted EPS			
Net income available to common shareholders	<u>\$ 351,130,884</u>	<u>25,930,380</u>	<u>\$13.54</u>

27. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2019	2018
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	\$ 243,160,463	\$ 251,292,565
Recognized in operating expenses	24,285,569	23,020,118
Recognized in other operating income and expenses	<u>18,511</u>	<u>27,857</u>
	<u>\$ 267,464,543</u>	<u>\$ 274,340,540</u>
b. Amortization of intangible assets		
Recognized in cost of revenue	\$ 2,971,336	\$ 2,018,702
Recognized in operating expenses	<u>2,367,550</u>	<u>2,334,145</u>
	<u>\$ 5,338,886</u>	<u>\$ 4,352,847</u>
c. Research and development costs expensed as incurred	<u>\$ 90,482,815</u>	<u>\$ 84,944,461</u>

	Years Ended December 31	
	2019	2018
d. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	\$ 2,063,508	\$ 2,028,928
Defined benefit plans	<u>259,596</u>	<u>281,866</u>
	2,323,104	2,310,794
Other employee benefits	<u>94,236,265</u>	<u>93,694,021</u>
	<u>\$ 96,559,369</u>	<u>\$ 96,004,815</u>
Employee benefits expense summarized by function		
Recognized in cost of revenue	\$ 58,502,618	\$ 57,733,597
Recognized in operating expenses	<u>38,056,751</u>	<u>38,271,218</u>
	<u>\$ 96,559,369</u>	<u>\$ 96,004,815</u>

According to the Company's Articles of Incorporation, the Company shall allocate compensation to directors and profit sharing bonus to employees of the Company not more than 0.3% and not less than 1% of annual profits during the period, respectively.

The Company accrued profit sharing bonus to employees based on a percentage of net income before income tax, profit sharing bonus to employees and compensation to directors during the period, which amounted to NT\$23,165,745 thousand and NT\$23,570,040 thousand for the years ended December 31, 2019 and 2018, respectively; compensation to directors was expensed based on estimated amount payable. If there is a change in the proposed amounts after the annual parent company only financial statements are authorized for issue, the differences are recorded as a change in accounting estimate.

The Company's profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,165,745 thousand and NT\$360,404, thousand in cash for 2019, respectively, profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,570,040 thousand and NT\$349,272 thousand in cash for 2018, respectively, and profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,019,082 thousand and NT\$368,919 thousand in cash for 2017, respectively, had been approved by the Board of Directors of the Company held on February 11, 2020, February 19, 2019 and February 13, 2018, respectively. There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2019, 2018 and 2017, respectively.

The information about the appropriations of the Company's profit sharing bonus to employees and compensation to directors is available at the Market Observation Post System website.

28. CASH FLOW INFORMATION

a. Non-cash transactions

	Years Ended December 31	
	2019	2018
Additions of property, plant and equipment	\$ 555,377,864	\$ 287,670,276
Exchange of assets	(3,287,138)	-
Changes in payables to contractors and equipment suppliers	(101,720,581)	10,406,719
Transferred to initial carrying amount of hedged items	<u>(82,276)</u>	<u>22,162</u>
Payments for acquisition of property, plant and equipment	<u>\$ 450,287,869</u>	<u>\$ 298,099,157</u>
	Years Ended December 31	
	2019	2018
Disposal of property, plant and equipment	\$ 1,286,373	\$ 3,039,237
Changes in other receivables from related parties	(175,900)	1,692,416
Changes in other financial assets	<u>7,865</u>	<u>(24,535)</u>
Proceeds from disposal of property, plant and equipment	<u>\$ 1,118,338</u>	<u>\$ 4,707,118</u>

b. Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2019	Financing Cash Flow	Non-cash changes			Balance as of December 31, 2019
			Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	
Short-term loans	\$ 91,982,340	\$ 59,615,602	\$ (3,087,652)	\$ -	\$ -	\$ 148,510,290
Guarantee deposits	9,494,648	19,002	1,674	-	(7,824,572)	1,690,752
Lease liabilities	17,758,578	(2,811,698)	(17,489)	33,038	181,390	15,143,819
Bonds payable	<u>91,800,000</u>	<u>(34,900,000)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>56,900,000</u>
Total	<u>\$ 211,035,566</u>	<u>\$ 21,922,906</u>	<u>\$ (3,103,467)</u>	<u>\$ 33,038</u>	<u>\$ (7,643,182)</u>	<u>\$ 222,244,861</u>

	Balance as of January 1, 2018	Financing Cash Flow	Non-cash changes		Balance as of December 31, 2018
			Foreign Exchange Movement	Other Changes (Note)	
Short-term loans	\$ 63,766,850	\$ 27,154,770	\$ 1,060,720	\$ -	\$ 91,982,340
Guarantee deposits	13,629,122	1,504,809	396,617	(6,035,900)	9,494,648
Bonds payable	<u>116,100,000</u>	<u>(24,300,000)</u>	<u>-</u>	<u>-</u>	<u>91,800,000</u>
Total	<u>\$ 193,495,972</u>	<u>\$ 4,359,579</u>	<u>\$ 1,457,337</u>	<u>\$ (6,035,900)</u>	<u>\$ 193,276,988</u>

Note: Other changes include guarantee deposits refunded to customers by offsetting related accounts receivable and financial cost of lease liabilities.

29. CAPITAL MANAGEMENT

The Company requires significant amounts of capital to build and expand its production facilities and acquire additional equipment. In consideration of the industry dynamics, the Company manages its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, capital asset purchases, research and development activities, dividend payments, debt service requirements and other business requirements associated with its existing operations over the next 12 months.

30. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2019	December 31, 2018
Financial assets		
FVTPL (Note 1)	\$ 27,481	\$ 54,115
FVTOCI (Note 2)	4,132,975	5,126,829
Hedging financial assets	3,504	23,497
Amortized cost (Note 3)	<u>272,886,863</u>	<u>365,119,060</u>
	<u>\$ 277,050,823</u>	<u>\$ 370,323,501</u>
Financial liabilities		
FVTPL (Note 4)	\$ 982,302	\$ 30,232
Hedging financial liabilities	1,798	1,941
Amortized cost (Note 5)	<u>553,905,061</u>	<u>310,265,696</u>
	<u>\$ 554,889,161</u>	<u>\$ 310,297,869</u>

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable (net) and equity investments.

Note 3: Including cash and cash equivalents, financial assets at amortized cost, notes and accounts receivable (including related parties), other receivables and refundable deposits.

Note 4: Held for trading.

Note 5: Including short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, cash dividends payable, accrued expenses and other current liabilities, bonds payable and guarantee deposits.

b. Financial risk management objectives

The Company seeks to ensure that sufficient cost-efficient funding is readily available when needed. The Company manages its exposure to foreign currency risk, interest rate risk, equity price risk, credit risk and liquidity risk with the objective to reduce the potentially adverse effects the market uncertainties may have on its financial performance.

The plans for material treasury activities are reviewed by Audit Committees and/or Board of Directors in accordance with procedures required by relevant regulations or internal controls. During the implementation of such plans, the corporate treasury function must comply with certain treasury procedures that provide guiding principles for overall financial risk management and segregation of duties.

c. Market risk

The Company is exposed to the financial market risks, primarily changes in foreign currency exchange rates, interest rates and equity investment prices. A portion of these risks is hedged.

Foreign currency risk

The majority of the Company's revenue is denominated in U.S. dollar and over one-half of its capital expenditures are denominated in currencies other than NT dollar, primarily in U.S. dollar, Japanese yen and Euro. As a result, any significant fluctuations to its disadvantage in exchange rate of NT dollar against such currencies, in particular a weakening of U.S. dollar against NT dollar, would have an adverse impact on the revenue and operating profit as expressed in NT dollar. The Company uses foreign currency derivative contracts, such as currency forwards or currency swaps, to protect against currency exchange rate risks associated with non-NT dollar-denominated assets and liabilities and certain forecasted transactions. The Company utilizes U.S. dollar denominated debt to partially offset currency risk arising from U.S. dollar denominated receivables for balance sheet hedges. These hedges reduce, but do not entirely eliminate, the financial impact on the Company caused by the effect of foreign currency exchange rate movements on the assets and liabilities.

Based on a sensitivity analysis performed on the Company's total monetary assets and liabilities for the years ended December 31, 2019 and 2018, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT\$2,112,450 thousand and NT\$489,326 thousand, respectively, and decreased its other comprehensive income by NT\$107,690 thousand and NT\$315,571 thousand, respectively, after taking into account hedges and offsetting positions.

Interest rate risk

The Company is exposed to interest rate risks primarily related to its bank deposits and bank loans. Changes in interest rates affect the interest earned on the Company's bank deposits, as well as the interest paid on its bank loans. Because all of the Company's bonds issued are fixed-rate and measured at amortized cost, changes in interest rates would not affect the cash flows and the fair value.

Other price risk

The Company is exposed to equity price risk arising from financial assets at FVTOCI.

Assuming a hypothetical decrease of 10% in prices of the equity investments at the end of the reporting period for the years ended December 31, 2019 and 2018, the other comprehensive income would have decreased by NT\$77,156 thousand and NT\$130,193 thousand, respectively.

d. Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial losses to the Company. The Company is exposed to credit risks from operating activities, primarily trade receivables, and from investing activities, primarily deposits, fixed-income investments and other financial instruments with banks. Credit risk is managed separately for business related and financial related exposures. As of the end of the reporting period, the Company's maximum credit risk exposure is equal to the carrying amount of financial assets.

Business related credit risk

The Company's trade receivables are from its customers worldwide. The majority of the Company's outstanding trade receivables are not covered by collaterals or guarantees. While the Company has procedures to monitor and manage credit risk exposure on trade receivables, there is no assurance such procedures will effectively eliminate losses resulting from its credit risk. This risk is heightened during periods when economic conditions worsen.

As of December 31, 2019 and 2018, the Company's ten largest customers accounted for 83% and 76% of accounts receivable, respectively. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

The Company mitigates its financial credit risk by selecting counterparties with investment-grade credit ratings and by limiting the exposure to any individual counterparty. The Company regularly monitors and reviews the limit applied to counterparties and adjusts the limit according to market conditions and the credit standing of the counterparties.

The risk management of expected credit loss for financial assets at amortized cost is as follows:

The Company only invests in debt instruments that are rated as investment grade or higher. The credit rating information is supplied by external rating agencies. The Company assesses whether there has been a significant increase in credit risk since initial recognition by reviewing changes in external credit ratings, financial market conditions and material information of the bond issuers.

The Company assesses the 12-month expected credit loss and lifetime expected credit loss based on the probability of default and loss given default provided by external credit rating agencies. The current credit risk assessment policies are as follows:

Category	Description	Basis for Recognizing Expected Credit Loss	Expected Credit Loss Ratio
Performing	Credit rating on trade date and valuation date: (1) Within investment grade (2) Between BB+ and BB-	12 months expected credit loss	0%
Doubtful	Credit rating on trade date and valuation date: (1) From investment grade to non-investment grade (2) From BB+~BB- to B+~CCC-	Lifetime expected credit loss-not credit impaired	-
In default	Credit rating CC or below	Lifetime expected credit loss-credit impaired	-
Write-off	There is evidence indicating that the debtor is in severe financial difficulty and the Company has no realistic prospect of recovery	Amount is written off	-

For the years ended December 31, 2019 and 2018, no expected credit loss was recognized.

e. Liquidity risk management

The objective of liquidity risk management is to ensure the Company has sufficient liquidity to fund its business operations over the next 12 months. The Company manages its liquidity risk by maintaining adequate cash and cash equivalent.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments, including principal and interest.

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
<u>December 31, 2019</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 148,550,641	\$ -	\$ -	\$ -	\$ 148,550,641
Accounts payable (including related parties)	41,745,770	-	-	-	41,745,770
Payables to contractors and equipment suppliers	139,754,491	-	-	-	139,754,491
Accrued expenses and other current liabilities	35,651,856	-	-	-	35,651,856
Bonds payable	32,338,853	7,777,715	18,203,601	-	58,320,169
Lease liabilities (including those classified under accrued expenses and other current liabilities)	1,976,891	2,170,171	2,063,855	9,981,523	16,192,440
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	1,520,306	114,945	55,501	-	1,690,752
	<u>401,538,808</u>	<u>10,062,831</u>	<u>20,322,957</u>	<u>9,981,523</u>	<u>441,906,119</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	125,580,851	-	-	-	125,580,851
Inflows	<u>(125,114,784)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(125,114,784)</u>
	<u>466,067</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>466,067</u>
	<u>\$ 402,004,875</u>	<u>\$ 10,062,831</u>	<u>\$ 20,322,957</u>	<u>\$ 9,981,523</u>	<u>\$ 442,372,186</u>

Additional information about the maturity analysis for lease liabilities:

	Less than 5 Years	5-10 Years	10-15 Years	15-20 Years	More Than 20 Years
Lease liabilities	<u>\$ 6,210,917</u>	<u>\$ 4,679,991</u>	<u>\$ 3,626,190</u>	<u>\$ 1,600,962</u>	<u>\$ 74,380</u>

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
<u>December 31, 2018</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 92,039,118	\$ -	\$ -	\$ -	\$ 92,039,118
Accounts payable (including related parties)	35,019,044	-	-	-	35,019,044
Payables to contractors and equipment suppliers	41,279,910	-	-	-	41,279,910
Accrued expenses and other current liabilities	40,888,712	-	-	-	40,888,712
Bonds payable	36,039,935	35,340,742	22,979,426	-	94,360,103
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	6,148,000	2,884,933	461,715	-	9,494,648
	<u>251,414,719</u>	<u>38,225,675</u>	<u>23,441,141</u>	<u>-</u>	<u>313,081,535</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	35,608,273	-	-	-	35,608,273
Inflows	<u>(35,681,524)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(35,681,524)</u>
	<u>(73,251)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(73,251)</u>
	<u>\$ 251,341,468</u>	<u>\$ 38,225,675</u>	<u>\$ 23,441,141</u>	<u>\$ -</u>	<u>\$ 313,008,284</u>

f. Fair value of financial instruments

1) Fair value measurements recognized in the parent company only balance sheets

Fair value measurements are grouped into Levels 1 to 3 based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

2) Fair value of financial instruments that are measured at fair value on a recurring basis

Fair value hierarchy

The following table presents the Company's financial assets and liabilities measured at fair value on a recurring basis:

	December 31, 2019			
	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>				
Mandatorily measured at FVTPL				
Forward exchange contracts	\$ -	\$ 27,481	\$ -	\$ 27,481
<u>Financial assets at FVTOCI</u>				
Investments in equity instruments				
Non-publicly traded equity investments	\$ -	\$ -	\$ 877,110	\$ 877,110
Notes and accounts receivable, net	-	3,255,865	-	3,255,865
	<u>\$ -</u>	<u>\$ 3,255,865</u>	<u>\$ 877,110</u>	<u>\$ 4,132,975</u>
<u>Hedging financial assets</u>				
Cash flow hedges				
Forward exchange contracts	\$ -	\$ 3,504	\$ -	\$ 3,504
<u>Financial liabilities at FVTPL</u>				
Held for trading				
Forward exchange contracts	\$ -	\$ 982,302	\$ -	\$ 982,302
<u>Hedging financial liabilities</u>				
Cash flow hedges				
Forward exchange contracts	\$ -	\$ 1,798	\$ -	\$ 1,798

	December 31, 2018			
	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>				
Mandatorily measured at FVTPL				
Forward exchange contracts	\$ <u> -</u>	\$ <u> 54,115</u>	\$ <u> -</u>	\$ <u> 54,115</u>
<u>Financial assets at FVTOCI</u>				
Investments in equity instruments				
Non-publicly traded equity investments	\$ -	\$ -	\$ 963,610	\$ 963,610
Publicly traded stocks	568,150	-	-	568,150
Notes and accounts receivable, net	<u> -</u>	<u> 3,595,069</u>	<u> -</u>	<u> 3,595,069</u>
	<u>\$ 568,150</u>	<u>\$ 3,595,069</u>	<u>\$ 963,610</u>	<u>\$ 5,126,829</u>
<u>Hedging financial assets</u>				
Cash flow hedges				
Forward exchange contracts	\$ <u> -</u>	\$ <u> 23,497</u>	\$ <u> -</u>	\$ <u> 23,497</u>
<u>Financial liabilities at FVTPL</u>				
Held for trading				
Forward exchange contracts	\$ <u> -</u>	\$ <u> 30,232</u>	\$ <u> -</u>	\$ <u> 30,232</u>
<u>Hedging financial liabilities</u>				
Cash flow hedges				
Forward exchange contracts	\$ <u> -</u>	\$ <u> 1,941</u>	\$ <u> -</u>	\$ <u> 1,941</u>

Reconciliation of Level 3 fair value measurements of financial assets

The financial assets measured at Level 3 fair value were equity investments classified as financial assets at FVTOCI. Reconciliations for the years ended December 31, 2019 and 2018 were as follows:

	Years Ended December 31	
	2019	2018
Balance, beginning of year	\$ 963,610	\$ 983,590
Recognized in other comprehensive income	(85,393)	(16,524)
Disposals and proceeds from return of capital of investments	<u>(1,107)</u>	<u>(3,456)</u>
Balance, end of year	<u>\$ 877,110</u>	<u>\$ 963,610</u>

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of financial assets and financial liabilities are determined as follows:

- Forward exchange contracts are measured using forward exchange rates and the discounted curves that are derived from quoted market prices.
- The fair value of accounts receivables classified as at FVTOCI are determined by the present value of future cash flows based on the discount rate that reflects the credit risk of counterparties.

Valuation techniques and assumptions used in Level 3 fair value measurement

The fair values of non-publicly traded equity investments are mainly determined by using the asset approach and market approach.

The asset approach takes into account the net asset value measured at the fair value by independent parties.

The market approach takes into account the recent financing activities of investees, the market transaction prices of the similar companies and market conditions.

3) Fair value of financial instruments that are not measured at fair value

Except as detailed in the following table, the Company considers that the carrying amounts of financial instruments in the parent company only financial statements that are not measured at fair value approximate their fair values.

Fair value hierarchy

The table below sets out the fair value hierarchy for the Company's assets and liabilities which are not required to measure at fair value:

	December 31, 2019	
	Carrying Amount	Level 2 Fair Value
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 56,900,000</u>	<u>\$ 57,739,115</u>
	December 31, 2018	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Commercial paper	<u>\$ 2,294,098</u>	<u>\$ 2,296,188</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 91,800,000</u>	<u>\$ 93,171,255</u>

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair value of commercial paper is determined by the present value of future cash flows based on the discounted curves that are derived from the quoted market prices.

The fair value of the Company's bonds payable is determined by quoted market prices provided by third party pricing services.

31. RELATED PARTY TRANSACTIONS

The significant transactions between the Company and its related parties, other than those disclosed in other notes, are summarized as follows:

a. Related party name and categories

<u>Related Party Name</u>	<u>Related Party Categories</u>
TSMC Global	Subsidiaries
TSMC China	Subsidiaries
TSMC Nanjing	Subsidiaries
VisEra Tech	Subsidiaries
TSMC North America	Subsidiaries
TSMC Europe	Subsidiaries
TSMC Japan	Subsidiaries
TSMC Korea	Subsidiaries
TSMC Solar Europe GmbH	Subsidiaries
TSMC Design Technology Canada Inc. (TSMC Canada)	Indirect Subsidiaries
TSMC Technology, Inc. (TSMC Technology)	Indirect Subsidiaries
WaferTech, LLC (WaferTech)	Indirect Subsidiaries
GUC	Associates
VIS	Associates
SSMC	Associates
Xintec	Associates
TSMC Education and Culture Foundation	Other related parties
TSMC Charity Foundation	Other related parties

b. Net revenue

<u>Item</u>	<u>Related Party Name/Categories</u>	<u>Years Ended December 31</u>	
		<u>2019</u>	<u>2018</u>
Net revenue from sale of goods	TSMC North America	\$ 636,441,507	\$ 650,432,820
	Associates	4,052,853	6,762,827
	Other subsidiaries	149,560	150,407
	Other related parties	-	330
		<u>\$ 640,643,920</u>	<u>\$ 657,346,384</u>
Net revenue from royalties	Associates	\$ 183,583	\$ 362,259
	Subsidiaries	64,710	568
		<u>\$ 248,293</u>	<u>\$ 362,827</u>

c. Purchases

	Years Ended December 31	
	2019	2018
<u>Related Party Categories</u>		
Subsidiaries	\$ 40,419,311	\$ 34,136,678
Associates	<u>6,301,417</u>	<u>8,809,394</u>
	<u>\$ 46,720,728</u>	<u>\$ 42,946,072</u>

d. Receivables from related parties

		December 31, 2019	December 31, 2018
<u>Item</u>	<u>Related Party Name/Categories</u>		
Receivables from related parties	TSMC North America	\$ 81,732,281	\$ 86,057,097
	Associates	458,292	375,184
	Other subsidiaries	<u>3,928</u>	<u>20,303</u>
		<u>\$ 82,194,501</u>	<u>\$ 86,452,584</u>
Other receivables from related parties	TSMC North America	\$ 802,726	\$ 1,035,465
	TSMC Nanjing	101,559	89,334
	Associates	50,450	64,203
	Other subsidiaries	<u>13,388</u>	<u>45,660</u>
		<u>\$ 968,123</u>	<u>\$ 1,234,662</u>

e. Payables to related parties

		December 31, 2019	December 31, 2018
<u>Item</u>	<u>Related Party Name/Categories</u>		
Payables to related parties	TSMC China	\$ 1,538,971	\$ 1,299,072
	TSMC Nanjing	1,266,002	414,401
	WaferTech	1,097,625	1,092,785
	Xintec	736,747	649,812
	SSMC	487,944	362,564
	VIS	153,977	357,080
	Other subsidiaries	379,250	363,995
	Other associates	41,119	7,043
	Other related parties	<u>15,000</u>	<u>-</u>
		<u>\$ 5,716,635</u>	<u>\$ 4,546,752</u>

f. Accrued expenses and other current liabilities

		December 31, 2019	December 31, 2018
<u>Item</u>	<u>Related Party Name/Categories</u>		
Accrued expenses and other current liabilities	TSMC Nanjing	\$ -	\$ 199,638
	Other subsidiaries	<u>2,722</u>	<u>681</u>
		<u>\$ 2,722</u>	<u>\$ 200,319</u>

g. Disposal of property, plant and equipment

	Proceeds	
	Years Ended December 31	
	2019	2018
<u>Related Party Name/Categories</u>		
TSMC Nanjing	\$ 1,096,516	\$ 2,839,622
Other subsidiaries	<u>44,095</u>	<u>25,380</u>
	<u>\$ 1,140,611</u>	<u>\$ 2,865,002</u>

	Gains	
	Years Ended December 31	
	2019	2018
<u>Related Party Name/Categories</u>		
TSMC Nanjing	\$ 332,955	\$ 386,239
Other subsidiaries	<u>67,151</u>	<u>64,964</u>
	<u>\$ 400,106</u>	<u>\$ 451,203</u>

	Deferred Gains (Losses) from Disposal of Property, Plant and Equipment	
	December 31, 2019	December 31, 2018
<u>Related Party Name/Categories</u>		
TSMC Nanjing	\$ (30,731)	\$ 234,810
Other subsidiaries	<u>129,915</u>	<u>152,970</u>
	<u>\$ 99,184</u>	<u>\$ 387,780</u>

h. Others

		Years Ended December 31	
		2019	2018
<u>Item</u>	<u>Related Party Name/Categories</u>		
Manufacturing expenses	Associates	\$ 2,816,089	\$ 2,876,216
	Subsidiaries	<u>35,825</u>	<u>35,603</u>
		<u>\$ 2,851,914</u>	<u>\$ 2,911,819</u>
Research and development expenses	Subsidiaries	\$ 2,821,204	\$ 2,407,068
	Associates	<u>163,425</u>	<u>83,145</u>
		<u>\$ 2,984,629</u>	<u>\$ 2,490,213</u>
Marketing expenses - commission	TSMC Europe	\$ 439,147	\$ 463,093
	Other subsidiaries	<u>419,920</u>	<u>402,973</u>
		<u>\$ 859,067</u>	<u>\$ 866,066</u>
General and administrative expenses	Other related parties	\$ 120,000	\$ 120,756
	Subsidiaries	<u>3,423</u>	<u>3,426</u>
		<u>\$ 123,423</u>	<u>\$ 124,182</u>

The sales prices and payment terms to related parties were not significantly different from those of sales to third parties. For other related party transactions, price and terms were determined in accordance with mutual agreements.

The Company leased factory and office from associates. The lease terms and prices were both determined in accordance with mutual agreements. The rental expenses were paid to associates monthly; the related expenses were both classified under manufacturing expenses.

The Company deferred the disposal gain or loss derived from sales of property, plant and equipment to related parties using equity method, and then recognized such gain or loss over the depreciable lives of the disposed assets.

i. Compensation of key management personnel

The compensation to directors and other key management personnel for the years ended December 31, 2019 and 2018 were as follows:

	Years Ended December 31	
	2019	2018
Short-term employee benefits	\$ 1,822,806	\$ 1,906,266
Post-employment benefits	<u>2,330</u>	<u>3,041</u>
	<u>\$ 1,825,136</u>	<u>\$ 1,909,307</u>

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

32. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

Significant contingent liabilities and unrecognized commitments of the Company as of the end of the reporting period, excluding those disclosed in other notes, were as follows:

- a. Under a technical cooperation agreement with Industrial Technology Research Institute, the R.O.C. Government or its designee approved by the Company can use up to 35% of the Company's capacity provided the Company's outstanding commitments to its customers are not prejudiced. The term of this agreement is for five years beginning from January 1, 1987 and is automatically renewed for successive periods of five years unless otherwise terminated by either party with one year prior notice. As of December 31, 2019, the R.O.C. Government did not invoke such right.
- b. Under a Shareholders Agreement entered into with Philips and EDB Investments Pte Ltd. on March 30, 1999, the parties formed a joint venture company, SSMC, which is an integrated circuit foundry in Singapore. The Company's equity interest in SSMC was 32%. Nevertheless, in September 2006, Philips spun-off its semiconductor subsidiary which was renamed as NXP B.V. Further, the Company and NXP B.V. purchased all the SSMC shares owned by EDB Investments Pte Ltd. pro rata according to the Shareholders Agreement on November 15, 2006. After the purchase, the Company and NXP B.V. currently own approximately 39% and 61% of the SSMC shares, respectively. The Company and NXP B.V. are required, in the aggregate, to purchase at least 70% of SSMC's capacity, but the Company alone is not required to purchase more than 28% of the capacity. If any party defaults on the commitment and the capacity utilization of SSMC falls below a specific percentage of its capacity, the defaulting party is required to compensate SSMC for all related unavoidable costs. There was no default from the aforementioned commitment as of December 31, 2019.
- c. In February 2019, Innovative Foundry Technologies LLC ("IFT") filed a complaint in the U.S. District Court for the District of Delaware alleging that the Company and TSMC Technology Inc. infringe five U.S. patents. IFT also filed a complaint in the U.S. International Trade Commission (the "ITC") alleging that the Company, TSMC North America, TSMC Technology Inc., and other companies infringe the same patents. The ITC instituted an investigation in March 2019. Both parties agreed to end the dispute and the ITC terminated the investigation in October 2019. The pending litigation in the U.S. District Court for the District of Delaware was dismissed at the same time.
- d. On September 28, 2017, the Company was contacted by the European Commission (the "Commission"), which has asked us for information and documents concerning alleged anti-competitive practices in relation to semiconductor sales. We are cooperating with the Commission to provide the requested information and documents. In light of the fact that this proceeding is still in its preliminary stage, it is premature to predict how the case will proceed, the outcome of the proceeding or its impact.
- e. The Company entered into long-term purchase agreements of material with multiple suppliers. The relative minimum purchase quantity and price are specified in the agreements.
- f. The Company entered into a long-term purchase agreement of equipment. The relative purchase quantity and price are specified in the agreement.
- g. The Company entered into long-term energy purchase agreements with multiple suppliers. The relative purchase period, quantity and price are specified in the agreements.
- h. As of December 31, 2019, the Company provided endorsement guarantees of NT\$2,495,400 thousand to its subsidiary, TSMC North America, in respect of providing endorsement guarantees for office leasing contract.

33. EXCHANGE RATE INFORMATION OF FOREIGN-CURRENCY FINANCIAL ASSETS AND LIABILITIES

The following information was summarized according to the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousands)	Exchange Rate (Note)	Carrying Amount (In Thousands)
<u>December 31, 2019</u>			
<u>Financial assets</u>			
Monetary items			
USD	\$ 4,515,031	29.988	\$ 135,396,753
EUR	2,867	33.653	96,495
JPY	71,980,350	0.2751	19,801,794
<u>Financial liabilities</u>			
Monetary items			
USD	5,874,701	29.988	176,170,537
EUR	2,550,377	33.653	85,827,831
JPY	100,338,589	0.2751	27,603,146
<u>December 31, 2018</u>			
<u>Financial assets</u>			
Monetary items			
USD	4,527,578	30.740	139,177,748
EUR	2,171	35.22	76,462
JPY	235,512	0.2783	65,543
Non-monetary items			
HKD	144,567	3.93	568,150
<u>Financial liabilities</u>			
Monetary items			
USD	4,147,398	30.740	127,491,021
EUR	471,127	35.22	16,593,099
JPY	33,416,236	0.2783	9,299,738

Note: Exchange rate represents the number of N.T. dollars for which one foreign currency could be exchanged.

Please refer to the parent company only statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss for the years ended December 31, 2019 and 2018, respectively. Since there were varieties of foreign currency transactions of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

34. SIGNIFICANT OPERATION LOSSES

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

The Company experienced a computer virus outbreak on August 3, 2018, which affected a number of computer systems and fab tools, and consequently impacted wafer production in Taiwan. All the impacted tools have been recovered by August 6, 2018. The Company recognized a loss of NT\$2,596,046 thousand related to this incident for the three months ended September 30, 2018, which was included in cost of revenue.

35. ADDITIONAL DISCLOSURES

Following are the additional disclosures required by the Securities and Futures Bureau for the Company:

- a. Financings provided: Please see Table 1 attached;
- b. Endorsement/guarantee provided: Please see Table 2 attached;
- c. Marketable securities held (excluding investments in subsidiaries and associates): Please see Table 3 attached;
- d. Marketable securities acquired and disposed of at costs or prices of at least NT\$300 million or 20% of the paid-in capital: Please see Table 4 attached;
- e. Acquisition of individual real estate properties at costs of at least NT\$300 million or 20% of the paid-in capital: Please see Table 5 attached;
- f. Disposal of individual real estate properties at prices of at least NT\$300 million or 20% of the paid-in capital: None;
- g. Total purchases from or sales to related parties of at least NT\$100 million or 20% of the paid-in capital: Please see Table 6 attached;
- h. Receivables from related parties amounting to at least NT\$100 million or 20% of the paid-in capital: Please see Table 7 attached;
- i. Information about the derivative financial instruments transaction: Please see Notes 7 and 8;
- j. Names, locations, and related information of investees over which the Company exercises significant influence (excluding information on investment in mainland China): Please see Table 8 attached;
- k. Information on investment in mainland China
 - 1) The name of the investee in mainland China, the main businesses and products, its issued capital, method of investment, information on inflow or outflow of capital, percentage of ownership, income (losses) of the investee, share of profits/losses of investee, ending balance, amount received as dividends from the investee, and the limitation on investee: Please see Table 9 attached.

- 2) Significant direct or indirect transactions with the investee, its prices and terms of payment, unrealized gain or loss, and other related information which is helpful to understand the impact of investment in mainland China on financial reports: Please see Note 31.

36. OPERATING SEGMENTS INFORMATION

The Company has provided the operating segments disclosure in the consolidated financial statements.

Taiwan Semiconductor Manufacturing Company Limited and Investees

FINANCINGS PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Financing Company	Counter-party	Financial Statement Account	Related Party	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Interest Rate	Nature for Financing (Note 4)	Transaction Amounts	Reason for Financing (Note 4)	Allowance for Bad Debt	Collateral		Financing Limits for Each Borrowing Company (Notes 1 and 2)	Financing Company's Total Financing Amount Limits (Notes 1 and 2)
													Item	Value		
1	TSMC China	TSMC Nanjing	Other receivables from related parties	Yes	\$ 44,497,852 (RMB 7,000,000)& (US\$ 479,000)	\$ 38,903,568 (RMB 6,000,000)& (US\$ 436,000)	\$ 24,102,968 (RMB 5,000,000)& (US\$ 86,000)	1.50-1.96%	The need for long-term financing	\$ -	Operating capital	\$ -	\$ -	\$ 57,358,467	\$ 57,358,467	
2	TSMC Global	TSMC	Other receivables from related parties	Yes	\$ 44,982,000 (US\$ 1,500,000)	\$ 29,988,000 (US\$ 1,000,000)	\$ 29,988,000 (US\$ 1,000,000)	0.00%	The need for short-term financing	\$ -	Operating capital	\$ -	\$ -	\$ 397,737,270	\$ 397,737,270	

Note 1: The total amount available for lending purpose shall not exceed the net worth of TSMC China. The total amount for lending to a company for funding for a short-term period shall not exceed ten percent (10%) of the net worth of TSMC China. In addition, the total amount lendable to any one borrower shall be no more than thirty percent (30%) of the borrower's net worth. The above restriction does not apply to the subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC. However, the total amount lendable to any such subsidiary of TSMC shall not exceed forty percent (40%) of the net worth of TSMC China. When there is a lending for funding needs by TSMC China to TSMC, or to the subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC, which are not located in Taiwan, the lending will not be subject to the restriction set forth in the above paragraph. Notwithstanding the foregoing, the aggregate amount available for lending to such borrowers and the total amount lendable to each of such borrowers shall not exceed the net worth of TSMC China.

Note 2: The total amount available for lending purpose shall not exceed the net worth of TSMC Global. The total amount for lending to a company for funding for a short-term period shall not exceed ten percent (10%) of the net worth of TSMC Global. In addition, the total amount lendable to any one borrower shall be no more than thirty percent (30%) of the borrower's net worth. While TSMC, or its foreign subsidiaries in which TSMC directly or indirectly holds 100% of the voting shares will not be subject to this restriction, their total borrowing amount still shall not exceed the net worth of TSMC Global. Notwithstanding the foregoing, the aggregate amount for lending to Taiwan companies other than TSMC shall not exceed forty percent (40%) of the net worth of TSMC Global.

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

Note 4: The restriction of the term of each loan for funding not exceeding one year shall not apply to inter-company loans for funding between offshore subsidiaries in which the Company holds, directly or indirectly, 100% of the voting shares.

TABLE 2

Taiwan Semiconductor Manufacturing Company Limited and Investees

**ENDORSEMENTS/GUARANTEES PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)**

No.	Endorsee/ Guarantee Provider	Guaranteed Party		Limits on Endorsement/ Guarantee Amount Provided to Each Party (Notes 1 and 2)	Maximum Balance for the Period (US\$ in Thousands) (Note 3)	Ending Balance (US\$ in Thousands) (Note 3)	Amount Actually Drawn (US\$ in Thousands)	Amount of Endorsement/ Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Note 2)	Guarantee Provided by Parent Company	Guarantee Provided by A Subsidiary	Guarantee Provided to Subsidiaries in Mainland China
		Name	Nature of Relationship										
0	TSMC	TSMC North America	Subsidiary	\$ 405,352,531	\$ 2,495,400 (US\$ 83,213)	\$ 2,495,400 (US\$ 83,213)	\$ 2,495,400 (US\$ 83,213)	\$ -	0.15%	\$ 405,352,531	Yes	No	No

Note 1: The total amount of the guarantee provided by TSMC to any individual entity shall not exceed ten percent (10%) of TSMC's net worth, or the net worth of such entity. However, subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC are not subject to the above restrictions after the approval of the Board of Directors.

Note 2: The total amount of guarantee shall not exceed twenty-five percent (25%) of TSMC's net worth.

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

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES HELD

DECEMBER 31, 2019

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

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC	Non-publicly traded equity investments United Industrial Gases Co., Ltd.	-	Financial assets at fair value through other comprehensive income	21,230	\$ 468,428	10	\$ 468,428	
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	"	10,500	318,276	7	318,276	
	Global Investment Holding Inc.	-	"	11,124	81,529	6	81,529	
	W.K. Technology Fund IV	-	"	806	5,157	2	5,157	
	Crimson Asia Capital	-	"	-	2,621	1	2,621	
	Horizon Ventures Fund	-	"	-	1,100	12	1,100	
	Convertible bonds	-	"	-	-	-	-	
	Inpria Corporation	-	Financial assets at fair value through Profit or Loss	-	US\$ 4,127	-	US\$ 4,127	
	Non-publicly traded equity investments Shanghai Walden Venture Capital Enterprise	-	Financial assets at fair value through other comprehensive income	-	US\$ 10,380	6	US\$ 10,380	
	China Walden Venture Investments II L.P.	-	"	-	US\$ 9,474	9	US\$ 9,474	
China Walden Venture Investments III, L.P.	-	"	-	US\$ 3,298	4	US\$ 3,298		
Tela Innovations	-	"	-	-	25	-		
Mcube Inc.	-	"	-	6,333	12	-		
TSMC Global	Corporate bond Bank of America Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 46,671	N/A	US\$ 46,671	
	Goldman Sachs Group Inc/The	-	"	-	US\$ 39,686	N/A	US\$ 39,686	
	Morgan Stanley	-	"	-	US\$ 39,419	N/A	US\$ 39,419	
	Citigroup Inc	-	"	-	US\$ 38,637	N/A	US\$ 38,637	
	AbbVie Inc	-	"	-	US\$ 31,425	N/A	US\$ 31,425	
	JPMorgan Chase & Co	-	"	-	US\$ 30,678	N/A	US\$ 30,678	
	AT&T Inc	-	"	-	US\$ 26,140	N/A	US\$ 26,140	
	CVS Health Corp	-	"	-	US\$ 22,242	N/A	US\$ 22,242	
	Bristol-Myers Squibb Co	-	"	-	US\$ 21,666	N/A	US\$ 21,666	
	Mitsubishi UFJ Financial Group Inc	-	"	-	US\$ 21,332	N/A	US\$ 21,332	
	Wells Fargo & Co	-	"	-	US\$ 21,303	N/A	US\$ 21,303	
	HSBC Holdings PLC	-	"	-	US\$ 20,102	N/A	US\$ 20,102	
	Apple Inc	-	"	-	US\$ 19,886	N/A	US\$ 19,886	
	Sumitomo Mitsui Financial Group Inc	-	"	-	US\$ 19,176	N/A	US\$ 19,176	
	Toronto-Dominion Bank/The	-	"	-	US\$ 18,018	N/A	US\$ 18,018	
	Credit Agricole SA/London	-	"	-	US\$ 14,904	N/A	US\$ 14,904	
	Verizon Communications Inc	-	"	-	US\$ 14,058	N/A	US\$ 14,058	
	BNP Paribas SA	-	"	-	US\$ 13,092	N/A	US\$ 13,092	
	LUBS Group Funding Switzerland AG	-	"	-	US\$ 12,932	N/A	US\$ 12,932	
	Banco Santander SA	-	"	-	US\$ 12,837	N/A	US\$ 12,837	
United Technologies Corp	-	"	-	US\$ 12,108	N/A	US\$ 12,108		
ERAC USA Finance LLC	-	"	-	US\$ 11,904	N/A	US\$ 11,904		
Banque Federative du Credit Mutuel SA	-	"	-	US\$ 11,752	N/A	US\$ 11,752		

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	American International Group Inc	-	Financial assets at fair value through other comprehensive income	-	US\$ 11,423	N/A	US\$ 11,423
	Equifax Inc	-	"	-	US\$ 11,001	N/A	US\$ 11,001
	Ryder System Inc	-	"	-	US\$ 10,892	N/A	US\$ 10,892
	BPCE SA	-	"	-	US\$ 10,887	N/A	US\$ 10,887
	BAT Capital Corp	-	"	-	US\$ 10,843	N/A	US\$ 10,843
	Reliance Standard Life Global Funding II	-	"	-	US\$ 10,682	N/A	US\$ 10,682
	DTE Energy Co	-	"	-	US\$ 10,681	N/A	US\$ 10,681
	Hewlett Packard Enterprise Co	-	"	-	US\$ 10,661	N/A	US\$ 10,661
	Penske Truck Leasing Co Lp / PTL Finance Corp	-	"	-	US\$ 10,612	N/A	US\$ 10,612
	International Business Machines Corp	-	"	-	US\$ 10,414	N/A	US\$ 10,414
	Macquarie Group Ltd	-	"	-	US\$ 10,344	N/A	US\$ 10,344
	Mizuho Financial Group Inc	-	"	-	US\$ 10,307	N/A	US\$ 10,307
	Skandinaviska Enskilda Banken AB	-	"	-	US\$ 9,827	N/A	US\$ 9,827
	Nordea Bank Abp	-	"	-	US\$ 9,458	N/A	US\$ 9,458
	NextEra Energy Capital Holdings Inc	-	"	-	US\$ 9,420	N/A	US\$ 9,420
	SMBC Aviation Capital Finance DAC	-	"	-	US\$ 9,414	N/A	US\$ 9,414
	Fiserv Inc	-	"	-	US\$ 9,174	N/A	US\$ 9,174
	Lloyds Banking Group PLC	-	"	-	US\$ 9,106	N/A	US\$ 9,106
	Cox Communications Inc	-	"	-	US\$ 9,062	N/A	US\$ 9,062
	Western Union Co/The	-	"	-	US\$ 8,991	N/A	US\$ 8,991
	Tyson Foods Inc	-	"	-	US\$ 8,944	N/A	US\$ 8,944
	PNC Bank NA	-	"	-	US\$ 8,913	N/A	US\$ 8,913
	Suncorp-Metway Ltd	-	"	-	US\$ 8,869	N/A	US\$ 8,869
	Bank of Montreal	-	"	-	US\$ 8,551	N/A	US\$ 8,551
	Comcast Corp	-	"	-	US\$ 8,514	N/A	US\$ 8,514
	Capital One NA	-	"	-	US\$ 8,484	N/A	US\$ 8,484
	Midwest Connector Capital Co LLC	-	"	-	US\$ 8,412	N/A	US\$ 8,412
	Santander UK PLC	-	"	-	US\$ 8,272	N/A	US\$ 8,272
	Scentre Group Trust 1 / Scentre Group Trust 2	-	"	-	US\$ 8,248	N/A	US\$ 8,248
	Metropolitan Life Global Funding I	-	"	-	US\$ 8,222	N/A	US\$ 8,222
	Credit Suisse AG/New York NY	-	"	-	US\$ 8,031	N/A	US\$ 8,031
	Athene Global Funding	-	"	-	US\$ 7,999	N/A	US\$ 7,999
	Societe Generale SA	-	"	-	US\$ 7,825	N/A	US\$ 7,825
	NatWest Markets PLC	-	"	-	US\$ 7,816	N/A	US\$ 7,816
	Altria Group Inc	-	"	-	US\$ 7,805	N/A	US\$ 7,805
	Dominion Energy Gas Holdings LLC	-	"	-	US\$ 7,681	N/A	US\$ 7,681
	Air Lease Corp	-	"	-	US\$ 7,675	N/A	US\$ 7,675
	Tencent Holdings Ltd	-	"	-	US\$ 7,612	N/A	US\$ 7,612
	Microsoft Corp	-	"	-	US\$ 7,455	N/A	US\$ 7,455
	BG Energy Capital PLC	-	"	-	US\$ 7,346	N/A	US\$ 7,346
	Prudential Funding LLC	-	"	-	US\$ 7,333	N/A	US\$ 7,333
	Fox Corp	-	"	-	US\$ 7,331	N/A	US\$ 7,331
	BP Capital Markets America Inc	-	"	-	US\$ 7,280	N/A	US\$ 7,280
	ANZ New Zealand Int'l Ltd/London	-	"	-	US\$ 7,259	N/A	US\$ 7,259
	Jackson National Life Global Funding	-	"	-	US\$ 7,203	N/A	US\$ 7,203
	Huntington Bancshares Inc/OH	-	"	-	US\$ 7,160	N/A	US\$ 7,160
	Shire Acquisitions Investments Ireland DAC	-	"	-	US\$ 6,972	N/A	US\$ 6,972
	Wells Fargo Bank NA	-	"	-	US\$ 6,958	N/A	US\$ 6,958
	New York Life Global Funding	-	"	-	US\$ 6,947	N/A	US\$ 6,947
	ING Groep NV	-	"	-	US\$ 6,874	N/A	US\$ 6,874
	Kinder Morgan Energy Partners LP	-	"	-	US\$ 6,842	N/A	US\$ 6,842
	Sun Trust Bank/Atlanta GA	-	"	-	US\$ 6,680	N/A	US\$ 6,680

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Daimler Finance North America LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 6,536	N/A	US\$ 6,536
	Regions Financial Corp	-	"	-	US\$ 6,384	N/A	US\$ 6,384
	Credit Suisse Group Funding Guernsey Ltd	-	"	-	US\$ 6,344	N/A	US\$ 6,344
	General Dynamics Corp	-	"	-	US\$ 6,297	N/A	US\$ 6,297
	Anheuser-Busch InBev Worldwide Inc	-	"	-	US\$ 6,276	N/A	US\$ 6,276
	DNB Bank ASA	-	"	-	US\$ 6,252	N/A	US\$ 6,252
	American Express Co	-	"	-	US\$ 6,239	N/A	US\$ 6,239
	AIG Global Funding	-	"	-	US\$ 6,199	N/A	US\$ 6,199
	Panasonic Corp	-	"	-	US\$ 6,104	N/A	US\$ 6,104
	Canadian Imperial Bank of Commerce	-	"	-	US\$ 6,036	N/A	US\$ 6,036
	Reckitt Benckiser Treasury Services PLC	-	"	-	US\$ 6,029	N/A	US\$ 6,029
	Fortive Corp	-	"	-	US\$ 6,025	N/A	US\$ 6,025
	Royal Bank of Canada	-	"	-	US\$ 6,010	N/A	US\$ 6,010
	Macquarie Bank Ltd	-	"	-	US\$ 5,983	N/A	US\$ 5,983
	Analog Devices Inc	-	"	-	US\$ 5,969	N/A	US\$ 5,969
	Bank of Nova Scotia/The	-	"	-	US\$ 5,958	N/A	US\$ 5,958
	WPP Finance 2010	-	"	-	US\$ 5,927	N/A	US\$ 5,927
	Capital One Financial Corp	-	"	-	US\$ 5,848	N/A	US\$ 5,848
	Roper Technologies Inc	-	"	-	US\$ 5,717	N/A	US\$ 5,717
	Inesa Smpaolo SpA	-	"	-	US\$ 5,678	N/A	US\$ 5,678
	Barclays Bank PLC	-	"	-	US\$ 5,645	N/A	US\$ 5,645
	Alabama Power Co	-	"	-	US\$ 5,623	N/A	US\$ 5,623
	Anheuser-Busch InBev Finance Inc	-	"	-	US\$ 5,618	N/A	US\$ 5,618
	Shell International Finance BV	-	"	-	US\$ 5,595	N/A	US\$ 5,595
	Bayser US Finance II LLC	-	"	-	US\$ 5,510	N/A	US\$ 5,510
	Cigna Corp	-	"	-	US\$ 5,475	N/A	US\$ 5,475
	Sompo International Holdings Ltd	-	"	-	US\$ 5,275	N/A	US\$ 5,275
	Takeda Pharmaceutical Co Ltd	-	"	-	US\$ 5,245	N/A	US\$ 5,245
	Laboratory Corp of America Holdings	-	"	-	US\$ 5,230	N/A	US\$ 5,230
	Lloyds Bank PLC	-	"	-	US\$ 5,202	N/A	US\$ 5,202
	CNA Financial Corp	-	"	-	US\$ 5,173	N/A	US\$ 5,173
	Cooperative Rabobank UA	-	"	-	US\$ 5,124	N/A	US\$ 5,124
	BMW US Capital LLC	-	"	-	US\$ 5,112	N/A	US\$ 5,112
	Saudi Arabian Oil Co	-	"	-	US\$ 5,096	N/A	US\$ 5,096
	BB&T Corp	-	"	-	US\$ 5,041	N/A	US\$ 5,041
	Thermo Fisher Scientific Inc	-	"	-	US\$ 5,029	N/A	US\$ 5,029
	Five Corners Funding Trust	-	"	-	US\$ 4,888	N/A	US\$ 4,888
	Enel Finance International NV	-	"	-	US\$ 4,888	N/A	US\$ 4,888
	Vodafone Group PLC	-	"	-	US\$ 4,807	N/A	US\$ 4,807
	Credit Suisse Group AG	-	"	-	US\$ 4,737	N/A	US\$ 4,737
	Standard Chartered PLC	-	"	-	US\$ 4,717	N/A	US\$ 4,717
	Principal Life Global Funding II	-	"	-	US\$ 4,693	N/A	US\$ 4,693
	American Express Credit Corp	-	"	-	US\$ 4,676	N/A	US\$ 4,676
	NiSource Inc	-	"	-	US\$ 4,583	N/A	US\$ 4,583
	ABN AMRO Bank NV	-	"	-	US\$ 4,574	N/A	US\$ 4,574
	Svenska Handelsbanken AB	-	"	-	US\$ 4,529	N/A	US\$ 4,529
	Sempra Energy	-	"	-	US\$ 4,476	N/A	US\$ 4,476
	Keurig Dr Pepper Inc	-	"	-	US\$ 4,463	N/A	US\$ 4,463
	Eversource Energy	-	"	-	US\$ 4,456	N/A	US\$ 4,456
	Welltower Inc	-	"	-	US\$ 4,444	N/A	US\$ 4,444
	Fifth Third Bancorp	-	"	-	US\$ 4,398	N/A	US\$ 4,398
	Truist Bank	-	"	-	US\$ 4,353	N/A	US\$ 4,353

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Westpac Banking Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 4,350	N/A	US\$ 4,350	
	Marrriott International Inc./MD	-	"	-	US\$ 4,334	N/A	US\$ 4,334	
	Duke Energy Corp	-	"	-	US\$ 4,262	N/A	US\$ 4,262	
	Verisk Analytics Inc	-	"	-	US\$ 4,200	N/A	US\$ 4,200	
	Husky Energy Inc	-	"	-	US\$ 4,182	N/A	US\$ 4,182	
	Exelon Corp	-	"	-	US\$ 4,087	N/A	US\$ 4,087	
	CenterPoint Energy Inc	-	"	-	US\$ 4,052	N/A	US\$ 4,052	
	Intercontinental Exchange Inc	-	"	-	US\$ 4,043	N/A	US\$ 4,043	
	Alimentation Couche-Tard Inc	-	"	-	US\$ 4,003	N/A	US\$ 4,003	
	HCP Inc	-	"	-	US\$ 3,989	N/A	US\$ 3,989	
	European Bank for Reconstruction & Development	-	"	-	US\$ 3,973	N/A	US\$ 3,973	
	GE Capital International Funding Co Unlimited Co	-	"	-	US\$ 3,953	N/A	US\$ 3,953	
	Citizens Bank NA/Providence RI	-	"	-	US\$ 3,912	N/A	US\$ 3,912	
	BOC Aviation Ltd	-	"	-	US\$ 3,901	N/A	US\$ 3,901	
	Volkswagen Group of America Finance LLC	-	"	-	US\$ 3,896	N/A	US\$ 3,896	
	Nationwide Building Society	-	"	-	US\$ 3,836	N/A	US\$ 3,836	
	MPLX LP	-	"	-	US\$ 3,795	N/A	US\$ 3,795	
	Mongahela Power Co	-	"	-	US\$ 3,717	N/A	US\$ 3,717	
	Asian Development Bank	-	"	-	US\$ 3,628	N/A	US\$ 3,628	
	Charles Schwab Corp/The	-	"	-	US\$ 3,524	N/A	US\$ 3,524	
	Dominion Energy Inc	-	"	-	US\$ 3,488	N/A	US\$ 3,488	
	Commonwealth Bank of Australia	-	"	-	US\$ 3,421	N/A	US\$ 3,421	
	KeyBank NA/Cleveland OH	-	"	-	US\$ 3,324	N/A	US\$ 3,324	
	WEC Energy Group Inc	-	"	-	US\$ 3,293	N/A	US\$ 3,293	
	General Electric Co	-	"	-	US\$ 3,250	N/A	US\$ 3,250	
	Walt Disney Co/The	-	"	-	US\$ 3,246	N/A	US\$ 3,246	
	ONE Gas Inc	-	"	-	US\$ 3,224	N/A	US\$ 3,224	
	Boeing Co/The	-	"	-	US\$ 3,214	N/A	US\$ 3,214	
	Nutrien Ltd	-	"	-	US\$ 3,188	N/A	US\$ 3,188	
	Hyundai Capital America	-	"	-	US\$ 3,187	N/A	US\$ 3,187	
	Inter-American Development Bank	-	"	-	US\$ 3,168	N/A	US\$ 3,168	
	AutoZone Inc	-	"	-	US\$ 3,167	N/A	US\$ 3,167	
	People's United Financial Inc	-	"	-	US\$ 3,117	N/A	US\$ 3,117	
	Textron Inc	-	"	-	US\$ 3,072	N/A	US\$ 3,072	
	McKesson Corp	-	"	-	US\$ 3,071	N/A	US\$ 3,071	
	Zions Bancorp NA	-	"	-	US\$ 3,070	N/A	US\$ 3,070	
	Ameren Corp	-	"	-	US\$ 3,049	N/A	US\$ 3,049	
	Rockwell Collins Inc	-	"	-	US\$ 3,040	N/A	US\$ 3,040	
	Oncor Electric Delivery Co LLC	-	"	-	US\$ 3,038	N/A	US\$ 3,038	
	DuPont de Nemours Inc	-	"	-	US\$ 3,037	N/A	US\$ 3,037	
	Xcel Energy Inc	-	"	-	US\$ 3,015	N/A	US\$ 3,015	
	Duke Energy Florida LLC	-	"	-	US\$ 3,002	N/A	US\$ 3,002	
	Cooperative Rabobank U/A/N/Y	-	"	-	US\$ 2,980	N/A	US\$ 2,980	
	Canadian Natural Resources Ltd	-	"	-	US\$ 2,921	N/A	US\$ 2,921	
	Reynolds American Inc	-	"	-	US\$ 2,921	N/A	US\$ 2,921	
	Danske Bank A/S	-	"	-	US\$ 2,903	N/A	US\$ 2,903	
	MUFG Union Bank NA	-	"	-	US\$ 2,893	N/A	US\$ 2,893	
	RELX Capital Inc	-	"	-	US\$ 2,875	N/A	US\$ 2,875	
	Barrick Gold Corp	-	"	-	US\$ 2,862	N/A	US\$ 2,862	
	Royal Bank of Scotland Group PLC	-	"	-	US\$ 2,848	N/A	US\$ 2,848	
	Compass Bank	-	"	-	US\$ 2,794	N/A	US\$ 2,794	
	Ventus Realty LP	-	"	-	US\$ 2,771	N/A	US\$ 2,771	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Dow Chemical Co/The	-	Financial assets at fair value through other comprehensive income	-	US\$ 2,740	N/A	US\$ 2,740
	Public Service Enterprise Group Inc	-	"	-	US\$ 2,728	N/A	US\$ 2,728
	Nuveen Finance LLC	-	"	-	US\$ 2,717	N/A	US\$ 2,717
	John Deere Capital Corp	-	"	-	US\$ 2,698	N/A	US\$ 2,698
	Quest Diagnostics Inc	-	"	-	US\$ 2,695	N/A	US\$ 2,695
	Huntington National Bank/The	-	"	-	US\$ 2,668	N/A	US\$ 2,668
	Newcrest Finance Pty Ltd	-	"	-	US\$ 2,668	N/A	US\$ 2,668
	Enterprise Products Operating LLC	-	"	-	US\$ 2,622	N/A	US\$ 2,622
	Deutsche Telekom International Finance BV	-	"	-	US\$ 2,615	N/A	US\$ 2,615
	Exelon Generation Co LLC	-	"	-	US\$ 2,601	N/A	US\$ 2,601
	AvalonBay Communities Inc	-	"	-	US\$ 2,564	N/A	US\$ 2,564
	GlaxoSmithKline Capital PLC	-	"	-	US\$ 2,555	N/A	US\$ 2,555
	Seven & i Holdings Co Ltd	-	"	-	US\$ 2,550	N/A	US\$ 2,550
	UBS Group AG	-	"	-	US\$ 2,540	N/A	US\$ 2,540
	Barclays PLC	-	"	-	US\$ 2,527	N/A	US\$ 2,527
	Energy Corp	-	"	-	US\$ 2,527	N/A	US\$ 2,527
	Delta Air Lines 2007-1 Class A Pass Through Trust	-	"	-	US\$ 2,524	N/A	US\$ 2,524
	3M Co	-	"	-	US\$ 2,507	N/A	US\$ 2,507
	Simon Property Group LP	-	"	-	US\$ 2,494	N/A	US\$ 2,494
	Ventas Realty LP / Ventas Capital Corp	-	"	-	US\$ 2,450	N/A	US\$ 2,450
	Northrop Grumman Corp	-	"	-	US\$ 2,435	N/A	US\$ 2,435
	Berkshire Hathaway Energy Co	-	"	-	US\$ 2,424	N/A	US\$ 2,424
	Baidu Inc	-	"	-	US\$ 2,374	N/A	US\$ 2,374
	Berkshire Hathaway Inc	-	"	-	US\$ 2,373	N/A	US\$ 2,373
	Anthem Inc	-	"	-	US\$ 2,352	N/A	US\$ 2,352
	Eastman Chemical Co	-	"	-	US\$ 2,307	N/A	US\$ 2,307
	NBCUniversal Media LLC	-	"	-	US\$ 2,269	N/A	US\$ 2,269
	Cintas Corp No 2	-	"	-	US\$ 2,244	N/A	US\$ 2,244
	Marathon Petroleum Corp	-	"	-	US\$ 2,242	N/A	US\$ 2,242
	Acetna Inc	-	"	-	US\$ 2,235	N/A	US\$ 2,235
	Unum Group	-	"	-	US\$ 2,219	N/A	US\$ 2,219
	National Bank of Canada	-	"	-	US\$ 2,209	N/A	US\$ 2,209
	PSEG Power LLC	-	"	-	US\$ 2,193	N/A	US\$ 2,193
	Southern California Edison Co	-	"	-	US\$ 2,175	N/A	US\$ 2,175
	QUALCOMM Inc	-	"	-	US\$ 2,164	N/A	US\$ 2,164
	US Bank NA/Cincinnati OH	-	"	-	US\$ 2,163	N/A	US\$ 2,163
	Lincoln National Corp	-	"	-	US\$ 2,162	N/A	US\$ 2,162
	American Airlines 2013-2 Class A Pass Through Trust	-	"	-	US\$ 2,159	N/A	US\$ 2,159
	Suncor Energy Inc	-	"	-	US\$ 2,122	N/A	US\$ 2,122
	ASB Bank Ltd	-	"	-	US\$ 2,120	N/A	US\$ 2,120
	Ingersoll-Rand Luxembourg Finance SA	-	"	-	US\$ 2,099	N/A	US\$ 2,099
	San Diego Gas & Electric Co	-	"	-	US\$ 2,092	N/A	US\$ 2,092
	Woolworths Group Ltd	-	"	-	US\$ 2,072	N/A	US\$ 2,072
	WR Berkley Corp	-	"	-	US\$ 2,045	N/A	US\$ 2,045
	AstraZeneca PLC	-	"	-	US\$ 2,041	N/A	US\$ 2,041
	US Bancorp	-	"	-	US\$ 2,028	N/A	US\$ 2,028
	Pricoa Global Funding I	-	"	-	US\$ 2,015	N/A	US\$ 2,015
	Oracle Corp	-	"	-	US\$ 2,004	N/A	US\$ 2,004
	CK Hutchison International 16 Ltd	-	"	-	US\$ 1,984	N/A	US\$ 1,984
	Avangrid Inc	-	"	-	US\$ 1,960	N/A	US\$ 1,960
	Bank of New York Mellon Corp/The	-	"	-	US\$ 1,956	N/A	US\$ 1,956
	Kinder Morgan Inc/DE	-	"	-	US\$ 1,949	N/A	US\$ 1,949

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	CenterPoint Energy Resources Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,918	N/A	US\$ 1,918
	Australia & New Zealand Banking Group Ltd/New York NY	-	"	-	US\$ 1,906	N/A	US\$ 1,906
	Kroger Co/The	-	"	-	US\$ 1,904	N/A	US\$ 1,904
	BP Capital Markets PLC	-	"	-	US\$ 1,900	N/A	US\$ 1,900
	Sydney Airport Finance Co Pty Ltd	-	"	-	US\$ 1,886	N/A	US\$ 1,886
	Bank of New Zealand	-	"	-	US\$ 1,866	N/A	US\$ 1,866
	Discover Bank	-	"	-	US\$ 1,831	N/A	US\$ 1,831
	WestRock RKT LLC	-	"	-	US\$ 1,791	N/A	US\$ 1,791
	Philip Morris International Inc	-	"	-	US\$ 1,772	N/A	US\$ 1,772
	McCormick & Co Inc/MD	-	"	-	US\$ 1,760	N/A	US\$ 1,760
	Equinor ASA	-	"	-	US\$ 1,751	N/A	US\$ 1,751
	General Mills Inc	-	"	-	US\$ 1,744	N/A	US\$ 1,744
	Public Service Co of Oklahoma	-	"	-	US\$ 1,741	N/A	US\$ 1,741
	PPL Capital Funding Inc	-	"	-	US\$ 1,722	N/A	US\$ 1,722
	Wisconsin Public Service Corp	-	"	-	US\$ 1,711	N/A	US\$ 1,711
	ITC Holdings Corp	-	"	-	US\$ 1,670	N/A	US\$ 1,670
	Spectra Energy Partners LP	-	"	-	US\$ 1,661	N/A	US\$ 1,661
	Toyota Industries Corp	-	"	-	US\$ 1,657	N/A	US\$ 1,657
	Mondelez International Holdings Netherlands BV	-	"	-	US\$ 1,650	N/A	US\$ 1,650
	Southern Co/The	-	"	-	US\$ 1,643	N/A	US\$ 1,643
	Walgreens Boots Alliance Inc	-	"	-	US\$ 1,630	N/A	US\$ 1,630
	Brookfield Finance Inc	-	"	-	US\$ 1,604	N/A	US\$ 1,604
	UnitedHealth Group Inc	-	"	-	US\$ 1,601	N/A	US\$ 1,601
	LyondellBasell Industries NV	-	"	-	US\$ 1,593	N/A	US\$ 1,593
	Xylem Inc/NY	-	"	-	US\$ 1,572	N/A	US\$ 1,572
	Suntory Holdings Ltd	-	"	-	US\$ 1,572	N/A	US\$ 1,572
	Nestle Holdings Inc	-	"	-	US\$ 1,559	N/A	US\$ 1,559
	CK Hutchison International 19 Ltd	-	"	-	US\$ 1,538	N/A	US\$ 1,538
	NTT Finance Corp	-	"	-	US\$ 1,525	N/A	US\$ 1,525
	Trust F/1401	-	"	-	US\$ 1,523	N/A	US\$ 1,523
	Activision Blizzard Inc	-	"	-	US\$ 1,517	N/A	US\$ 1,517
	Public Service Electric & Gas Co	-	"	-	US\$ 1,516	N/A	US\$ 1,516
	KEB Hana Bank	-	"	-	US\$ 1,504	N/A	US\$ 1,504
	Guardian Life Global Funding	-	"	-	US\$ 1,502	N/A	US\$ 1,502
	Sinopac Group Overseas Development 2015 Ltd	-	"	-	US\$ 1,501	N/A	US\$ 1,501
	Georgia Power Co	-	"	-	US\$ 1,500	N/A	US\$ 1,500
	Mastercard Inc	-	"	-	US\$ 1,496	N/A	US\$ 1,496
	Realty Income Corp	-	"	-	US\$ 1,496	N/A	US\$ 1,496
	AIA Group Ltd	-	"	-	US\$ 1,488	N/A	US\$ 1,488
	Protective Life Global Funding	-	"	-	US\$ 1,461	N/A	US\$ 1,461
	Prudential Financial Inc	-	"	-	US\$ 1,458	N/A	US\$ 1,458
	HSBC Bank PLC	-	"	-	US\$ 1,438	N/A	US\$ 1,438
	Westlake Chemical Corp	-	"	-	US\$ 1,432	N/A	US\$ 1,432
	Texas Eastern Transmission LP	-	"	-	US\$ 1,415	N/A	US\$ 1,415
	Daiwa Securities Group Inc	-	"	-	US\$ 1,412	N/A	US\$ 1,412
	Citizens Financial Group Inc	-	"	-	US\$ 1,410	N/A	US\$ 1,410
	CNOOC Curtis Funding No 1 Pty Ltd	-	"	-	US\$ 1,390	N/A	US\$ 1,390
	Baker Hughes a GE Co LLC / Baker Hughes Co-Obligor Inc	-	"	-	US\$ 1,387	N/A	US\$ 1,387
	Permod Ricard SA	-	"	-	US\$ 1,357	N/A	US\$ 1,357
	Ameriprise Financial Inc	-	"	-	US\$ 1,355	N/A	US\$ 1,355
	Essex Portfolio LP	-	"	-	US\$ 1,343	N/A	US\$ 1,343
	Ontario Teachers' Cadillac Fairview Properties Trust	-	"	-	US\$ 1,326	N/A	US\$ 1,326

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Energy Arkansas LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,315	N/A	US\$ 1,315
	JPMorgan Chase Bank NA	-	"	-	US\$ 1,304	N/A	US\$ 1,304
	Interpublic Group of Cos Inc/The	-	"	-	US\$ 1,289	N/A	US\$ 1,289
	American Electric Power Co Inc	-	"	-	US\$ 1,274	N/A	US\$ 1,274
	Santander UK Group Holdings PLC	-	"	-	US\$ 1,228	N/A	US\$ 1,228
	State Street Corp	-	"	-	US\$ 1,201	N/A	US\$ 1,201
	Cardinal Health Inc	-	"	-	US\$ 1,201	N/A	US\$ 1,201
	Aviation Capital Group LLC	-	"	-	US\$ 1,193	N/A	US\$ 1,193
	Sprint Spectrum Co LLC / Sprint Spectrum Co II LLC / Sprint Spectrum Co III LLC	-	"	-	US\$ 1,192	N/A	US\$ 1,192
	UDK Inc	-	"	-	US\$ 1,190	N/A	US\$ 1,190
	Regions Bank/Birmingham AL	-	"	-	US\$ 1,178	N/A	US\$ 1,178
	Magellan Midstream Partners LP	-	"	-	US\$ 1,162	N/A	US\$ 1,162
	Johnson Controls International plc	-	"	-	US\$ 1,149	N/A	US\$ 1,149
	Cleveland Electric Illuminating Co/The	-	"	-	US\$ 1,144	N/A	US\$ 1,144
	TransCanada PipeLines Ltd	-	"	-	US\$ 1,140	N/A	US\$ 1,140
	APT Pipelines Ltd	-	"	-	US\$ 1,139	N/A	US\$ 1,139
	National Australia Bank Ltd/New York	-	"	-	US\$ 1,135	N/A	US\$ 1,135
	Mamulife Financial Corp	-	"	-	US\$ 1,122	N/A	US\$ 1,122
	WP Carey Inc	-	"	-	US\$ 1,068	N/A	US\$ 1,068
	CMS Energy Corp	-	"	-	US\$ 1,053	N/A	US\$ 1,053
	Alexandria Real Estate Equities Inc	-	"	-	US\$ 1,051	N/A	US\$ 1,051
	Union Pacific Corp	-	"	-	US\$ 1,042	N/A	US\$ 1,042
	Baltimore Gas & Electric Co	-	"	-	US\$ 1,037	N/A	US\$ 1,037
	Cigna Holding Co	-	"	-	US\$ 1,033	N/A	US\$ 1,033
	DH Europe Finance II Sarl	-	"	-	US\$ 1,026	N/A	US\$ 1,026
	Weyerhaeuser Co	-	"	-	US\$ 1,026	N/A	US\$ 1,026
	Energy Mississippi LLC	-	"	-	US\$ 1,024	N/A	US\$ 1,024
	Toyota Motor Credit Corp	-	"	-	US\$ 1,020	N/A	US\$ 1,020
	Continental Airlines 2012-1 Class A Pass Through Trust	-	"	-	US\$ 1,020	N/A	US\$ 1,020
	Loews Corp	-	"	-	US\$ 1,019	N/A	US\$ 1,019
	Amazon.com Inc	-	"	-	US\$ 1,018	N/A	US\$ 1,018
	Toyota Motor Finance Netherlands BV	-	"	-	US\$ 1,011	N/A	US\$ 1,011
	Cop Nacional del Cobre de Chile	-	"	-	US\$ 1,011	N/A	US\$ 1,011
	Republic Services Inc	-	"	-	US\$ 1,009	N/A	US\$ 1,009
	Commonwealth Edison Co	-	"	-	US\$ 1,007	N/A	US\$ 1,007
	Kimco Realty Corp	-	"	-	US\$ 1,007	N/A	US\$ 1,007
	African Development Bank	-	"	-	US\$ 1,003	N/A	US\$ 1,003
	UBS AG/Stamford CT	-	"	-	US\$ 1,001	N/A	US\$ 1,001
	Gilead Sciences Inc	-	"	-	US\$ 998	N/A	US\$ 998
	MetLife Inc	-	"	-	US\$ 996	N/A	US\$ 996
	BBVA USA	-	"	-	US\$ 992	N/A	US\$ 992
	British Airways 2013-1 Class A Pass Through Trust	-	"	-	US\$ 988	N/A	US\$ 988
	Marsh & McLennan Cos Inc	-	"	-	US\$ 979	N/A	US\$ 979
	Georgia-Pacific LLC	-	"	-	US\$ 979	N/A	US\$ 979
	Mitsubishi UFJ Lease & Finance Co Ltd	-	"	-	US\$ 925	N/A	US\$ 925
	Lockheed Martin Corp	-	"	-	US\$ 906	N/A	US\$ 906
	MassMutual Global Funding II	-	"	-	US\$ 905	N/A	US\$ 905
	CA Inc	-	"	-	US\$ 903	N/A	US\$ 903
	CBS Corp	-	"	-	US\$ 900	N/A	US\$ 900
	Coca-Cola Femsa SAB de CV	-	"	-	US\$ 887	N/A	US\$ 887
	CNOOC Finance 2011 Ltd	-	"	-	US\$ 878	N/A	US\$ 878
	Viterra Inc	-	"	-	US\$ 866	N/A	US\$ 866
		-	"	-	US\$ 843	N/A	US\$ 843

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	ONEOK Partners LP	-	Financial assets at fair value through other comprehensive income	-	US\$ 824	N/A	US\$ 824	
	Sinopec Capital 2013 Ltd	-	"	-	US\$ 814	N/A	US\$ 814	
	Nationwide Financial Services Inc	-	"	-	US\$ 779	N/A	US\$ 779	
	AXIS Specialty Finance LLC	-	"	-	US\$ 762	N/A	US\$ 762	
	PayPal Holdings Inc	-	"	-	US\$ 755	N/A	US\$ 755	
	Pinnacle West Capital Corp	-	"	-	US\$ 751	N/A	US\$ 751	
	Warner Media LLC	-	"	-	US\$ 742	N/A	US\$ 742	
	BNZ International Funding Ltd/London	-	"	-	US\$ 724	N/A	US\$ 724	
	BAE Systems Holdings Inc	-	"	-	US\$ 705	N/A	US\$ 705	
	Phillips 66	-	"	-	US\$ 705	N/A	US\$ 705	
	Southern California Gas Co	-	"	-	US\$ 704	N/A	US\$ 704	
	Aon Corp	-	"	-	US\$ 665	N/A	US\$ 665	
	Digital Realty Trust LP	-	"	-	US\$ 657	N/A	US\$ 657	
	Ohio Power Co	-	"	-	US\$ 636	N/A	US\$ 636	
	Fifth Third Bank/Cincinnati OH	-	"	-	US\$ 635	N/A	US\$ 635	
	OneBeacon US Holdings Inc	-	"	-	US\$ 627	N/A	US\$ 627	
	Norfolk Southern Railway Co	-	"	-	US\$ 621	N/A	US\$ 621	
	RBC USA Holdco Corp	-	"	-	US\$ 614	N/A	US\$ 614	
	Aptiv Corp	-	"	-	US\$ 609	N/A	US\$ 609	
	Toledo Edison Co/The	-	"	-	US\$ 609	N/A	US\$ 609	
	Pioneer Natural Resources Co	-	"	-	US\$ 608	N/A	US\$ 608	
	American Water Capital Corp	-	"	-	US\$ 603	N/A	US\$ 603	
	Nissan Motor Acceptance Corp	-	"	-	US\$ 600	N/A	US\$ 600	
	Every Inc	-	"	-	US\$ 593	N/A	US\$ 593	
	ViacomCBS Inc	-	"	-	US\$ 588	N/A	US\$ 588	
	Duke Energy Progress LLC	-	"	-	US\$ 575	N/A	US\$ 575	
	Swedbank AB	-	"	-	US\$ 575	N/A	US\$ 575	
	Continental Airlines 2007-1 Class A Pass Through Trust	-	"	-	US\$ 572	N/A	US\$ 572	
	ABC Inc	-	"	-	US\$ 550	N/A	US\$ 550	
	Jump Networks Inc	-	"	-	US\$ 541	N/A	US\$ 541	
	Amgen Inc	-	"	-	US\$ 541	N/A	US\$ 541	
	Ingersoll-Rand Global Holding Co Ltd	-	"	-	US\$ 530	N/A	US\$ 530	
	Aflac Inc	-	"	-	US\$ 525	N/A	US\$ 525	
	Regency Centers Corp	-	"	-	US\$ 521	N/A	US\$ 521	
	salesforce.com Inc	-	"	-	US\$ 519	N/A	US\$ 519	
	TTX Co	-	"	-	US\$ 511	N/A	US\$ 511	
	Nomura Holdings Inc	-	"	-	US\$ 504	N/A	US\$ 504	
	Hanwha Energy USA Holdings Corp	-	"	-	US\$ 504	N/A	US\$ 504	
	PNC Financial Services Group Inc/The	-	"	-	US\$ 502	N/A	US\$ 502	
	Caterpillar Financial Services Corp	-	"	-	US\$ 502	N/A	US\$ 502	
	Danone SA	-	"	-	US\$ 500	N/A	US\$ 500	
	National Oilwell Varco Inc	-	"	-	US\$ 495	N/A	US\$ 495	
	Duke Energy Carolinas LLC	-	"	-	US\$ 465	N/A	US\$ 465	
	BAT International Finance PLC	-	"	-	US\$ 462	N/A	US\$ 462	
	United Overseas Bank Ltd	-	"	-	US\$ 462	N/A	US\$ 462	
	Narragansett Electric Co/The	-	"	-	US\$ 452	N/A	US\$ 452	
	Duke Realty LP	-	"	-	US\$ 425	N/A	US\$ 425	
	Liberty Property LP	-	"	-	US\$ 417	N/A	US\$ 417	
	Boston Properties LP	-	"	-	US\$ 413	N/A	US\$ 413	
	Newmont Goldcorp Corp	-	"	-	US\$ 408	N/A	US\$ 408	
	Eaton Electric Holdings LLC	-	"	-	US\$ 406	N/A	US\$ 406	
	Comerica Bank	-	"	-	US\$ 405	N/A	US\$ 405	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Southern Power Co	-	Financial assets at fair value through other comprehensive income	-	US\$ 404	N/A	US\$ 404
	Canadian Pacific Railway Co	-	"	-	US\$ 400	N/A	US\$ 400
	Fidelity National Information Services Inc	-	"	-	US\$ 399	N/A	US\$ 399
	AXA Equitable Holdings Inc	-	"	-	US\$ 393	N/A	US\$ 393
	Metropolitan Edison Co	-	"	-	US\$ 388	N/A	US\$ 388
	StanCorp Financial Group Inc	-	"	-	US\$ 386	N/A	US\$ 386
	Principal Financial Group Inc	-	"	-	US\$ 359	N/A	US\$ 359
	Continental Airlines 2000-1 Class A-1 Pass Through Trust	-	"	-	US\$ 312	N/A	US\$ 312
	Chubb INA Holdings Inc	-	"	-	US\$ 308	N/A	US\$ 308
	America Movil SAB de CV	-	"	-	US\$ 307	N/A	US\$ 307
	Alibaba Group Holding Ltd	-	"	-	US\$ 306	N/A	US\$ 306
	CommonSpirit Health	-	"	-	US\$ 303	N/A	US\$ 303
	Schlumberger Finance Canada Ltd	-	"	-	US\$ 300	N/A	US\$ 300
	Manufacturers & Traders Trust Co	-	"	-	US\$ 300	N/A	US\$ 300
	Eli Lilly & Co	-	"	-	US\$ 299	N/A	US\$ 299
	Home Depot Inc/The	-	"	-	US\$ 284	N/A	US\$ 284
	Southern Natural Gas Co LLC / Southern Natural Issuing Corp	-	"	-	US\$ 282	N/A	US\$ 282
	Archer-Daniels-Midland Co	-	"	-	US\$ 258	N/A	US\$ 258
	Bank of America NA	-	"	-	US\$ 257	N/A	US\$ 257
	Grupo Bimbo SAB de CV	-	"	-	US\$ 252	N/A	US\$ 252
	Aon PLC	-	"	-	US\$ 248	N/A	US\$ 248
	Telstra Corp Ltd	-	"	-	US\$ 209	N/A	US\$ 209
	US Airways 2013-1 Class A Pass Through Trust	-	"	-	US\$ 209	N/A	US\$ 209
	Halliburton Co	-	"	-	US\$ 208	N/A	US\$ 208
	Waste Management Inc	-	"	-	US\$ 207	N/A	US\$ 207
	QNB Finance Ltd	-	"	-	US\$ 207	N/A	US\$ 207
	WestRock MWV LLC	-	"	-	US\$ 201	N/A	US\$ 201
	Glencore Funding LLC	-	"	-	US\$ 200	N/A	US\$ 200
	Nucor Corp	-	"	-	US\$ 185	N/A	US\$ 185
	American Airlines 2011-1 Class A Pass Through Trust	-	"	-	US\$ 111	N/A	US\$ 111
	Wells Fargo & Co	-	Financial assets at amortized cost	-	US\$ 160,098	N/A	US\$ 161,794
	JP Morgan Chase & Co	-	"	-	US\$ 84,967	N/A	US\$ 85,578
	Industrial and Commercial Bank of China	-	"	-	US\$ 9,996	N/A	US\$ 10,022
	Government bond	-	Financial assets at fair value through other comprehensive income	-	US\$ 419,942	N/A	US\$ 419,942
	United States Treasury Note/Bond	-	"	-	US\$ 3,501	N/A	US\$ 3,501
	Abu Dhabi Government International Bond	-	"	-	US\$ 2,830	N/A	US\$ 2,830
	United States Treasury Inflation Indexed Bonds	-	"	-	US\$ 1,372	N/A	US\$ 1,372
	Qatar Government International Bond	-	"	-	US\$ 1,365	N/A	US\$ 1,365
	Agency bonds/Agency mortgage-backed securities	-	Financial assets at fair value through Profit or Loss	-	US\$ 761,352	N/A	US\$ 761,352
	Freddie Mac Multifamily Structured Pass Through Certificates	-	Financial assets at fair value through other comprehensive income	-	US\$ 176,379	N/A	US\$ 176,379
	Fannie Mae Pool	-	"	-	US\$ 164,994	N/A	US\$ 164,994
	Fannie Mae REMICS	-	"	-	US\$ 164,081	N/A	US\$ 164,081
	Freddie Mac REMICS	-	"	-	US\$ 152,833	N/A	US\$ 152,833
	Freddie Mac Gold Pool	-	"	-	US\$ 129,835	N/A	US\$ 129,835
	Ginnie Mae II Pool	-	"	-	US\$ 56,856	N/A	US\$ 56,856
	Freddie Mac Pool	-	"	-	US\$ 54,891	N/A	US\$ 54,891
	Fannie Mae or Freddie Mac	-	"	-	US\$ 33,108	N/A	US\$ 33,108
	Government National Mortgage Association	-	"	-			
	Ginnie Mae	-	"	-			

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Fannie Mae-Aces	-	Financial assets at fair value through other comprehensive income	-	US\$ 21,409	N/A	US\$ 21,409	
	Freddie Mac Strips	-	"	-	US\$ 3,041	N/A	US\$ 3,041	
	Federal Home Loan Bank Discount Notes	-	"	-	US\$ 2,696	N/A	US\$ 2,696	
	Freddie Mac Multifamily Structured Pass Through Certificates	-	"	-	US\$ 2,160	N/A	US\$ 2,160	
	Korea Hydro & Nuclear Power Co Ltd	-	"	-	US\$ 1,970	N/A	US\$ 1,970	
	Federal Farm Credit Banks Funding Corp	-	"	-	US\$ 1,099	N/A	US\$ 1,099	
	Denver City & County Housing Authority	-	"	-	US\$ 996	N/A	US\$ 996	
	Ginnie Mae I Pool	-	"	-	US\$ 970	N/A	US\$ 970	
	FHLMC-GNMA	-	"	-	US\$ 860	N/A	US\$ 860	
	Oregon Health & Science University	-	"	-	US\$ 789	N/A	US\$ 789	
	NCUA Guaranteed Notes Trust 2010-R2	-	"	-	US\$ 668	N/A	US\$ 668	
	FRESB 2019-SB61 Mortgage Trust	-	"	-	US\$ 667	N/A	US\$ 667	
	Freddie Mac Non Gold Pool	-	"	-	US\$ 499	N/A	US\$ 499	
	FRESB 2019-SB60 Mortgage Trust	-	"	-	US\$ 415	N/A	US\$ 415	
	NCUA Guaranteed Notes Trust 2010-R1	-	"	-	US\$ 222	N/A	US\$ 222	
	Fannie Mae Benchmark REMIC	-	"	-	US\$ 116	N/A	US\$ 116	
	Asset-backed securities							
	Hyundai Auto Receivables Trust 2017-A	-	Financial assets at fair value through other comprehensive income	-	US\$ 9,925	N/A	US\$ 9,925	
	Citibank Credit Card Issuance Trust	-	"	-	US\$ 7,321	N/A	US\$ 7,321	
	Chitigroup Commercial Mortgage Trust 2014-GC21	-	"	-	US\$ 7,036	N/A	US\$ 7,036	
	CGDDB Commercial Mortgage Trust 2017-BIOC	-	"	-	US\$ 6,845	N/A	US\$ 6,845	
	Benchmark 2019-B11 Mortgage Trust	-	"	-	US\$ 6,248	N/A	US\$ 6,248	
	Ford Credit Auto Owner Trust 2017-A	-	"	-	US\$ 6,084	N/A	US\$ 6,084	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	"	-	US\$ 6,075	N/A	US\$ 6,075	
	UBS-Barclays Commercial Mortgage Trust 2012-C2	-	"	-	US\$ 6,070	N/A	US\$ 6,070	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C29	-	"	-	US\$ 6,041	N/A	US\$ 6,041	
	Ford Credit Auto Owner Trust 2016-REV1	-	"	-	US\$ 6,022	N/A	US\$ 6,022	
	CD 2019-CD8 Mortgage Trust	-	"	-	US\$ 5,924	N/A	US\$ 5,924	
	Wells Fargo Commercial Mortgage Trust 2019-C53	-	"	-	US\$ 5,678	N/A	US\$ 5,678	
	WFRBS Commercial Mortgage Trust 2013-C13	-	"	-	US\$ 5,648	N/A	US\$ 5,648	
	BBCMS 2018-TALL Mortgage Trust	-	"	-	US\$ 5,472	N/A	US\$ 5,472	
	COMM 2015-CCRE24 Mortgage Trust	-	"	-	US\$ 5,238	N/A	US\$ 5,238	
	Hyundai Auto Lease Securitization Trust 2018-A	-	"	-	US\$ 5,079	N/A	US\$ 5,079	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C30	-	"	-	US\$ 5,030	N/A	US\$ 5,030	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C10	-	"	-	US\$ 5,012	N/A	US\$ 5,012	
	Ford Credit Auto Owner Trust 2015-REV1	-	"	-	US\$ 4,922	N/A	US\$ 4,922	
	MRCDD 2019-MARK Mortgage Trust	-	"	-	US\$ 4,705	N/A	US\$ 4,705	
	BANK 2019-BNK22	-	"	-	US\$ 4,518	N/A	US\$ 4,518	
	Hyundai Auto Receivables Trust 2016-B	-	"	-	US\$ 4,502	N/A	US\$ 4,502	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C7	-	"	-	US\$ 4,263	N/A	US\$ 4,263	
	Mercedes-Benz Auto Lease Trust 2019-B	-	"	-	US\$ 4,241	N/A	US\$ 4,241	
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	"	-	US\$ 4,180	N/A	US\$ 4,180	
	Hyundai Auto Receivables Trust 2016-A	-	"	-	US\$ 4,178	N/A	US\$ 4,178	
	GM Financial Consumer Automobile Receivables Trust 2018-1	-	"	-	US\$ 4,164	N/A	US\$ 4,164	
	UBS Commercial Mortgage Trust 2018-C10	-	"	-	US\$ 4,163	N/A	US\$ 4,163	
	JPMCC Commercial Mortgage Securities Trust 2017-JP7	-	"	-	US\$ 4,151	N/A	US\$ 4,151	
	BANK 2017-BNK6	-	"	-	US\$ 4,107	N/A	US\$ 4,107	
	BANK 2017-BNK5	-	"	-	US\$ 4,104	N/A	US\$ 4,104	
	BANK 2019-BNK17	-	"	-	US\$ 4,099	N/A	US\$ 4,099	
	BX Commercial Mortgage Trust 2018-IND	-	"	-	US\$ 3,992	N/A	US\$ 3,992	
	American Express Credit Account Master Trust	-	"	-	US\$ 3,804	N/A	US\$ 3,804	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Enterprise Fleet Financing 2019-2 LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 3,763	N/A	US\$ 3,763	
	Barclays Commercial Mortgage Trust 2019-C5	-	"	-	US\$ 3,720	N/A	US\$ 3,720	
	Citigroup Commercial Mortgage Trust 2019-C7	-	"	-	US\$ 3,685	N/A	US\$ 3,685	
	BANK 2019-BNK23	-	"	-	US\$ 3,640	N/A	US\$ 3,640	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	-	"	-	US\$ 3,381	N/A	US\$ 3,381	
	UBS-Barclays Commercial Mortgage Trust 2013-C6	-	"	-	US\$ 3,327	N/A	US\$ 3,327	
	GS Mortgage Securities Trust 2012-GC6	-	"	-	US\$ 3,194	N/A	US\$ 3,194	
	Ford Credit Auto Lease Trust 2019-B	-	"	-	US\$ 3,122	N/A	US\$ 3,122	
	Toyota Auto Receivables 2017-A Owner Trust	-	"	-	US\$ 3,108	N/A	US\$ 3,108	
	Nissan Auto Lease Trust 2017-B	-	"	-	US\$ 3,072	N/A	US\$ 3,072	
	UBS-Barclays Commercial Mortgage Trust 2012-C3	-	"	-	US\$ 3,061	N/A	US\$ 3,061	
	Toyota Auto Receivables 2018-D Owner Trust	-	"	-	US\$ 3,059	N/A	US\$ 3,059	
	J.P. Morgan Chase Commercial Mortgage Securities Trust 2016-WIKI	-	"	-	US\$ 3,020	N/A	US\$ 3,020	
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	"	-	US\$ 3,017	N/A	US\$ 3,017	
	Citigroup Commercial Mortgage Trust 2016-P5	-	"	-	US\$ 3,008	N/A	US\$ 3,008	
	GS Mortgage Securities Corp Trust 2018-R1VR	-	"	-	US\$ 3,003	N/A	US\$ 3,003	
	GM Financial Consumer Automobile Receivables Trust 2017-2	-	"	-	US\$ 2,995	N/A	US\$ 2,995	
	Morgan Stanley Capital I Trust 2017-H1	-	"	-	US\$ 2,966	N/A	US\$ 2,966	
	Hyundai Auto Receivables Trust 2018-A	-	"	-	US\$ 2,915	N/A	US\$ 2,915	
	Nissan Auto Lease Trust 2019-B	-	"	-	US\$ 2,885	N/A	US\$ 2,885	
	Citigroup Commercial Mortgage Trust 2016-C3	-	"	-	US\$ 2,760	N/A	US\$ 2,760	
	GS Mortgage Securities Trust 2013-GCJ12	-	"	-	US\$ 2,660	N/A	US\$ 2,660	
	GS Mortgage Securities Trust 2011-GC3	-	"	-	US\$ 2,626	N/A	US\$ 2,626	
	BANK 2019-BNK24	-	"	-	US\$ 2,606	N/A	US\$ 2,606	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	-	"	-	US\$ 2,536	N/A	US\$ 2,536	
	ARI Fleet Lease Trust 2019-A	-	"	-	US\$ 2,408	N/A	US\$ 2,408	
	Nissan Auto Lease Trust 2019-A	-	"	-	US\$ 2,350	N/A	US\$ 2,350	
	UBS Commercial Mortgage Trust 2018-C11	-	"	-	US\$ 2,179	N/A	US\$ 2,179	
	Morgan Stanley Capital I Trust 2018-H3	-	"	-	US\$ 2,134	N/A	US\$ 2,134	
	BENCHMARK 2018-B4	-	"	-	US\$ 2,125	N/A	US\$ 2,125	
	COMM 2013-CCRE12 Mortgage Trust	-	"	-	US\$ 2,112	N/A	US\$ 2,112	
	Ford Credit Auto Owner Trust 2019-A	-	"	-	US\$ 2,088	N/A	US\$ 2,088	
	Citigroup Commercial Mortgage Trust 2017-P8	-	"	-	US\$ 2,059	N/A	US\$ 2,059	
	JPMDB Commercial Mortgage Securities Trust 2017-C7	-	"	-	US\$ 2,044	N/A	US\$ 2,044	
	WFRBS Commercial Mortgage Trust 2013-C17	-	"	-	US\$ 2,044	N/A	US\$ 2,044	
	JPMDB Commercial Mortgage Securities Trust 2014-C19	-	"	-	US\$ 2,032	N/A	US\$ 2,032	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C31	-	"	-	US\$ 2,027	N/A	US\$ 2,027	
	GM Financial Consumer Automobile 2017-1	-	"	-	US\$ 2,001	N/A	US\$ 2,001	
	COMM 2014-CCRE17 Mortgage Trust	-	"	-	US\$ 2,000	N/A	US\$ 2,000	
	GS Mortgage Securities Trust 2014-GC22	-	"	-	US\$ 1,961	N/A	US\$ 1,961	
	Mercedes-Benz Auto Lease Trust 2018-B	-	"	-	US\$ 1,961	N/A	US\$ 1,961	
	GS Mortgage Securities Trust 2015-GC34	-	"	-	US\$ 1,905	N/A	US\$ 1,905	
	Chesapeake Funding II LLC	-	"	-	US\$ 1,903	N/A	US\$ 1,903	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	-	"	-	US\$ 1,831	N/A	US\$ 1,831	
	Citigroup Commercial Mortgage Trust 2015-GC35	-	"	-	US\$ 1,791	N/A	US\$ 1,791	
	Morgan Stanley Capital I Trust 2019-H6	-	"	-	US\$ 1,772	N/A	US\$ 1,772	
	GM Financial Automobile Leasing Trust 2019-1	-	"	-	US\$ 1,647	N/A	US\$ 1,647	
	JPMDB Commercial Mortgage Securities Trust 2013-C12	-	"	-	US\$ 1,544	N/A	US\$ 1,544	
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	"	-	US\$ 1,498	N/A	US\$ 1,498	
	Morgan Stanley Bank of America Merrill Lynch Trust 2015-C24	-	"	-	US\$ 1,492	N/A	US\$ 1,492	
	Citigroup Commercial Mortgage Trust 2015-GC27	-	"	-	US\$ 1,458	N/A	US\$ 1,458	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	GM Financial Consumer Automobile Receivables Trust 2019-3	-	Financial assets at fair value through other comprehensive income	-	US\$ 443	N/A	US\$ 443	
	Hyundai Auto Lease Securitization Trust 2017-C	-	"	-	US\$ 410	N/A	US\$ 410	
	WFRBS Commercial Mortgage Trust 2014-C25	-	"	-	US\$ 408	N/A	US\$ 408	
	Ford Credit Auto Lease Trust 2017-B	-	"	-	US\$ 380	N/A	US\$ 380	
	Hyundai Auto Receivables Trust 2015-C	-	"	-	US\$ 365	N/A	US\$ 365	
	GM Financial Automobile Leasing Trust 2018-2	-	"	-	US\$ 351	N/A	US\$ 351	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C5	-	"	-	US\$ 350	N/A	US\$ 350	
	COMM 2015-CCRE26 Mortgage Trust	-	"	-	US\$ 349	N/A	US\$ 349	
	GM Financial Automobile Leasing Trust 2018-3	-	"	-	US\$ 339	N/A	US\$ 339	
	JPMorgan Commercial Mortgage Securities Trust 2015-C31	-	"	-	US\$ 325	N/A	US\$ 325	
	Ford Credit Auto Owner Trust 2017-B	-	"	-	US\$ 301	N/A	US\$ 301	
	Toyota Auto Receivables 2018-B Owner Trust	-	"	-	US\$ 283	N/A	US\$ 283	
	BMW Vehicle Lease Trust 2017-2	-	"	-	US\$ 189	N/A	US\$ 189	
	COMM 2015-DC1 Mortgage Trust	-	"	-	US\$ 180	N/A	US\$ 180	
	Wells Fargo Commercial Mortgage Trust 2015-NXSI	-	"	-	US\$ 103	N/A	US\$ 103	
	Wells Fargo Commercial Mortgage Trust 2015-SG1	-	"	-	US\$ 100	N/A	US\$ 100	
	COMM 2014-CCRE15 Mortgage Trust	-	"	-	US\$ 46	N/A	US\$ 46	
	Nissan Auto Receivables 2016-B Owner Trust	-	"	-	US\$ 36	N/A	US\$ 36	
WFRBS Commercial Mortgage Trust 2011-C5	-	"	-	US\$ 31	N/A	US\$ 31		
GS Mortgage Securities Trust 2010-C2	-	"	-	US\$ 21	N/A	US\$ 21		
Morgan Stanley Bank of America Merrill Lynch Trust 2014-C18	-	"	-	US\$ 20	N/A	US\$ 20		
GS Mortgage Securities Trust 2010-C1	-	"	-	US\$ 9	N/A	US\$ 9		
VTAF II	Non-publicly traded equity investments Primavera Capital Fund III L.P.	-	Financial assets at fair value through other comprehensive income	-	US\$ 78,403	4	US\$ 78,403	
	Non-publicly traded equity investments Sentific	-	Financial assets at fair value through other comprehensive income	1,019	US\$ 1,307	4	US\$ 1,307	
VTAF III	Aether Systems, Inc.	-	"	1,085	US\$ 362	20	US\$ 362	
	5V Technologies, Inc.	-	"	4	-	2	-	
Growth Fund	Non-publicly traded equity investments LiquidLeds Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US\$ 800	14	US\$ 800	
	Neocomix, Inc.	-	"	4,147	US\$ 174	-	US\$ 174	
Growth Fund	Non-publicly traded equity investments Innovium, Inc.	-	Financial assets at fair value through other comprehensive income	230	US\$ 1,560	-	US\$ 1,560	
	Innovium, Inc.	-	"	221	US\$ 1,501	-	US\$ 1,501	
	CNEX Labs, Inc.	-	"	237	US\$ 775	-	US\$ 775	
	Astera Labs, Inc.	-	"	127	US\$ 250	-	US\$ 250	

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES ACQUIRED AND DISPOSED OF AT COSTS OR PRICES OF AT LEAST NT\$300 MILLION OR 20% OF THE PAID-IN CAPITAL

FOR THE YEAR ENDED DECEMBER 31, 2019

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

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)
TSMC	Commercial paper	Financial assets at amortized cost	-	-	-	\$ 1,795,261	-	\$ -	180	\$ 1,800,000	\$ -	-	\$ -
	Taiwan Power Company	"	-	-	-	498,837	-	-	50	500,000	-	-	-
	CPC Corporation, Taiwan	"	-	-	-	-	-	-	-	-	-	-	-
TSMC Global	Publicly traded stocks	Financial assets at fair value through other comprehensive income	-	-	-	568,150	-	-	21,105	775,282	252,307	-	-
	Semiconductor Manufacturing International Corporation	"	-	-	-	-	-	-	-	-	-	-	-
	Corporate bond	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 44,755	-	US\$ 26,624	-	US\$ 26,924	US\$ 26,897	27	US\$ 46,084
	Bank of America Corp	"	-	-	-	-	-	-	-	-	-	-	-
	Citigroup Inc	"	-	-	-	US\$ 28,602	-	US\$ 27,307	-	US\$ 21,481	US\$ 21,386	95	US\$ 35,512
	AbbVie Inc	"	-	-	-	US\$ 11,504	-	US\$ 36,780	-	US\$ 17,687	US\$ 17,576	111	US\$ 31,425
	AT&T Inc	"	-	-	-	US\$ 23,123	-	US\$ 16,412	-	US\$ 14,343	US\$ 14,218	125	US\$ 26,140
	Goldman Sachs Group Inc/The	"	-	-	-	US\$ 17,619	-	US\$ 12,935	-	US\$ 5,709	US\$ 5,703	6	US\$ 25,789
	CVS Health Corp	"	-	-	-	US\$ 27,238	-	US\$ 25,647	-	US\$ 31,861	US\$ 31,310	551	US\$ 22,242
	Bristol-Myers Squibb Co	"	-	-	-	US\$ -	-	US\$ 25,338	-	US\$ 4,409	US\$ 4,342	67	US\$ 21,666
	Mitsubishi UFJ Financial Group Inc	"	-	-	-	US\$ 9,547	-	US\$ 13,962	-	US\$ 2,670	US\$ 2,646	24	US\$ 21,332
	JPMorgan Chase & Co	"	-	-	-	US\$ 16,577	-	US\$ 14,544	-	US\$ 10,973	US\$ 10,974	(1)	US\$ 20,825
	Morgan Stanley	"	-	-	-	US\$ 19,581	-	US\$ 17,212	-	US\$ 16,990	US\$ 16,874	116	US\$ 20,421
	HSBC Holdings PLC	"	-	-	-	US\$ 15,571	-	US\$ 13,265	-	US\$ 9,205	US\$ 9,074	131	US\$ 20,102
	Apple Inc	"	-	-	-	US\$ 12,585	-	US\$ 10,796	-	US\$ 3,939	US\$ 3,997	(58)	US\$ 19,886
	Sumitomo Mitsui Financial Group Inc	"	-	-	-	US\$ 10,008	-	US\$ 16,956	-	US\$ 8,327	US\$ 8,288	39	US\$ 19,176
	Toronto-Dominion Bank/The	"	-	-	-	US\$ 5,000	-	US\$ 17,437	-	US\$ 7,765	US\$ 7,669	96	US\$ 15,017
	Verizon Communications Inc	"	-	-	-	US\$ 15,927	-	US\$ 9,920	-	US\$ 12,478	US\$ 12,447	31	US\$ 14,058
	Wells Fargo & Co	"	-	-	-	US\$ 576	-	US\$ 11,967	-	US\$ 813	US\$ 815	(2)	US\$ 11,864
	Morgan Stanley	"	-	-	-	US\$ 8,928	-	US\$ 10,113	-	US\$ 7,610	US\$ 7,463	147	US\$ 11,837
Banque Federative du Credit Mutuel SA	"	-	-	-	US\$ 4,028	-	US\$ 11,726	-	US\$ 4,096	US\$ 4,088	8	US\$ 11,752	
American International Group Inc	"	-	-	-	US\$ 10,737	-	US\$ 10,471	-	US\$ 10,247	US\$ 10,213	34	US\$ 11,423	
Equifax Inc	"	-	-	-	US\$ 174	-	US\$ 10,748	-	US\$ -	US\$ -	-	US\$ 11,001	
Ryder System Inc	"	-	-	-	US\$ 4,778	-	US\$ 11,957	-	US\$ 6,218	US\$ 6,121	97	US\$ 10,892	
International Business Machines Corp	"	-	-	-	US\$ -	-	US\$ 13,545	-	US\$ 3,265	US\$ 3,266	(1)	US\$ 10,414	
NexEra Energy Capital Holdings Inc	"	-	-	-	US\$ 4,706	-	US\$ 15,881	-	US\$ 11,397	US\$ 11,366	31	US\$ 9,420	
Fiserv Inc	"	-	-	-	US\$ 1,455	-	US\$ 12,324	-	US\$ 4,902	US\$ 4,770	132	US\$ 9,174	
Comcast Corp	"	-	-	-	US\$ 18,894	-	US\$ 3,773	-	US\$ 14,933	US\$ 14,452	481	US\$ 8,514	
JPMorgan Chase & Co	"	-	-	-	US\$ 25,423	-	US\$ 5,887	-	US\$ 23,845	US\$ 23,737	108	US\$ 7,849	
Anheuser-Busch InBev Worldwide Inc	"	-	-	-	US\$ -	-	US\$ 11,641	-	US\$ 6,093	US\$ 5,824	269	US\$ 6,276	
American Express Co	"	-	-	-	US\$ 4,547	-	US\$ 10,414	-	US\$ 9,023	US\$ 8,890	133	US\$ 6,239	
Walt Disney Co/The	"	-	-	-	US\$ -	-	US\$ 10,719	-	US\$ 7,387	US\$ 7,428	(41)	US\$ 3,246	
Hyundai Capital America	"	-	-	-	US\$ 6,644	-	US\$ 8,783	-	US\$ 12,403	US\$ 12,333	70	US\$ 3,187	

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)
TSMC Global	AXA Equitable Holdings Inc	Financial assets at fair value through other comprehensive income	-	-	US\$ 5,662	-	US\$ 6,917	-	US\$ 12,532	US\$ 12,265	US\$ 267	-	US\$ 393
	Ford Motor Credit Co LLC	"	-	-	US\$ 10,153	-	US\$ -	-	US\$ 10,252	US\$ 10,454	US\$ (202)	-	US\$ -
	European Investment Bank	"	-	-	US\$ 3,903	-	US\$ 7,177	-	US\$ 11,181	US\$ 11,123	US\$ 58	-	US\$ -
	Wells Fargo & Co	Financial assets at amortized cost	-	-	US\$ 149,941	-	US\$ 10,187	-	US\$ -	US\$ -	US\$ -	-	US\$ 160,098
	JPMorgan Chase & Co.	"	-	-	US\$ 124,948	-	US\$ -	-	US\$ 40,000	US\$ 40,000	US\$ -	-	US\$ 84,967
	Goldman Sachs Group, Inc.	"	-	-	US\$ 99,900	-	US\$ -	-	US\$ 100,000	US\$ 100,000	US\$ -	-	US\$ -
	Bank of Nova Scotia	"	-	-	US\$ 49,976	-	US\$ -	-	US\$ 50,000	US\$ 50,000	US\$ -	-	US\$ -
	Commonwealth Bank of Australia	"	-	-	US\$ 49,994	-	US\$ -	-	US\$ 50,000	US\$ 50,000	US\$ -	-	US\$ -
	Westpac Banking Corp.	"	-	-	US\$ 99,987	-	US\$ -	-	US\$ 100,000	US\$ 100,000	US\$ -	-	US\$ -
	National Australia Bank	"	-	-	US\$ 49,994	-	US\$ -	-	US\$ 50,000	US\$ 50,000	US\$ -	-	US\$ -
	Government bond	"	-	-	US\$ 283,314	-	US\$ 1,330,414	-	US\$ 1,201,895	US\$ 1,197,309	US\$ 4,586	-	US\$ 419,942
	United States Treasury Note/Bond	Financial assets at fair value through other comprehensive income	-	-	US\$ 2,248	-	US\$ 30,306	-	US\$ 30,583	US\$ 30,575	US\$ 8	-	US\$ -
	United States Treasury Bill	"	-	-	US\$ -	-	US\$ 50,193	-	US\$ 50,290	US\$ 50,290	US\$ -	-	US\$ -
	United States Cash Management Bill	"	-	-	US\$ 68,164	-	US\$ -	-	US\$ 68,186	US\$ 68,239	US\$ (53)	-	US\$ -
	United States Treasury Floating Rate Note	"	-	-	US\$ -	-	US\$ -	-	US\$ -	US\$ -	US\$ -	-	US\$ -
	Agency bonds/Agency mortgage-backed securities	Financial assets at fair value through other comprehensive income	-	-	US\$ -	-	US\$ 43,868	-	US\$ 448	US\$ 460	US\$ (12)	-	US\$ 43,455
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 41,510	-	US\$ 1,017	US\$ 1,047	US\$ (30)	-	US\$ 40,438
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 30,338	-	US\$ 917	US\$ 941	US\$ (24)	-	US\$ 29,463
	GNMA II Pool MA6155	"	-	-	US\$ -	-	US\$ 27,922	-	US\$ 3,870	US\$ 3,876	US\$ (6)	-	US\$ 23,932
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 24,616	-	US\$ 1,759	US\$ 1,855	US\$ (96)	-	US\$ 22,981
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 23,956	-	US\$ 1,506	US\$ 1,572	US\$ (66)	-	US\$ 22,677
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 22,063	-	US\$ 1,716	US\$ 1,771	US\$ (55)	-	US\$ 20,518
	FNMA TBA 30 Yr 4.5	"	-	-	US\$ -	-	US\$ 466,768	-	US\$ 446,909	US\$ 446,629	US\$ 280	-	US\$ 20,165
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 21,757	-	US\$ 2,297	US\$ 2,329	US\$ (32)	-	US\$ 19,901
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 20,910	-	US\$ 1,702	US\$ 1,770	US\$ (68)	-	US\$ 19,392
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 18,806	-	US\$ -	US\$ -	US\$ -	-	US\$ 18,834
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,929	-	US\$ 1,965	US\$ 2,050	US\$ (85)	-	US\$ 18,011
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 18,859	-	US\$ 1,475	US\$ 1,582	US\$ (107)	-	US\$ 17,529
	FNMA TBA 30 Yr 4	"	-	-	US\$ -	-	US\$ 251,219	-	US\$ 233,880	US\$ 233,875	US\$ 5	-	US\$ 17,372
	GNMA II Pool MA6090	"	-	-	US\$ -	-	US\$ 17,117	-	US\$ 155	US\$ 161	US\$ (6)	-	US\$ 16,840
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 19,605	-	US\$ 3,315	US\$ 3,436	US\$ (121)	-	US\$ 16,230
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 16,126	-	US\$ -	US\$ -	US\$ -	-	US\$ 16,122
	GNMA II TBA 30 Yr 3	"	-	-	US\$ -	-	US\$ 206,260	-	US\$ 191,534	US\$ 191,171	US\$ 363	-	US\$ 15,095
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 15,995	-	US\$ 1,319	US\$ 1,349	US\$ (30)	-	US\$ 14,828
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 17,665	-	US\$ 3,584	US\$ 3,755	US\$ (171)	-	US\$ 13,966
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 13,217	-	US\$ -	US\$ -	US\$ -	-	US\$ 13,261
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 14,044	-	US\$ 1,004	US\$ 1,028	US\$ (24)	-	US\$ 13,152
	GNMA II Pool MA5264	"	-	-	US\$ -	-	US\$ 16,635	-	US\$ 3,686	US\$ 3,832	US\$ (146)	-	US\$ 12,793
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 12,611	-	US\$ -	US\$ -	US\$ -	-	US\$ 12,628
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 13,778	-	US\$ 1,615	US\$ 1,636	US\$ (21)	-	US\$ 12,480
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 12,394	-	US\$ -	US\$ 158	US\$ (10)	-	US\$ 12,281
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 14,112	-	US\$ 2,091	US\$ 2,197	US\$ (106)	-	US\$ 11,962
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 12,515	-	US\$ 1,472	US\$ 1,497	US\$ (25)	-	US\$ 11,248
	GNMA II TBA 30 Yr 3.5	"	-	-	US\$ 1,157	-	US\$ 270,651	-	US\$ 261,544	US\$ 261,292	US\$ 252	-	US\$ 10,517

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)
TSMC Global	Fannie Mae	Financial assets at fair value through other comprehensive income	-	-	US\$ 1,889	-	US\$ 10,203	-	US\$ 1,938	US\$ 1,918	US\$ 20	-	US\$ 10,258
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,110	-	US\$ 38	US\$ 39	US\$ (1)	-	US\$ 10,057
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,205	-	US\$ 471	US\$ 486	US\$ (15)	-	US\$ 9,703
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 11,094	-	US\$ 1,594	US\$ 1,594	US\$ (65)	-	US\$ 9,596
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,064	-	US\$ 642	US\$ 652	US\$ (10)	-	US\$ 9,384
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 10,212	-	US\$ 1,100	US\$ 1,118	US\$ (18)	-	US\$ 9,306
	FNMA TBA 30 Yr 3.5	"	-	-	US\$ -	-	US\$ 622,622	-	US\$ 613,991	US\$ 613,385	US\$ 606	-	US\$ 9,259
	Fannie Mae	"	-	-	US\$ 9,370	-	US\$ 9,467	-	US\$ 10,271	US\$ 10,267	US\$ 4	-	US\$ 8,700
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 28,050	-	US\$ 19,505	US\$ 19,498	US\$ 7	-	US\$ 8,538
	GNMA II TBA 30 Yr 4.5	"	-	-	US\$ 587	-	US\$ 37,238	-	US\$ 30,291	US\$ 30,323	US\$ (32)	-	US\$ 7,496
	Fannie Mae-Aces	"	-	-	US\$ -	-	US\$ 11,110	-	US\$ 4,196	US\$ 4,077	US\$ 119	-	US\$ 7,112
	Fannie Mae	"	-	-	US\$ 11,146	-	US\$ 6,657	-	US\$ 11,945	US\$ 11,922	US\$ 23	-	US\$ 6,200
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 21,042	-	US\$ 16,462	US\$ 16,381	US\$ 81	-	US\$ 4,705
	FNMA TBA 30 Yr 5	"	-	-	US\$ 24,761	-	US\$ 112,529	-	US\$ 133,871	US\$ 133,727	US\$ 144	-	US\$ 3,603
	FNMA TBA 15 Yr 3	"	-	-	US\$ -	-	US\$ 142,803	-	US\$ 138,801	US\$ 138,711	US\$ 90	-	US\$ 3,073
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 23,067	-	US\$ 20,672	US\$ 20,453	US\$ 219	-	US\$ 2,673
	Fannie Mae-Aces	"	-	-	US\$ -	-	US\$ 19,910	-	US\$ 18,513	US\$ 17,849	US\$ 664	-	US\$ 2,181
	FNMA TBA 30 Yr 3	"	-	-	US\$ -	-	US\$ 274,335	-	US\$ 272,691	US\$ 272,314	US\$ 377	-	US\$ 2,028
	FNMA Pool BM4493	"	-	-	US\$ 16,915	-	US\$ 1,795	-	US\$ 17,390	US\$ 17,262	US\$ 128	-	US\$ 1,588
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	US\$ -	-	US\$ 33,864	-	US\$ 33,705	US\$ 32,603	US\$ 1,102	-	US\$ 1,321
	Government National Mortgage Association	"	-	-	US\$ 16,485	-	US\$ 860	-	US\$ 17,209	US\$ 16,942	US\$ 267	-	US\$ 763
	Government National Mortgage Association	"	-	-	US\$ 10,590	-	US\$ 665	-	US\$ 10,652	US\$ 10,728	US\$ (76)	-	US\$ 640
	Fannie Mae or Freddie Mac	"	-	-	US\$ 360	-	US\$ 11,135	-	US\$ 11,138	US\$ 11,127	US\$ 11	-	US\$ 367
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,951	-	US\$ 20,336	US\$ 19,929	US\$ 407	-	US\$ -
	Government National Mortgage Association	"	-	-	US\$ 15,253	-	US\$ -	-	US\$ 15,929	US\$ 15,671	US\$ 258	-	US\$ -
	Government National Mortgage Association	"	-	-	US\$ 12,897	-	US\$ -	-	US\$ 13,248	US\$ 13,269	US\$ (21)	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 11,390	-	US\$ 11,544	US\$ 11,369	US\$ 175	-	US\$ -
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	US\$ -	-	US\$ 9,824	-	US\$ 10,426	US\$ 9,819	US\$ 607	-	US\$ -
	FED HMLN PC Pool G61603	"	-	-	US\$ 25,515	-	US\$ -	-	US\$ 25,966	US\$ 25,627	US\$ 339	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,788	-	US\$ 19,817	US\$ 19,783	US\$ 34	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 19,993	-	US\$ 20,102	US\$ 19,993	US\$ 109	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 31,117	-	US\$ 30,924	US\$ 31,115	US\$ (191)	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 19,999	-	US\$ 20,332	US\$ 19,982	US\$ 350	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 14,988	-	US\$ 15,037	US\$ 14,987	US\$ 50	-	US\$ -
	FNMA Pool BM4495	"	-	-	US\$ 27,324	-	US\$ -	-	US\$ 28,065	US\$ 27,635	US\$ 430	-	US\$ -
	FED HMLN PC Pool G61592	"	-	-	US\$ 21,507	-	US\$ -	-	US\$ 21,673	US\$ 21,448	US\$ 225	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 23,009	-	US\$ 23,035	US\$ 23,003	US\$ 32	-	US\$ -
	FED HMLN PC Pool G61654	"	-	-	US\$ 18,555	-	US\$ -	-	US\$ 18,883	US\$ 18,606	US\$ 277	-	US\$ -
	GNMA II Pool MA5468	"	-	-	US\$ 17,490	-	US\$ -	-	US\$ 17,460	US\$ 17,591	US\$ (131)	-	US\$ -
	Fannie Mae-Aces	"	-	-	US\$ -	-	US\$ 10,575	-	US\$ 11,022	US\$ 10,560	US\$ 462	-	US\$ -
	FNMA Pool CA2169	"	-	-	US\$ 13,859	-	US\$ -	-	US\$ 13,966	US\$ 13,892	US\$ 74	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 9,743	-	US\$ -	-	US\$ 9,881	US\$ 10,148	US\$ (267)	-	US\$ -
	FED HMLN PC Pool G61553	"	-	-	US\$ 15,045	-	US\$ -	-	US\$ 15,177	US\$ 15,109	US\$ 68	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	US\$ -	-	US\$ 10,296	-	US\$ 10,337	US\$ 10,289	US\$ 48	-	US\$ -
	FHLMC TBA 30 Yr 3	"	-	-	US\$ 15	-	US\$ 51,813	-	US\$ 52,028	US\$ 51,828	US\$ 200	-	US\$ -
	FNMA TBA 15 Yr 3.5	"	-	-	US\$ 2,020	-	US\$ 48,272	-	US\$ 50,364	US\$ 50,283	US\$ 81	-	US\$ -

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)
TSMC Global	Fannie Mae or Freddie Mac	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 13,314	-	US\$ 13,301	US\$ 13,314	US\$ (13)	-	US\$ -	
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ 76,846	-	US\$ 76,925	US\$ 76,846	US\$ 79	-	US\$ -	
	Freddie Mac Gold Pool	"	-	-	-	US\$ 16,687	-	US\$ 16,832	US\$ 16,668	US\$ 164	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 24,951	-	US\$ 25,391	US\$ 24,902	US\$ 489	-	US\$ -	
	Freddie Mac Gold Pool	"	-	-	-	US\$ 14,610	-	US\$ 14,728	US\$ 14,594	US\$ 134	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 61,366	-	US\$ 61,130	US\$ 61,332	US\$ (202)	-	US\$ -	
	GNMA II TBA 30 Yr 5	"	-	-	-	US\$ 12,209	-	US\$ 50,926	US\$ 50,878	US\$ 48	-	US\$ -	
	FNMA Pool CA2352	"	-	-	-	US\$ 25,130	-	US\$ 25,161	US\$ 25,104	US\$ 57	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 15,430	-	US\$ 15,615	US\$ 15,461	US\$ 154	-	US\$ -	
	GNMA II TBA 30 Yr 4	"	-	-	-	US\$ 2,129	-	US\$ 63,840	US\$ 63,791	US\$ 49	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 21,932	-	US\$ 22,196	US\$ 21,977	US\$ 219	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 40,059	-	US\$ 41,005	US\$ 41,421	US\$ (416)	-	US\$ -	
	FNMA Pool BM1948	"	-	-	-	US\$ 26,046	-	US\$ 26,835	US\$ 26,938	US\$ (103)	-	US\$ -	
	Freddie Mac Gold Pool	"	-	-	-	US\$ 15,441	-	US\$ 15,631	US\$ 15,460	US\$ 171	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 16,982	-	US\$ 17,040	US\$ 16,958	US\$ 82	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 12,893	-	US\$ 13,190	US\$ 12,889	US\$ 301	-	US\$ -	
	Fannie Mae Pool	"	-	-	-	US\$ 26,015	-	US\$ 26,560	US\$ 26,015	US\$ 545	-	US\$ -	
	FNMA Pool BM4681	"	-	-	-	US\$ 31,784	-	US\$ 32,259	US\$ 31,819	US\$ 440	-	US\$ -	
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	-	US\$ 10,877	-	US\$ 11,560	US\$ 11,380	US\$ 180	-	US\$ -	
	Asset-backed securities Hyundai Auto Receivables Trust	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 9,921	-	US\$ -	US\$ -	US\$ -	-	US\$ 9,925	
	Citibank Credit Card Issuance Trust	"	-	-	-	US\$ 68,487	-	US\$ 64,194	US\$ 64,146	US\$ 48	-	US\$ 7,321	
	American Express Credit Account Master Trust	"	-	-	-	US\$ 27,285	-	US\$ 26,647	US\$ 26,678	US\$ (31)	-	US\$ 2,070	
	American Express Credit Account Master Trust	"	-	-	-	US\$ 8,861	-	US\$ 10,143	US\$ 10,116	US\$ 27	-	US\$ 865	
	Discover Card Execution Note Trust	"	-	-	-	US\$ 37,495	-	US\$ 38,510	US\$ 38,529	US\$ (19)	-	US\$ -	
	Ford Credit Floorplan Master Owner Trust A	"	-	-	-	US\$ 26,702	-	US\$ 26,696	US\$ 26,748	US\$ (52)	-	US\$ -	
	Chase Issuance Trust	"	-	-	-	US\$ 43,604	-	US\$ 43,763	US\$ 43,697	US\$ 66	-	US\$ -	

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

(Concluded)

TABLE 5

Taiwan Semiconductor Manufacturing Company Limited and Investees

ACQUISITION OF INDIVIDUAL REAL ESTATE PROPERTIES AT COSTS OF AT LEAST NTS300 MILLION OR 20% OF THE PAID-IN CAPITAL FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab	September 11, 2018 to August 12, 2019	\$ 1,008,210	Monthly settlement by the construction progress and acceptance	KEDGE Construction Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None
	Fab	March 25, 2019	888,800	Monthly settlement by the construction progress and acceptance	PAN ASIA Corp.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None
	Fab	June 27, 2019 to October 2, 2019	348,935	Based on the terms in the purchase order	Fu Tsu Construction Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None
	Fab	November 12, 2019	74,800,000	Based on the terms in the purchase order	72 counterparties, including: Lead-Fu Industrials Corporation San Fu Chemical Co., Ltd. Chenfull International Co., Ltd. Shihlin Electric & Engineering Corporation TASA Construction Corporation China Steel Structure Co., Ltd. Capital Machinery Limited Fu Tsu Construction Co., Ltd. Mandartech Interiors Inc. Techgo Industrial Co., Ltd. Ovivo Taiwan Co., Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Zhao-Cheng Corp.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms		
							Owner	Relationships	Transfer Date	Amount					
TSMC	Fab				Jlmm-Clean-Air Solution Tech.Services Co., Ltd. Mega Union Technology Incorporated Am-Power Machine International Enterprise Co., Ltd. Marketech International Corp. ABB Ltd. Siemens Limited Huang Luei Process Industry Co., Ltd. Jusun Instruments Co., Ltd. Weltall Technology Corporation Allis Electric Co., Ltd. Air Liquide Far Eastern Ltd. L&K Engineering Co., Ltd. Hsieh Kun Co., Ltd. Taiwan Puritic Corp. Solomon Technology Corporation Exyte Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Evergreen Steel Corporation Atlas Copco Taiwan Ltd. Trusval Technology Co., Ltd. Yangtech Engineering Co., Ltd. Schneider Electric Taiwan Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Swift Engineering Co., Ltd. Chen Yuan International Co., Ltd. Uangyih-Tech Industrial Co., Ltd. Kedge Construction Co., Ltd. Taiwan Gleno Enterprise Co., Ltd.										

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab				Unelectra International Corp. JG Environmental Technology Co., Ltd. Fortune Electric Co., Ltd. Desiccant Technology Corporation Organo Technology Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) Da-Cin Construction Co., Ltd. Wholetech System Hitech Limited United Integrated Services Co., Ltd. Hantech Engineering Co., Ltd. Kinetics Technology Corporation Versum Materials Taiwan Co., Ltd. Confederate Technology Co., Ltd. Atlas Technology Corp. Accudevice Co., Ltd.								

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Investees

TOTAL PURCHASES FROM OR SALES TO RELATED PARTIES OF AT LEAST NT\$100 MILLION OR 20% OF THE PAID-IN CAPITAL FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Transaction Details			Abnormal Transaction		Notes/Accounts Payable or Receivable		Note	
			Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)		% to Total
TSMC	TSMC North America GUC	Subsidiary Associate	Sales	\$ 636,441,507	58	Net 30 days from invoice date (Note)	-	(Note)	\$ 81,732,281	62	
			Sales	4,024,495	-	Net 30 days from the end of the month of when invoice is issued	-	-	458,292	-	
	TSMC Nanjing	Subsidiary	Purchases	16,970,404	18	Net 30 days from the end of the month of when invoice is issued	-	-	(1,266,002)	3	
			Purchases	16,584,706	17	Net 30 days from the end of the month of when invoice is issued	-	-	(1,538,971)	4	
	Wafer/tech	Indirect subsidiary	Purchases	6,864,201	7	Net 30 days from the end of the month of when invoice is issued	-	-	(1,097,625)	3	
	SSMC	Associate	Purchases	3,208,817	4	Net 30 days from the end of the month of when invoice is issued	-	-	(487,944)	1	
	VIS	Associate	Purchases	3,092,600	3	Net 30 days from the end of the month of when invoice is issued	-	-	(153,977)	-	
TSMC North America	GUC	Associate of TSMC	Sales	1,628,944 (US\$ 52,821)	-	Net 30 days from invoice date	-	-	283,472 (US\$ 9,453)	-	
VisEra Tech	Xintec	Associate of TSMC	Sales	571,537	17	Net 30 days from the end of the month of when invoice is issued	-	-	120,172	18	

Note : The tenor is 30 days from TSMC's invoice date or determined by the payment terms granted to its clients by TSMC North America.

Taiwan Semiconductor Manufacturing Company Limited and Investees

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NTS100 MILLION OR 20% OF THE PAID-IN CAPITAL
DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Amount	Overdue		Amounts Received in Subsequent Period	Allowance for Bad Debts
						Amount	Action Taken		
TSMC	TSMC North America	Subsidiary	\$ 82,535,007	48	\$ 1,109,577	-	-	\$ 30,688,822	\$ -
	TSMC Nanjing	Subsidiary	101,559	Note 2	-	-	-	-	-
	GUC	Associate	458,292	38	32,753	-	-	32,753	-
TSMC North America	GUC	Associate of TSMC	284,674 (US\$ 9,493)	45	24,377 (US\$ 813)	-	-	24,377 (US\$ 813)	-
	TSMC China	The same parent company	24,200,839 (RMB 5,621,827)	Note 2	-	-	-	-	-
TSMC Nanjing	TSMC	Parent company	1,538,971 (RMB 357,502)	32	-	-	-	-	-
	TSMC	Parent company	1,266,002 (RMB 294,092)	19	-	-	-	-	-
VisEra Tech	Ximtec	Associate of TSMC	120,172	36	-	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	249,993 (US\$ 8,336)	Note 2	-	-	-	-	-
	WaferTech	The ultimate parent of the Company	1,097,625 (US\$ 36,602)	59	598,169 (US\$ 19,947)	-	-	598,169 (US\$ 19,947)	-

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

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

Taiwan Semiconductor Manufacturing Company Limited and Investees

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEE OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
FOR THE YEAR ENDED DECEMBER 31, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2019			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2019 (Foreign Currencies in Thousands)	December 31, 2018 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC	TSMC Global TSMC Partners	Tortola, British Virgin Islands Tortola, British Virgin Islands	Investment activities Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	\$355,162,309 31,456,130	\$355,162,309 31,456,130	11 988,268	100 100	\$397,737,270 53,388,267	\$ 11,592,187 2,202,709	Subsidiary Subsidiary	
		Hsin-Chu, Taiwan	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	10,180,677	464,223	28	9,027,572	5,860,497	Associate	
	SSMC	Singapore	Manufacturing and selling of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	6,502,174	2,286,743	Associate	
		San Jose, California, U.S.A.	Selling and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	4,569,825	416,366	Subsidiary	
	VisEra Tech	Hsin-Chu, Taiwan	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	5,005,171	5,005,171	253,120	87	4,541,741	613,841	Subsidiary	
		Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	1,846,145	181,978	Associate	
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	1,284,377	633,467	Associate	
		TSMC Europe VTAF III	Amsterdam, the Netherlands Cayman Islands	Customer service and supporting activities Investing in new start-up technology companies	15,749 1,318,846	15,749 1,308,244	- -	100 98	462,479 231,504	37,621 1,168	Subsidiary Subsidiary
	TSMC Japan VTAF II	Yokohama, Japan Cayman Islands	Customer service and supporting activities Investing in new start-up technology companies	83,760 260,300	83,760 278,800	6 -	100 98	142,620 75,095	3,254 (3,340)	Subsidiary Subsidiary	
		TSMC Korea TSMC Solar Europe GmbH	Seoul, Korea Hamburg, Germany	Customer service and supporting activities Selling of solar related products and providing customer service	13,656 -	13,656 25,266	80 -	100 -	40,727 -	2,196 -	Subsidiary Subsidiary
	TSMC Partners	TSMC Development TSMC Technology	Delaware, U.S.A.	Investing in companies involved in the manufacturing related business in the semiconductor industry	17,601,121 (US\$ 586,939)	17,601,121 (US\$ 586,939)	- -	100	29,825,099 (US\$ 994,568)	1,338,673 (US\$ 43,339)	Subsidiary
			Delaware, U.S.A.	Engineering support activities	428,289 (US\$ 14,282)	428,289 (US\$ 14,282)	- -	100	670,538 (US\$ 22,360)	100,661 (US\$ 3,264)	Subsidiary
TSMC Canada	ISDF	Ontario, Canada	Engineering support activities	68,972 (US\$ 2,300)	68,972 (US\$ 2,300)	2,300	100	239,150 (US\$ 7,975)	30,494 (US\$ 987)	Subsidiary	
		Cayman Islands	Investing in new start-up technology companies	- (US\$ 475)	14,250 (US\$ 475)	583	97	- (US\$ -)	10 (US\$ -)	Subsidiary	
VTAF III	Growth Fund Mutual-Pak	Cayman Islands	Investing in new start-up technology companies	-	-	9,299	97	-	-	Subsidiary	
		Cayman Islands	Investing in new start-up technology companies	75,083 (US\$ 2,504)	64,587 (US\$ 2,154)	- -	100	124,648 (US\$ 4,157)	(1,351) (US\$ (44))	Subsidiary	
		New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	47,781 (US\$ 1,593)	47,781 (US\$ 1,593)	4,693	28	38,520 (US\$ 1,285)	20,941 (US\$ 671)	Associate	

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2019			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2019 (Foreign Currencies in Thousands)	December 31, 2018 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC Development	WaterTech	Washington, U.S.A	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	\$ -	\$ -	293,637	100	4,402,646 (US\$ 146,814)	843,483 (US\$ 27,326)	Note 2	Subsidiary

Note 1: The share of profits/losses of investee includes the effect of unrealized gross profit on intercompany transactions.

Note 2: The share of profits/losses of the investee company is not reflected herein as such amount is already included in the share of profits/losses of the investor company.

(Concluded)

TABLE 9

Taiwan Semiconductor Manufacturing Company Limited and Investees

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR YEAR ENDED DECEMBER 31, 2019

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

Investee Company	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Accumulated Outflow of Investment from January 1, 2019 (US\$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from December 31, 2019 (US\$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of December 31, 2019	Accumulated Inward Remittance of Earnings as of December 31, 2019
					Outflow (US\$ in Thousands)	Inflow						
TSMC China	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	\$ 18,939,667 (RMB 4,502,080)	Note 1	\$ 18,939,667 (US\$ 596,000)	\$ -	\$ -	\$ 18,939,667 (US\$ 596,000)	\$ 4,037,216	100%	\$ 4,070,094 (Note 2)	\$ 57,289,154	\$ -
TSMC Nanjing	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	30,521,412 (RMB 6,650,119)	Note 1	30,521,412 (US\$ 1,000,000)	-	-	30,521,412 (US\$ 1,000,000)	1,289,672	100%	1,213,021 (Note 2)	21,364,939	-

Accumulated Investment in Mainland China as of December 31, 2019 (US\$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US\$ in Thousands)	Upper Limit on Investment
\$ 49,461,079 (US\$ 1,596,000)	\$ 119,412,667 (US\$ 3,596,000)	\$ 973,257,256 (Note 3)

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

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

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

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Taiwan Semiconductor Manufacturing Company Limited**STATEMENT OF CASH AND CASH EQUIVALENTS****DECEMBER 31, 2019****(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)**

Item	Description	Amount
Cash		
Petty cash		\$ 460
Cash in banks		
Checking accounts and demand deposits		5,497,624
Foreign currency deposits	Including US\$385,487 thousand @29.988, JPY3,439,861 thousand @0.2751 and EUR2,327 thousand @33.653	12,584,607
Time deposits	From 2019.10.01 to 2020.10.14, interest rates at 0.19%-2.40%, including NT\$115,277,800 thousand and US\$269,781 thousand @29.988	<u>123,368,007</u>
Total		<u>\$ 141,450,698</u>

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NOTES AND ACCOUNTS RECEIVABLE, NET

DECEMBER 31, 2019

(In Thousands of New Taiwan Dollars)

Client Name	Amount
Client A	\$ 20,435,306
Client B	4,419,372
Client C	3,914,138
Client D	3,375,702
Others (Note)	<u>17,299,460</u>
	49,443,978
Less: Loss allowance	<u>(319,045)</u>
Total	<u>\$ 49,124,933</u>

Note: The amount of individual client included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF RECEIVABLES FROM RELATED PARTIES

DECEMBER 31, 2019

(In Thousands of New Taiwan Dollars)

Client Name	Amount
TSMC North America	\$ 81,732,281
Others (Note)	<u>462,220</u>
Total	<u>\$ 82,194,501</u>

Note: The amount of individual client included in others does not exceed 5% of the account balance.

STATEMENT 4**Taiwan Semiconductor Manufacturing Company Limited****STATEMENT OF INVENTORIES****DECEMBER 31, 2019****(In Thousands of New Taiwan Dollars)**

Item	Amount	
	Cost	Net Realizable Value
Finished goods	\$ 8,533,179	\$ 25,069,823
Work in process	49,268,466	236,694,719
Raw materials	15,046,116	14,064,902
Supplies and spare parts	<u>3,416,090</u>	<u>3,591,225</u>
Total	<u>\$ 76,263,851</u>	<u>\$ 279,420,669</u>

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGES IN INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD
FOR THE YEAR ENDED DECEMBER 31, 2019
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investees	Balance, January 1, 2019		Additions in Investment		Decrease in Investment		Increase (Decrease) in Using the Equity Method		Balance, December 31, 2019		Market Value or Net Assets Value		
	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Amount (Note 2)	Shares (In Thousands)	%	Amount	Unit Price (NT\$)	Total Amount	Collateral
Stocks													
TSMC Global	11	\$ 393,577,931	-	-	-	\$ -	\$ 4,159,339	11	100	\$ 397,737,270		\$ 397,737,270	Nil
TSMC Partners	988,268	52,339,094	-	-	-	-	1,049,173	988,268	100	53,388,267		53,455,518	Nil
VIS	464,223	9,006,126	-	-	-	-	21,446	464,223	28	9,027,572	\$ 79 (Note 1)	36,812,923	Nil
SSMC	314	5,772,815	-	-	-	-	729,359	314	39	6,502,174		6,288,190	Nil
TSMC North America	11,000	4,269,393	-	-	-	-	300,432	11,000	100	4,569,825		4,569,825	Nil
VisEra Tech	253,120	4,531,929	-	-	-	-	9,812	253,120	87	4,541,741		4,508,249	Nil
Xintec	111,282	1,764,607	-	-	-	-	81,538	111,282	41	1,846,145		8,958,195	Nil
GUC	46,688	1,299,423	-	-	-	-	(15,046)	46,688	35	1,284,377		11,251,774	Nil
TSMC Europe	-	445,828	-	-	-	-	16,651	-	100	462,479		462,479	Nil
TSMC Japan	6	141,136	-	-	-	-	1,484	6	100	142,620		142,620	Nil
TSMC Korea	80	40,966	-	-	-	-	(239)	80	100	40,727		40,727	Nil
TSMC Solar Europe GmbH	1	(20,106)	-	-	(1)	(1)	20,106	-	-	479,543,197		524,227,770	Nil
Subtotal		473,169,142					6,354,257						
Capital													
TSMC China	-	55,466,911	-	-	-	-	1,822,243	-	100	57,289,154		57,358,467	Nil
TSMC Nanjing	-	20,601,413	-	-	-	-	763,526	-	100	21,364,939		21,408,850	Nil
VTAF III	-	194,660	-	10,602	-	-	26,242	-	98	231,504		208,227	Nil
VTAF II	-	128,758	-	-	-	(18,500)	(35,163)	-	98	75,095		68,848	Nil
Subtotal		76,391,742		10,602		(18,500)	2,576,848			78,960,692		79,044,392	
Total		\$ 549,560,884		\$ 10,602		\$ (18,500)	\$ 8,931,105			\$ 558,503,889		\$ 603,272,162	

Note 1: The unit price is calculated by closing price of the Taipei Exchange or the TWSE as of December 31, 2019.

Note 2: Mainly including share of profit or loss of subsidiaries and associates, share of other comprehensive income of subsidiaries and associates, cash dividends received from subsidiaries and associates, liquidation amount of subsidiaries and associates, etc.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGE IN RIGHT-OF-USE ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2019
(In Thousands of New Taiwan Dollars)

Item	Land	Buildings	Machinery and Equipment	Office Equipment	Total	Remark
Cost						
Balance at January 1, 2019	\$ -	-	\$ -	-	\$ -	
Adjustments arising from initial application of accounting standards	14,825,426	429,023	2,559,303	17,505	17,831,257	
Additions	536,552	88,403	-	14,924	639,879	
Deductions	(593,427)	(8,717)	-	(1,865)	(604,009)	
Transfers out of right-of-use assets	-	-	(619,779)	-	(619,779)	
Balance at December 31, 2019	\$ 14,768,551	\$ 508,709	\$ 1,939,524	\$ 30,564	\$ 17,247,348	
Accumulated depreciation						
Balance at January 1, 2019	\$ -	-	\$ -	-	\$ -	
Additions	944,052	105,873	1,184,374	10,154	2,244,453	
Deductions	(5,700)	-	(20,659)	(766)	(6,466)	
Transfers out of right-of-use assets	-	-	-	-	(20,659)	
Balance at December 31, 2019	\$ 938,352	\$ 105,873	\$ 1,163,715	\$ 9,388	\$ 2,217,328	
Carrying amounts at December 31, 2019	\$ 13,830,199	\$ 402,836	\$ 775,809	\$ 21,176	\$ 15,030,020	

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF SHORT-TERM LOANS
DECEMBER 31, 2019

(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Type	Balance, End of Year	Contract Period	Range of Interest Rates (%)	Loan Commitments	Collateral	Remark
Unsecured loans						
Crédit Agricole CIB	\$ 25,071,485	2019.09.27-2020.05.25	0.01	USD 1,100,000	Nil	-
Bank of America	14,994,000	2019.11.19-2020.01.14	2.16	USD 600,000	Nil	-
DBS	14,840,973	2019.10.30-2020.04.07	0.01	USD 500,000	Nil	-
Sumitomo Mitsui Banking Corporation	13,194,720	2019.11.08-2020.01.13	2.19-2.20	USD 500,000	Nil	-
Megabank	10,495,800	2019.11.06-2020.01.06	2.08-2.10	TWD 12,000,000	Nil	-
ING Bank N.V.	7,538,272	2019.12.27-2020.05.25	0.01	USD 1,000,000	Nil	-
Standard Chartered Bank	7,497,000	2019.12.04-2020.01.06	2.08	USD 450,000	Nil	-
First Commercial Bank	6,597,360	2019.11.08-2020.01.08	2.15	TWD 9,000,000	Nil	-
JPMorgan Chase Bank N.A.	5,697,720	2019.11.27-2020.01.09	2.22	USD 200,000	Nil	-
Citibank Taiwan	4,198,320	2019.11.08-2020.01.10	2.15	USD 145,000	Nil	-
Hua Nan Commercial Bank Ltd.	3,598,560	2019.12.05-2020.01.06	2.1	TWD 4,000,000	Nil	-
BNP Paribas Taiwan	1,799,280	2019.11.19-2020.01.13	2.16	USD 75,000	Nil	-
Citibank Taipei	1,499,400	2019.11.08-2020.01.07	2.15	USD 555,000	Nil	-
The Bank of Tokyo-Mitsubishi UFJ, Ltd.	1,499,400	2019.11.27-2020.01.09	2.22	USD 300,000	Nil	-
Subtotal	118,522,290					
Related parties						
TSMC Global	29,988,000	2019.07.18-2020.07.17	-	USD 1,000,000	Nil	-
Total	<u>\$148,510,290</u>					

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCOUNTS PAYABLES

DECEMBER 31, 2019

(In Thousands of New Taiwan Dollars)

Accounts payables was NT\$36,029,135 thousands. The amount of individual vendor does not exceed 5% of the account balance.

STATEMENT 9

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF PAYABLES TO RELATED PARTIES

DECEMBER 31, 2019

(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
TSMC China	\$ 1,538,971
TSMC Nanjing	1,266,002
WaferTech	1,097,625
Xintec	736,747
SSMC	487,944
Others (Note)	<u>589,346</u>
Total	<u>\$ 5,716,635</u>

Note: The amount of individual vendor in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited**STATEMENT OF PAYABLES TO CONTRACTORS AND EQUIPMENT SUPPLIERS****DECEMBER 31, 2019****(In Thousands of New Taiwan Dollars)**

Vendor Name	Amount
Vendor A	\$ 30,277,721
Vendor B	23,758,769
Vendor C	12,331,155
Vendor D	10,909,698
Vendor E	8,523,195
Others (Note)	<u>53,953,953</u>
Total	<u>\$ 139,754,491</u>

Note: The amount of individual vendor included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited**STATEMENT OF LEASE LIABILITIES****DECEMBER 31, 2019****(In Thousands of New Taiwan Dollars)**

Item	Description	Lease Term	Discount Rate (%)	Balance, End of Year
Land	Mainly for the use of plants and offices	2 to 22 years	0.67-0.94	\$ 13,882,035
Buildings	Mainly for the use of offices	2 to 6 years	0.67-0.71	397,849
Machinery and equipment	For operation use	2 years	3.24	842,185
Office equipment	For operation use	1 to 3 years	0.64-0.71	<u>21,750</u>
				15,143,819
Less: Current portion				<u>(1,843,556)</u>
Noncurrent portion				<u>\$ 13,300,263</u>

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

DECEMBER 31, 2019

(In Thousands of New Taiwan Dollars)

Item	Amount
Refund liability	\$ 17,673,937
Contract liabilities	4,095,915
Utilities	2,758,347
Others (Note)	<u>18,583,433</u>
Total	<u>\$ 43,111,632</u>

Note: The amount of each item in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF BONDS PAYABLE
DECEMBER 31, 2019
(In Thousands of New Taiwan Dollars)

Bonds Name	Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Amount			Collateral
					Total Amount	Repayment paid	Balance, End of Year (Carrying Value)	
Domestic unsecured bonds-100-2 -B	Mega International Commercial Bank Co., Ltd.	2012.01.11	On 01.11 annually	1.46	\$ 7,000,000	\$ 7,000,000	\$ -	Bullet repayment Nil
Domestic unsecured bonds-101-1 -B	Mega International Commercial Bank Co., Ltd.	2012.08.02	On 08.02 annually	1.40	9,000,000	9,000,000	-	Bullet repayment Nil
Domestic unsecured bonds-101-2 -B	Taipei Fubon Commercial Bank Co., Ltd.	2012.09.26	On 09.26 annually	1.39	9,000,000	9,000,000	-	Bullet repayment Nil
Domestic unsecured bonds-101-3 Domestic unsecured bonds-101-4	Taipei Fubon Commercial Bank Co., Ltd.	2012.10.09	On 10.09 annually	1.53	4,400,000	-	4,400,000	Bullet repayment Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2013.01.04	On 01.04 annually	1.35	10,000,000	-	10,000,000	Bullet repayment Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2013.01.04	On 01.04 annually	1.49	3,000,000	-	3,000,000	Bullet repayment Nil
Domestic unsecured bonds-102-1 -B	Taipei Fubon Commercial Bank Co., Ltd.	2013.02.06	On 02.06 annually	1.38	11,600,000	-	11,600,000	Bullet repayment Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2013.02.06	On 02.06 annually	1.50	3,600,000	-	3,600,000	Bullet repayment Nil
Domestic unsecured bonds-102-2 -A	Taipei Fubon Commercial Bank Co., Ltd.	2013.07.16	On 07.16 annually	1.50	10,200,000	-	10,200,000	Bullet repayment Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2013.07.16	On 07.16 annually	1.70	3,500,000	-	3,500,000	Bullet repayment Nil
Domestic unsecured bonds-102-3 -B	Taipei Fubon Commercial Bank Co., Ltd.	2013.08.09	On 08.09 annually	1.52	8,500,000	8,500,000	-	Bullet repayment Nil
Domestic unsecured bonds-102-4 -C	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	1.60	1,400,000	1,400,000	-	Bullet repayment Nil
-D	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	1.85	2,600,000	-	2,600,000	Bullet repayment Nil
-E	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	2.05	5,400,000	-	5,400,000	Bullet repayment Nil
-F	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	2.10	2,600,000	-	2,600,000	Bullet repayment Nil
TOTAL					\$ 91,800,000	\$ 34,900,000	56,900,000	
Less: current portion							(31,800,000)	
							\$ 25,100,000	

Taiwan Semiconductor Manufacturing Company Limited**STATEMENT OF NET REVENUE****FOR THE YEAR ENDED DECEMBER 31, 2019****(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)**

Item	Shipments (Piece) (Note)	Amount
Wafer	10,050,665	\$ 921,095,318
Other		<u>138,551,475</u>
Net revenue		<u>\$ 1,059,646,793</u>

Note: 12-inch equivalent wafers.

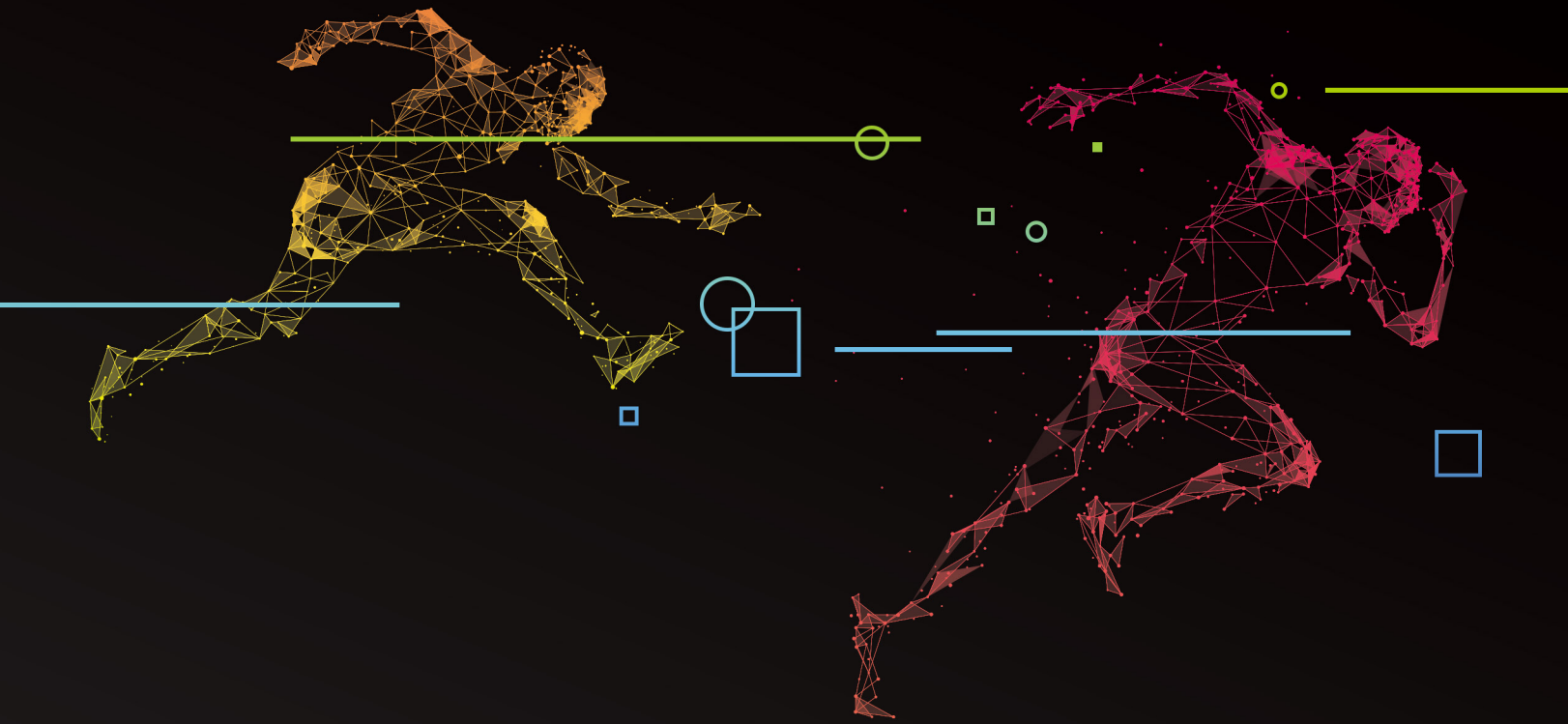
Taiwan Semiconductor Manufacturing Company Limited**STATEMENT OF COST OF REVENUE
FOR THE YEAR ENDED DECEMBER 31, 2019
(In Thousands of New Taiwan Dollars)**

Item	Amount
Raw materials used	
Balance, beginning of year	\$ 14,110,534
Raw material purchased	46,165,054
Raw materials, end of year	(15,046,116)
Transferred to manufacturing or operating expenses	(8,192,083)
Others	(247,853)
Subtotal	36,789,536
Direct labor	13,679,542
Manufacturing expenses	473,793,547
Manufacturing cost	524,262,625
Work in process, beginning of year	70,405,998
Work in process, end of year	(49,268,466)
Transferred to manufacturing or operating expenses	(24,537,651)
Cost of finished goods	520,862,506
Finished goods, beginning of year	10,920,351
Finished goods purchased	49,626,845
Finished goods, end of year	(8,533,179)
Transferred to manufacturing or operating expenses	(12,000,597)
Scrapped	(308,304)
Subtotal	560,567,622
Others	18,939,425
 Total	 <u>\$ 579,507,047</u>

Taiwan Semiconductor Manufacturing Company Limited**STATEMENT OF OPERATING EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 2019
(In Thousands of New Taiwan Dollars)**

Item	Research and Development Expenses	General and Administrative Expenses	Selling Expenses
Payroll and related expense	\$ 28,605,548	\$ 7,310,041	\$ 2,141,162
Depreciation expense	23,129,545	1,113,860	42,164
Consumables	22,820,487	363,967	619
Repair and maintenance expense	4,429,076	1,228,740	441
Service fee	19,426	2,101,536	14,681
Management fees of the Science Park Administration	-	1,928,907	-
Patents	-	1,726,083	-
Commission	-	-	859,045
Others (Note)	<u>11,478,733</u>	<u>4,580,193</u>	<u>173,665</u>
Total	<u>\$ 90,482,815</u>	<u>\$ 20,353,327</u>	<u>\$ 3,231,777</u>

Note: The amount of each item in others does not exceed 5% of the account balance.



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Taiwan Semiconductor Manufacturing Company, Ltd.



Mark Liu, Chairman