TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD
Form 6-K
March 04, 2019

1934 Act Registration No. 1-14700

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER

PURSUANT TO RULE 13a-16 OR 15d-16

OF THE SECURITIES EXCHANGE ACT OF 1934

For the month of February 2019

Taiwan Semiconductor Manufacturing Company Ltd.

(Translation of Registrant s Name Into English)

No. 8, Li-Hsin Rd. 6,

Hsinchu Science Park,

Taiwan

(Address of Principal Executive Offices)

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

Form 20-F Form 40-F

(Indicate by check mark whether the registrant by furnishing the information contained in this form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.)

Yes No

(If Yes is marked, indicated below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82: .)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Taiwan Semiconductor Manufacturing Company Ltd.

Date: February 27, 2019

By /s/ Lora Ho
Lora Ho
Senior Vice President & Chief Financial Officer

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

Consolidated Financial Statements for the

Years Ended December 31, 2018 and 2017 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, 2018, 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 19, 2019

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 subsidiaries (the Company), which comprise the consolidated balance sheets as of December 31, 2018 and 2017, 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, 2018 and 2017, 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, 2018. 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, 2018 are stated as follows:

Estimate for sales returns and allowances

In consideration of business volume and market conditions, the Company provides a variety of business incentives to specific customers or products. The estimate for sales returns and allowance is based on historical experience and the varying contractual terms. Please refer to Notes 4, 5 and 26 to the consolidated financial statements for the details of the information about estimate for sales returns and allowances. Since the estimate for sales returns and allowances is subject to accounting judgment and estimation, and the result could also affect the net revenue in the consolidated financial statements, it has been identified as a key audit matter.

Our key audit procedures performed in respect of the above area included the following:

1. Understood and tested the design and operating effectiveness of the key controls over estimate for sales returns and allowances;

2. Understood and assessed the reasonableness of assumptions made and methodology used in estimating sales returns and allowances;

3. Sampled and inspected the sales contracts of main products by agreeing the contractual terms and performed an analysis to challenge the estimation on possibility that specific products could meet business incentives condition to verify the reasonableness of the accrual of the sales returns and allowances;

4. Performed a retrospective review to comparatively analyze the historical accuracy of judgments with reference to actual sales returns and allowance paid.

Timing to commence depreciation of property, plant and equipment (PP&E)

The Company continues to invest in capital expenditures to develop and build capacity in leading-edge technologies to meet customers demand. Please refer to Notes 4, 5 and 17 to the consolidated financial statements for the details of the information and accounting policy about the depreciation of PP&E. According to IAS 16, depreciation of PP&E begins when the assets are available for use, and in the condition necessary for the assets to be capable of operating in the intended manner. Due to the significant capital expenditures of the Company, and the criteria to determine whether such assets are available for their intended use vary within categories of assets as well as involve subjective judgments, the validity of the timing to commence depreciation of PP&E could have a material impact on its financial performance. Consequently, the validity of the timing to commence depreciation of PP&E is identified as a key audit matter.

Our key audit procedures performed in respect of the above area included the following:

1. Understood and tested the design and operating effectiveness of the key controls over the timing to commence depreciation of PP&E;

2. Understood the criteria the assets are defined as available for their intended use and the corresponding accounting treatments;

3. Sampled and reviewed the appropriateness of the timing for commencing depreciation after the assets met the criteria of available for use in current year;

4. Performed an observation on the physical count of equipment under installation and construction in progress; sampled and inspected the supporting documentation to verify that the status of equipment under installation and construction in progress are not available for use;

5. Sampled equipment under installation and construction in progress which met the criteria of available for use and were transferred in the subsequent period to evaluate the reasonableness of the timing for commencing depreciation;

6. Sampled and reviewed the appropriateness of the equipment under installation and construction in progress which are not available for their intended use.

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, 2018 and 2017 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, 2018 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 19, 2019

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, 2018		December 31, 2017	
ASSETS	**Amount**	**%**	**Amount**	**%**
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	$ 577,814,601	28	$ 553,391,696	28
Financial assets at fair value through profit or loss (Note 7)	3,504,590		569,751	
Financial assets at fair value through other comprehensive income (Note 8)	99,561,740	5		
Available-for-sale financial assets (Note 9)			93,374,153	5
Held-to-maturity financial assets (Note 10)			1,988,385	
Financial assets at amortized cost (Note 11)	14,277,615	1		
Hedging derivative financial assets (Note 13)			34,394	
Hedging financial assets (Note 13)	23,497			
Notes and accounts receivable, net (Note 14)	128,613,391	6	121,133,248	6
Receivables from related parties (Note 37)	584,412		1,184,124	
Other receivables from related parties (Note 37)	65,028		171,058	
Inventories (Notes 5, 15 and 41)	103,230,976	5	73,880,747	4
Other financial assets (Note 38)	18,597,448	1	7,253,114	
Other current assets (Note 19)	5,406,423		4,222,440	
Total current assets	951,679,721	46	857,203,110	43
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income (Notes 5 and 8)	3,910,681			
Held-to-maturity financial assets (Note 10)			18,833,329	1
Financial assets at amortized cost (Note 11)	7,528,277			
Financial assets carried at cost (Note 12)			4,874,257	
Investments accounted for using equity method (Notes 5 and 16)	17,865,838	1	17,861,488	1
Property, plant and equipment (Notes 5 and 17)	1,072,050,279	51	1,062,542,322	53
Intangible assets (Notes 5 and 18)	17,002,137	1	14,175,140	1
Deferred income tax assets (Notes 5 and 31)	16,806,387	1	12,105,463	1
Refundable deposits	1,700,071		1,283,414	
Other noncurrent assets (Note 19)	1,584,647		2,983,120	
Total noncurrent assets	1,138,448,317	54	1,134,658,533	57
TOTAL	$ 2,090,128,038	100	$ 1,991,861,643	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				

Short-term loans (Notes 20 and 34)	$ 88,754,640	4	$ 63,766,850	3
Financial liabilities at fair value through profit or loss (Note 7)	40,825		26,709	
Hedging derivative financial liabilities (Note 13)			15,562	
Hedging financial liabilities (Note 13)	155,832			
Accounts payable	32,980,933	2	28,412,807	1
Payables to related parties (Note 37)	1,376,499		1,656,356	
Salary and bonus payable	14,471,372	1	14,254,871	1
Accrued profit sharing bonus to employees and compensation to directors and supervisors (Notes 25 and 33)	23,981,154	1	23,419,135	1
Payables to contractors and equipment suppliers	43,133,659	2	55,723,774	3
Income tax payable (Notes 5 and 31)	38,987,053	2	33,479,311	2
Provisions (Notes 5 and 21)			13,961,787	1
Long-term liabilities - current portion (Note 22)	34,900,000	2	58,401,122	3
Accrued expenses and other current liabilities (Notes 5, 24, 26 and 34)	61,760,619	3	65,588,396	3
Total current liabilities	340,542,586	17	358,706,680	18
NONCURRENT LIABILITIES				
Bonds payable (Notes 22 and 34)	56,900,000	3	91,800,000	5
Deferred income tax liabilities (Notes 5 and 31)	233,284		302,205	
Net defined benefit liability (Notes 5 and 23)	9,651,405		8,850,704	1
Guarantee deposits (Notes 24 and 34)	3,353,378		7,586,790	
Others	1,950,989		1,855,621	
Total noncurrent liabilities	72,089,056	3	110,395,320	6
Total liabilities	412,631,642	20	469,102,000	24
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 25)	259,303,805	12	259,303,805	13
Capital surplus (Note 25)	56,315,932	3	56,309,536	3
Retained earnings (Note 25)				
Appropriated as legal capital reserve	276,033,811	13	241,722,663	12
Appropriated as special capital reserve	26,907,527	1		
Unappropriated earnings	1,073,706,503	52	991,639,347	49
	1,376,647,841	66	1,233,362,010	61
Others (Note 25)	(15,449,913)	(1)	(26,917,818)	(1)
Equity attributable to shareholders of the parent	1,676,817,665	80	1,522,057,533	76
NON - CONTROLLING INTERESTS	678,731		702,110	
Total equity	1,677,496,396	80	1,522,759,643	76
TOTAL	$ 2,090,128,038	100	$ 1,991,861,643	100

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)

	2018		2017	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 26, 37 and 45)	$ 1,031,473,557	100	$ 977,447,241	100
COST OF REVENUE (Notes 5, 15, 33, 37 and 41)	533,487,516	52	482,616,286	49
GROSS PROFIT BEFORE UNREALIZED GROSS PROFIT ON SALES TO ASSOCIATES	497,986,041	48	494,830,955	51
UNREALIZED GROSS PROFIT ON SALES TO ASSOCIATES	(111,788)		(4,553)	
GROSS PROFIT	497,874,253	48	494,826,402	51
OPERATING EXPENSES (Notes 5, 33 and 37)				
Research and development	85,895,569	8	80,732,463	8
General and administrative	20,265,883	2	21,196,717	2
Marketing	5,987,828	1	5,972,488	1
Total operating expenses	112,149,280	11	107,901,668	11
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 17, 18, 27 and 33)	(2,101,449)		(1,365,511)	(1)
INCOME FROM OPERATIONS (Note 45)	383,623,524	37	385,559,223	39
NON-OPERATING INCOME AND EXPENSES				
Share of profits of associates	3,057,781		2,985,941	1
Other income (Note 28)	14,852,814	2	9,610,294	1
Foreign exchange gain (loss), net (Note 43)	2,438,171		(1,509,473)	
Finance costs (Note 29)	(3,051,223)		(3,330,313)	
Other gains and losses, net (Note 30)	(3,410,804)		2,817,358	
Total non-operating income and expenses	13,886,739	2	10,573,807	2
INCOME BEFORE INCOME TAX	397,510,263	39	396,133,030	41
INCOME TAX EXPENSE (Notes 5 and 31)	46,325,857	5	52,986,182	6
NET INCOME	351,184,406	34	343,146,848	35

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

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

	2018		2017	
	Amount	%	Amount	%
OTHER COMPREHENSIVE INCOME (LOSS) (Notes 5, 23, 25 and 31)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	$ (861,162)		$ (254,681)	
Unrealized loss on investments in equity instruments at fair value through other comprehensive income	(3,309,089)			
Gain on hedging instruments	40,975			
Share of other comprehensive loss of associates	(14,217)		(20,853)	
Income tax benefit related to items that will not be reclassified subsequently	195,729		30,562	
	(3,947,764)		(244,972)	
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	14,562,386	1	(28,259,627)	(3)
Changes in fair value of available-for-sale financial assets			(218,832)	
Cash flow hedges			4,683	
Unrealized loss on investments in debt instruments at fair value through other comprehensive income	(870,906)			
Share of other comprehensive income (loss) of associates	93,260		(99,347)	
Income tax expense related to items that may be reclassified subsequently			(3,536)	
	13,784,740	1	(28,576,659)	(3)
Other comprehensive income (loss) for the year, net of income tax	9,836,976	1	(28,821,631)	(3)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	$ 361,021,382	35	$ 314,325,217	32
NET INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	$ 351,130,884	34	$ 343,111,476	35
Non-controlling interests	53,522		35,372	
	$ 351,184,406	34	$ 343,146,848	35

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

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

	2018		2017	
	Amount	%	Amount	%
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	$ 360,965,015	35	$ 314,294,993	32
Non-controlling interests	56,367		30,224	
	$ 361,021,382	35	$ 314,325,217	32

	2018 Income Attributable to Shareholders of the Parent	2017 Income Attributable to Shareholders of the Parent
EARNINGS PER SHARE (NT$, Note 32)		
Basic earnings per share	$ 13.54	$ 13.23
Diluted earnings per share	$ 13.54	$ 13.23

(Concluded)

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

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

	Equity Attributable to Shareholders of the Parent											
			Retained Earnings			Others						
	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) from Available-for-sale Financial Assets	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Cash Flow Hedges Reserve	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	
$ 208,297,945	$	$	863,710,224	$ 1,072,008,169	$ 1,661,237	$ 2,641	$	$ 105	$	$	$
33,424,718			(33,424,718)								
			(181,512,663)	(181,512,663)							
33,424,718			(214,937,381)	(181,512,663)							
			343,111,476	343,111,476							
			(244,972)	(244,972)	(28,358,917)	(216,715)		4,121			(2
			342,866,504	342,866,504	(28,358,917)	(216,715)		4,121			(2

								(10,290)	
241,722,663	991,639,347	1,233,362,010	(26,697,680)	(214,074)		4,226		(10,290)	(2
	1,556,321	1,556,321		214,074	(524,915)	(4,226)	4,226		
241,722,663	993,195,668	1,234,918,331	(26,697,680)		(524,915)		4,226	(10,290)	(2

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

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

Equity Attributable to Shareholders of the Parent									
							Others		
						Unrealized Gain (Loss) on Financial Assets at Fair Value Through			
	Retained Earnings			Foreign	Unrealized Gain (Loss)		Cash		Unearned
Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Currency Translation Reserve	from Available-for-sale Financial Assets	Other Comprehensive Income	Flow Hedges Reserve	Gain (Loss) on Hedging Instruments	Stock-Based Employee Compensation
34,311,148		(34,311,148)							
	26,907,527	(26,907,527)							
		(207,443,044)	(207,443,044)						
34,311,148	26,907,527	(268,661,719)	(207,443,044)						
		351,130,884	351,130,884						
		(765,274)	(765,274)	14,655,333		(4,097,465)		41,537	
		350,365,610	350,365,610	14,655,333		(4,097,465)		41,537	

		(1,193,056)	(1,193,056)		1,193,056				
							(22,162)		
								8,447	
$ 276,033,811	$ 26,907,527	$ 1,073,706,503	$ 1,376,647,841	$ (12,042,347)	$	$ (3,429,324)	$	$ 23,601	$ (1,843)	$ (

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2018	2017
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	$ 397,510,263	$ 396,133,030
Adjustments for:		
Depreciation expense	288,124,897	255,795,962
Amortization expense	4,421,405	4,346,736
Reversal of expected credit losses on investments in debt instruments	(2,383)	
Finance costs	3,051,223	3,330,313
Share of profits of associates	(3,057,781)	(2,985,941)
Interest income	(14,694,456)	(9,464,706)
Loss on disposal or retirement of property, plant and equipment, net	1,005,644	1,097,908
Gain on disposal of intangible assets, net	(436)	
Impairment loss on property, plant and equipment	423,468	
Impairment loss on intangible assets		13,520
Impairment loss on financial assets		29,603
Loss on financial instruments at fair value through profit or loss, net	358,156	
Loss on disposal of investments in debt instruments at fair value through other comprehensive income, net	989,138	
Gain on disposal of available-for-sale financial assets, net		(76,986)
Gain on disposal of financial assets carried at cost, net		(12,809)
Gain from disposal of subsidiaries		(17,343)
Unrealized gross profit on sales to associates	111,788	4,553
Loss (gain) on foreign exchange, net	2,916,659	(9,118,580)
Dividend income	(158,358)	(145,588)
Loss arising from fair value hedges, net	2,386	30,293
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	480,109	5,645,093
Notes and accounts receivable, net	(13,271,268)	1,061,805
Receivables from related parties	599,712	(214,565)
Other receivables from related parties	106,030	(13,873)
Inventories	(29,369,975)	(25,229,101)
Other financial assets	(4,601,295)	(502,306)
Other current assets	(513,051)	12,085
Other noncurrent assets	152,555	(1,276,130)
Accounts payable	4,540,583	2,572,072
Payables to related parties	(279,857)	394,182
Salary and bonus payable	216,501	582,054
Accrued profit sharing bonus to employees and compensation to directors and supervisors	562,019	525,129
Accrued expenses and other current liabilities	(20,226,384)	30,435,424

Provisions		(4,057,900)
Net defined benefit liability	(60,461)	44,615
Cash generated from operations	619,336,831	648,938,549
Income taxes paid	(45,382,523)	(63,620,382)
Net cash generated by operating activities	573,954,308	585,318,167

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2018	2017
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial instruments at fair value through profit or loss - debt instruments	$ (310,478)	$
Financial assets at fair value through other comprehensive income	(96,412,786)	
Available-for-sale financial assets		(100,510,905)
Held-to-maturity financial assets		(1,997,076)
Financial assets at amortized cost	(2,294,098)	
Financial assets carried at cost		(1,313,124)
Property, plant and equipment	(315,581,881)	(330,588,188)
Intangible assets	(7,100,306)	(4,480,588)
Land use right		(819,694)
Proceeds from disposal or redemption of:		
Financial instruments at fair value through profit or loss debt instruments	487,216	
Financial assets at fair value through other comprehensive income	86,639,322	
Available-for-sale financial assets		69,480,675
Held-to-maturity financial assets		17,980,640
Financial assets at amortized cost	2,032,442	
Financial assets carried at cost		58,237
Property, plant and equipment	181,450	326,232
Intangible assets	492	
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	127,878	
Proceeds from return of capital of financial assets carried at cost		14,828
Derecognition of hedging derivative financial instruments		33,008
Derecognition of hedging financial instruments	250,538	
Interest received	14,660,388	9,526,253
Proceeds from government grants - property, plant and equipment		2,629,747
Proceeds from government grants - land use right and others		1,811
Cash outflow from disposal of subsidiary		(4,080)
Other dividends received	158,358	145,588
Dividends received from investments accounted for using equity method	3,262,910	4,245,772
Refundable deposits paid	(2,227,541)	(1,326,983)
Refundable deposits refunded	1,857,188	432,944
Net cash used in investing activities	(314,268,908)	(336,164,903)

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2018	2017
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase in short-term loans	$ 23,922,975	$ 10,394,290
Repayment of bonds	(58,024,900)	(38,100,000)
Repayment of long-term bank loans		(31,460)
Interest paid	(3,233,331)	(3,482,703)
Guarantee deposits received	1,668,887	950,928
Guarantee deposits refunded	(1,948,106)	(3,823,183)
Cash dividends	(207,443,044)	(181,512,663)
Donation from shareholders	10,141	20,837
Decrease in non-controlling interests	(77,413)	(113,675)
Net cash used in financing activities	(245,124,791)	(215,697,629)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	9,862,296	(21,317,772)
NET INCREASE IN CASH AND CASH EQUIVALENTS	24,422,905	12,137,863
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	553,391,696	541,253,833
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 577,814,601	$ 553,391,696

(Concluded)

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

FOR THE YEARS ENDED DECEMBER 31, 2018 AND 2017

(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 19, 2019.

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 9 Financial Instruments and related amendment

IFRS 9 supersedes IAS 39 Financial Instruments: Recognition and Measurement , with consequential amendments to IFRS 7 Financial Instruments: Disclosures and other standards. IFRS 9 sets out the requirements for classification,

measurement and impairment of financial assets and hedge accounting. Please refer to Note 4 for information relating to the relevant accounting policies.

Classification, measurement and impairment of financial assets and financial liabilities

The Company elects not to restate prior reporting period when applying the requirements for the classification, measurement and impairment of financial assets and financial liabilities under IFRS 9 with the cumulative effect of the initial application recognized at the date of initial application.

The impact on measurement categories, carrying amount and related reconciliation for each class of the Company s financial assets and financial liabilities when retrospectively applying IFRS 9 on January 1, 2018 is detailed below:

	Measurement Category		Carrying Amount		
	IAS 39	IFRS 9	IAS 39	IFRS 9	Note
Financial Assets					
Cash and cash equivalents	Loans and receivables	Amortized cost	$ 553,391,696	$ 553,391,696	(1)
Derivatives	Held for trading	Mandatorily at fair value through profit or loss (FVTPL)	569,751	569,751	
	Hedging instruments	Hedging instruments	34,394	34,394	
Equity securities	Available-for-sale	Fair value through other comprehensive income (FVTOCI)	7,422,311	8,389,438	(2)
Debt securities	Available-for-sale	Mandatorily at FVTPL		779,489	(3)
		FVTOCI	90,826,099	90,046,610	(3)
	Held-to-maturity	Amortized cost	20,821,714	20,813,462	(4)
Notes and accounts receivable (including related parties), other receivables and refundable deposits	Loans and receivables	Amortized cost	131,024,958	131,269,731	(1)
Financial Liabilities					
Derivatives	Held for trading	Held for trading	26,709	26,709	
	Hedging instruments	Hedging instruments	15,562	15,562	
Short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, accrued expenses and other current liabilities, bonds payable and guarantee deposits	Amortized cost	Amortized cost	340,501,266	340,501,266	

Financial Assets	**Carrying Amount as of December 31, 2017 (IAS 39)**	**Reclassifi-cations**	**Remea-surements**	**Carrying Amount as of January 1, 2018 (IFRS 9)**	**Retained Earnings Effect on January 1, 2018**	**Other Equity Effect on January 1, 2018**	**Note**

					2018		
FVTPL	$ 569,751	$	$	$ 569,751	$	$	
- Debt instruments							
Add: From available for sale		779,489		779,489	(10,085)	10,085	(3)
	569,751	779,489		1,349,240	(10,085)	10,085	
FVTOCI							
- Equity instruments							
Add: From available for sale		7,422,311	967,127	8,389,438	1,294,528	(325,858)	(2)
- Debt instruments							
Add: From available for sale		90,046,610		90,046,610	(30,658)	30,658	(3)
		97,468,921	967,127	98,436,048	1,263,870	(295,200)	
Amortized cost							
Add: From held to maturity		20,821,714	(8,252)	20,813,462	(8,252)		(4)
Add: From loans and receivables		684,416,654	244,773	684,661,427	244,773		(1)
		705,238,368	236,521	705,474,889	236,521		
Hedging instruments	34,394			34,394			
Total	$ 604,145	$ 803,486,778	$ 1,203,648	$ 805,294,571	$ 1,490,306	$ (285,115)	

	Carrying Amount as of December 31, 2017 (IAS 39)	**Adjustments Arising from Initial Application**	**Carrying Amount as of January 1, 2018 (IFRS 9)**	**Retained Earnings Effect on January 1, 2018**	**Other Equity Effect on January 1, 2018**	**Note**
Investments accounted for using equity method	$ 17,861,488	$ 8,259	$ 17,869,747	$ 33,985	$ (25,726)	(5)

(1) Cash and cash equivalents, notes and accounts receivable (including related parties), other receivables and refundable deposits that were classified as loans and receivables under IAS 39 are now classified at amortized cost with assessment of future 12-month or lifetime expected credit loss under IFRS 9. As a result of retrospective application, the adjustments would result in a decrease in loss of allowance for accounts receivable of NT$244,773 thousand and an increase in retained earnings of NT$244,773 thousand on January 1, 2018.

(2) As equity investments that were previously classified as available-for-sale financial assets under IAS 39 are not held for trading, the Company elected to designate all of these investments as at FVTOCI under IFRS 9. As a result, the related other equity-unrealized gain or loss on available-for-sale financial assets of NT$228,304 thousand is reclassified to increase other equity unrealized gain or loss on financial assets at FVTOCI.

As equity investments previously measured at cost under IAS 39 are remeasured at fair value under IFRS 9, the adjustments would result in an increase in financial assets at FVTOCI of NT$967,127 thousand, an increase in other equity-unrealized gain or loss on financial assets at FVTOCI of NT$968,670 thousand and a decrease in non-controlling interests of NT$1,543 thousand on January 1, 2018.

For those equity investments previously classified as available-for-sale financial assets (including measured at cost financial assets) under IAS 39, the impairment losses that the Company had recognized have been accumulated in retained earnings. Since these investments were designated as at FVTOCI under IFRS 9 and no impairment assessment is required, the adjustments would result in a decrease in other equity unrealized gain or loss on financial assets at FVTOCI of NT$1,294,528 thousand and an increase in retained earnings of NT$1,294,528 thousand on January 1, 2018.

(3) Debt investments were previously classified as available-for-sale financial assets under IAS 39. Under IFRS 9, except for debt instruments of NT$779,489 thousand whose contractual cash flows are not solely payments of principal and interest on the principal outstanding and therefore are classified as at FVTPL with the related other equity-unrealized gain or loss on available-for-sale financial assets of NT$10,085 thousand being consequently reclassified to decrease retained earnings, the remaining debt investments are classified as at FVTOCI with assessment of future 12-month expected credit loss because these investments are held within a business model whose objective is both to collect the contractual cash flows and sell the financial assets. The related other equity-unrealized gain or loss on available-for-sale financial assets of NT$434,403 thousand is reclassified to decrease other equity-unrealized gain or loss on financial assets at FVTOCI. As a result of retrospective application of future 12-month expected credit loss, the adjustments would result in an increase in other equity unrealized gain or loss on financial assets at FVTOCI of NT$30,658 thousand and a decrease in retained earnings of NT$30,658 thousand on January 1, 2018.

(4) Debt investments previously classified as held-to-maturity financial assets and measured at amortized cost under IAS 39 are classified as measured at amortized cost with assessment of future 12-month expected credit loss under IFRS 9 because the contractual cash flows are solely payments of principal and interest on the principal outstanding and these investments are held within a business model whose objective is to collect the contractual cash flows. As a result of retrospective application of future 12-month expected credit loss, the adjustments would result in an increase in loss allowance of NT$8,252 thousand and a decrease in retained earnings of NT$8,252 thousand on January 1, 2018.

(5) With the retrospective adoption of IFRS 9 by associates accounted for using equity method, the corresponding adjustments made by the Company would result in an increase in investments accounted for using equity method of NT$8,259 thousand, a decrease in other equity- unrealized gain or loss on financial assets at FVTOCI of NT$23,616 thousand, a decrease in other equity- unrealized gain or loss on available-for-sale financial assets of NT$2,110 thousand and an increase in retained earnings of NT$33,985 thousand on January 1, 2018.

Hedge accounting

The Company prospectively applies the requirements for hedge accounting upon initial application of IFRS 9. In addition, due to the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers, all derivative and non-derivative financial assets and financial liabilities which are designated as hedging instruments are presented as financial assets and financial liabilities for hedging starting 2018.

2) IFRS 15 Revenue from Contracts with Customers and related amendments

IFRS 15 establishes principles for recognizing revenue that apply to all contracts with customers, and will supersede IAS 18, Revenue, IAS 11, Construction Contracts, and a number of revenue-related interpretations. Please refer to Note 4 for information relating to the relevant accounting policies.

The Company elected only to retrospectively apply IFRS 15 to contracts that were not completed on January 1, 2018 and elected not to restate prior reporting period with the cumulative effect of the initial application recognized at the date of initial application.

The impact on assets, liabilities and equity when retrospectively applying IFRS 15 on January 1, 2018 is detailed below:

	Carrying Amount as of December 31, 2017 (IAS 18 and Revenue-related Interpretations)	Adjustments Arising from Initial Application	Carrying Amount as of January 1, 2018 (IFRS 15)	Note
Inventories	$ 73,880,747	$ (19,745)	$ 73,861,002	(1)
Contract assets		34,177	34,177	(1)
Investments accounted for using equity method	17,861,488	19,483	17,880,971	(1)
Total effect on assets		$ 33,915		
Provisions - current	13,961,787	$ (13,961,787)		(2)
Accrued expenses and other current liabilities	65,588,396	13,961,787	79,550,183	(2)
Total effect on liabilities		$		

Retained earnings	1,233,362,010	$	32,030	1,233,394,040	(1)
Non-controlling interests	702,110		1,885	703,995	(1)
Total effect on equity		$	33,915		

(1) Prior to the application of IFRS 15, the Company recognizes revenue based on the accounting treatment of the sales of goods. Under IFRS 15, certain subsidiaries and associates accounted for using equity method will change to recognize revenue over time because customers are deemed to have control over the products when the products are manufactured. As a result, the Company will recognize contract assets (classified under other current assets) and adjust related assets and equity accordingly.

(2) Prior to the application of IFRS 15, the Company recognized the estimation of sales returns and allowance as provisions. Under IFRS 15, the Company recognizes such estimation as refund liability (classified under accrued expenses and other current liabilities).

The following table shows the amount affected in the current period by the application of IFRS 15 as compared to IAS 18:

Impact on Assets, Liabilities and Equity

		December 31, 2018
Decrease in inventories	$	(29,610)
Increase in contract assets		52,470
Increase in investments accounted for using equity method		15,163
Total effect on assets	$	38,023
Decrease in provisions - current	$	(22,672,634)
Increase in accrued expenses and other current liabilities		22,671,587
Increase in income tax payable		4,781
Total effect on liabilities	$	3,734
Increase in retained earnings	$	31,791
Increase in non-controlling interests		2,498
Total effect on equity	$	34,289

Impact on Total Comprehensive Income

		Year Ended December 31, 2018
Increase in net revenue	$	53,517
Increase in cost of revenue		(29,610)
Increase in share of the profit or loss of associates		15,163
Increase in income tax expense		(4,781)
Increase in net income for the year	$	34,289

Increase in net income/total comprehensive income attributable to:		
Shareholders of the parent	$	31,791
Non-controlling interests		2,498
	$	34,289

3) Please refer to Note 34 for the disclosure of amendment to IAS 7 Disclosure Initiative

b. Amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers for application starting from 2019 and the IFRSs issued by IASB and endorsed by FSC with effective date starting 2019

New, Amended or Revised Standards and Interpretations (the New IFRSs)	**Effective Date Announced by IASB (Note 1)**
Annual Improvements to IFRSs 2015-2017 Cycle	January 1, 2019
Amendments to IFRS 9 Prepayment Features with Negative Compensation	January 1, 2019 (Note 2)
IFRS 16 Leases	January 1, 2019
Amendments to IAS 19 Plan Amendment, Curtailment or Settlement	January 1, 2019 (Note 3)
Amendments to IAS 28 Long-term Interests in Associates and Joint Ventures	January 1, 2019
IFRIC 23 Uncertainty over Income Tax Treatments	January 1, 2019

Note 1: Unless stated otherwise, the above New IFRSs are effective for annual periods beginning on or after their respective effective dates.

Note 2: The FSC permits the election for early adoption of the amendments starting from 2018.

Note 3: The Company shall apply these amendments to plan amendments, curtailments or settlements occurring on or after January 1, 2019.

Except for the following items, the Company believes that the adoption of aforementioned standards or interpretations will 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 will supersede IAS 17 Leases , IFRIC 4 Determining whether an Arrangement contains a Lease , and a number of related interpretations.

Definition of a lease

Upon initial application of IFRS 16, the Company will apply 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 will not be reassessed and will be accounted for in accordance with the transitional provisions under IFRS 16.

The Company as lessee

Upon initial application of IFRS 16, except for payments for low-value asset and short-term leases which will be recognized as expenses on a straight-line basis, the Company will recognize right-of-use assets and lease liabilities for all leases on the consolidated balance sheets. On the consolidated statements of comprehensive income, the Company will present the depreciation expense charged on right-of-use assets separately from the interest expense accrued on lease liabilities and 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.

Upon initial application of IFRS 16, the Company will apply IFRS 16 retrospectively with the cumulative effect of the initial application recognized at the date of initial application but will not restate comparative information.

Leases agreements classified as operating leases under IAS 17, except for leases of low-value asset and short-term leases, will be 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 will apply the following practical expedients to measure right-of-use assets and lease liabilities on January 1, 2019 :

a) The Company will apply a single discount rate to a portfolio of leases with reasonably similar characteristics to measure lease liabilities.

b) The Company will account for those leases for which the lease term ends on or before December 31, 2019 as short-term leases.

c) Except for lease payment, the Company will exclude incremental costs of obtaining the lease from the measurement of right-of-use assets on January 1, 2019.

d) The Company will determine 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	(3,189,821)
Undiscounted gross amounts on January 1, 2019	$ 17,659,764
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	3,438,016
Lease liabilities recognized on January 1, 2019	$ 19,903,615

The Company as lessor

Except for sublease transactions, the Company will not make any adjustments for leases in which it is a lessor, and will account 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 will be 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	(77,171)	1,507,476
Total effect on assets		$ 19,887,462	
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	(9,189)	1,941,800
Total effect on liabilities		$ 19,887,462	
Total effect on equity		$	

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

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 3 Definition of a Business	January 1, 2020 (Note 1)
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 and IAS 8 Definition of Material	January 1, 2020 (Note 2)

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 prospectively for annual reporting periods beginning on or after January 1, 2020.

As of the date the accompanying consolidated financial statements were issued, 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 December 31, 2018	Percentage of Ownership December 31, 2017	Note
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%	
	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%	100%	a) , c)
TSMC Partners	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) , c)
	InveStar Semiconductor Development Fund, Inc. (II) LDC. (ISDF II)	Investing in new start-up technology companies	Cayman Islands	97%	97%	a) , c)
TSMC Development	WaferTech, LLC (WaferTech)	Manufacturing, selling and testing of integrated circuits and	Washington, U.S.A.	100%	100%	

		other semiconductor devices				
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: 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

2018

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.

2017

Financial assets are classified into the following specified categories: Financial assets at FVTPL, available-for-sale financial assets, held-to-maturity financial assets and loans and receivables.

1) Financial asset at FVTPL

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

Financial assets 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.

2) Available-for-sale financial assets

Available-for-sale financial assets are non-derivative financial assets that are either designated as available-for-sale or are not classified as (a) loans and receivables, (b) held-to-maturity financial assets or (c) financial assets at fair value through profit or loss.

Available-for-sale financial assets are measured at fair value. Interest income from available-for-sale monetary financial assets and dividends on available-for-sale equity investments are recognized in profit or loss. Other changes in the carrying amount of available-for-sale financial assets are recognized in other comprehensive income. When the investment is disposed of or is determined to be impaired, the cumulative gain or loss previously recognized in other comprehensive income is reclassified to profit or loss.

Dividends on available-for-sale equity instruments are recognized in profit or loss when the Company s right to receive the dividends is established.

Available-for-sale equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured are measured at cost less any identified impairment losses at the end of each reporting period. Such equity instruments are subsequently remeasured at fair value when their fair value can be reliably measured, and the difference between the carrying amount and fair value is recognized in profit or loss or other comprehensive income.

3) Held-to-maturity financial assets

Held-to-maturity investments are non-derivative financial assets with fixed or determinable payments and fixed maturity dates that the Company has the positive intent and ability to hold to maturity. Subsequent to initial recognition, held-to-maturity financial assets are measured at amortized cost using the effective interest method less any impairment.

4) Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Loans and receivables including cash and cash equivalents, notes and accounts receivable and other receivables are measured at amortized cost using the effective interest method, less any impairment, except for those loans and receivables with immaterial discounted effect.

b. Impairment of financial assets

2018

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.

2017

Financial assets, other than those carried at FVTPL, are assessed for indicators of impairment at the end of each reporting period. Those financial assets are considered to be impaired when there is objective evidence that, as a result of one or more events that occurred after the initial recognition of the financial assets, their estimated future cash flows have been affected.

For financial assets carried at amortized cost, such as trade receivables, assets that are assessed not to be impaired individually are, in addition, assessed for impairment on a collective basis. The Company assesses the collectability of receivables by performing the account aging analysis and examining current trends in the credit quality of its customers.

For financial assets carried at amortized cost, the amount of the impairment loss is the difference between the asset s carrying amount and the present value of estimated future cash flows, discounted at the financial asset s original effective interest rate.

For financial assets measured at amortized cost, if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment loss was recognized, the previously recognized impairment loss is reversed through profit or loss to the extent that the carrying amount of the financial assets at the date the impairment loss is reversed does not exceed what the amortized cost would have been had the impairment loss not been recognized.

When an available-for-sale financial asset is considered to be impaired, cumulative gains or losses previously recognized in other comprehensive income are reclassified to profit or loss in the year.

In respect of available-for-sale equity instruments, impairment losses previously recognized in profit or loss are not reversed through profit or loss. Any increase in fair value subsequent to the recognition of an impairment loss is recognized in other comprehensive income and accumulated under the heading of unrealized gains or losses from available-for-sale financial assets.

For financial assets carried at cost, the amount of the impairment loss is measured as the difference between the asset s carrying amount and the present value of the estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment loss will not be reversed in subsequent periods.

The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with the exception of trade receivables, where the carrying amount is reduced through the use of an allowance account. When a trade receivable is considered uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against the allowance account.

c. Derecognition of financial assets

2018

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.

2017

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 in its entirety, the difference between the financial 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 and accumulated in equity is recognized in 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.

Financial Instruments Designated as at Fair Value through Profit or Loss

A financial instrument may be designated as at FVTPL upon initial recognition. The financial instrument forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Company s documented risk management or investment strategy, and information about the grouping is provided internally on that basis.

Hedge Accounting

a. Fair value hedge

The Company designates certain hedging instruments, such as interest rate futures contracts, to partially hedge against the price risk caused by changes in interest rates in the Company s investments in fixed income securities as fair value hedge. 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 asset 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.

2018

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.

2017

Hedge accounting was discontinued prospectively when the Company revoked the designated hedging relationship, when the hedging instrument expired or was sold, terminated, or exercised; or no longer met the criteria for hedge accounting.

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 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 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 over the following estimated useful lives: land improvements 20 years; buildings 10 to 20 years; machinery and equipment 2 to 5 years; and office equipment 3 to 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

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 relevant 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 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.

Other tangible and intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible and 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.

Provision

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows.

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

2018

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.

2017

Revenue is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances.

Sale of goods

Revenue from the sale of goods is recognized when the goods are delivered and titles have passed, at which time all the following conditions are satisfied:

The Company has transferred to the buyer the significant risks and rewards of ownership of the goods;

The Company retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;

The amount of revenue can be measured reliably;

It is probable that the economic benefits associated with the transaction will flow to the Company; and

The costs incurred or to be incurred in respect of the transaction can be measured reliably.

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.

Dividend and interest income

Dividend income from investments is recognized when the shareholder s right to receive payment has been established, provided that it is probable that the economic benefits will flow to the Company and the amount of income can be measured reliably.

Interest income from a financial asset is recognized when it is probable that the economic benefits will flow to the Company and the amount of income can be measured reliably. Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable.

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 remeasurement) 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. Remeasurement, 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. Remeasurement 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.

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied. The Company also records estimated future returns and other allowances in the same period the related revenue is recorded. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms, and the Company periodically reviews the adequacy of the estimation used.

Timing to commence depreciation of property, plant and equipment

As described in Note 4, depreciation of property, plant and equipment begins when the assets are available for use, and in the condition necessary for the assets to be capable of operating in the intended manner. The criteria to determine whether assets are available for their intended use vary within categories of assets as well as involve subjective judgments, thus validity of the timing to commence depreciation of property, plant and equipment could have a material impact on the Company s financial performance.

Impairment of Tangible and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible and intangible assets other than goodwill, the Company is required to make subjective judgments in determining 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 changes in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Impairment of Goodwill

The assessment of impairment of goodwill requires the Company to make subjective judgment to determine the identified cash-generating units, allocate the goodwill to relevant cash-generating units and estimate the recoverable amount of relevant cash-generating units.

Impairment Assessment on Investment Using Equity Method

The Company assesses the impairment of investments accounted for using the equity method whenever triggering events or changes in circumstances indicate that an investment may be impaired and carrying value may not be recoverable. The Company measures the impairment based on a projected future cash flow of the investees, including the underlying assumptions of sales growth rate and capacity utilization rate formulated by such investees internal management team. The Company also takes into account market conditions and the relevant industry trends to ensure the reasonableness of such assumptions.

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.

Fair Value Measurement of Non-publicly Traded Equity Investments

The fair value measurement for non-publicly traded equity investments is determined by the estimated fair value under appropriate valuation methods primarily based on investees financial positions, operation results and recent

financing activities, the market transaction prices of similar investments, market conditions and the required discount factors. As such, the estimated fair value may be different from the actual disposal price in the future. The Company assesses the fair value quarterly based on market

conditions to ensure the appropriateness of fair value measurement of non-publicly traded equity investments.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses judgment and 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 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 mainly determined based on assumptions of future demand within a specific time horizon.

Recognition and Measurement of Defined Benefit Plans

Net defined benefit liability and the resulting defined benefit costs under defined benefit pension plans are calculated using the Projected Unit Credit Method. Actuarial assumptions comprise the discount rate, rate of employee turnover, and future salary increase rate. Changes in economic circumstances and market conditions will affect these assumptions and may have a material impact on the amount of the expense and the liability.

6. CASH AND CASH EQUIVALENTS

	December 31, 2018	December 31, 2017
Cash and deposits in banks	$ 575,825,502	$ 551,919,770
Repurchase agreements collateralized by corporate bonds	1,229,600	
Commercial paper	759,499	695,901
Agency bonds		776,025
	$ 577,814,601	$ 553,391,696

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, 2018	December 31, 2017
Financial assets		
Mandatorily measured at FVTPL		
Agency mortgage-backed securities	$ 3,419,287	$
Forward exchange contracts	85,303	

		3,504,590		
Held for trading				
Forward exchange contracts				569,751
	$	3,504,590	$	569,751
Financial liabilities				
Held for trading				
Forward exchange contracts	$	40,825	$	26,709

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

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
December 31, 2018		
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$97,000
December 31, 2017		
Sell NT$/Buy EUR	January 2018 to February 2018	NT$6,002,786/EUR169,000
Sell NT$/Buy JPY	February 2018	NT$996,294/JPY3,800,000
Sell US$/Buy JPY	January 2018	US$2,191/JPY246,724
Sell US$/Buy RMB	January 2018	US$558,000/RMB3,679,575
Sell US$/Buy NT$	January 2018 to February 2018	US$1,661,500/NT$49,673,320
Sell RMB /Buy EUR	January 2018	RMB38,967/EUR4,994
Sell RMB/Buy JPY	January 2018	RMB409,744/JPY7,062,536
Sell RMB/Buy GBP	January 2018	RMB3,637/GBP413

Investments in debt instruments at FVTOCI were classified as available-for-sale financial assets under IAS 39. Refer to Notes 3 and 9 for information relating to their reclassification and comparative information for 2017.

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME-2018

	December 31, 2018
Investments in debt instruments at FVTOCI	
Corporate bonds	$ 40,753,582
Agency bonds/Agency mortgage-backed securities	31,288,762
Asset-backed securities	15,670,295
Government bonds	11,151,359
Commercial paper	107,590
	98,971,588
Investments in equity instruments at FVTOCI	

Non-publicly traded equity investments	3,910,681
Publicly traded stocks	590,152
	4,500,833
	$ 103,472,421

(Continued)

	December 31, 2018
Current	$ 99,561,740
Noncurrent	3,910,681
	$ 103,472,421

(Concluded)

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

For the year ended December 31, 2018, the Company sold shares of stocks for NT$840,605 thousand mainly because the strategic purpose no longer exists and the non-publicly traded investee has been merged. The related other equity-unrealized gain or loss on financial assets at FVTOCI of NT$1,193,056 thousand was transferred to decrease retained earnings.

For dividends from equity investments designated as at FVTOCI recognized during the year ended December 31, 2018, please refer to Note 28. All the dividends are from investments held at the end of the reporting period.

As of December 31, 2018, the cumulative loss allowance for expected credit loss of NT$29,723 thousand is recognized under investments in debt instruments at FVTOCI. Refer to Note 36 for information relating to their credit risk management and expected credit loss.

Investments in equity and debt instruments at FVTOCI were classified as available-for-sale financial assets and cost methods (only for equity instruments) under IAS 39. Refer to Notes 3, 9 and 12 (only for equity instruments) for information relating to their reclassification and comparative information for 2017.

9. AVAILABLE-FOR-SALE FINANCIAL ASSETS-2017

	December 31, 2017
Corporate bonds	$ 40,165,148
Agency bonds/Agency mortgage-backed securities	29,235,388
Asset-backed securities	13,459,545
Government bonds	7,817,723
Publicly traded stocks	2,548,054
Commercial paper	148,295
	$ 93,374,153

10. HELD-TO-MATURITY FINANCIAL ASSETS-2017

	December 31, 2017
Corporate bonds	$ 19,338,764
Structured product	1,482,950
	$ 20,821,714
Current portion	$ 1,988,385
Noncurrent portion	18,833,329
	$ 20,821,714

11. FINANCIAL ASSETS AT AMORTIZED COST-2018

	December 31, 2018
Corporate bonds	$ 19,519,941
Commercial paper	2,294,098
Less: Allowance for impairment loss	(8,147)
	$ 21,805,892
Current portion	$ 14,277,615
Noncurrent portion	7,528,277
	$ 21,805,892

Financial assets at amortized cost were classified as held-to-maturity financial assets under IAS 39. Refer to Notes 3 and 10 for information relating to their reclassification and comparative information for 2017. Refer to Note 36 for information relating to credit risk management and expected credit loss for financial assets at amortized cost.

12. FINANCIAL ASSETS CARRIED AT COST-2017

The Company s investment classified as financial assets carried at cost primarily consists of non-publicly traded equity investments. Since there is a wide range of estimated fair values of the Company s investments in non-publicly traded equity investments, the Company concludes that the fair value cannot be reliably measured and therefore should be measured at the cost less any impairment.

The stock of Aquantia was listed in November 2017. Accordingly, the Company reclassified the aforementioned investment from financial assets carried at cost to available-for-sale financial assets.

13. HEDGING FINANCIAL INSTRUMENTS

2018

		December 31, 2018
Financial assets- current		
Cash flow hedges		
Forward exchange contracts	$	23,497
Financial liabilities- current		
Fair value hedges		
Interest rate futures contracts	$	153,891
Cash flow hedges		
Forward exchange contracts		1,941
	$	155,832

Fair value hedge

The Company entered into interest rate futures contracts, which are used to partially hedge against the price risk caused by changes in interest rates in the Company s investments in fixed income securities. 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 future 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 as of December 31, 2018.

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 as of December 31, 2018	Asset Accumulated

		Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	$ 23,229,530	$ (13,508)

The effect for the year ended December 31, 2018 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness
Hedging Instruments	
US treasury bonds interest rate futures contracts	$ 11,460
Hedged Items	
Financial assets at FVTOCI	(13,846)
	$ (2,386)

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 year ended December 31, 2018, refer to Note 25(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 as of 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 year ended December 31, 2018 is detailed below:

Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness
Hedging Instruments	
Forward exchange contracts	$ 34,563
Foreign currency deposits	6,412
	$ 40,975
Hedged Items	
Forecast transaction (capital expenditures)	$ (40,975)

2017

The Company s hedging policies for 2017 are the same as those mentioned previously in 2018, the instruments employed are as follows:

	December 31, 2017
Financial assets- current	
Fair value hedges	
Interest rate futures contracts	$ 27,016
Cash flow hedges	
Forward exchange contracts	7,378
	$ 34,394
Financial liabilities- current	
Cash flow hedges	
Forward exchange contracts	$ 15,562

The Company entered into interest rate futures contracts, which are used to partially hedge against the price risk caused by changes in interest rates in the Company s investments in fixed income securities.

The outstanding interest rate futures contracts consisted of the following:

Maturity Period	Contract Amount (US$ in Thousands)
December 31, 2017	
March 2018	US$ 169,400

The Company entered into forward exchange contracts to partially hedge foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). These contracts have maturities of 12 months or less.

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
December 31, 2017		
Sell NT$/Buy EUR	February 2018 to May 2018	NT$ 2,649,104/EUR75,000

14. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2018	December 31, 2017
At amortized cost		
Notes and accounts receivable	$ 125,025,575	$ 121,604,989
Less: Loss allowance	(7,253)	(471,741)
	125,018,322	121,133,248
At FVTOCI	3,595,069	
	$ 128,613,391	$ 121,133,248

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.

2018

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 losses on credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels. Such risk levels are determined with 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, net

	December 31, 2018
Not past due	$ 113,126,484
Past due	
Past due within 30 days	15,006,461
Past due 31-60 days	472,833
Past due 61-120 days	4,654

Past due over 121 days	2,959
	$ 128,613,391

Movements of the loss allowance for accounts receivable

Balance at January 1, 2018 (IAS 39)	$ 471,741
Effect of retrospective application of IFRS 9	(244,773)
Balance at January 1, 2018 (IFRS 9)	226,968
Provision (Reversal)	(219,714)
Effect of exchange rate changes	(1)
Balance at December 31, 2018	$ 7,253

For the year ended December 31, 2018, the decrease in loss allowance was mainly due to the variations from accounts receivable balance of different risk levels.

2017

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 of when the invoice is issued. The allowance for doubtful receivables is assessed by reference to the collectability of receivables by performing the account aging analysis, historical experience and current financial condition of customers.

Except for those impaired, for the rest of the notes and accounts receivable, the account aging analysis at the end of the reporting period is summarized in the following table. There was no impairment concern for the accounts receivable that were past due without recognizing a specific allowance for doubtful receivables since there was no significant change in the credit quality of its customers after the assessment and the Company has obtained guarantee against certain receivables.

Aging analysis of notes and accounts receivable, net

	December 31, 2017
Neither past due nor impaired	$ 105,295,219
Past due but not impaired	
Past due within 30 days	13,984,125
Past due 31-60 days	929,672
Past due 61-120 days	582,821
Past due over 121 days	341,411
	$ 121,133,248

Movements of the allowance for doubtful receivables

	Individually Assessed for	**Collectively Assessed for**	**Total**

	Impairment	Impairment	
Balance at January 1, 2017	$ 1,848	$ 478,270	$ 480,118
Reversal/Write-off	(1,848)	(6,305)	(8,153)
Effect of exchange rate changes		(224)	(224)
Balance at December 31, 2017	$	$ 471,741	$ 471,741

15. INVENTORIES

	December 31, 2018	December 31, 2017
Finished goods	$ 11,329,802	$ 9,923,338
Work in process	72,071,861	53,362,160
Raw materials	15,233,877	7,143,806
Supplies and spare parts	4,595,436	3,451,443
	$ 103,230,976	$ 73,880,747

Write-down of inventories to net realizable value (excluding computer virus outbreak losses) and reversal of write-down of inventories resulting from the increase in net realizable value in the amount of NT$1,259,472 thousand and NT$840,861 thousand, respectively, were included in the cost of revenue for the years ended December 31, 2018 and 2017. Please refer to computer virus outbreak losses in Note 41.

16. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount December 31, 2018	Carrying Amount December 31, 2017	% of Ownership and Voting Rights Held by the Company December 31, 2018	% of Ownership and Voting Rights Held by the Company December 31, 2017
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	$ 9,006,126	$ 8,568,344	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor	Singapore	5,772,815	5,677,640	39%	39%

	devices					
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	1,764,607	2,292,100	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	1,299,423	1,300,194	35%	35%
Mutual-Pak	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	New Taipei, Taiwan	22,867	23,210	39%	39%
			$ 17,865,838	$ 17,861,488		

Starting December 2017, the Company no longer had the majority of voting power and control over Mutual-Pak. As a result, Mutual-Pak is no longer consolidated and is accounted for using the equity method.

As of December 31, 2018 and 2017, 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, 2018	December 31, 2017
VIS	$ 27,621,298	$ 30,638,751
GUC	$ 9,617,699	$ 11,905,404
Xintec	$ 3,783,585	$ 9,180,759

17. PROPERTY, PLANT AND EQUIPMENT

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
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 (Deductions)		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	28,110	(405,841)	(61,937)	8,180	(254,841)	(686,329)
Balance at December 31, 2018	$ 4,011,353	$ 418,714,285	$ 2,728,760,127	$ 48,382,279	$ 172,910,989	$ 3,372,779,033
Accumulated depreciation and impairment						
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	19,177	33,210	(15,128)	32,862		70,121
Balance at December 31,	$ 550,575	$ 218,374,142	$ 2,049,278,908	$ 32,525,129	$	$ 2,300,728,754

2018						
Carrying amounts at December 31, 2018	$ 3,460,778	$ 200,340,143	$ 679,481,219	$ 15,857,150	$ 172,910,989	$ 1,072,050,279
Cost						
Balance at January 1, 2017	$ 4,049,292	$ 304,404,474	$ 2,042,867,744	$ 34,729,640	$ 387,199,675	$ 2,773,250,825
Additions (Deductions)		75,594,667	458,605,807	8,195,896	(219,902,510)	322,493,860
Disposals or retirements		(36,957)	(9,552,995)	(377,798)		(9,967,750)
Reclassification			8,791	1,507		10,298
Effect of disposal of subsidiary			(51,216)	(14,750)	(518)	(66,484)
Effect of exchange rate changes	(66,049)	(827,571)	(4,125,866)	(142,979)	56,843	(5,105,622)
Balance at December 31, 2017	$ 3,983,243	$ 379,134,613	$ 2,487,752,265	$ 42,391,516	$ 167,353,490	$ 3,080,615,127
Accumulated depreciation and impairment						
Balance at January 1, 2017	$ 524,845	$ 174,349,077	$ 1,577,377,509	$ 23,221,707	$	$ 1,775,473,138
Additions	27,790	20,844,584	229,985,588	4,938,000		255,795,962
Disposals or retirements		(28,816)	(8,114,327)	(377,470)		(8,520,613)
Reclassification			8,195	1,466		9,661
Effect of disposal of subsidiary			(42,830)	(13,838)		(56,668)
Effect of exchange rate changes	(42,137)	(718,324)	(3,765,293)	(102,921)		(4,628,675)
Balance at December 31, 2017	$ 510,498	$ 194,446,521	$ 1,795,448,842	$ 27,666,944	$	$ 2,018,072,805
Carrying amounts at December 31, 2017	$ 3,472,745	$ 184,688,092	$ 692,303,423	$ 14,724,572	$ 167,353,490	$ 1,062,542,322

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.

18. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
Cost					
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	$ 5,795,488	$ 10,974,458	$ 29,594,483	$ 7,656,524	$ 54,020,953
Accumulated amortization and impairment					
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	$	$ 8,756,005	$ 23,023,498	$ 5,239,313	$ 37,018,816
Carrying amounts at December 31, 2018	$ 5,795,488	$ 2,218,453	$ 6,570,985	$ 2,417,211	$ 17,002,137
Cost					
Balance at January 1, 2017	$ 6,007,975	$ 9,546,007	$ 22,243,595	$ 5,386,435	$ 43,184,012
Additions		897,861	3,021,085	349,265	4,268,211
Retirements			(75,237)		(75,237)
Reclassification			7,662	(17,960)	(10,298)
Effect of disposal of subsidiary	(13,499)		(7,662)		(21,161)
Effect of exchange rate changes	(345,774)	(611)	(3,225)	(1,594)	(351,204)
Balance at December 31, 2017	$ 5,648,702	$ 10,443,257	$ 25,186,218	$ 5,716,146	$ 46,994,323
Accumulated amortization and impairment					
Balance at January 1, 2017	$	$ 6,147,200	$ 18,144,428	$ 4,277,538	$ 28,569,166
Additions		1,548,263	2,310,742	487,731	4,346,736
Retirements			(75,237)		(75,237)
Reclassification			7,409	(17,070)	(9,661)
Impairment	13,520				13,520
Effect of disposal of subsidiary	(13,499)		(7,554)		(21,053)
Effect of exchange rate changes	(21)	(606)	(3,095)	(566)	(4,288)
Balance at December 31, 2017	$	$ 7,694,857	$ 20,376,693	$ 4,747,633	$ 32,819,183

Carrying amounts at December 31, 2017	$ 5,648,702	$ 2,748,400	$ 4,809,525	$ 968,513	$ 14,175,140

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 9.0% and 8.5% in its test of impairment as of December 31, 2018 and 2017, respectively, to reflect the relevant specific risk in the cash-generating unit.

For the year ended December 31, 2018, the Company did not recognize any impairment loss on goodwill. For the year ended December 31, 2017, the Company assessed goodwill impairment and recognized an impairment loss of NT$13,520 thousand related to a subsidiary since the operating result of this cash generating unit was not as expected and the recoverable amount of goodwill was nil. Such impairment loss was recognized in other operating income and expenses.

19. OTHER ASSETS

	December 31, 2018	December 31, 2017
Tax receivable	$ 3,780,293	$ 4,021,602
Prepaid expenses	1,298,710	1,559,963
Others	1,912,067	1,623,995
	$6,991,070	$7,205,560
Current portion	$ 5,406,423	$ 4,222,440
Noncurrent portion	1,584,647	2,983,120
	$6,991,070	$7,205,560

20. SHORT-TERM LOANS

	December 31, 2018	December 31, 2017
Unsecured loans		
Amount	$ 88,754,640	$ 63,766,850
Original loan content		
US$ (in thousands)	$ 2,610,000	$ 2,150,000
EUR (in thousands)	242,000	
Annual interest rate	0.01%-3.22%	1.54%-1.82%
Maturity date	Due by January 2019	Due by February 2018

21. PROVISIONS

The Company s current provisions were provisions for sales returns and allowances.

	Sales Returns and Allowances
Year Ended December 31, 2017	
Balance, beginning of year	$ 18,037,789
Provision	44,833,557
Payment	(48,884,704)
Effect of exchange rate changes	(24,855)
Balance, end of year	$ 13,961,787

Provisions for sales returns and allowances are estimated based on historical experience and the consideration of varying contractual terms, and are recognized as a reduction of revenue in the same year of the related product sales.

Starting from 2018, the Company recognizes the estimation of sales returns and allowance as refund liability (classified under accrued expenses and other current liabilities) upon initial application of IFRS 15.

22. BONDS PAYABLE

	December 31, 2018	December 31, 2017
Domestic unsecured bonds	$ 91,800,000	$ 116,100,000
Overseas unsecured bonds		34,107,850
	91,800,000	150,207,850
Less: Discounts on bonds payable		(6,728)
Less: Current portion	(34,900,000)	(58,401,122)
	$56,900,000	$91,800,000

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	A	January 2012 to January 2017	10,000,000	1.29%	The same as above
	B	January 2012 to January 2019	7,000,000	1.46%	The same as above
101-1	A	August 2012 to August 2017	9,900,000	1.28%	The same as above
	B	August 2012 to August 2019	9,000,000	1.40%	The same as above
101-2	A	September 2012 to September 2017	12,700,000	1.28%	The same as above
	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	A	August 2013 to August 2017	4,000,000	1.34%	The same as above
	B	August 2013 to August 2019	8,500,000	1.52%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
102-4	B	September 2013 to September 2017	$ 1,500,000	1.45%	Bullet repayment; interest payable annually
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)

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

23. 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, Mutual-Pak 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, TSMC Technology and TSMC Solar Europe GmbH also make monthly contributions at certain percentages of the basic salary of their employees. Accordingly, the Company recognized expenses of NT$2,568,945 thousand and NT$2,369,940 thousand for the years ended December 31, 2018 and 2017, 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	
	2018	2017
Current service cost	$ 137,758	$ 145,026
Net interest expense	144,108	126,525
Components of defined benefit costs recognized in profit or loss	281,866	271,551
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(71,288)	29,290
Actuarial loss arising from experience adjustments	334,630	483,846
Actuarial loss (gain) arising from changes in financial assumptions	597,820	(258,455)
Components of defined benefit costs recognized in other comprehensive income	861,162	254,681
Total	$ 1,143,028	$ 526,232

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

	Years Ended December 31	
	2018	2017
Cost of revenue	$ 177,772	$ 175,357
Research and development expenses	79,143	75,340
General and administrative expenses	20,591	16,669
Marketing expenses	4,360	4,185
	$281,866	$271,551

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

	December 31, 2018	December 31, 2017
Present value of defined benefit obligation	$ 13,662,684	$ 12,774,593
Fair value of plan assets	(4,011,279)	(3,923,889)
Net defined benefit liability	$ 9,651,405	$ 8,850,704

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

	Years Ended December 31	
	2018	2017
Balance, beginning of year	$ 12,774,593	$ 12,480,480
Current service cost	137,758	145,026
Interest expense	207,804	185,561
Remeasurement:		
Actuarial loss arising from experience adjustments	334,630	483,846
Actuarial loss (gain) arising from changes in financial assumptions	597,820	(258,455)
Benefits paid from plan assets	(274,326)	(261,865)
Benefits paid directly by the Company	(115,595)	
Balance, end of year	$ 13,662,684	$ 12,774,593

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

	Years Ended December 31	
	2018	2017
Balance, beginning of year	$ 3,923,889	$ 3,929,072
Interest income	63,696	59,036
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	71,288	(29,290)
Contributions from employer	226,732	226,936
Benefits paid from plan assets	(274,326)	(261,865)
Balance, end of year	$ 4,011,279	$ 3,923,889

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

	December 31, 2018	December 31, 2017
Cash	$ 756,126	$ 707,477
Equity instruments	2,148,040	1,993,336
Debt instruments	1,107,113	1,223,076
	$4,011,279	$3,923,889

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, 2018	December 31, 2017
Discount rate	1.30%	1.65%
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$921,750 thousand and NT$890,116 thousand as of December 31, 2018 and 2017, 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$901,629 thousand and NT$873,801 thousand as of December 31, 2018 and 2017, 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$233,534 thousand to the defined benefit plans in the next year starting from December 31, 2018. The weighted average duration of the defined benefit obligation is 13 years.

24. GUARANTEE DEPOSITS

	December 31, 2018	December 31, 2017
Capacity guarantee	$ 9,289,628	$ 13,346,550
Receivables guarantee	653,686	2,427,548

Others	245,731	306,521
	$10,189,045	$16,080,619
Current portion (classified under accrued expenses and other current liabilities)	$ 6,835,667	$ 8,493,829
Noncurrent portion	3,353,378	7,586,790
	$10,189,045	$16,080,619

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

25. EQUITY

a. Capital stock

	December 31, 2018	December 31, 2017
Authorized shares (in thousands)	28,050,000	28,050,000
Authorized capital	$ 280,500,000	$ 280,500,000
Issued and paid shares (in thousands)	25,930,380	25,930,380
Issued capital	$ 259,303,805	$ 259,303,805

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, 2018, 1,068,157 thousand ADSs of TSMC were traded on the NYSE. The number of common shares represented by the ADSs was 5,340,787 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2018	December 31, 2017
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	121,473	118,792
From share of changes in equities of associates	282,820	289,240
Donations	29,343	19,208
	$56,315,932	$56,309,536

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

TSMC s Articles of Incorporation provide that, when allocating the net profits for each fiscal year, TSMC shall first offset its losses in previous years and then set aside the following items accordingly:

1) Legal capital reserve at 10% of the profits left over, until the accumulated legal capital reserve equals TSMC s paid-in capital;

2) Special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge;

3) Any balance left over shall be allocated according to the resolution of the shareholders meeting.

TSMC s Articles of Incorporation provide the policy about the profit sharing bonus to employees, please refer to Note 33.

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.

Any appropriations of the profits are subject to shareholders approval in the following year.

The appropriation for legal capital reserve shall be made until the reserve equals the Company s paid-in capital. 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 2017 and 2016 earnings had been approved by TSMC s shareholders in its meetings held on June 5, 2018 and June 8, 2017, respectively. The appropriations and dividends per share were as follows:

	Appropriation of Earnings		Dividends Per Share (NT$)	
	For Fiscal Year 2017	For Fiscal Year 2016	For Fiscal Year 2017	For Fiscal Year 2016
Legal capital reserve	$ 34,311,148	$ 33,424,718		
Special capital reserve	26,907,527			
Cash dividends to shareholders	207,443,044	181,512,663	$ 8	$ 7
	$268,661,719	$214,937,381		

TSMC s appropriation of earnings for 2018 had been approved in the meeting of the Board of Directors held on February 19, 2019. The appropriation and dividends per share were as follows:

	Appropriation of Earnings For Fiscal Year 2018	Dividends Per Share (NT$) For Fiscal Year 2018
Legal capital reserve	$ 35,113,088	
Special capital reserve	(11,459,458)	
Cash dividends to shareholders	207,443,044	$ 8
	$231,096,674	

The appropriation of earnings for 2018 is to be presented for approval in the TSMC s shareholders meeting to be held on June 5, 2019 (expected).

d. Others

Changes in others were as follows:

	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 Compensation	Total
Balance, beginning of year (IFRS 9)	$ (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	$ (12,042,347)	$ (3,429,324)	$ 23,601	$ (1,843)	$ (15,449,913)

	Year Ended December 31, 2017				
	Foreign Currency Translation Reserve	Unrealized Gain/Loss from Available-for-sale Financial Assets	Cash Flow Hedges Reserve	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ 1,661,237	$ 2,641	$ 105	$	$ 1,663,983
Exchange differences arising on translation of foreign operations	(28,257,449)				(28,257,449)
Changes in fair value of available-for-sale financial assets		(154,680)			(154,680)
Cumulative (gain)/loss reclassified to profit or loss upon disposal of available-for-sale financial assets		(61,182)			(61,182)
Gain/(loss) arising on changes in the fair value of hedging instruments			99,534		99,534
Transferred to initial carrying amount of hedged items			(94,851)		(94,851)
Share of other comprehensive income (loss) of associates	(101,468)	2,121			(99,347)
Share of unearned stock-based employee compensation of associates				(10,290)	(10,290)
Income tax effect		(2,974)	(562)		(3,536)
Balance, end of year	$ (26,697,680)	$ (214,074)	$ 4,226	$ (10,290)	$ (26,917,818)

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

26. NET REVENUE

a. Disaggregation of revenue from contracts with customers

Product	Year Ended December 31, 2018
Wafer	$ 911,296,364
Others	120,177,193
	$ 1,031,473,557

Geography	Year Ended December 31, 2018
Taiwan	$ 78,260,773
United States	632,821,464
China	175,794,228
Europe, the Middle East and Africa	71,068,438
Japan	58,125,879
Others	15,402,775
	$ 1,031,473,557

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

Application Type	Year Ended December 31, 2018
Communication	$ 578,923,664
Industrial/Standard	234,153,360
Computer	144,614,153
Consumer	73,782,380
	$ 1,031,473,557

Resolution	Year Ended December 31, 2018
7-nanometer	$ 81,680,746
10-nanometer	96,989,486
16/20-nanometer	210,989,033
28-nanometer	178,440,396
40/45-nanometer	101,801,017
65-nanometer	76,122,259
90-nanometer	36,652,061
0.11/0.13 micron	20,677,658
0.15/0.18 micron	81,182,646
0.25 micron and above	26,761,062
Wafer revenue	$ 911,296,364

b. Contract balances

	December 31, 2018	January 1, 2018
Contract liabilities (classified under accrued expenses and other current liabilities)	$ 4,684,024	$ 32,434,829

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

For the year ended December 31, 2018, the Company recognized NT$31,769,970 thousand as revenue from the beginning balance of contract liability.

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$55,405,973 thousand for the year ended December 31, 2018. As of December 31, 2018, the aforementioned refund liabilities amounted to NT$22,672,634 thousand (classified under accrued expenses and other current liabilities).

27. OTHER OPERATING INCOME AND EXPENSES, NET

	Years Ended December 31	
	2018	2017
Gain (loss) on disposal or retirement of property, plant and equipment, net	$ (1,005,644)	$ (1,097,908)
Impairment loss on property, plant and equipment	(423,468)	
Others	(672,337)	(267,603)
	$ (2,101,449)	$ (1,365,511)

28. OTHER INCOME

	Years Ended December 31	
	2018	2017
Interest income		
Bank deposits	$ 10,310,738	$ 6,412,823
Financial assets at FVTPL	382,673	
Financial assets at FVTOCI	3,078,604	
Financial assets at amortized cost	922,441	
Available-for-sale financial assets		2,091,435
Held-to-maturity financial assets		568,552
Structured product		391,896
	14,694,456	9,464,706
Dividend income	158,358	145,588
	$ 14,852,814	$ 9,610,294

29. FINANCE COSTS

	Years Ended December 31	
	2018	2017
Interest expense		
Corporate bonds	$ 1,633,775	$ 2,563,544
Bank loans	1,417,287	766,625
Others	161	144
	$ 3,051,223	$ 3,330,313

30. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2018	**2017**
Gain (loss) on disposal of financial assets, net		
Investments in debt instruments at FVTOCI	$ (989,138)	$
Available-for-sale financial assets		76,986
Financial assets carried at cost		12,809
Gain from disposal of subsidiaries		17,343
Net gain (loss) on financial instruments at FVTPL		
Held for trading		2,253,651
Mandatorily measured at FVTPL	(2,293,895)	
Designated as at FVTPL		131,037
Loss arising from fair value hedges, net	(2,386)	(30,293)
Impairment loss on financial assets		
Financial assets carried at cost		(29,603)
The reversal of expected credit loss of financial assets		
Investments in debt instruments at FVTOCI	1,990	
Financial assets at amortized cost	393	
Other gains (losses), net	(127,768)	385,428
	$ (3,410,804)	$ 2,817,358

31. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2018	**2017**
Current income tax expense		
Current tax expense recognized in the current year	$ 51,710,319	$ 57,503,831
Income tax adjustments on prior years	(989,984)	(896,147)
Other income tax adjustments	152,884	152,790
	50,873,219	56,760,474
Deferred income tax expense (benefit)		
Effect of tax rate changes	(1,474,808)	561,818
The origination and reversal of temporary differences	(3,072,554)	(4,336,110)
	(4,547,362)	(3,774,292)

Income tax expense recognized in profit or loss	$ 46,325,857	$ 52,986,182

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

	Years Ended December 31	
	2018	**2017**
Income before tax	$ 397,510,263	$ 396,133,030
Income tax expense at the statutory rate	$ 80,865,915	$ 69,608,602
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	2,539,966	(1,410,955)
Tax-exempt income	(54,543,521)	(16,901,134)
Additional income tax under the Alternative Minimum Tax Act	21,455,854	
Additional income tax on unappropriated earnings	7,420,479	11,835,948
Effect of tax rate changes on deferred income tax	(1,474,808)	561,818
The origination and reversal of temporary differences	(3,072,554)	(4,336,110)
Income tax credits	(6,028,374)	(5,628,630)
	47,162,957	53,729,539
Income tax adjustments on prior years	(989,984)	(896,147)
Other income tax adjustments	152,884	152,790
Income tax expense recognized in profit or loss	$ 46,325,857	$ 52,986,182

For the year ended December 31, 2017, the Company applied a tax rate of 17% for entities subject to the R.O.C. Income Tax Law. In February 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	
	2018	**2017**
Deferred income tax benefit (expense)		
Related to remeasurement of defined benefit obligation	$ 103,339	$ 30,562
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	91,828	
Related to gain/loss on cash flow hedges	562	(562)
Related to unrealized gain/loss on available-for-sale financial assets		(2,974)
	$ 195,729	$ 27,026

c. Deferred income tax balance

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

	December 31, 2018	December 31, 2017
Deferred income tax assets		
Temporary differences		
Depreciation	$ 11,839,221	$ 8,401,266
Refund liability	2,594,003	
Net defined benefit liability	1,084,874	975,324
Unrealized loss on inventories	750,995	629,442
Deferred compensation cost	271,711	266,521
Provision for sales returns and allowance		1,637,713
Investments in equity instruments at FVTOCI	56,191	
Others	209,392	195,197
	$ 16,806,387	$ 12,105,463
Deferred income tax liabilities		
Temporary differences		
Unrealized exchange gains	$ (61,677)	$ (169,480)
Available-for-sale financial assets		(95,421)
Others	(171,607)	(37,304)
	$ (233,284)	$ (302,205)

	Year Ended December 31, 2018				
		Recognized in			
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	Balance, End of Year
Deferred income tax assets					
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	$ (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)
	$ (302,205)	$ 32,722	$ 36,199	$	$ (233,284)

	Year Ended December 31, 2017					
		Recognized in				
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Effect of Disposal of Subsidiary	Effect of Exchange Rate Changes	Balance, End of Year
Deferred income tax assets						
Temporary differences						
Depreciation	$ 4,244,214	$ 4,207,209	$	$	$ (50,157)	$ 8,401,266
Provision for sales returns and allowance	1,512,061	129,971			(4,319)	1,637,713
Net defined benefit liability	939,543	5,219	30,562			975,324
Unrealized loss on inventories	737,247	(105,068)			(2,737)	629,442
Deferred compensation cost	378,740	(83,124)			(29,095)	266,521
Others	445,133	(222,429)			(27,507)	195,197
Operating loss carryforward	14,483			(14,483)		
	$ 8,271,421	$ 3,931,778	$ 30,562	$ (14,483)	$ (113,815)	$ 12,105,463
Deferred income tax liabilities						
Temporary differences						
Unrealized exchange gains	$ (48,736)	$ (120,744)	$	$	$	$ (169,480)
Available-for-sale financial assets	(92,447)		(2,974)			(95,421)
Others		(36,742)	(562)			(37,304)
	$ (141,183)	$ (157,486)	$ (3,536)	$	$	$ (302,205)

d. The investment operating loss carryforward and deductible temporary differences for which no deferred income tax assets have been recognized

As of December 31, 2018 and 2017, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT$20,060,918 thousand and NT$26,536,307 thousand, respectively.

e. Unused tax-exemption information

As of December 31, 2018, 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 2008 by TSMC	2015 to 2019
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, 2018 and 2017, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT$112,893,001 thousand and NT$95,003,344 thousand, respectively.

g. Income tax examination

The tax authorities have examined income tax returns of TSMC through 2015. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

32. EARNINGS PER SHARE

	Years Ended December 31	
	2018	2017
Basic EPS	$ 13.54	$ 13.23
Diluted EPS	$ 13.54	$ 13.23

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT$)
Year Ended December 31, 2018			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	$ 351,130,884	25,930,380	$ 13.54
Year Ended December 31, 2017			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	$ 343,111,476	25,930,380	$ 13.23

33. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2018	2017
a. Depreciation of property, plant and equipment		
Recognized in cost of revenue	$ 264,804,741	$ 235,985,189
Recognized in operating expenses	23,292,299	19,746,263
Recognized in other operating income and expenses	27,857	64,510
	$ 288,124,897	$ 255,795,962
b. Amortization of intangible assets		
Recognized in cost of revenue	$ 2,073,480	$ 2,135,521
Recognized in operating expenses	2,347,925	2,211,215
	$ 4,421,405	$ 4,346,736
	$ 85,895,569	$ 80,732,463

c. Research and development costs expensed as incurred

	Years Ended December 31	
	2018	2017
d. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	$ 2,568,945	$ 2,369,940
Defined benefit plans	281,866	271,551
	2,850,811	2,641,491
Other employee benefits	105,364,132	101,488,608
	$ 108,214,943	$ 104,130,099
Employee benefits expense summarized by function		
Recognized in cost of revenue	$ 63,597,704	$ 61,026,107
Recognized in operating expenses	44,617,239	43,103,992
	$ 108,214,943	$ 104,130,099

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$23,570,040 thousand and NT$23,019,082 thousand for the years ended December 31, 2018 and 2017, 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$23,570,040 thousand and NT$349,272 thousand in cash for 2018, respectively, 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, and profit sharing bonus to employees and compensation to directors in the amounts of NT$22,418,339 thousand and NT$376,432 thousand in cash for 2016, respectively, had been approved by the Board of Directors of TSMC held on February 19, 2019, February 13, 2018 and February 14, 2017, respectively. There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2018, 2017 and 2016, 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.

34. CASH FLOW INFORMATION

Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2018	Financing Cash Flow	Non-cash changes: Foreign Exchange Movement	Non-cash changes: Other Changes (Note)	Balance as of December 31, 2018
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	150,201,122	(58,024,900)	(382,878)	6,656	91,800,000
Total	$ 230,048,591	$ (34,381,144)	$ 1,105,482	$ (6,029,244)	$ 190,743,685

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

35. 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.

36. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2018
Financial assets	
FVTPL (Note 1)	$ 3,504,590
FVTOCI (Note 2)	107,067,490
Hedging financial assets	23,497
Amortized cost (Note 3)	745,585,774
	$ 856,181,351
Financial liabilities	
FVTPL (Note 4)	$ 40,825

Hedging financial liabilities	155,832
Amortized cost (Note 5)	318,475,704
	$ 318,672,361

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable, net, debt 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, accrued expenses and other current liabilities, bonds payable, and guarantee deposits.

	December 31, 2017
Financial assets	
FVTPL (Note 6)	$ 569,751
Available-for-sale financial assets (Note 7)	98,248,410
Held-to-maturity financial assets	20,821,714
Hedging derivative financial assets	34,394
Loans and receivables (Note 8)	684,416,654
	$ 804,090,923
Financial liabilities	
FVTPL (Note 6)	$ 26,709
Hedging derivative financial liabilities	15,562
Amortized cost (Note 9)	340,501,266
	$ 340,543,537

Note 6: Including held for trading and designated as at FVTPL.

Note 7: Including financial assets carried at cost.

Note 8: Including cash and cash equivalents, notes and accounts receivable (including related parties), other receivables and refundable deposits.

Note 9: Including short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, accrued expenses and other current liabilities, bonds payable and guarantee deposits.

b. Financial risk management objectives

The Company seeks to ensure sufficient cost-efficient funding 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, 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

Most of the Company s revenues and expenditures are denominated in foreign currencies. Consequently, the Company is exposed to foreign currency risk. To protect against reductions in value and the volatility of future cash flows caused by changes in foreign exchange rates, the Company uses derivative financial instruments, such as forward exchange contracts and cross currency swaps, and non-derivative financial instruments, such as foreign currency-denominated debt, to partially hedge the Company s existing and certain forecasted currency exposure. These hedges will offset only a portion of, but do not eliminate, the financial impact from movements in foreign currency exchange rates.

The Company s sensitivity analysis of foreign currency risk mainly focuses on the foreign currency monetary items and the derivatives financial instruments at the end of the reporting period. Assuming an unfavorable 10% movement in the levels of foreign exchanges relative to the New Taiwan dollar, the net income for the years ended December 31, 2018 and 2017 would have decreased by NT$506,369 thousand and NT$867,910 thousand, respectively, and the other comprehensive income for the years ended December 31, 2018 and 2017 would have decreased by NT$315,571 thousand and NT$265,875 thousand, respectively.

Interest rate risk

The Company is exposed to interest rate risk primarily related to its outstanding debt and investments in fixed income securities. All of the Company s bonds payable have fixed interest rates and are measured at amortized cost. As such, changes in interest rates would not affect the future cash flows.

The Company classified its investments in fixed income securities as financial assets at FVTPL, financial assets at FVTOCI and financial assets at amortized costs starting from 2018; as available-for-sale and held-to-maturity financial assets in 2017. Because financial assets at amortized costs and held-to-maturity fixed income securities are measured at amortized cost, changes in interest rates would not affect the fair value. On the other hand, financial assets at FVTPL, financial assets at FVTOCI and available-for-sale fixed income securities are exposed to fair value fluctuations caused by changes in interest rates. The Company utilized interest rate futures to partially hedge the interest rate risk on its financial assets at FVTPL and financial assets at FVTOCI and available-for-sale fixed income investments. These hedges may offset only a small portion of the financial impact from movements in interest rates.

Based on a sensitivity analysis performed at the end of the reporting period, an unfavorable movement of hypothetical 1.00% increase in interest rates across all maturities would have resulted in a decrease in net income by NT$247,761 thousand for the year ended December 31, 2018, and in a decrease in other comprehensive income by NT$2,449,954 thousand and NT$2,119,713 thousand for the years ended December 31, 2018 and 2017, respectively.

Other price risk

The Company is exposed to equity price risk for 2018 and 2017 arising from financial assets at FVTOCI and available-for-sale equity investments, respectively.

Assuming a hypothetical decrease of 5% in prices of the equity investments at the end of the reporting period for the years ended December 31, 2018 and 2017, the other comprehensive income would have decreased by NT$213,550 thousand and NT$351,520 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, 2018 and 2017, the Company s ten largest customers accounted for 79% and 70% of accounts receivable, respectively. The Company believes the concentration of credit risk is not material for the remaining accounts receivable.

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	Lifetime expected credit loss-not credit impaired	

	(2) From BB+~BB to B+~CCC-	
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 year ended December 31, 2018, the expected credit loss decreases NT$1,040 thousand, mainly attributed to asset allocation adjustment to debt investments of higher credit rating.

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	2-3 Years	4-5 Years	5+ Years	Total
December 31, 2018					
Non-derivative financial liabilities					
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
	259,418,358	38,232,405	23,441,141		321,091,904
Derivative financial instruments					
Forward exchange contracts					
Outflows	49,302,325				49,302,325
Inflows	(49,393,679)				(49,393,679)
	(91,354)				(91,354)
	$ 259,327,004	$ 38,232,405	$ 23,441,141	$	$ 321,000,550
December 31, 2017					
Non-derivative financial liabilities					
Short-term loans	$ 63,801,977	$	$	$	$ 63,801,977
Accounts payable (including related parties)	30,069,163				30,069,163
Payables to contractors and equipment suppliers	55,723,774				55,723,774
Accrued expenses and other current liabilities	24,659,738				24,659,738
Bonds payable	60,176,818	68,378,787	7,777,715	18,203,601	154,536,921
	8,493,829	7,503,151	83,639		16,080,619

Guarantee deposits (including those classified under accrued expenses and other current liabilities)					
	242,925,299	75,881,938	7,861,354	18,203,601	344,872,192
Derivative financial instruments					
Forward exchange contracts					
Outflows	67,393,539				67,393,539
Inflows	(67,957,919)				(67,957,919)
	(564,380)				(564,380)
	$ 242,360,919	$ 75,881,938	$ 7,861,354	$ 18,203,601	$ 344,307,812

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).

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, 2018			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at FVTPL				
Mandatorily measured at FVTPL				
Agency mortgage-backed securities	$	$ 3,419,287	$	$ 3,419,287
Forward exchange contracts		85,303		85,303
	$	$ 3,504,590	$	$ 3,504,590
Financial assets at FVTOCI				
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

	$ 11,596,319	$ 91,560,490	$ 3,910,681	$ 107,067,490
Hedging financial assets				
Cash flow hedges				
Forward exchange contracts	$	$ 23,497	$	$ 23,497

(Continued)

	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$	$ 40,825	$	$ 40,825
Hedging financial liabilities				
Fair value hedges				
Interest rate futures contracts	$ 153,891	$	$	$ 153,891
Cash flow hedges				
Forward exchange contracts		1,941		1,941
	$ 153,891	$ 1,941	$	$ 155,832

(Concluded)

	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Financial assets at FVTPL				
Held for trading				
Forward exchange contracts	$	$ 569,751	$	$ 569,751
Available-for-sale financial assets				
Corporate bonds	$	$ 40,165,148	$	$ 40,165,148
Agency bonds/Agency mortgage-backed securities		29,235,388		29,235,388
Asset-backed securities		13,459,545		13,459,545
Government bonds	7,715,980	101,743		7,817,723
Publicly traded stocks	2,548,054			2,548,054
Commercial paper		148,295		148,295
	$ 10,264,034	$ 83,110,119	$	$ 93,374,153
Hedging derivative financial assets				
Fair value hedges				
Interest rate futures contracts	$ 27,016	$	$	$ 27,016
Cash flow hedges				
Forward exchange contracts		7,378		7,378
	$ 27,016	$ 7,378	$	$ 34,394
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$	$ 26,709	$	$ 26,709
Hedging derivative financial liabilities				
Cash flow hedges				
Forward exchange contracts	$	$ 15,562	$	$ 15,562

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 year ended December 31, 2018 were as follows:

Balance at January 1, 2018	$ 5,841,384
Additions	212,488
Recognized in other comprehensive income	(2,141,421)
Disposals and proceeds from return of capital of investments	(175,731)
Effect of exchange rate changes	173,961
Balance at December 31, 2018	$ 3,910,681

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, and government bonds are determined by quoted market prices provided by third party pricing services.

Forward exchange contracts are measured using forward exchange rates and the discounted yield curves that are derived from quoted market prices. For investments in commercial paper, the fair values are determined by the present value of future cash flows based on the discounted yield curves that are derived from the 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.

To determine the fair value, the Company utilizes the asset approach and takes into account the net asset value measured at the fair value by independent parties. On December 31, 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$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, 2018, the Company uses significant unobservable inputs, which include expected returns, discount rate of 10%, discounts 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 value, for which the recent financing activities of investees, the market transaction prices of the similar companies and market conditions are considered.

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, 2018				
	Carrying Amount	Fair Value			
		Level 1	Level 2	Level 3	Total
Financial assets					
Financial assets at amortized costs					
Corporate bonds	$ 19,511,794	$	$ 19,554,553	$	$ 19,554,553
Commercial paper	2,294,098		2,296,188		2,296,188
	$ 21,805,892	$	$ 21,850,741	$	$ 21,850,741
Financial liabilities					
Financial liabilities at amortized costs					
Bonds payable	$ 91,800,000	$	$ 93,171,255	$	$ 93,171,255

	December 31, 2017				
	Carrying Amount	Fair Value			
		Level 1	Level 2	Level 3	Total
Financial assets					
Held-to-maturity securities					
Corporate bonds	$ 19,338,764	$	$ 19,541,419	$	$ 19,541,419
Structured product	1,482,950		1,475,350		1,475,350
	$ 20,821,714	$	$ 21,016,769	$	$ 21,016,769
Financial liabilities					
Measured at amortized cost					
Bonds payable	$ 150,201,122	$	$ 152,077,728	$	$ 152,077,728

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 structured product is determined by quoted market prices provided by the counterparty.

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.

37. 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

Related Party Name	Related Party Categories
GUC	Associates
VIS	Associates
SSMC	Associates
Xintec	Associates
Mutual-Pak	Associates
TSMC Education and Culture Foundation	Other related parties
TSMC Charity Foundation	Other related parties

b. Net revenue

		Years Ended December 31	
		2018	2017
Item	Related Party Categories		
Net revenue from sale of goods	Associates	$ 8,980,079	$ 8,495,937
	Other related parties	330	133
		$ 8,980,409	$ 8,496,070
Net revenue from royalties	Associates	$ 362,259	$ 482,537

c. Purchases

	Years Ended December 31	
	2018	2017
Related Party Categories		
Associates	$ 8,809,533	$ 9,904,637

d. Receivables from related parties

Item	Related Party Name/Categories	December 31, 2018	December 31, 2017
Receivables from related parties	GUC	$ 481,934	$ 1,022,892
	Xintec	102,478	161,232
		$ 584,412	$ 1,184,124

(Continued)

Item	Related Party Name/Categories	December 31, 2018	December 31, 2017
Other receivables from related parties	SSMC	$ 53,780	$ 83,099
	VIS	10,423	78,141
	Other Associates	825	9,818
		$ 65,028	$ 171,058

(Concluded)

e. Payables to related parties

Item	Related Party Name/Categories	December 31, 2018	December 31, 2017
Payables to related parties	Xintec	$ 649,812	$ 817,930
	SSMC	362,564	406,959
	VIS	357,080	409,950
	Other Associates	7,043	21,517
		$ 1,376,499	$ 1,656,356

f. Others

Item	Related Party Categories	Years Ended December 31 2018	2017
Manufacturing expenses	Associates	$ 2,974,581	$ 2,196,141
General and administrative expenses	Other related parties	$ 120,756	$ 101,500

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 (transactions with associates), and then recognized such gain or loss over the depreciable lives of the disposed assets.

g. Compensation of key management personnel

The compensation to directors and other key management personnel for the years ended December 31, 2018 and 2017 were as follows:

	Years Ended December 31	
	2018	2017
Short-term employee benefits	$ 2,004,881	$ 2,170,280
Post-employment benefits	3,383	3,727
	$ 2,008,264	$ 2,174,007

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.

38. PLEDGED ASSETS

The Company provided certificate of deposits recorded in other financial assets as collateral mainly for building lease agreements. As of December 31, 2018 and 2017, the aforementioned other financial assets amounted to NT$124,244 thousand and NT$165,618 thousand, respectively.

39. SIGNIFICANT OPERATING LEASE ARRANGEMENTS

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

The Company expensed the lease payments as follows:

	Years Ended December 31	
	2018	2017
Minimum lease payments	$ 4,243,091	$ 2,178,054

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

	December 31, 2018	December 31, 2017
Not later than 1 year	$ 5,824,119	$ 3,116,209
Later than 1 year and not later than 5 years	5,834,884	5,174,729
Later than 5 years	9,190,582	8,905,848

$ 20,849,585	$ 17,196,786

40. 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, 2018, 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, 2018.

c. In May 2017, Uri Cohen filed a complaint in the U.S. District Court for the Eastern District of Texas alleging that TSMC, TSMC North America and other companies infringe four U.S. patents. Cohen s case was transferred to and consolidated with the responsive declaratory judgment case for non-infringement of Cohen s asserted patents filed by TSMC and TSMC North America in the U.S. District Court for the Northern District of California. In July 2018, all pending litigations between the parties in the U.S. District Court for the Northern District of California were dismissed.

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, 2018 and 2017 were NT$70,702 thousand and NT$94,909 thousand, respectively.

41. SIGNIFICANT LOSSES FROM DISASTERS

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.

42. SIGNIFICANT SUBSEQUENT EVENTS

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. As of the date the accompanying consolidated financial statements were issued, a preliminary estimated loss of NT$6,100,000 thousand will be recognized in cost of revenue for the three months ended March 31, 2019.

43. 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)
December 31, 2018			
Financial assets			
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
Financial liabilities			
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

(Continued)

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
December 31, 2017			
Financial assets			
Monetary items			
USD	$ 5,668,611	29.659	$ 168,125,342
USD	580,555	6.512(Note 2)	17,218,674
EUR	236,474	35.45	8,383,015
JPY	34,335,661	0.2629	9,026,845
Financial assets			
Non-monetary items			
HKD	285,336	3.80	1,084,276
Financial liabilities			
Monetary items			
USD	4,048,384	29.659	120,071,030
EUR	415,819	35.45	14,740,766
JPY	43,205,838	0.2629	11,358,815
			(Concluded)

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

Note 2: The exchange rate represents the number of RMB for which one USD dollars 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, 2018 and 2017, 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.

44. 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 13;

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.

45. OPERATING SEGMENTS INFORMATION

a. Operating segments, segment revenue and operating results

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 Company uses the income from operations as the measurement for the basis of performance assessment. The basis for such measurement 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, product and major customers information were as follows:

1) Geographic information

	Net Revenue from External Customers Year Ended December 31 2017	Noncurrent Assets	
		December 31, 2018	December 31, 2017
Taiwan	$ 88,046,147	$ 1,039,471,321	$ 1,027,963,202
United States	635,851,720	7,569,797	7,515,835
China	110,201,389	43,574,538	44,204,888
Europe, the Middle East and Africa	69,046,797	8,269	8,123
Japan	60,628,029	13,138	8,534
Others	13,673,159		
	$ 977,447,241	$ 1,090,637,063	$ 1,079,700,582

The Company categorized the net revenue mainly based on the countries where the customers are headquartered. For geographic information in 2018, please refer to Note 26. Noncurrent assets include property, plant and equipment, intangible assets and other noncurrent assets.

2) Product information

Product	Year Ended December 31 2017
Wafer	$ 875,461,445
Others	101,985,796
	$ 977,447,241

For product information in 2018, please refer to Note 26.

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

	Years Ended December 31			
	2018		2017	
	Amount	%	Amount	%
Customer A	$ 224,690,695	22	$ 220,463,127	23

Commencing in 2018, the Company began to break down the net revenue by geography, by product 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. On a comparable basis, the classifications of 2017 have been revised accordingly.

TABLE 1

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

FINANCINGS PROVIDED

FOR THE YEAR ENDED DECEMBER 31, 2018

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

												Co
	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)	Allowanc for Bad Debt	Ite
		$ 52,859,100	$ 46,065,560	$ 30,829,260		The need for short-term and long-term financing				
les		(RMB 7,000,000)&	(RMB 7,000,000)&	(RMB 6,000,000)&						
	Yes	(US$ 700,000)	(US$ 479,000)	(US$ 129,000)	1.30%-1.96%		$	Operating capital	$	
les		46,110,000	46,110,000	3,227,700		The need for short-term financing				
	Yes	(US$ 1,500,000)	(US$ 1,500,000)	(US$ 105,000)	2.53%			Operating capital		

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 of this Article. 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 foreign subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC 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 Subsidiaries

ENDORSEMENTS/GUARANTEES PROVIDED

FOR THE YEAR ENDED DECEMBER 31, 2018

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

Endorser/ Guarantor	Guaranteed Party Name	Nature of Relationship	Limits on Endorsement/ Guarantee Amount Provided to Each Guaranteed 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 Amount to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Note 2)	Guarantee Provided by Subsidiary
				$ 35,351,000						
	TSMC Global	Subsidiary	$ 419,204,416	(US$ 1,150,000)	$	$	$		$ 419,204,416	
				2,557,977	2,557,977	2,557,977				
	TSMC North America	Subsidiary	419,204,416	(US$ 83,213)	(US$ 83,213)	(US$ 83,213)		0.15%	419,204,416	

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.

TABLE 3

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES HELD

DECEMBER 31, 2018

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

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)
TSMC	Commercial paper						
	Taiwan Power Company		Financial assets at amortized cost	180	$ 1,795,261	N/A	$ 1,797,107
	CPC Corporation, Taiwan			50	498,837	N/A	499,080
	Non-publicly traded equity investments						
	United Industrial Gases Co., Ltd.		Financial assets at fair value through other comprehensive income	21,230	493,225	10	493,225
	Shin-Etsu Handotai Taiwan Co., Ltd.			10,500	379,176	7	379,176
	Global Investment Holding Inc.			11,124	78,430	6	78,430
	W.K. Technology Fund IV			806	5,747	2	5,747
	Crimson Asia Capital				4,554	1	4,554
	Horizon Ventures Fund				2,477	12	2,477
	Publicly traded stocks						
	Semiconductor Manufacturing International Corporation		Financial assets at fair value through other comprehensive income	21,105	568,150		568,150
TSMC Partners	Non-publicly traded equity investments						
	Shanghai Walden Venture Capital Enterprise		Financial assets at fair value through other comprehensive income		US$ 8,904	6	US$ 8,904
	China Walden Venture Investments II, L.P.				US$ 8,175	9	US$ 8,175

	China Walden Venture Investments III, L.P.			US$	1,486	4	US$ 1,486
	Tela Innovations		10,440			25	
	Mcube Inc.		6,333			12	
	Sonics, Inc.		637			9	
MC Global	Corporate bond						
	Bank of America Corp	Financial assets at fair value through other comprehensive income		US$	44,755	N/A	US$ 44,755
	JPMorgan Chase & Co			US$	44,291	N/A	US$ 44,291
	Morgan Stanley			US$	40,237	N/A	US$ 40,237
	Goldman Sachs Group Inc/The			US$	32,464	N/A	US$ 32,464
	Citigroup Inc			US$	28,602	N/A	US$ 28,602
	CVS Health Corp			US$	27,238	N/A	US$ 27,238
	AT&T Inc			US$	23,123	N/A	US$ 23,123
	Comcast Corp			US$	18,894	N/A	US$ 18,894
	Verizon Communications Inc			US$	15,927	N/A	US$ 15,927
	HSBC Holdings PLC			US$	15,571	N/A	US$ 15,571
	BAT Capital Corp			US$	12,594	N/A	US$ 12,594
	Apple Inc			US$	12,585	N/A	US$ 12,585
	Daimler Finance North America LLC			US$	12,578	N/A	US$ 12,578
	PNC Bank NA			US$	12,203	N/A	US$ 12,203
	Nordea Bank Abp			US$	11,704	N/A	US$ 11,704
	AbbVie Inc			US$	11,504	N/A	US$ 11,504

(Continued)

			December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	United Technologies Corp		Financial assets at fair value through other comprehensive income		US$ 11,159	N/A	US$ 11,159	
	American International Group Inc				US$ 10,737	N/A	US$ 10,737	
	Ford Motor Credit Co LLC				US$ 10,153	N/A	US$ 10,153	
	Credit Suisse AG/New York NY				US$ 10,096	N/A	US$ 10,096	
	Sumitomo Mitsui Financial Group Inc				US$ 10,008	N/A	US$ 10,008	
	Mitsubishi UFJ Financial Group Inc				US$ 9,547	N/A	US$ 9,547	
	Duke Energy Corp				US$ 9,228	N/A	US$ 9,228	
	Macquarie Group Ltd				US$ 8,970	N/A	US$ 8,970	
	Analog Devices Inc				US$ 8,841	N/A	US$ 8,841	
	ABN AMRO Bank NV				US$ 8,652	N/A	US$ 8,652	
	ERAC USA Finance LLC				US$ 8,601	N/A	US$ 8,601	
	Wells Fargo & Co				US$ 8,495	N/A	US$ 8,495	
	Tencent Holdings Ltd				US$ 8,089	N/A	US$ 8,089	
	Intercontinental Exchange Inc				US$ 7,850	N/A	US$ 7,850	
	Celgene Corp				US$ 7,726	N/A	US$ 7,726	
	American Express Credit Corp				US$ 7,718	N/A	US$ 7,718	
	Huntington National Bank/The				US$ 7,717	N/A	US$ 7,717	
	Wells Fargo Bank NA				US$ 7,621	N/A	US$ 7,621	
	Siemens Financieringsmaatschappij NV				US$ 7,517	N/A	US$ 7,517	
	Cardinal Health Inc				US$ 7,484	N/A	US$ 7,484	
	Citizens Bank NA/Providence RI				US$ 7,469	N/A	US$ 7,469	
	Cooperatieve Rabobank UA/NY				US$ 7,462	N/A	US$ 7,462	
	QUALCOMM Inc				US$ 7,432	N/A	US$ 7,432	
	Reliance Standard Life Global Funding II				US$ 7,387	N/A	US$ 7,387	
	UBS Group Funding Switzerland AG				US$ 7,367	N/A	US$ 7,367	
	Hewlett Packard Enterprise Co				US$ 7,327	N/A	US$ 7,327	

ANZ New Zealand Int 1 Ltd/London	US$ 7,270	N/A	US$ 7,270
Microsoft Corp	US$ 7,152	N/A	US$ 7,152
Deutsche Telekom International Finance BV	US$ 7,110	N/A	US$ 7,110
African Development Bank	US$ 7,097	N/A	US$ 7,097
Svenska Handelsbanken AB	US$ 7,081	N/A	US$ 7,081
General Dynamics Corp	US$ 7,039	N/A	US$ 7,039
Welltower Inc	US$ 6,995	N/A	US$ 6,995
Banco Santander SA	US$ 6,907	N/A	US$ 6,907
Bank of New York Mellon Corp/The	US$ 6,907	N/A	US$ 6,907
Toyota Motor Credit Corp	US$ 6,902	N/A	US$ 6,902
Mizuho Financial Group Inc	US$ 6,783	N/A	US$ 6,783
BB&T Corp	US$ 6,703	N/A	US$ 6,703
Hyundai Capital America	US$ 6,644	N/A	US$ 6,644
Anheuser-Busch InBev Finance Inc	US$ 6,637	N/A	US$ 6,637
BP Capital Markets PLC	US$ 6,589	N/A	US$ 6,589
Southern Co/The	US$ 6,477	N/A	US$ 6,477
Westpac Banking Corp	US$ 6,474	N/A	US$ 6,474
SunTrust Bank/Atlanta GA	US$ 6,467	N/A	US$ 6,467
Tyson Foods Inc	US$ 6,213	N/A	US$ 6,213
Dominion Energy Inc	US$ 6,187	N/A	US$ 6,187
Air Lease Corp	US$ 6,161	N/A	US$ 6,161
21st Century Fox America Inc	US$ 6,152	N/A	US$ 6,152
KeyBank NA/Cleveland OH	US$ 6,049	N/A	US$ 6,049
Fifth Third Bancorp	US$ 6,045	N/A	US$ 6,045

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Northrop Grumman Corp		Financial assets at fair value through other comprehensive income		US$ 6,036	N/A	US$ 6,036	
	KeyCorp				US$ 5,806	N/A	US$ 5,806	
	SMBC Aviation Capital Finance DAC				US$ 5,806	N/A	US$ 5,806	
	Santander UK Group Holdings PLC				US$ 5,782	N/A	US$ 5,782	
	UBS AG/London				US$ 5,772	N/A	US$ 5,772	
	DowDuPont Inc				US$ 5,757	N/A	US$ 5,757	
	BPCE SA				US$ 5,709	N/A	US$ 5,709	
	AXA Equitable Holdings Inc				US$ 5,662	N/A	US$ 5,662	
	Aviation Capital Group LLC				US$ 5,657	N/A	US$ 5,657	
	BP Capital Markets America Inc				US$ 5,616	N/A	US$ 5,616	
	Reckitt Benckiser Treasury Services PLC				US$ 5,611	N/A	US$ 5,611	
	Enterprise Products Operating LLC				US$ 5,589	N/A	US$ 5,589	
	Santander UK PLC				US$ 5,568	N/A	US$ 5,568	
	Oracle Corp				US$ 5,521	N/A	US$ 5,521	
	Penske Truck Leasing Co Lp / PTL Finance Corp				US$ 5,399	N/A	US$ 5,399	
	ITC Holdings Corp				US$ 5,350	N/A	US$ 5,350	
	Capital One NA				US$ 5,305	N/A	US$ 5,305	
	Western Union Co/The				US$ 5,218	N/A	US$ 5,218	
	International Bank for Reconstruction & Development				US$ 5,186	N/A	US$ 5,186	
					US$ 5,092	N/A	US$ 5,092	

Sompo International Holdings Ltd			
Jackson National Life Global Funding	US$ 5,069	N/A	US$ 5,069
Manufacturers & Traders Trust Co	US$ 5,049	N/A	US$ 5,049
SunTrust Banks Inc	US$ 5,044	N/A	US$ 5,044
Toronto-Dominion Bank/The	US$ 5,000	N/A	US$ 5,000
UBS AG/Stamford CT	US$ 4,972	N/A	US$ 4,972
Cigna Holding Co	US$ 4,917	N/A	US$ 4,917
Marriott International Inc/MD	US$ 4,799	N/A	US$ 4,799
Cox Communications Inc	US$ 4,791	N/A	US$ 4,791
Ryder System Inc	US$ 4,778	N/A	US$ 4,778
NextEra Energy Capital Holdings Inc	US$ 4,706	N/A	US$ 4,706
US Bank NA/Cincinnati OH	US$ 4,644	N/A	US$ 4,644
Five Corners Funding Trust	US$ 4,624	N/A	US$ 4,624
Credit Suisse Group Funding Guernsey Ltd	US$ 4,564	N/A	US$ 4,564
American Express Co	US$ 4,547	N/A	US$ 4,547
BNP Paribas SA	US$ 4,530	N/A	US$ 4,530
Amgen Inc	US$ 4,526	N/A	US$ 4,526
AEP Texas Inc	US$ 4,502	N/A	US$ 4,502
New York Life Global Funding	US$ 4,448	N/A	US$ 4,448
Barclays PLC	US$ 4,216	N/A	US$ 4,216
Credit Agricole SA/London	US$ 4,118	N/A	US$ 4,118
Vodafone Group PLC	US$ 4,040	N/A	US$ 4,040
Fifth Third Bank/Cincinnati OH	US$ 4,031	N/A	US$ 4,031
Banque Federative du Credit Mutuel SA	US$ 4,028	N/A	US$ 4,028
	US$ 3,969	N/A	US$ 3,969

Exelon Generation Co LLC			
European Investment Bank	US$ 3,903	N/A	US$ 3,903
Bank of Nova Scotia/The	US$ 3,862	N/A	US$ 3,862
Air Liquide Finance SA	US$ 3,827	N/A	US$ 3,827
Edison International	US$ 3,762	N/A	US$ 3,762
Alimentation Couche-Tard Inc	US$ 3,656	N/A	US$ 3,656
Macquarie Bank Ltd	US$ 3,643	N/A	US$ 3,643

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Bayer US Finance II LLC		Financial assets at fair value through other comprehensive income		US$ 3,638	N/A	US$ 3,638	
	Barclays Bank PLC				US$ 3,621	N/A	US$ 3,621	
	Asian Development Bank				US$ 3,594	N/A	US$ 3,594	
	Canadian Imperial Bank of Commerce				US$ 3,586	N/A	US$ 3,586	
	Branch Banking & Trust Co				US$ 3,489	N/A	US$ 3,489	
	Royal Bank of Canada				US$ 3,484	N/A	US$ 3,484	
	Keurig Dr Pepper Inc				US$ 3,480	N/A	US$ 3,480	
	Capital One Financial Corp				US$ 3,426	N/A	US$ 3,426	
	BMW US Capital LLC				US$ 3,406	N/A	US$ 3,406	
	Enel Finance International NV				US$ 3,385	N/A	US$ 3,385	
	Mondelez International Holdings Netherlands BV				US$ 3,382	N/A	US$ 3,382	
	LyondellBasell Industries NV				US$ 3,366	N/A	US$ 3,366	
	Lloyds Banking Group PLC				US$ 3,222	N/A	US$ 3,222	
	Inter-American Development Bank				US$ 3,118	N/A	US$ 3,118	
	Digital Realty Trust LP				US$ 3,102	N/A	US$ 3,102	
	Bank of Montreal				US$ 3,086	N/A	US$ 3,086	

Walgreens Boots Alliance Inc	US$ 3,075	N/A	US$ 3,075
Skandinaviska Enskilda Banken AB	US$ 3,058	N/A	US$ 3,058
Schlumberger Holdings Corp	US$ 3,019	N/A	US$ 3,019
State Street Corp	US$ 3,007	N/A	US$ 3,007
Eversource Energy	US$ 2,915	N/A	US$ 2,915
Anthem Inc	US$ 2,843	N/A	US$ 2,843
Charles Schwab Corp/The	US$ 2,793	N/A	US$ 2,793
National Australia Bank Ltd/New York	US$ 2,741	N/A	US$ 2,741
Express Scripts Holding Co	US$ 2,727	N/A	US$ 2,727
Shell International Finance BV	US$ 2,718	N/A	US$ 2,718
ING Groep NV	US$ 2,664	N/A	US$ 2,664
Nestle Holdings Inc	US$ 2,611	N/A	US$ 2,611
McCormick & Co Inc/MD	US$ 2,595	N/A	US$ 2,595
PartnerRe Finance B LLC	US$ 2,568	N/A	US$ 2,568
Sprint Spectrum Co LLC / Sprint Spectrum Co II LLC / Sprint Spectrum Co III LLC	US$ 2,502	N/A	US$ 2,502
Berkshire Hathaway Energy Co	US$ 2,501	N/A	US$ 2,501
WR Berkley Corp	US$ 2,484	N/A	US$ 2,484
Delta Air Lines 2007-1 Class A Pass Through Trust	US$ 2,483	N/A	US$ 2,483
Lam Research Corp	US$ 2,482	N/A	US$ 2,482
Ventas Realty LP / Ventas	US$ 2,416	N/A	US$ 2,416

	Capital Corp			
	NiSource Inc	US$ 2,377	N/A	US$ 2,377
	DXC Technology Co	US$ 2,345	N/A	US$ 2,345
	EI du Pont de Nemours & Co	US$ 2,326	N/A	US$ 2,326
	Xylem Inc/NY	US$ 2,319	N/A	US$ 2,319
	MUFG Bank Ltd	US$ 2,296	N/A	US$ 2,296
	NBCUniversal Media LLC	US$ 2,252	N/A	US$ 2,252
	Lloyds Bank PLC	US$ 2,219	N/A	US$ 2,219
	Cintas Corp No 2	US$ 2,165	N/A	US$ 2,165
	Sumitomo Mitsui Banking Corp	US$ 2,164	N/A	US$ 2,164
	Gilead Sciences Inc	US$ 2,101	N/A	US$ 2,101
	ProAssurance Corp	US$ 2,094	N/A	US$ 2,094
	HCP Inc	US$ 2,039	N/A	US$ 2,039
	Volkswagen Group of America Finance LLC	US$ 2,024	N/A	US$ 2,024

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	EOG Resources Inc		Financial assets at fair value through other comprehensive income		US$ 2,003	N/A	US$ 2,003	
	Roche Holdings Inc				US$ 1,999	N/A	US$ 1,999	
	British Telecommunications PLC				US$ 1,997	N/A	US$ 1,997	
	Aetna Inc				US$ 1,997	N/A	US$ 1,997	
	Realty Income Corp				US$ 1,959	N/A	US$ 1,959	
	Caterpillar Financial Services Corp				US$ 1,938	N/A	US$ 1,938	
	American Airlines 2013-2 Class A Pass Through Trust				US$ 1,925	N/A	US$ 1,925	
	Huntington Bancshares Inc/OH				US$ 1,912	N/A	US$ 1,912	
	Duke Realty LP				US$ 1,895	N/A	US$ 1,895	
	Dow Chemical Co/The				US$ 1,881	N/A	US$ 1,881	
	Societe Generale SA				US$ 1,819	N/A	US$ 1,819	
	General Mills Inc				US$ 1,818	N/A	US$ 1,818	
	Simon Property Group LP				US$ 1,781	N/A	US$ 1,781	
	Visa Inc				US$ 1,755	N/A	US$ 1,755	
	UnitedHealth Group Inc				US$ 1,752	N/A	US$ 1,752	
	WestRock RKT Co				US$ 1,746	N/A	US$ 1,746	
	Brambles USA Inc				US$ 1,740	N/A	US$ 1,740	
	PSEG Power LLC				US$ 1,730	N/A	US$ 1,730	
	Dominion Energy Gas Holdings LLC				US$ 1,726	N/A	US$ 1,726	
	McKesson Corp				US$ 1,707	N/A	US$ 1,707	
	Danske Bank A/S				US$ 1,687	N/A	US$ 1,687	
	Standard Chartered PLC				US$ 1,680	N/A	US$ 1,680	
	Wisconsin Public Service Corp				US$ 1,678	N/A	US$ 1,678	
	Regions Financial Corp				US$ 1,658	N/A	US$ 1,658	
	Amazon.com Inc				US$ 1,581	N/A	US$ 1,581	
	Principal Life Global Funding II				US$ 1,564	N/A	US$ 1,564	

	Husky Energy Inc	US$ 1,557	N/A	US$ 1,557
	General Electric Co	US$ 1,552	N/A	US$ 1,552
	American Electric Power Co Inc	US$ 1,546	N/A	US$ 1,546
	Weyerhaeuser Co	US$ 1,537	N/A	US$ 1,537
	Lincoln National Corp	US$ 1,536	N/A	US$ 1,536
	AIG Global Funding	US$ 1,491	N/A	US$ 1,491
	Harley-Davidson Financial Services Inc	US$ 1,490	N/A	US$ 1,490
	Compass Bank	US$ 1,483	N/A	US$ 1,483
	O Reilly Automotive Inc	US$ 1,470	N/A	US$ 1,470
	John Deere Capital Corp	US$ 1,470	N/A	US$ 1,470
	Nissan Motor Acceptance Corp	US$ 1,466	N/A	US$ 1,466
	Guardian Life Global Funding	US$ 1,459	N/A	US$ 1,459
	Public Service Electric & Gas Co	US$ 1,457	N/A	US$ 1,457
	Fiserv Inc	US$ 1,455	N/A	US$ 1,455
	Oesterreichische Kontrollbank AG	US$ 1,441	N/A	US$ 1,441
	TransCanada PipeLines Ltd	US$ 1,436	N/A	US$ 1,436
	HSBC Bank PLC	US$ 1,434	N/A	US$ 1,434
	Eastman Chemical Co	US$ 1,433	N/A	US$ 1,433
	CBS Corp	US$ 1,420	N/A	US$ 1,420
	Takeda Pharmaceutical Co Ltd	US$ 1,412	N/A	US$ 1,412
	IBM Credit LLC	US$ 1,407	N/A	US$ 1,407
	Monongahela Power Co	US$ 1,387	N/A	US$ 1,387
	Cboe Global Markets Inc	US$ 1,368	N/A	US$ 1,368
	Texas Eastern Transmission LP	US$ 1,363	N/A	US$ 1,363

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Georgia-Pacific LLC		Financial assets at fair value through other comprehensive income		US$ 1,346	N/A	US$ 1,346	
	Kreditanstalt fuer Wiederaufbau				US$ 1,331	N/A	US$ 1,331	
	Rockwell Collins Inc				US$ 1,321	N/A	US$ 1,321	
	GATX Corp				US$ 1,265	N/A	US$ 1,265	
	Entergy Arkansas LLC				US$ 1,262	N/A	US$ 1,262	
	CNA Financial Corp				US$ 1,249	N/A	US$ 1,249	
	Entergy Corp				US$ 1,226	N/A	US$ 1,226	
	CenterPoint Energy Inc				US$ 1,224	N/A	US$ 1,224	
	Consolidated Edison Inc				US$ 1,203	N/A	US$ 1,203	
	Glencore Funding LLC				US$ 1,190	N/A	US$ 1,190	
	GlaxoSmithKline Capital PLC				US$ 1,182	N/A	US$ 1,182	
	Regions Bank/Birmingham AL				US$ 1,157	N/A	US$ 1,157	
	Magellan Midstream Partners LP				US$ 1,149	N/A	US$ 1,149	
	Woolworths Group Ltd				US$ 1,099	N/A	US$ 1,099	
	Commonwealth Bank of Australia/New York NY				US$ 1,094	N/A	US$ 1,094	
	Interpublic Group of Cos Inc/The				US$ 1,086	N/A	US$ 1,086	
	Swedbank AB				US$ 1,061	N/A	US$ 1,061	
	Reinsurance Group of America Inc				US$ 1,037	N/A	US$ 1,037	
	Quest Diagnostics Inc				US$ 1,026	N/A	US$ 1,026	
	Prudential Financial Inc				US$ 1,026	N/A	US$ 1,026	

Glencore Finance Canada Ltd	US$ 1,022	N/A	US$ 1,022
Athene Global Funding	US$ 1,020	N/A	US$ 1,020
Commonwealth Edison Co	US$ 1,014	N/A	US$ 1,014
DNB Bank ASA	US$ 1,014	N/A	US$ 1,014
Scentre Group Trust 1 / Scentre Group Trust 2	US$ 1,014	N/A	US$ 1,014
Mitsubishi UFJ Trust & Banking Corp	US$ 1,013	N/A	US$ 1,013
DTE Energy Co	US$ 1,010	N/A	US$ 1,010
Union Pacific Corp	US$ 1,008	N/A	US$ 1,008
Commonwealth Bank of Australia	US$ 1,003	N/A	US$ 1,003
Philip Morris International Inc	US$ 1,001	N/A	US$ 1,001
Equinor ASA	US$ 995	N/A	US$ 995
Southern California Edison Co	US$ 994	N/A	US$ 994
Laboratory Corp of America Holdings	US$ 993	N/A	US$ 993
Biogen Inc	US$ 992	N/A	US$ 992
Halliburton Co	US$ 989	N/A	US$ 989
Sysco Corp	US$ 988	N/A	US$ 988
Unum Group	US$ 987	N/A	US$ 987
Orange SA	US$ 986	N/A	US$ 986
BOC Aviation Ltd	US$ 985	N/A	US$ 985
Pricoa Global Funding I	US$ 985	N/A	US$ 985
Entergy Texas Inc	US$ 982	N/A	US$ 982
Protective Life Global Funding	US$ 979	N/A	US$ 979
Moody s Corp	US$ 978	N/A	US$ 978
Holcim US Finance Sarl & Cie SCS	US$ 973	N/A	US$ 973
Healthcare Trust of America Holdings LP	US$ 970	N/A	US$ 970
State Grid Overseas Investment 2016 Ltd	US$ 968	N/A	US$ 968
Loews Corp	US$ 965	N/A	US$ 965
Citibank NA	US$ 954	N/A	US$ 954
Bunge Ltd Finance Corp	US$ 953	N/A	US$ 953

Anheuser-Busch InBev Worldwide Inc	US$ 921	N/A	US$ 921

(Continued)

			December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	Coca-Cola Femsa SAB de CV		Financial assets at fair value through other comprehensive income		US$ 892	N/A	US$ 892	
	Lockheed Martin Corp				US$ 889	N/A	US$ 889	
	CNOOC Finance 2011 Ltd				US$ 860	N/A	US$ 860	
	CA Inc				US$ 857	N/A	US$ 857	
	Marsh & McLennan Cos Inc				US$ 853	N/A	US$ 853	
	Viterra Inc				US$ 850	N/A	US$ 850	
	Baker Hughes a GE Co LLC / Baker Hughes Co-Obligor Inc				US$ 823	N/A	US$ 823	
	Intesa Sanpaolo SpA				US$ 804	N/A	US$ 804	
	Aon PLC				US$ 800	N/A	US$ 800	
	Alterra Finance LLC				US$ 787	N/A	US$ 787	
	ONEOK Partners LP				US$ 783	N/A	US$ 783	
	Activision Blizzard Inc				US$ 774	N/A	US$ 774	
	Suncorp-Metway Ltd				US$ 774	N/A	US$ 774	
	AXIS Specialty Finance LLC				US$ 771	N/A	US$ 771	
	Sinopec Capital 2013 Ltd				US$ 771	N/A	US$ 771	
	Nomura Holdings Inc				US$ 769	N/A	US$ 769	
	Manulife Financial Corp				US$ 769	N/A	US$ 769	
	Incitec Pivot Finance LLC				US$ 767	N/A	US$ 767	
	Warner Media LLC				US$ 758	N/A	US$ 758	
	AutoZone Inc				US$ 753	N/A	US$ 753	
	Baidu Inc				US$ 745	N/A	US$ 745	
	Walmart Inc				US$ 744	N/A	US$ 744	

Metropolitan Life Global Funding I	US$ 738	N/A	US$ 738
Pinnacle West Capital Corp	US$ 734	N/A	US$ 734
WEC Energy Group Inc	US$ 733	N/A	US$ 733
Phillips 66	US$ 701	N/A	US$ 701
Thermo Fisher Scientific Inc	US$ 701	N/A	US$ 701
Australia & New Zealand Banking Group Ltd/New York NY	US$ 695	N/A	US$ 695
eBay Inc	US$ 695	N/A	US$ 695
APT Pipelines Ltd	US$ 695	N/A	US$ 695
Baker Hughes a GE Co LLC	US$ 691	N/A	US$ 691
Textron Inc	US$ 685	N/A	US$ 685
Reynolds American Inc	US$ 670	N/A	US$ 670
Vornado Realty LP	US$ 669	N/A	US$ 669
Rochester Gas & Electric Corp	US$ 660	N/A	US$ 660
National Oilwell Varco Inc	US$ 659	N/A	US$ 659
Norfolk Southern Railway Co	US$ 656	N/A	US$ 656
Ohio Power Co	US$ 635	N/A	US$ 635
Toledo Edison Co/The	US$ 630	N/A	US$ 630
Wm Wrigley Jr Co	US$ 624	N/A	US$ 624
ERP Operating LP	US$ 623	N/A	US$ 623
Alexandria Real Estate Equities Inc	US$ 618	N/A	US$ 618
RBC USA Holdco Corp	US$ 618	N/A	US$ 618
Citizens Financial Group Inc	US$ 613	N/A	US$ 613
Grupo Bimbo SAB de CV	US$ 612	N/A	US$ 612
Liberty Property LP	US$ 612	N/A	US$ 612
Nutrien Ltd	US$ 610	N/A	US$ 610
Continental Airlines 2000-1 Class A-1 Pass	US$ 605	N/A	US$ 605

Through Trust				
Continental Airlines 2007-1 Class A Pass Through Trust	US$ 600	N/A	US$ 600	
Daiwa Securities Group Inc	US$ 599	N/A	US$ 599	

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	MUFG Union Bank NA		Financial assets at fair value through other comprehensive income		US$ 598	N/A	US$ 598	
	OneBeacon US Holdings Inc				US$ 597	N/A	US$ 597	
	US Bancorp				US$ 595	N/A	US$ 595	
	Ontario Teachers Cadillac Fairview Properties Trust				US$ 594	N/A	US$ 594	
	BAT International Finance PLC				US$ 591	N/A	US$ 591	
	Kimco Realty Corp				US$ 589	N/A	US$ 589	
	Life Technologies Corp				US$ 585	N/A	US$ 585	
	AXIS Specialty Finance PLC				US$ 574	N/A	US$ 574	
	Nationwide Financial Services Inc				US$ 569	N/A	US$ 569	
	ABC Inc				US$ 568	N/A	US$ 568	
	Host Hotels & Resorts LP				US$ 564	N/A	US$ 564	
	AvalonBay Communities Inc				US$ 563	N/A	US$ 563	
	Duke Energy Progress LLC				US$ 551	N/A	US$ 551	
	Church & Dwight Co Inc				US$ 525	N/A	US$ 525	
	Sempra Energy				US$ 518	N/A	US$ 518	
	Fulton Financial Corp				US$ 510	N/A	US$ 510	
	ASB Bank Ltd				US$ 501	N/A	US$ 501	
	Regency Centers Corp				US$ 498	N/A	US$ 498	
	TD Ameritrade Holding Corp				US$ 497	N/A	US$ 497	

Sumitomo Mitsui Trust Bank Ltd	US$ 496	N/A	US$ 496	
Highwoods Realty LP	US$ 493	N/A	US$ 493	
ORIX Corp	US$ 490	N/A	US$ 490	
International Paper Co	US$ 478	N/A	US$ 478	
MassMutual Global Funding II	US$ 477	N/A	US$ 477	
Diageo Capital PLC	US$ 475	N/A	US$ 475	
Comerica Inc	US$ 473	N/A	US$ 473	
Eni SpA	US$ 472	N/A	US$ 472	
Spire Inc	US$ 459	N/A	US$ 459	
Narragansett Electric Co/The	US$ 456	N/A	US$ 456	
United Overseas Bank Ltd	US$ 454	N/A	US$ 454	
Duke Energy Carolinas LLC	US$ 453	N/A	US$ 453	
Eaton Corp	US$ 451	N/A	US$ 451	
Public Service Enterprise Group Inc	US$ 449	N/A	US$ 449	
Total Capital International SA	US$ 446	N/A	US$ 446	
Burlington Northern Santa Fe LLC	US$ 429	N/A	US$ 429	
Columbia Pipeline Group Inc	US$ 424	N/A	US$ 424	
Canadian Pacific Railway Co	US$ 412	N/A	US$ 412	
Marathon Petroleum Corp	US$ 412	N/A	US$ 412	
Valero Energy Corp	US$ 412	N/A	US$ 412	
Texas-New Mexico Power Co	US$ 406	N/A	US$ 406	
Eaton Electric Holdings LLC	US$ 403	N/A	US$ 403	
Markel Corp	US$ 400	N/A	US$ 400	
Tanger Properties LP	US$ 393	N/A	US$ 393	

Southern Power Co	US$ 388	N/A	US$	388
Continental Airlines 2012-1 Class A Pass Through Trust	US$ 385	N/A	US$	385
StanCorp Financial Group Inc	US$ 379	N/A	US$	379
Aon Corp	US$ 377	N/A	US$	377
First Niagara Financial Group Inc	US$ 364	N/A	US$	364
CenterPoint Energy Resources Corp	US$ 355	N/A	US$	355
American Honda Finance Corp	US$ 354	N/A	US$	354

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	Deutsche Bank AG		Financial assets at fair value through other comprehensive income		US$ 348	N/A	US$ 348	
	Cooperatieve Rabobank UA				US$ 340	N/A	US$ 340	
	Schlumberger Finance Canada Ltd				US$ 293	N/A	US$ 293	
	Eli Lilly & Co				US$ 289	N/A	US$ 289	
	Amphenol Corp				US$ 286	N/A	US$ 286	
	BAE Systems Holdings Inc				US$ 282	N/A	US$ 282	
	Home Depot Inc/The				US$ 277	N/A	US$ 277	
	EMD Finance LLC				US$ 277	N/A	US$ 277	
	Archer-Daniels-Midland Co				US$ 250	N/A	US$ 250	
	Hartford Financial Services Group Inc/The				US$ 228	N/A	US$ 228	
	Rolls-Royce PLC				US$ 221	N/A	US$ 221	
	Protective Life Corp				US$ 216	N/A	US$ 216	
	WestRock MWV LLC				US$ 210	N/A	US$ 210	
	ING Bank NV				US$ 207	N/A	US$ 207	
	Fidelity National Information Services Inc				US$ 202	N/A	US$ 202	
	Equifax Inc				US$ 174	N/A	US$ 174	
	Packaging Corp of America				US$ 157	N/A	US$ 157	
	Schneider Electric SE				US$ 157	N/A	US$ 157	
	Wells Fargo & Co		Financial assets at amortized cost		US$ 149,941	N/A	US$ 150,065	
	JPMorgan Chase & Co.				US$ 124,948	N/A	US$ 125,726	
	Westpac Banking Corp.				US$ 99,987	N/A	US$ 100,111	
	Goldman Sachs Group, Inc.				US$ 99,900	N/A	US$ 100,103	
	Commonwealth Bank of Australia				US$ 49,994	N/A	US$ 50,037	
	National Australia Bank				US$ 49,994	N/A	US$ 50,010	
	Bank of Nova Scotia				US$ 49,976	N/A	US$ 50,077	
	Industrial and Commercial Bank of China				US$ 9,996	N/A	US$ 10,000	

	Government bond				
	United States Treasury Note/Bond	Financial assets at fair value through other comprehensive income	US$ 287,628	N/A	US$ 287,628
	United States Treasury Floating Rate Note		US$ 68,164	N/A	US$ 68,164
	Abu Dhabi Government International Bond		US$ 3,408	N/A	US$ 3,408
	United States Treasury Bill		US$ 2,248	N/A	US$ 2,248
	Qatar Government International Bond		US$ 1,315	N/A	US$ 1,315
	Agency bonds/Agency mortgage-backed securities				
	Freddie Mac REMICS	Financial assets at fair value through Profit or Loss	US$ 47,996	N/A	US$ 47,996
	Fannie Mae REMICS		US$ 33,767	N/A	US$ 33,767
	Government National Mortgage Association		US$ 24,518	N/A	US$ 24,518
	Fannie Mae Interest Strip		US$ 1,859	N/A	US$ 1,859
	Freddie Mac Multifamily Structured Pass Through Certificates		US$ 1,713	N/A	US$ 1,713
	Freddie Mac Strips		US$ 1,380	N/A	US$ 1,380
	Fannie Mae Pool	Financial assets at fair value through other comprehensive income	US$ 398,735	N/A	US$ 398,735
	Freddie Mac Gold Pool		US$ 133,948	N/A	US$ 133,948
	Fannie Mae REMICS		US$ 131,341	N/A	US$ 131,341
	Government National Mortgage Association		US$ 128,236	N/A	US$ 128,236
	Freddie Mac REMICS		US$ 112,050	N/A	US$ 112,050
	Ginnie Mae II Pool		US$ 51,015	N/A	US$ 51,015
	Fannie Mae		US$ 27,141	N/A	US$ 27,141

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Ginnie Mae		Financial assets at fair value through other comprehensive income		US$ 16,081	N/A	US$ 16,081	
	Fannie Mae-Aces				US$ 5,796	N/A	US$ 5,796	
	Freddie Mac Non Gold Pool				US$ 2,684	N/A	US$ 2,684	
	Freddie Mac Multifamily Structured Pass Through Certificates				US$ 2,554	N/A	US$ 2,554	
	Province of Quebec Canada				US$ 2,514	N/A	US$ 2,514	
	FHLMC-GNMA				US$ 1,486	N/A	US$ 1,486	
	Federal Farm Credit Banks				US$ 891	N/A	US$ 891	
	NCUA Guaranteed Notes Trust 2010-R2				US$ 842	N/A	US$ 842	
	Ginnie Mae I Pool				US$ 632	N/A	US$ 632	
	Kowloon-Canton Railway Corp				US$ 554	N/A	US$ 554	
	Federal Home Loan Mortgage Corp				US$ 500	N/A	US$ 500	
	Federal National Mortgage Association				US$ 370	N/A	US$ 370	
	NCUA Guaranteed Notes Trust 2010-R1				US$ 335	N/A	US$ 335	
	Fannie Mae Benchmark REMIC				US$ 132	N/A	US$ 132	
	Freddie Mac				US$ 15	N/A	US$ 15	
	Asset-backed securities							
					US$ 68,487	N/A	US$ 68,487	

	Citibank Credit Card Issuance Trust	Financial assets at fair value through other comprehensive income			
	Chase Issuance Trust		US$ 43,604	N/A	US$ 43,604
	American Express Credit Account Master Trust		US$ 42,144	N/A	US$ 42,144
	Discover Card Execution Note Trust		US$ 37,495	N/A	US$ 37,495
	Ford Credit Floorplan Master Owner Trust A		US$ 26,702	N/A	US$ 26,702
	Hyundai Auto Receivables Trust 2018-B		US$ 8,122	N/A	US$ 8,122
	BA Credit Card Trust		US$ 8,092	N/A	US$ 8,092
	Nissan Master Owner Trust Receivables		US$ 7,989	N/A	US$ 7,989
	CGDBB Commercial Mortgage Trust 2017-BIOC		US$ 7,430	N/A	US$ 7,430
	Capital One Multi-Asset Execution Trust		US$ 7,304	N/A	US$ 7,304
	BX Commercial Mortgage Trust 2018-IND		US$ 6,946	N/A	US$ 6,946
	UBS-Barclays Commercial Mortgage Trust 2012-C2		US$ 6,313	N/A	US$ 6,313
	Mercedes-Benz Master Owner Trust 2016-B		US$ 6,012	N/A	US$ 6,012
	Ford Credit Auto Owner Trust 2016-REV1		US$ 5,917	N/A	US$ 5,917
	BBCMS 2018-TALL Mortgage Trust		US$ 5,403	N/A	US$ 5,403
	Chesapeake Funding II LLC		US$ 5,328	N/A	US$ 5,328
			US$ 4,879	N/A	US$ 4,879

Morgan Stanley Bank of America Merrill Lynch Trust 2013-C10				
Ford Credit Auto Owner Trust 2015-REV1	US$ 4,871	N/A	US$ 4,871	
Volvo Financial Equipment Master Owner Trust	US$ 4,510	N/A	US$ 4,510	
UBS Commercial Mortgage Trust 2018-C10	US$ 4,047	N/A	US$ 4,047	
JPMCC Commercial Mortgage Securities Trust 2017-JP7	US$ 3,960	N/A	US$ 3,960	
J.P. Morgan Chase Commercial Mortgage Securities Trust 2016-WIKI	US$ 3,932	N/A	US$ 3,932	
BANK 2017-BNK5	US$ 3,902	N/A	US$ 3,902	
BANK 2017-BNK6	US$ 3,899	N/A	US$ 3,899	
Nissan Auto Lease Trust 2016-B	US$ 3,886	N/A	US$ 3,886	
Cold Storage Trust 2017-ICE3	US$ 3,732	N/A	US$ 3,732	
GS Mortgage Securities Corp II	US$ 3,247	N/A	US$ 3,247	
COMM 2015-CCRE25 Mortgage Trust	US$ 2,998	N/A	US$ 2,998	
GS Mortgage Securities Corp Trust 2018-RIVR	US$ 2,989	N/A	US$ 2,989	
Honda Auto Receivables 2017-2 Owner Trust	US$ 2,947	N/A	US$ 2,947	
GM Financial Consumer	US$ 2,945	N/A	US$ 2,945	

	Automobile Receivables Trust 2017-2					

(Continued)

			December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	BMW Floorplan Master Owner Trust		Financial assets at fair value through other comprehensive income		US$ 2,800	N/A	US$ 2,800	
	GS Mortgage Securities Trust 2011-GC3				US$ 2,750	N/A	US$ 2,750	
	Hertz Fleet Lease Funding LP				US$ 2,672	N/A	US$ 2,672	
	Morgan Stanley Capital I Trust 2018-H3				US$ 2,596	N/A	US$ 2,596	
	GS Mortgage Securities Trust 2013-GCJ12				US$ 2,576	N/A	US$ 2,576	
	Toyota Auto Receivables 2018-C Owner Trust				US$ 2,554	N/A	US$ 2,554	
	JPMDB Commercial Mortgage Securities Trust 2016-C2				US$ 2,512	N/A	US$ 2,512	
	Nissan Auto Lease Trust 2017-A				US$ 2,386	N/A	US$ 2,386	
	Toyota Auto Receivables 2018-A Owner Trust				US$ 2,306	N/A	US$ 2,306	
	Hyundai Auto Lease Securitization Trust 2017-B				US$ 2,252	N/A	US$ 2,252	
	Wells Fargo Commercial Mortgage Trust 2015-LC20				US$ 2,127	N/A	US$ 2,127	
	UBS Commercial Mortgage Trust				US$ 2,083	N/A	US$ 2,083	

2018-C11			
COMM 2013-CCRE12 Mortgage Trust	US$ 2,061	N/A	US$ 2,061
Ford Credit Auto Owner Trust 2017-C	US$ 2,046	N/A	US$ 2,046
BENCHMARK 2018-B4	US$ 2,034	N/A	US$ 2,034
JPMBB Commercial Mortgage Securities Trust 2014-C19	US$ 2,017	N/A	US$ 2,017
COMM 2015-CCRE22 Mortgage Trust	US$ 2,010	N/A	US$ 2,010
Wells Fargo Commercial Mortgage Trust 2015-C30	US$ 2,006	N/A	US$ 2,006
UBS-Barclays Commercial Mortgage Trust 2013-C6	US$ 1,979	N/A	US$ 1,979
Toyota Auto Receivables 2016-B Owner Trust	US$ 1,977	N/A	US$ 1,977
Citigroup Commercial Mortgage Trust 2017-P8	US$ 1,974	N/A	US$ 1,974
Toyota Auto Receivables 2017-C Owner Trust	US$ 1,960	N/A	US$ 1,960
Mercedes-Benz Auto Lease Trust 2018-B	US$ 1,953	N/A	US$ 1,953
JPMDB Commercial Mortgage Securities Trust 2017-C7	US$ 1,944	N/A	US$ 1,944
Morgan Stanley Bank of America Merrill Lynch Trust 2016-C31	US$ 1,940	N/A	US$ 1,940
	US$ 1,931	N/A	US$ 1,931

GM Financial Automobile Leasing Trust 2016-3			
Morgan Stanley Capital I Trust 2016-UB11	US$ 1,868	N/A	US$ 1,868
Ford Credit Auto Lease Trust 2017-B	US$ 1,863	N/A	US$ 1,863
BANK 2018-BNK14	US$ 1,811	N/A	US$ 1,811
BMW Vehicle Lease Trust	US$ 1,801	N/A	US$ 1,801
Ford Credit Auto Lease Trust	US$ 1,799	N/A	US$ 1,799
Wheels SPV 2 LLC	US$ 1,788	N/A	US$ 1,788
Citigroup Commercial Mortgage Trust 2015-GC35	US$ 1,783	N/A	US$ 1,783
Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	US$ 1,771	N/A	US$ 1,771
BENCHMARK 2018-B6 Mortgage Trust	US$ 1,766	N/A	US$ 1,766
CarMax Auto Owner Trust	US$ 1,756	N/A	US$ 1,756
Nelnet Student Loan Trust 2010-4	US$ 1,742	N/A	US$ 1,742
SLM Student Loan Trust 2005-4	US$ 1,722	N/A	US$ 1,722
UBS-Barclays Commercial Mortgage Trust 2013-C5	US$ 1,707	N/A	US$ 1,707
Hyundai Auto Lease Securitization Trust 2016-C	US$ 1,670	N/A	US$ 1,670
Ford Credit Auto Lease Trust 2017-A	US$ 1,603	N/A	US$ 1,603
	US$ 1,598	N/A	US$ 1,598

	Edsouth Indenture No 10 LLC			
	Ford Credit Auto Owner Trust 2015-A	US$ 1,541	N/A	US$ 1,541
	Navient Student Loan Trust 2017-1	US$ 1,540	N/A	US$ 1,540
	Nelnet Student Loan Trust 2018-3	US$ 1,538	N/A	US$ 1,538
	COMM 2015-PC1 Mortgage Trust	US$ 1,500	N/A	US$ 1,500
	Ford Credit Auto Lease Trust 2018-A	US$ 1,497	N/A	US$ 1,497
	Morgan Stanley Capital I Trust 2017-H1	US$ 1,481	N/A	US$ 1,481
	SLM Student Loan Trust 2013-6	US$ 1,465	N/A	US$ 1,465
	JPMCC Commercial Mortgage Securities Trust 2017-JP5	US$ 1,460	N/A	US$ 1,460

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	ECMC Group Student Loan Trust 2018-2		Financial assets at fair value through other comprehensive income		US$ 1,448	N/A	US$ 1,448	
	Nelnet Student Loan Trust 2012-1				US$ 1,446	N/A	US$ 1,446	
	Pheaa Student Loan Trust 2018-1				US$ 1,443	N/A	US$ 1,443	
	Toyota Auto Receivables 2018-B Owner Trust				US$ 1,432	N/A	US$ 1,432	
	Mercedes-Benz Master Owner Trust 2018-BA				US$ 1,396	N/A	US$ 1,396	
	Ford Credit Auto Owner Trust 2014-REV2				US$ 1,390	N/A	US$ 1,390	
	Nelnet Student Loan Trust 2006-2				US$ 1,388	N/A	US$ 1,388	
	COMM 2013-CCRE6 Mortgage Trust				US$ 1,360	N/A	US$ 1,360	
	GM Financial Automobile Leasing Trust 2017-1				US$ 1,299	N/A	US$ 1,299	
	COMM 2015-DC1 Mortgage Trust				US$ 1,253	N/A	US$ 1,253	
	Enterprise Fleet Financing LLC				US$ 1,251	N/A	US$ 1,251	
	Hyundai Auto Lease Securitization Trust 2018-A				US$ 1,246	N/A	US$ 1,246	
	JPMBB Commercial Mortgage				US$ 1,243	N/A	US$ 1,243	

	Securities Trust 2016-C1			
	Morgan Stanley Bank of America Merrill Lynch Trust 2015-C20	US$ 1,196	N/A	US$ 1,196
	Hyundai Auto Lease Securitization Trust 2017-C	US$ 1,049	N/A	US$ 1,049
	Nissan Auto Receivables 2016-B Owner Trust	US$ 1,043	N/A	US$ 1,043
	WFRBS Commercial Mortgage Trust 2011-C4	US$ 1,036	N/A	US$ 1,036
	GM Financial Consumer Automobile Receivables Trust 2018-4	US$ 1,023	N/A	US$ 1,023
	COMM 2014-CCRE20 Mortgage Trust	US$ 1,009	N/A	US$ 1,009
	Nissan Auto Receivables 2017-B Owner Trust	US$ 1,008	N/A	US$ 1,008
	Morgan Stanley Bank of America Merrill Lynch Trust 2014 C19	US$ 1,006	N/A	US$ 1,006
	Nissan Auto Receivables 2018-B Owner Trust	US$ 1,004	N/A	US$ 1,004
	JPMBB Commercial Mortgage Securities Trust 2014-C21	US$ 1,002	N/A	US$ 1,002
	Navient Student Loan Trust 2017-3	US$ 1,000	N/A	US$ 1,000
	GM Financial Consumer Automobile	US$ 986	N/A	US$ 986

	2017-1						
	Ford Credit Auto Owner Trust 2017-REV1	US$	985	N/A	US$	985	
	Citigroup Commercial Mortgage Trust 2013-GC11	US$	969	N/A	US$	969	
	JPMBB Commercial Mortgage Securities Trust 2015-C31	US$	945	N/A	US$	945	
	Honda Auto Receivables 2018-2 Owner Trust	US$	911	N/A	US$	911	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	US$	897	N/A	US$	897	
	CarMax Auto Owner Trust 2018-1	US$	873	N/A	US$	873	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	US$	853	N/A	US$	853	
	Mercedes-Benz Auto Receivables Trust 2018-1	US$	841	N/A	US$	841	
	280 Park Avenue 2017-280P Mortgage Trust	US$	822	N/A	US$	822	
	SLM Student Loan Trust 2012-3	US$	816	N/A	US$	816	
	Ford Credit Auto Owner Trust 2015-REV2	US$	803	N/A	US$	803	
	Navient Student Loan Trust 2018-1	US$	799	N/A	US$	799	
		US$	798	N/A	US$	798	

Ford Credit Auto Owner Trust/Ford Credit 2014-REV1				
Honda Auto Receivables 2018-3 Owner Trust	US$ 792	N/A	US$	792
SLM Student Loan Trust 2013-1	US$ 786	N/A	US$	786
CFCRE Commercial Mortgage Trust 2011-C1	US$ 776	N/A	US$	776
Mercedes-Benz Auto Lease Trust 2018-A	US$ 770	N/A	US$	770
GM Financial Automobile Leasing Trust 2018-1	US$ 753	N/A	US$	753
COMM 2015-LC19 Mortgage Trust	US$ 716	N/A	US$	716
Toyota Auto Receivables 2018-D Owner Trust	US$ 706	N/A	US$	706
Ally Auto Receivables Trust 2018-3	US$ 699	N/A	US$	699
SLM Student Loan Trust 2013-4	US$ 688	N/A	US$	688
Wells Fargo Commercial Mortgage Trust 2015-C28	US$ 670	N/A	US$	670
Mercedes-Benz Auto Lease Trust 2016-B	US$ 649	N/A	US$	649

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2018					Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)		
TSMC Global	Ford Credit Auto Owner Trust 2018-A	Financial assets at fair value through other comprehensive income		US$	640	N/A	US$	640	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-C6			US$	636	N/A	US$	636	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-WLDN			US$	607	N/A	US$	607	
	GM Financial Automobile Leasing Trust 2018-3			US$	585	N/A	US$	585	
	DBGS 2018-BIOD Mortgage Trust			US$	573	N/A	US$	573	
	Hyundai Auto Receivables Trust 2015-A			US$	571	N/A	US$	571	
	COMM 2016-SAVA Mortgage Trust			US$	555	N/A	US$	555	
	DBUBS 2011-LC2 Mortgage Trust			US$	514	N/A	US$	514	
	ARI Fleet Lease Trust 2018-A			US$	508	N/A	US$	508	
	GS Mortgage Securities Trust 2014-GC18			US$	505	N/A	US$	505	
	CD 2016-CD2 Mortgage Trust			US$	500	N/A	US$	500	
	COMM 2014-CCRE19 Mortgage Trust			US$	499	N/A	US$	499	

	Ford Credit Auto Owner Trust 2016-A	US$	485	N/A	US$	485
	Hyundai Auto Lease Securitization Trust 2017-A	US$	433	N/A	US$	433
	WFRBS Commercial Mortgage Trust 2014-C25	US$	404	N/A	US$	404
	GM Financial Automobile Leasing Trust 2018-2	US$	390	N/A	US$	390
	Morgan Stanley Bank of America Merrill Lynch Trust 2014-C18	US$	377	N/A	US$	377
	Honda Auto Receivables 2017-4 Owner Trust	US$	366	N/A	US$	366
	Wells Fargo Commercial Mortgage Trust 2016-LC24	US$	357	N/A	US$	357
	Morgan Stanley Bank of America Merrill Lynch Trust 2014-C16	US$	337	N/A	US$	337
	ARI Fleet Lease Trust 2018-B	US$	331	N/A	US$	331
	BMW Vehicle Lease Trust 2018-1	US$	317	N/A	US$	317
	JPMBB Commercial Mortgage Securities Trust 2013-C14	US$	300	N/A	US$	300
	GM Financial Automobile Leasing Trust 2017-2	US$	269	N/A	US$	269
	Wells Fargo Commercial Mortgage Trust 2015-NXS1	US$	264	N/A	US$	264
	BMW Vehicle Lease Trust	US$	259	N/A	US$	259

	2016-2						
	Honda Auto Receivables 2016-2 Owner Trust		US$	248	N/A	US$	248
	Wells Fargo Commercial Mortgage Trust 2015-SG1		US$	214	N/A	US$	214
	Citigroup Commercial Mortgage Trust 2014-GC23		US$	199	N/A	US$	199
	BMW Vehicle Lease Trust 2017-2		US$	187	N/A	US$	187
	GS Mortgage Securities Trust 2010-C1		US$	141	N/A	US$	141
	WFRBS Commercial Mortgage Trust 2011-C5		US$	123	N/A	US$	123
	COMM 2014-CCRE15 Mortgage Trust		US$	96	N/A	US$	96
	GS Mortgage Securities Trust 2014-GC24		US$	82	N/A	US$	82
	GS Mortgage Securities Trust 2010-C2		US$	45	N/A	US$	45
	Honda Auto Receivables 2015-4 Owner Trust		US$	32	N/A	US$	32
	Commercial paper						
	Royal Bank of Canada/New York NY	Financial assets at fair value through other comprehensive income	US$	2,000	N/A	US$	2,000
	Toronto-Dominion Bank/NY		US$	1,500	N/A	US$	1,500
	Non-publicly traded equity investments						
	Primavera Capital Fund II L.P.	Financial assets at fair value through other comprehensive	US$	70,460	4	US$	70,460

		income						
VTAF II	Non-publicly traded equity investments							
		Financial assets at fair value through other comprehensive income						
	Sentelic		1,019	US$	2,039	4	US$	2,039
	Aether Systems, Inc.		1,085	US$	353	20	US$	353

(Continued)

				December 31, 2018					
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)		Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)		Note
VTAF II	5V Technologies, Inc.		Financial assets at fair value through other comprehensive income	364	US$	313	2	US$	313	
	Publicly traded stocks									
	Aquantia		Financial assets at fair value through other comprehensive income	83	US$	730		US$	730	
VTAF III	Non-publicly traded equity investments									
	LiquidLeds Lighting Corp.		Financial assets at fair value through other comprehensive income	1,952	US$	800	14	US$	800	
	Neoconix, 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	451	US$	2,393		US$	2,393	
	CNEX Labs, Inc.			237	US$	775		US$	775	

(Concluded)

TABLE 4

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

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, 2018

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

ities	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance Shares/Units (In Thousands)	Beginning Balance Amount	Acquisition Shares/Units (In Thousands)	Acquisition Amount	Disposal Shares/Units (In Thousands)	Disposal Amount	Carrying Value
n	Financial assets at amortized cost			$	50	$ 498,837	$	$		
ty										
	Investments accounted for using equity method (Note 2)	Subsidiary		9	309,211,877	2	62,272,080			
		Subsidiary			26,493,740		2,361,320			
	Financial assets at fair value through other comprehensive income			58,320	1,309,279			58,320	651,973	1,831,241
	Financial assets at fair value through other comprehensive income				US$ 40,876	US$ 10,852		US$ 5,990	US$	6,027
					US$ 29,911	US$ 11,293		US$ 12,000	US$	12,128
					US$ 10,018	US$ 18,102		US$ 684	US$	692
					US$ 26,867	US$ 9,299		US$ 12,438	US$	12,482
					US$ 1,256	US$ 18,768		US$ 1,210	US$	1,212
					US$ 17,024	US$ 13,719		US$ 17,590	US$	17,732

p		US$	1,761	US$	10,490	US$	984	US$ 1,000
		US$	12,722	US$	8,573	US$	12,105	US$ 12,257
		US$	6,181	US$	10,575	US$	8,673	US$ 8,860
UA/NY		US$	1,450	US$	13,474	US$	7,326	US$ 7,453
k		US$	11,073	US$	3,576	US$	11,075	US$ 11,075
		US$		US$	21,168	US$	21,166	US$ 21,166
	Financial assets at amortized cost	US$	10,013	US$		US$	10,000	US$ 10,000
ote/Bond	Financial assets at fair value through other comprehensive income	US$	202,689	US$	483,976	US$	401,246	US$ 403,883
loating		US$	49,901	US$	124,504	US$	106,171	US$ 106,123
ill		US$	2,997	US$	175,861	US$	176,725	US$ 176,682

(Continued)

Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature Relationship	Beginning Balance Shares/Units (In Thousands)	Beginning Balance Amount	Acquisition Shares/Units (In Thousands)	Acquisition Amount	Disposal Shares/Units (In Thousands)	Disposal Amount	Carrying Value	Gain/Loss on Disposal	Ba Shares/ (In Thou
	Agency bonds/Agency mortgage-backed securities												
	FNMA PooL BM4681	Financial assets at fair value through other comprehensive income			US$	US$	35,947	US$ 4,026	US$	4,089	US$	(63)	
	FNMA Pool BM4495				US$	US$	29,035	US$ 1,249	US$	1,361	US$	(112)	
	FNMA Pool BM1948				US$	41,275	US$	5,534	US$ 18,653	US$	19,922	US$	(1,269)
	FED HM LN PC Pool G61603				US$	US$	27,059	US$ 1,256	US$	1,387	US$	(131)	
	FNMA Pool CA2352				US$	US$	25,688	US$ 492	US$	517	US$	(25)	
	FNMA TBA 30 Yr 5				US$	US$	186,999	US$ 162,191	US$	162,197	US$	(6)	
	FED HM LN PC Pool G61592				US$	US$	45,987	US$ 24,813	US$	24,527	US$	286	
	FED HM LN PC Pool G61654				US$	US$	19,316	US$ 651	US$	704	US$	(53)	
	GNMA II Pool MA5468				US$	US$	17,751	US$ 112	US$	118	US$	(6)	
	FNMA Pool BM4493				US$	US$	18,362	US$ 1,279	US$	1,325	US$	(46)	
	Government National Mortgage Association				US$	US$	16,433	US$ 39	US$	39	US$		
	FED HM LN PC Pool G61553				US$	US$	15,372	US$ 244	US$	255	US$	(11)	
	FNMA Pool CA2169				US$	US$	15,368	US$ 1,406	US$	1,429	US$	(23)	
	GNMA II Pool MA5332				US$	US$	26,202	US$ 13,285	US$	13,279	US$	6	
	GNMA II TBA 30 Yr 5				US$	US$	61,268	US$ 49,012	US$	49,046	US$	(34)	
	Government National Mortgage Association				US$	US$	10,494	US$	US$		US$		

GNMA II TBA 30 Yr 4	US$	2,378	US$	47,507	US$	47,743	US$	47,773	US$	(30)
FNMA TBA 15 Yr 3.5	US$		US$	42,360	US$	40,346	US$	40,350	US$	(4)
GNMA II TBA 30 Yr 3.5	US$	145	US$	47,680	US$	46,609	US$	46,676	US$	(67)
FED HM LN PC Pool G08799	US$		US$	24,748	US$	24,846	US$	24,782	US$	64

ame	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature Relationship	Beginning Balance Shares/Units (In Thousands)	Beginning Balance Amount	Acquisition Shares/Units (In Thousands)	Acquisition Amount	Disposal Shares/Units (In Thousands)	Disposal Amount	Disposal Carrying Value	Disposal Gain/ Loss on Disposal	Ba Shares/U (In Thous
	Federal Home Loan Bank Discount Notes					US$		US$ 29,498		US$ 29,500	US$ 29,499	US$ 1	
	FED HM LN PC Pool G60594					US$ 11,599		US$		US$ 11,191	US$ 11,711	US$ (520)	
	FNMA TBA 30 Yr 3.5					US$ 2,866		US$ 83,271		US$ 86,356	US$ 86,144	US$ 212	
	FNMA TBA 30 Yr 3					US$		US$ 198,586		US$ 198,614	US$ 198,586	US$ 28	
	FNMA TBA 15 Yr 3					US$ 2,015		US$ 65,931		US$ 67,884	US$ 67,949	US$ (65)	
	FNMA TBA 30 Yr 4.5					US$ 15,758		US$ 157,210		US$ 172,818	US$ 173,014	US$ (196)	
	FED HM LN PC Pool G08773					US$		US$ 10,380		US$ 10,410	US$ 10,380	US$ 30	
	Asset-backed securities												
	Citibank Credit Card Issuance Trust	Financial assets at fair value through other comprehensive income				US$ 48,328		US$ 40,865		US$ 20,343	US$ 20,346	US$ (3)	
	Chase Issuance Trust					US$ 39,211		US$ 27,720		US$ 23,176	US$ 23,192	US$ (16)	
	Discover Card Execution Note Trust					US$ 45,722		US$ 16,266		US$ 24,230	US$ 24,268	US$ (38)	
	American Express Credit Account Master Trust					US$ 12,805		US$ 25,878		US$ 11,239	US$ 11,233	US$ 6	
	Capital One Multi-Asset Execution Trust					US$ 22,544		US$		US$ 15,223	US$ 15,227	US$ (4)	
l	Structure product												
	Bank of Tokyo-Mitsubishi UFJ	Financial assets at amortized cost				US$ 50,000		US$		US$ 50,000	US$ 50,000	US$	

Note 1: The ending balance includes the amortization of premium/discount on bonds investments, share of profits/losses of investees and other related adjustment.

Note 2:

To lower the hedging cost, in August 2018, the Board of Directors of TSMC approved to inject US$2,000,000 thousand of capital into TSMC Global. This project was approved by the Investment Commission, Ministry of Economic Affairs, R.O.C. (MOEA). The prepayment for investment was US$100,000 thousand as of December 31, 2018.

(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, 2018

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

	Transaction Amount (Foreign Currencies in			Prior Transaction of Related Counter-party				
ction Date	Thousands)	Payment Term	Counter-party	Nature of Relationships	Owner	Relationships	Transfer Date	Amount	Price Refe
10, 2017 to 25, 2018	$ 303,592	Monthly settlement by the construction progress and acceptance	HSIEH KUN CO., LTD	N/A	N/A	N/A	N/A	Price comparison price negot
17, 2017 to 12, 2018	301,341	Monthly settlement by the construction progress and acceptance	Jer Yih Electrical Eng. Co.	N/A	N/A	N/A	N/A	Price comparison price negot
21, 2017 to 6, 2018	607,800	Monthly settlement by the construction progress and acceptance	TRUSVAL TECHNOLOGY CO., LTD.	N/A	N/A	N/A	N/A	Price comparison price negot
0, 2017 to 30, 2018	382,672	Monthly settlement by the construction progress and acceptance	M+W High Tech Project Taiwan Co., Ltd.	N/A	N/A	N/A	N/A	Price comparison price negot
8, 2017 to 2018	1,334,403	Monthly settlement by the construction progress and acceptance	CHEN FULL INTERNATIONAL CO., LTD.	N/A	N/A	N/A	N/A	Price comparison price negot
0, 2017 to 9, 2018	300,874	Monthly settlement by the construction progress and acceptance	Unique Station International Corp.	N/A	N/A	N/A	N/A	Price comparison price negot
1, 2017 to , 2018	1,841,951	Monthly settlement by	Organo Technology Co., Ltd.	N/A	N/A	N/A	N/A	Price comparison

		the construction progress and acceptance						price negot
5, 2017 to , 2018	2,559,574	Monthly settlement by the construction progress and acceptance	YANKEY ENGINEERING CO., LTD.	N/A	N/A	N/A	N/A	Price comparison price negot
, 2017 to , 2018	413,901	Monthly settlement by the construction progress and acceptance	HUAN YU TECHNOLOGIES CO., LTD.	N/A	N/A	N/A	N/A	Price comparison price negot

(Continued)

	Transaction Amount (Foreign Currencies in Thousands)				Prior Transaction of Related Counter-party				
Date		Payment Term	Counter-party	Nature of Relationships	Owner	Relationships	Transfer Date	Amount	Price
7 to 8	$ 2,187,982	Monthly settlement by the construction progress and acceptance	MEGA UNION TECHNOLOGY INCORPORATED		N/A	N/A	N/A	N/A	Price comp price
to	1,422,454	Monthly settlement by the construction progress and acceptance	TASA Construction Corporation		N/A	N/A	N/A	N/A	Price comp price
to 8	347,431	Monthly settlement by the construction progress and acceptance	MandarTech Interiors Inc.		N/A	N/A	N/A	N/A	Price comp price
to 8	348,757	Monthly settlement by the construction progress and acceptance	J.J. PAN AND PARTNERS , ARCHITECTS AND PLANNERS		N/A	N/A	N/A	N/A	Price comp price
to	574,621	Monthly settlement by the construction progress and acceptance	Trane Taiwan Distribution Limited		N/A	N/A	N/A	N/A	Price comp price
17 to 8	337,069	Monthly settlement by the construction progress and acceptance	Lumax International Corp., Ltd		N/A	N/A	N/A	N/A	Price comp price
017 018	1,012,550	Monthly settlement by the construction progress and acceptance	Air Liquide Far Eastern		N/A	N/A	N/A	N/A	Price comp price
017 018	617,447	Monthly settlement by the construction progress and acceptance	Kao Hsin Engineering Co., Ltd.		N/A	N/A	N/A	N/A	Price comp price
1,	1,224,738	Monthly settlement by the construction progress and acceptance	Uangyih-Tech Industrial Co., Ltd.		N/A	N/A	N/A	N/A	Price comp price

4, h 22,	784,003	Monthly settlement by the construction progress and acceptance	Siemens Ltd.	N/A	N/A	N/A	N/A	Price comp price
2017 018	1,773,165	Monthly settlement by the construction progress and acceptance	MARKETECH INTERNATIONAL CORP.	N/A	N/A	N/A	N/A	Price comp price

(Continued)

n Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				
					Owner	Relationships	Transfer Date	Amount	Price
10, y 24,	$ 305,783	Monthly settlement by the construction progress and acceptance	DESICCANT TECHNOLOGY CO., LTD.		N/A	N/A	N/A	N/A	Price compar price n
13, 2018	948,048	Monthly settlement by the construction progress and acceptance	Chen Yuan International Co., Ltd		N/A	N/A	N/A	N/A	Price compar price n
14, ril 16,	1,724,550	Monthly settlement by the construction progress and acceptance	PAN ASIA Corp.		N/A	N/A	N/A	N/A	Price compar price n
5, 2017 2018	7,219,028	Monthly settlement by the construction progress and acceptance	UNITED INTEGRATED SERVICES CO., LTD.		N/A	N/A	N/A	N/A	Price compar price n
13, y 23,	2,457,695	Monthly settlement by the construction progress and acceptance	Taiwan Puritic Corp.		N/A	N/A	N/A	N/A	Price compar price n
14, y 23,	305,566	Monthly settlement by the construction progress and acceptance	WHOLETECH SYSTEM HITECH LIMITED		N/A	N/A	N/A	N/A	Price compar price n
26, 3, 2018	525,172	Monthly settlement by the construction progress and acceptance	ABB Ltd.		N/A	N/A	N/A	N/A	Price compar price n
2018 to 018	1,744,533	Monthly settlement by the construction progress and acceptance	KEDGE Construction Co., Ltd.		N/A	N/A	N/A	N/A	Price compar price n
2018 to 018	315,886	Monthly settlement by the construction progress and acceptance	Shihlin Electric & Engineering Corp. Tainan Branch		N/A	N/A	N/A	N/A	Price compar price n

2018 2018	2,564,709	Monthly settlement by the construction progress and acceptance	L&K ENGINEERING CO.,LTD.	N/A	N/A	N/A	N/A	Price compar price n
2018 3,	5,387,421	Monthly settlement by the construction progress and acceptance	Fu Tsu Construction Co., Ltd.	N/A	N/A	N/A	N/A	Price compar price n

(Continued)

	Transaction Amount (Foreign Currencies in Thousands)				Prior Transaction of Related Counter-party				
Date		Payment Term	Counter-party	Nature of Relationships	Owner	Relationships	Transfer Date	Amount	Price
2018 018	$ 378,445	Monthly settlement by the construction progress and acceptance	AMPOWER INTERNATIONAL ENTERPRISE		N/A	N/A	N/A	N/A	Price comp price
2018 018	1,415,232	Monthly settlement by the construction progress and acceptance	Cica-Huntek Chemical Technology Taiwan Co., Ltd		N/A	N/A	N/A	N/A	Price comp price
018 to 18	1,068,243	Monthly settlement by the construction progress and acceptance	Chun Yuan Steel Industry Co., Ltd		N/A	N/A	N/A	N/A	Price comp price
018 to ,	3,098,269	Monthly settlement by the construction progress and acceptance	China Steel Structure Co., Ltd.		N/A	N/A	N/A	N/A	Price comp price
8 to 8	410,000	Monthly settlement by the construction progress and acceptance	Lead Fu Industrials Corp.		N/A	N/A	N/A	N/A	Price comp price
8 to ,	5,311,851	Monthly settlement by the construction progress and acceptance	DA CIN Construction Co., Ltd.		N/A	N/A	N/A	N/A (Concluded)	Price comp price

TABLE 6

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, 2018

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

				Transaction Details			Abnormal Transaction		Notes/Accounts Payable Receivable	
Company Name	Related Party	Nature of Relationships	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	Subsidiary	Sales	$ 650,432,820	60	Net 30 days from invoice date (Note)	Note		$ 86,057,097	70
	GUC	Associate	Sales	6,705,439	1	Net 30 days from the end of the month of when invoice is issued			375,184	
	TSMC China	Subsidiary	Purchases	18,089,003	19	Net 30 days from the end of the month of when invoice is issued			(1,299,072)	4
	TSMC Nanjing	Subsidiary	Purchases	7,738,425	8	Net 30 days from the end of the			(414,401)	1

							month of when invoice is issued			
	WaferTech	Indirect subsidiary	Purchases		8,309,250	9	Net 30 days from the end of the month of when invoice is issued		(1,092,785)	3
	VIS	Associate	Purchases		5,142,749	5	Net 30 days from the end of the month of when invoice is issued		(357,080)	1
	SSMC	Associate	Purchases		3,666,645	4	Net 30 days from the end of the month of when invoice is issued		(362,564)	1
MC North erica	GUC	Associate of TSMC	Sales	(US$	1,664,555 55,492)		Net 30 days from invoice date	(US$	106,750 3,473)	
Era Tech	Xintec	Associate of TSMC	Sales		542,179	20	Net 30 days from the end of the month of when invoice is issued		102,478	20

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.

TABLE 7

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL

DECEMBER 31, 2018

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

any Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue Amount	Overdue Action Taken	Amounts Received in Subsequent Period	Al
	TSMC North America	Subsidiary	$ 87,092,562	50	$ 2,828,842	$	39,357,357	
	GUC	Associate	375,184	31	182,416		182,416	
China	TSMC Nanjing	The same parent company	30,986,047	Note 2				
			(RMB 6,920,699)					
	TSMC	Parent company	1,299,072	27				
			(RMB 290,149)					
			1,092,785		661,841		661,841	
Tech	TSMC	The ultimate parent of the Company	(USD 35,549)	53	(USD 21,530)	(USD	21,530)	
Nanjing	TSMC	Parent company	614,039	10				
			(RMB 137,146)					
			218,347					
ology	TSMC	The ultimate parent of the Company	(USD 7,103)	Note 2				
			106,750		43,023		43,023	
North ca	GUC	Associate of TSMC	(USD 3,473)	39	(USD 1,400)	(USD	1,400)	
Tech	Xintec	Associate of TSMC	102,478	44				

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, 2018

(Amounts in Thousands of New Taiwan Dollars)

				Intercompany Transactions			
No.	Company Name	Counter Party	Nature of Relationship (Note 1)	Financial Statements Item	Amount	Terms (Note 2)	Percentage of Consolidated Net Revenue or Total Assets
0	TSMC	TSMC North America	1	Net revenue from sale of goods	$ 650,432,820		63%
				Receivables from related parties	86,057,097		4%
				Other receivables from related parties	1,035,465		
		TSMC Japan	1	Marketing expenses - commission	225,013		
		TSMC Europe	1	Marketing expenses - commission	463,093		
		TSMC Global	1	Short-term loans	3,227,700		
		TSMC China	1	Purchases	18,089,003		2%
				Marketing expenses - commission	156,017		
				Payables to related parties	1,299,072		
		TSMC Nanjing	1	Purchases	7,738,426		1%
				Proceeds from disposal of property, plant and equipment	2,839,622		
					414,401		

				Payables to related parties		
				Accrued expense and other current liabilities	199,638	
		TSMC Canada	1	Research and development expenses	298,050	
		TSMC Technology	1	Research and development expenses	2,044,765	
				Payables to related parties	218,347	
		WaferTech	1	Purchases	8,309,250	1%
				Payables to related parties	1,092,785	
1	TSMC China	TSMC Nanjing	3	Other receivables from related parties	30,986,047	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 INVESTEES OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)

FOR THE YEAR ENDED DECEMBER 31, 2018

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

			Original Investment Amount		Balance as of December 31, 2018			
Company	Location	Main Businesses and Products	December 31, 2018 (Foreign Currencies in Thousands)	December 31, 2017 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)	Net Income (Losses) of the Investee (Foreign Currencies in Thousands
obal	Tortola, British Virgin Islands	Investment activities	$ 355,162,309 (Note 3)	$ 292,890,229	11	100	$ 393,577,931	$ 9,271,6
rtners	Tortola, British Virgin Islands	Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	31,456,130	31,456,130	988,268	100	52,339,094	2,499,3
	Hsin-Chu, Taiwan	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor	10,180,677	10,180,677	464,223	28	9,006,126	6,166,2

		devices and the manufacturing and design service of masks						
	Singapore	Manufacturing and selling of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	5,772,815	3,919,0
ch	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	4,531,929	412,2
rth	San Jose, California, U.S.A	Selling and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	4,269,393	117,9
	Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	1,764,607	(1,351,9
	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	1,299,423	988,1
rope	Amsterdam, the Netherlands	Customer service and supporting activities	15,749	15,749		100	445,828	41,6
	Cayman Islands	Investing in new start-up	1,308,244	1,318,885		98	194,660	(3,4

		technology companies									
pan	Yokohama, Japan	Customer service and supporting activities		83,760		83,760	6	100		141,136	4,0
	Cayman Islands	Investing in new start-up technology companies		278,800		412,831		98		128,758	(3,7
rea	Seoul, Korea	Customer service and supporting activities		13,656		13,656	80	100		40,966	2,1
lar mbH	Hamburg, Germany	Selling of solar related products and providing customer service		25,266		25,266	1	100		(20,106)	(
ent	Delaware, U.S.A	Investing in companies involved in the		18,042,499		18,042,499		100		29,240,767	1,863,1
		manufacturing related business in the semiconductor industry	(US$	586,939)	(US$	586,939)			(US$	951,229)	(US$ 61,8
chnology	Delaware, U.S.A	Engineering support activities		439,029		439,029		100		587,008	47,8
			(US$	14,282)	(US$	14,282)			(US$	19,096)	(US$ 1,6
nada	Ontario, Canada	Engineering support activities		70,702		70,702	2,300	100		205,423	32,2
			(US$	2,300)	(US$	2,300)			(US$	6,683)	(US$ 1,0
	Cayman Islands	Investing in new start-up technology companies		14,607		14,607	583	97		510	
			(US$	475)	(US$	475)			(US$	17)	
	Cayman Islands	Investing in new start-up technology companies					9,299	97			(6,7
										(US$	(2
und	Cayman Islands	Investing in new start-up technology companies		66,207		66,207		100		97,782	(5
			(US$	2,154)	(US$	2,154)			(US$	3,181)	(US$ (
k				48,980		48,980	4,693	39		22,867	(1,8

New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	(US$ 1,593)	(US$ 1,593)		(US$ 744)	(US$		

(Continued)

Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2018			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	
				December 31, 2018 (Foreign Currencies in Thousands)	December 31, 2017 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
ıent	WaferTech	Washington, U.S.A	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	$	$	293,637	100	$ 4,595,263 (US$ 149,488)	$ 1,473,555 (US$ 48,918)	Note 2	$

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

Note 3: To lower the hedging cost, in August 2018, the Board of Directors of TSMC approved to inject US$2,000,000 thousand of capital into TSMC Global. This project was approved by the Investment Commission, Ministry of Economic Affairs, R.O.C. (MOEA). The prepayment for investment was US$100,000 thousand as of December 31, 2018.

(Concluded)

TABLE 10

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INFORMATION ON INVESTMENT IN MAINLAND CHINA

FOR YEAR ENDED DECEMBER 31, 2018

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

				Investment Flows						
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, 2018 (US$ in Thousands)**	**Outflow (US$ in Thousands)**	**Inflow**	**Accumulated Outflow of Investment from Taiwan as of December 31, 2018 (US$ in Thousands)**	**Net Income (Losses) of the Investee Company**	**Percentage of Ownership**	**Sh Profi**
cturing, testing nputer- sign of ed and iductor	$ 18,939,667		$ 18,939,667			$ 18,939,667			$ 5,
	(RMB 4,502,080)	Note 1	(US$ 596,000)	$	$	(US$ 596,000)	$ 5,397,462	100%	(N
cturing, testing nputer- sign of ed and iductor	30,521,412		28,160,092	2,361,320		30,521,412			(8,
	(RMB 6,650,119)	Note 1	(US$ 920,000)	(US$ 80,000)		(US$ 1,000,000)	(8,215,989)	100%	(N

Accumulated Investment in Mainland China as of December, 2018 (US$ in Thousands)	**Investment Amounts Authorized by Investment Commission, MOEA (US$ in Thousands)**	**Upper Limit on Investment**
$ 49,461,079	$ 119,412,667	Note 3

(US$	1,596,000)	(US$	3,596,000)

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: As the Company has obtained the certificate of being qualified for operating headquarters issued by Industrial Development Bureau, MOEA on August 2016, the upper limit on investment in mainland China pursuant to Principle of investment or Technical Cooperation in Mainland China is not applicable.

Taiwan Semiconductor Manufacturing

Company Limited

Parent Company Only Financial Statements for the Years Ended December 31, 2018 and 2017 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, 2018 and 2017, 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 parent company only financial position of the Company as of December 31, 2018 and 2017, 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, 2018. 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, 2018 are stated as follows:

Estimate for sales returns and allowances

In consideration of business volume and market conditions, the Company provides a variety of business incentives to specific customers or products. The estimate for sales returns and allowance is based on historical experience and the varying contractual terms. Please refer to Notes 4, 5 and 21 to the parent company only financial statements for the details of the information about estimate for sales returns and allowances. Since the estimate for sales returns and allowances is subject to accounting judgment and estimation, and the result could also affect the net revenue in the parent company only financial statements, it has been identified as a key audit matter.

Our key audit procedures performed in respect of the above area included the following:

1. Understood and tested the design and operating effectiveness of the key controls over estimate for sales returns and allowances;

2. Understood and assessed the reasonableness of assumptions made and methodology used in estimating sales returns and allowances;

3. Sampled and inspected the sales contracts of main products by agreeing the contractual terms and performed an analysis to challenge the estimation on possibility that specific products could meet business incentives condition to verify the reasonableness of the accrual of the sales returns and allowances;

4. Performed a retrospective review to comparatively analyze the historical accuracy of judgments with reference to actual sales returns and allowance paid.

Timing to commence depreciation of property, plant and equipment (PP&E)

The Company continues to invest in capital expenditures to develop and build capacity in leading-edge technologies to meet customers demand. Please refer to Notes 4, 5 and 12 to the parent company only financial statements for the details of the information and accounting policy about the depreciation of PP&E. According to IAS 16, depreciation of PP&E begins when the assets are available for use, and in the condition necessary for the assets to be capable of operating in the intended manner. Due to the significant capital expenditures of the Company, and the criteria to determine whether such assets are available for their intended use vary within categories of assets as well as involve subjective judgments, the validity of the timing to commence depreciation of PP&E could have a material impact on its financial performance. Consequently, the validity of the timing to commence depreciation of PP&E is identified as a key audit matter.

Our key audit procedures performed in respect of the above area included the following:

1. Understood and tested the design and operating effectiveness of the key controls over the timing to commence depreciation of PP&E;

2. Understood the criteria the assets are defined as available for their intended use and the corresponding accounting treatments;

3. Sampled and reviewed the appropriateness of the timing for commencing depreciation after the assets met the criteria of available for use in current year;

4. Performed an observation on the physical count of equipment under installation and construction in progress; sampled and inspected the supporting documentation to verify that the status of equipment under installation and construction in progress are not available for use;

5. Sampled equipment under installation and construction in progress which met the criteria of available for use and were transferred in the subsequent period to evaluate the reasonableness of the timing for commencing depreciation;

6. Sampled and reviewed the appropriateness of the equipment under installation and construction in progress which are not available for their intended use.

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, 2018 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 19, 2019

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)

	December 31, 2018		December 31, 2017	
	Amount	%	Amount	%
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	$ 240,202,525	12	$ 239,176,841	12
Financial assets at fair value through profit or loss (Note 7)	54,115		373,351	
Financial assets at fair value through other comprehensive income	568,150			
Available-for-sale financial assets			2,393,555	
Financial assets at amortized cost	2,294,098			
Hedging derivative financial assets (Note 8)			7,378	
Hedging financial assets (Note 8)	23,497			
Notes and accounts receivable, net (Note 9)	36,685,389	2	26,655,427	2
Receivables from related parties (Note 32)	86,452,584	4	92,141,837	5
Other receivables from related parties (Note 32)	1,234,662		3,143,872	
Inventories (Notes 5, 10 and 35)	98,088,160	5	70,297,445	4
Other financial assets (Notes 33 and 35)	178,008		94,839	
Other current assets (Note 14)	4,184,918		2,484,792	
Total current assets	469,966,106	23	436,769,337	23
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income	963,610			
Financial assets carried at cost			415,051	
Investments accounted for using equity method (Notes 5 and 11)	549,560,884	26	463,986,364	24
Property, plant and equipment (Notes 5 and 12)	1,025,286,941	49	1,016,355,970	52
Intangible assets (Notes 5 and 13)	12,429,930	1	9,870,127	
Deferred income tax assets (Notes 5 and 26)	15,586,674	1	10,829,473	1
Refundable deposits and others	1,666,863		1,163,069	
Total noncurrent assets	1,605,494,902	77	1,502,620,054	77
TOTAL	$ 2,075,461,008	100	$ 1,939,389,391	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans (Notes 15 and 29)	$ 91,982,340	4	$ 63,766,850	3
Financial liabilities at fair value through profit or loss (Note 7)	30,232		18,764	

Hedging derivative financial liabilities (Note 8)			15,562	
Hedging financial liabilities (Note 8)	1,941			
Accounts payable	30,472,292	2	25,605,223	1
Payables to related parties (Note 32)	4,546,752		4,829,664	
Salary and bonus payable	12,442,707	1	12,283,321	1
Accrued profit sharing bonus to employees and compensation to directors (Notes 20 and 28)	23,919,312	1	23,388,002	1
Payables to contractors and equipment suppliers	41,279,910	2	50,363,976	3
Income tax payable (Notes 5 and 26)	38,706,990	2	32,950,667	2
Provisions (Notes 5 and 16)			13,174,825	1
Long-term liabilities - current portion (Note 17)	34,900,000	2	24,300,000	1
Accrued expenses and other current liabilities (Notes 5, 19, 21, 29 and 32)	49,778,042	2	57,686,386	3
Total current liabilities	328,060,518	16	308,383,240	16
NONCURRENT LIABILITIES				
Bonds payable (Notes 17 and 29)	56,900,000	3	91,800,000	5
Deferred income tax liabilities (Notes 5 and 26)	233,284		302,205	
Net defined benefit liability (Notes 5 and 18)	9,651,405	1	8,850,704	1
Guarantee deposits (Notes 19 and 29)	3,346,648		7,582,479	
Others	451,488		413,230	
Total noncurrent liabilities	70,582,825	4	108,948,618	6
Total liabilities	398,643,343	20	417,331,858	22
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 20)	259,303,805	12	259,303,805	13
Capital surplus (Note 20)	56,315,932	3	56,309,536	3
Retained earnings (Note 20)				
Appropriated as legal capital reserve	276,033,811	13	241,722,663	12
Appropriated as special capital reserve	26,907,527	1		
Unappropriated earnings	1,073,706,503	52	991,639,347	51
	1,376,647,841	66	1,233,362,010	63
Others (Note 20)	(15,449,913)	(1)	(26,917,818)	(1)
Total equity	1,676,817,665	80	1,522,057,533	78
TOTAL	$ 2,075,461,008	100	$ 1,939,389,391	100

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)

	2018		2017	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 21 and 32)	$ 1,023,925,713	100	$ 969,136,109	100
COST OF REVENUE (Notes 5, 10, 28, 32 and 35)	530,861,166	52	490,196,856	51
GROSS PROFIT BEFORE UNREALIZED GROSS PROFIT ON SALES TO SUBSIDIARIES AND ASSOCIATES	493,064,547	48	478,939,253	49
UNREALIZED GROSS PROFIT ON SALES TO SUBSIDIARIES AND ASSOCIATES	(109,046)		(1,562)	
GROSS PROFIT	492,955,501	48	478,937,691	49
OPERATING EXPENSES (Notes 5, 28, and 32)				
Research and development	84,944,461	8	79,887,723	8
General and administrative	19,113,298	2	20,049,405	2
Marketing	3,201,670		3,048,781	1
Total operating expenses	107,259,429	10	102,985,909	11
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 12, 22 and 28)	(1,668,234)		(1,261,665)	
INCOME FROM OPERATIONS	384,027,838	38	374,690,117	38
NON-OPERATING INCOME AND EXPENSES				
Share of profits of subsidiaries and associates (Note 11)	12,509,959	1	18,757,236	2
Other income (Note 23)	2,005,107		1,696,595	
Foreign exchange gain, net (Note 37)	1,927,029		(670,371)	
Finance costs (Note 24)	(2,903,454)		(2,749,640)	
Other gains and losses (Note 25)	(1,368,326)		1,592,239	
Total non-operating income and expenses	12,170,315	1	18,626,059	2
INCOME BEFORE INCOME TAX	396,198,153	39	393,316,176	40
INCOME TAX EXPENSE (Notes 5 and 26)	45,067,269	5	50,204,700	5
NET INCOME	351,130,884	34	343,111,476	35

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME

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

	2018		2017	
	Amount	%	Amount	%
OTHER COMPREHENSIVE INCOME (LOSS) (Notes 5, 11, 18, 20 and 26)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	$ (861,162)		$ (254,681)	
Unrealized loss on investments in equity instruments at fair value through other comprehensive income	(1,189,957)			
Gain on hedging instruments	40,975			
Share of other comprehensive loss of subsidiaries and associates	(2,135,880)		(20,853)	
Income tax benefit related to items that will not be reclassified subsequently	195,729		30,562	
	(3,950,295)		(244,972)	
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	14,578,483	1	(28,270,770)	(3)
Changes in fair value of available-for-sale financial assets			(425,692)	
Cash flow hedges			4,683	
Share of other comprehensive income (loss) of subsidiaries and associates	(794,057)		123,804	
Income tax expense related to items that may be reclassified subsequently			(3,536)	
	13,784,426	1	(28,571,511)	(3)
Other comprehensive income (loss) for the year, net of income tax	9,834,131	1	(28,816,483)	(3)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	$ 360,965,015	35	$ 314,294,993	32
EARNINGS PER SHARE (NT$, Note 27)				
Basic earnings per share	$ 13.54		$ 13.23	
Diluted earnings per share	$ 13.54		$ 13.23	

(Concluded)

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

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CHANGES IN EQUITY

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

ck	Retained Earnings				Unrealized Gain (Loss) on Assets at Fair Value Through Other			Othe
l Surplus	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earning	Total	Foreign Currency Translation Reserve	Unrealized Gain/Loss from Available-for-sale Financial Assets	Comprehensive Income	Cash Flow Hedges	Gain Inst
272,304	$ 208,297,945	$	$ 863,710,224	$ 1,072,008,169	$ 1,661,237	$ 2,641	$	$ 105	$
	33,424,718		(33,424,718)						
			(181,512,663)	(181,512,663)					
	33,424,718		(214,937,381)	(181,512,663)					
			343,111,476	343,111,476					
			(244,972)	(244,972)	(28,358,917)	(216,715)		4,121	
			342,866,504	342,866,504	(28,358,917)	(216,715)		4,121	
7,085									

10,994									
19,153									
309,536	$ 241,722,663	$	$ 991,639,347	$ 1,233,362,010	$ (26,697,680)	$ (214,074)	$	$ 4,226	$
			1,556,321	1,556,321		214,074	(524,915)	(4,226)	
309,536	241,722,663		993,195,668	1,234,918,331	(26,697,680)		(524,915)		
	34,311,148		(34,311,148)						
		26,907,527	(26,907,527)						
			(207,443,044)	(207,443,044)					
	34,311,148	26,907,527	(268,661,719)	(207,443,044)					
			351,130,884	351,130,884					
			(765,274)	(765,274)	14,655,333		(4,097,465)		
			350,365,610	350,365,610	14,655,333		(4,097,465)		
			(1,193,056)	(1,193,056)			1,193,056		

(6,420)

2,681

10,135

15,932 $ 276,033,811 $ 26,907,527 $ 1,073,706,503 $ 1,376,647,841 $ (12,042,347) $ $ (3,429,324) $ $

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)

	2018	2017
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	$ 396,198,153	$ 393,316,176
Adjustments for:		
Depreciation expense	274,340,540	250,597,135
Amortization expense	4,352,847	4,325,028
Finance costs	2,903,454	2,749,640
Share of profits of subsidiaries and associates	(12,509,959)	(18,757,236)
Interest income	(1,847,202)	(1,554,792)
Loss on disposal or retirement of property, plant and equipment, net	557,598	1,008,989
Gain on disposal of intangible assets, net	(5,933)	(3,198)
Impairment loss on property, plant and equipment	423,468	
Impairment loss on financial assets		6,137
Gain on financial instruments at fair value through profit or loss, net	(17,729)	
Gain on disposal of available-for-sale financial assets, net		(115,690)
Unrealized gross profit on sales to subsidiaries and associates	109,046	1,562
Loss (gain) on foreign exchange, net	2,732,445	(9,118,776)
Dividend income	(157,905)	(141,803)
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	301,714	(196,337)
Notes and accounts receivable, net	(15,821,089)	7,253,120
Receivables from related parties	5,689,253	(5,296,267)
Other receivables from related parties	216,794	(733,023)
Inventories	(27,790,715)	(23,793,099)
Other financial assets	(26,762)	2,029,903
Other current assets	(1,685,193)	510,739
Accounts payable	4,839,526	1,275,185
Payables to related parties	(282,912)	(10,337)
Salary and bonus payable	159,386	712,816
Accrued profit sharing bonus to employees and compensation to directors	531,310	593,231
Accrued expenses and other current liabilities	(21,092,059)	29,615,847
Provisions		(3,823,540)
Net defined benefit liability	(60,461)	44,615
Cash generated from operations	612,057,615	630,496,025
Income taxes paid	(43,956,272)	(61,695,694)
Net cash generated by operating activities	568,101,343	568,800,331

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2018	2017
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Held to maturity financial assets	$	$ (1,695,771)
Financial assets at amortized cost	(2,294,098)	
Property, plant and equipment	(298,099,157)	(311,763,999)
Intangible assets	(6,885,163)	(4,351,050)
Proceeds from disposal or redemption of:		
Financial assets at fair value through other comprehensive income	651,971	
Available-for-sale financial assets		140,395
Held-to-maturity financial assets		13,160,000
Property, plant and equipment	4,707,118	13,226,816
Intangible assets	15,881	27,409
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	3,456	
Proceeds from return of capital of financial assets carried at cost		14,080
Derecognition of hedging derivative financial instruments		38,097
Derecognition of hedging financial instruments	57,954	
Interest received	1,815,330	1,552,725
Other dividends received	157,905	141,803
Dividends received from investments accounted for using equity method	3,769,150	5,005,132
Refundable deposits paid	(2,218,292)	(1,227,010)
Refundable deposits refunded	1,762,043	416,600
Net cash used in investing activities	(296,555,902)	(285,314,773)
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase in short-term loans	27,154,770	10,394,485
Repayment of bonds	(24,300,000)	(38,100,000)
Interest paid	(2,957,663)	(2,916,969)
Guarantee deposits received	1,625,526	205,075
Guarantee deposits refunded	(120,717)	(89,507)
Cash dividends	(207,443,044)	(181,512,663)
Payment of partial acquisition of interests in subsidiaries	(64,633,400)	(82,433,287)
Proceeds from partial disposal of interests in subsidiaries	144,676	257,648
Donation from shareholders	10,095	7,938
Net cash used in financing activities	(270,519,757)	(294,187,280)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	1,025,684	(10,701,722)

CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	239,176,841	249,878,563
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 240,202,525	$ 239,176,841

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, 2018 AND 2017

(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 19, 2019.

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 9 Financial Instruments and related amendment

IFRS 9 supersedes IAS 39 Financial Instruments: Recognition and Measurement , with consequential amendments to IFRS 7 Financial Instruments: Disclosures and other standards. IFRS 9 sets out the requirements for classification,

measurement and impairment of financial assets and hedge accounting. Please refer to Note 4 for information relating to the relevant accounting policies.

Classification, measurement and impairment of financial assets and financial liabilities

The Company elects not to restate prior reporting period when applying the requirements for the classification, measurement and impairment of financial assets and financial liabilities under IFRS 9 with the cumulative effect of the initial application recognized at the date of initial application.

The impact on measurement categories, carrying amount and related reconciliation for each class of the Company s financial assets and financial liabilities when retrospectively applying IFRS 9 on January 1, 2018 is detailed below:

	Measurement Category		Carrying Amount		
Financial Assets	**IAS 39**	**IFRS 9**	**IAS 39**	**IFRS 9**	**Note**
Cash and cash equivalents	Loans and receivables	Amortized cost	$ 239,176,841	$ 239,176,841	(1)
Derivatives	Held for trading	Mandatorily at fair value through profit or loss (FVTPL)	373,351	373,351	
Equity securities	Hedging instruments	Hedging instruments	7,378	7,378	(2)
	Available-for-sale	Fair value through other comprehensive income (FVTOCI)	2,808,606	3,377,145	
Notes and accounts receivable (including related parties), other receivables and refundable deposits	Loans and receivables	Amortized cost	123,199,044	123,443,817	(1)
Financial Liabilities					
Derivatives	Held for trading	Held for trading	18,764	18,764	
	Hedging instruments	Hedging instruments	15,562	15,562	
Short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, accrued expenses and other current liabilities, bonds payable and guarantee deposits	Amortized cost	Amortized cost	294,856,247	294,856,247	

	Carrying Amount as of December 31, 2017			Carrying Amount as of January 1, 2018	Retained Earnings Effect on January 1, 2018	Other Equity Effect on January 1, 2018	
Financial Assets	**(IAS 39)**	**Reclassifi-cations**	**Remea-surements**	**(IFRS 9)**			**Note**
FVTPL	$ 373,351	$	$	$ 373,351	$	$	

FVTOCI							
- Equity instruments							
Add: From available for sale		2,808,606	568,539	3,377,145	534,270	34,269	(2)
		2,808,606	568,539	3,377,145	534,270	34,269	
Amortized cost							
Add: From loans and receivables		362,375,885	244,773	362,620,658	244,773		(1)
		362,375,885	244,773	362,620,658	244,773		
Hedging instruments	7,378			7,378			
Total	$ 380,729	$ 365,184,491	$ 813,312	$ 366,378,532	$ 779,043	$ 34,269	

	Carrying Amount as of December 31, 2017 (IAS 39)	**Adjustments Arising from Initial Application**	**Carrying Amount as of January 1, 2018 (IFRS 9)**	**Retained Earnings Effect on January 1, 2018**	**Other Equity Effect on January 1, 2018**	**Note**
Investments accounted for using equity method	$ 463,986,364	$ 400,138	$ 464,386,508	$ 745,248	$ (345,110)	(3)

(1) Cash and cash equivalents, notes and accounts receivable (including related parties), other receivables and refundable deposits that were classified as loans and receivables under IAS 39 are now classified at amortized cost with assessment of future 12-month or lifetime expected credit loss under IFRS 9. As a result of retrospective application, the adjustments would result in a decrease in loss of allowance for accounts receivable of NT$244,773 thousand and an increase in retained earnings of NT$244,773 thousand on January 1, 2018.

(2) As equity investments that were previously classified as available-for-sale financial assets under IAS 39 are not held for trading, the Company elected to designate all of these investments as at FVTOCI under IFRS 9. As a result, the related other equity-unrealized gain or loss on available-for-sale financial assets of NT$206,015 thousand is reclassified to increase other equity unrealized gain or loss on financial assets at FVTOCI.

As equity investments previously measured at cost under IAS 39 are remeasured at fair value under IFRS 9, the adjustments would result in an increase in financial assets at FVTOCI of NT$568,539 thousand and an increase in other equity-unrealized gain or loss on financial assets at FVTOCI of NT$568,539 thousand on January 1, 2018.

For those equity investments previously classified as available-for-sale financial assets (including measured at cost financial assets) under IAS 39, the impairment losses that the Company had recognized have been accumulated in retained earnings. Since these investments were designated as at FVTOCI under IFRS 9 and no impairment assessment is required, the adjustments would result in a decrease in other equity unrealized gain or loss on financial assets at FVTOCI of NT$534,270 thousand and an increase in retained earnings of NT$534,270 thousand on January 1, 2018.

(3) With the retrospective adoption of IFRS 9 by associates accounted for using equity method, the corresponding adjustments made by the Company would result in an increase in investments accounted for using equity method of NT$400,138 thousand, a decrease in other equity- unrealized gain or loss on financial assets at FVTOCI of NT$765,199 thousand, an increase in other equity- unrealized gain or loss on available-for-sale financial assets of NT$420,089 thousand and an increase in retained earnings of NT$745,248 thousand on January 1, 2018.

Hedge accounting

The Company prospectively applies the requirements for hedge accounting upon initial application of IFRS 9. In addition, due to the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers, all derivative and non-derivative financial assets and financial liabilities which are designated as hedging instruments are presented as financial assets and financial liabilities for hedging starting 2018.

2) IFRS 15 Revenue from Contracts with Customers and related amendments

IFRS 15 establishes principles for recognizing revenue that apply to all contracts with customers, and will supersede IAS 18, Revenue, IAS 11, Construction Contracts, and a number of revenue-related interpretations. Please refer to Note 4 for information relating to the relevant accounting policies.

The Company elected only to retrospectively apply IFRS 15 to contracts that were not completed on January 1, 2018 and elected not to restate prior reporting period with the cumulative effect of the initial application recognized at the date of initial application.

The impact on assets, liabilities and equity when retrospectively applying IFRS 15 on January 1, 2018 is detailed below:

	Carrying Amount as of December 31, 2017 (IAS 18 and Revenue-related Interpretations)	Adjustments Arising from Initial Application	Carrying Amount as of January 1, 2018 (IFRS 15)	Note
Investments accounted for using equity method	$ 463,986,364	$ 32,030	$ 464,018,394	(1)
Total effect on assets		$ 32,030		
Provisions - current	13,174,825	$ (13,174,825)		(2)
Accrued expenses and other current liabilities	57,686,386	13,174,825	70,861,211	(2)
Total effect on liabilities		$		
Retained earnings	1,233,362,010	$ 32,030	1,233,394,040	(1)
Total effect on equity		$ 32,030		

(1) Prior to the application of IFRS 15, the Company recognizes revenue based on the accounting treatment of the sales of goods. Under IFRS 15, certain subsidiaries and associates accounted for using equity method will change to recognize revenue over time because customers are deemed to have control over the products when the products are manufactured. As a result, the Company will adjust related investments and equity accordingly.

(2) Prior to the application of IFRS 15, the Company recognized the estimation of sales returns and allowance as provisions. Under IFRS 15, the Company recognizes such estimation as refund liability (classified under accrued expenses and other current liabilities).

The following table shows the amount affected in the current period by the application of IFRS 15 as compared to IAS 18:

Impact on Assets, Liabilities and Equity

	December 31, 2018

Increase in investments accounted for using equity method	$	31,791
Total effect on assets	$	31,791
Decrease in provisions - current	$	(21,199,032)
Increase in accrued expenses and other current liabilities		21,199,032
Total effect on liabilities	$	
Increase in retained earnings	$	31,791
Total effect on equity	$	31,791

Impact on Total Comprehensive Income

	Year Ended December 31, 2018
Increase in share of the profit or loss of associates	$ 31,791
Increase in net income for the year	$ 31,791

3) Please refer to Note 29 for the disclosure of amendment to IAS 7 Disclosure Initiative

b. Amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers for application starting from 2019 and the IFRSs issued by IASB and endorsed by FSC with effective date starting 2019.

New, Amended or Revised Standards and Interpretations (the New IFRSs)	Effective Date Announced by IASB (Note 1)
Annual Improvements to IFRSs 2015-2017 Cycle	January 1, 2019
Amendments to IFRS 9 Prepayment Features with Negative Compensation	January 1, 2019 (Note 2)
IFRS 16 Leases	January 1, 2019
Amendments to IAS 19 Plan Amendment, Curtailment or Settlement	January 1, 2019 (Note 3)
Amendments to IAS 28 Long-term Interests in Associates and Joint Ventures	January 1, 2019
IFRIC 23 Uncertainty over Income Tax Treatments	January 1, 2019

Note 1: Unless stated otherwise, the above New IFRSs are effective for annual periods beginning on or after their respective effective dates.

Note 2: The FSC permits the election for early adoption of the amendments starting from 2018.

Note 3: The Company shall apply these amendments to plan amendments, curtailments or settlements occurring on or after January 1, 2019.

Except for the following items, the Company believes that the adoption of aforementioned standards or interpretations will 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 will supersede IAS 17 Leases , IFRIC 4 Determining whether an Arrangement contains a Lease , and a number of related interpretations.

Definition of a lease

Upon initial application of IFRS 16, the Company will apply 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 will not be reassessed and will be accounted for in accordance with the transitional provisions under IFRS 16.

The Company as lessee

Upon initial application of IFRS 16, except for payments for low-value asset and short-term leases which will be recognized as expenses on a straight-line basis, the Company will recognize 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 will present the depreciation expense charged on right-of-use assets separately from the interest expense accrued on lease liabilities and 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.

Upon initial application of IFRS 16, the Company will apply IFRS 16 retrospectively with the cumulative effect of the initial application recognized at the date of initial application but will not restate comparative information.

Leases agreements classified as operating leases under IAS 17, except for leases of low-value asset and short-term leases, will be 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 will apply the following practical expedients to measure right-of-use assets and lease liabilities on January 1, 2019 :

a) The Company will apply a single discount rate to a portfolio of leases with reasonably similar characteristics to measure lease liabilities.

b) The Company will account for those leases for which the lease term ends on or before December 31, 2019 as short-term leases.

c) Except for lease payment, the Company will exclude incremental costs of obtaining the lease from the measurement of right-of-use assets on January 1, 2019.

d) The Company will determine 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	(3,163,562)
Undiscounted gross amounts on January 1, 2019	$ 15,558,319

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	3,106,390
Lease liabilities recognized on January 1, 2019	$ 17,758,578

The Company as lessor

Except for sublease transactions, the Company will not make any adjustments for leases in which it is a lessor, and will account 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 will be 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	(966)	1,665,897
Total effect on assets		$ 17,823,508	
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	64,930	516,418
Total effect on liabilities		$ 17,823,508	
Total effect on equity		$	

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

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 3 Definition of a Business	January 1, 2020 (Note 1)
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 and IAS 8 Definition of Material	January 1, 2020 (Note 2)

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 prospectively for annual reporting periods beginning on or after January 1, 2020.

As of the date the accompanying parent company only financial statements were issued, 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

2018

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.

2017

Financial assets are classified into the following specified categories: Financial assets at FVTPL, available-for-sale financial assets, held-to-maturity financial assets and loans and receivables.

1) Financial asset at FVTPL

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

Financial assets 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.

2) Available-for-sale financial assets

Available-for-sale financial assets are non-derivative financial assets that are either designated as available-for-sale or are not classified as (a) loans and receivables, (b) held-to-maturity financial assets or (c) financial assets at fair value through profit or loss.

Available-for-sale financial assets are measured at fair value. Interest income from available-for-sale monetary financial assets and dividends on available-for-sale equity investments are recognized in profit or loss. Other changes in the carrying amount of available-for-sale financial assets are recognized in other comprehensive income. When the investment is disposed of or is determined to be impaired, the cumulative gain or loss previously recognized in other comprehensive income is reclassified to profit or loss.

Dividends on available-for-sale equity instruments are recognized in profit or loss when the Company s right to receive the dividends is established.

Available-for-sale equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured are measured at cost less any identified impairment losses at the end of each reporting period. Such equity instruments are subsequently remeasured at fair value when their fair value can be reliably measured, and the difference between the carrying amount and fair value is recognized in profit or loss or other comprehensive income.

3) Held-to-maturity financial assets

Held-to-maturity investments are non-derivative financial assets with fixed or determinable payments and fixed maturity dates that the Company has the positive intent and ability to hold to maturity. Subsequent to initial recognition, held-to-maturity financial assets are measured at amortized cost using the effective interest method less any impairment.

4) Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Loans and receivables including cash and cash equivalents, notes and accounts receivable and other receivables are measured at amortized cost using the effective interest method, less any impairment, except for those loans and receivables with immaterial discounted effect.

b. Impairment of financial assets

2018

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.

2017

Financial assets, other than those carried at FVTPL, are assessed for indicators of impairment at the end of each reporting period. Those financial assets are considered to be impaired when there is objective evidence that, as a result of one or more events that occurred after the initial recognition of the financial assets, their estimated future cash flows have been affected.

For financial assets carried at amortized cost, such as trade receivables, assets that are assessed not to be impaired individually are, in addition, assessed for impairment on a collective basis. The Company assesses the collectability of receivables by performing the account aging analysis and examining current trends in the credit quality of its customers.

For financial assets carried at amortized cost, the amount of the impairment loss is the difference between the asset s carrying amount and the present value of estimated future cash flows, discounted at the financial asset s original effective interest rate.

For financial assets measured at amortized cost, if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment loss was recognized, the previously recognized impairment loss is reversed through profit or loss to the extent that the carrying amount of the financial assets at the date the impairment loss is reversed does not exceed what the amortized cost would have been had the impairment loss not been recognized.

When an available-for-sale financial asset is considered to be impaired, cumulative gains or losses previously recognized in other comprehensive income are reclassified to profit or loss in the year.

In respect of available-for-sale equity instruments, impairment losses previously recognized in profit or loss are not reversed through profit or loss. Any increase in fair value subsequent to the recognition of an impairment loss is recognized in other comprehensive income and accumulated under the heading of unrealized gains or losses from available-for-sale financial assets.

For financial assets carried at cost, the amount of the impairment loss is measured as the difference between the asset s carrying amount and the present value of the estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment loss will not be reversed in subsequent periods.

The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with the exception of trade receivables, where the carrying amount is reduced through the use of an allowance account. When a trade receivable is considered uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against the allowance account.

c. Derecognition of financial assets

2018

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.

2017

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 in its entirety, the difference between the financial 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 and accumulated in equity is recognized in 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.

Financial Instruments Designated as at Fair Value through Profit or Loss

A financial instrument may be designated as at FVTPL upon initial recognition. The financial instrument forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Company s documented risk management or investment strategy, and information about the grouping is provided internally on that basis.

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.

2018

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.

2017

Hedge accounting was discontinued prospectively when the Company revoked the designated hedging relationship, when the hedging instrument expired or was sold, terminated, or exercised; or no longer met the criteria for hedge accounting.

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 over the following estimated useful lives: buildings 10 to 20 years; machinery and equipment 2 to 5 years; and office equipment 3 to 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

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 relevant 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 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.

Other tangible and intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible and 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.

Provision

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows.

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

2018

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.

2017

Revenue is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances.

Sale of goods

Revenue from the sale of goods is recognized when the goods are delivered and titles have passed, at which time all the following conditions are satisfied:

The Company has transferred to the buyer the significant risks and rewards of ownership of the goods;

The Company retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;

The amount of revenue can be measured reliably;

It is probable that the economic benefits associated with the transaction will flow to the Company; and

The costs incurred or to be incurred in respect of the transaction can be measured reliably.

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.

Dividend and interest income

Dividend income from investments is recognized when the shareholder s right to receive payment has been established, provided that it is probable that the economic benefits will flow to the Company and the amount of income can be measured reliably.

Interest income from a financial asset is recognized when it is probable that the economic benefits will flow to the Company and the amount of income can be measured reliably. Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable.

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 remeasurement) 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. Remeasurement, 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. Remeasurement 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 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.

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied. The Company also records estimated future returns and other allowances in the same period the related revenue is recorded. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms, and the Company periodically reviews the adequacy of the estimation used.

Timing to commence depreciation of property, plant and equipment

As described in Note 4, depreciation of property, plant and equipment begins when the assets are available for use, and in the condition necessary for the assets to be capable of operating in the intended manner. The criteria to determine whether assets are available for their intended use vary within categories of assets as well as involve

subjective judgments, thus validity of the timing to commence depreciation of property, plant and equipment could have a material impact on the Company s financial performance.

Impairment of Tangible and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible and intangible assets other than goodwill, the Company is required to make subjective judgments in determining 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 changes in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Impairment of Goodwill

The assessment of impairment of goodwill requires the Company to make subjective judgment to determine the identified cash-generating units, allocate the goodwill to relevant cash-generating units and estimate the recoverable amount of relevant cash-generating units.

Impairment Assessment on Investment Using Equity Method

The Company assesses the impairment of investments accounted for using the equity method whenever triggering events or changes in circumstances indicate that an investment may be impaired and carrying value may not be recoverable. The Company measures the impairment based on a projected future cash flow of the investees, including the underlying assumptions of sales growth rate and capacity utilization rate formulated by such investees internal management team. The Company also takes into account market conditions and the relevant industry trends to ensure the reasonableness of such assumptions.

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.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses judgment and 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 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 mainly determined based on assumptions of future demand within a specific time horizon.

Recognition and Measurement of Defined Benefit Plans

Net defined benefit liability and the resulting defined benefit costs under defined benefit pension plans are calculated using the Projected Unit Credit Method. Actuarial assumptions comprise the discount rate, rate of employee turnover, and future salary increase rate. Changes in economic circumstances and market conditions will affect these assumptions and may have a material impact on the amount of the expense and the liability.

6. CASH AND CASH EQUIVALENTS

	December 31, 2018	December 31, 2017
Cash and deposits in banks	$ 238,473,857	$ 239,176,841
Repurchase agreements collateralized by corporate bonds	1,229,600	
Commercial paper	499,068	
	$ 240,202,525	$ 239,176,841

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, 2018	December 31, 2017
Financial assets		
Mandatorily measured at FVTPL		
Forward exchange contracts	$ 54,115	$
Held for trading		
Forward exchange contracts		373,351
	$ 54,115	$ 373,351
Financial liabilities		
Held for trading		
Forward exchange contracts	$ 30,232	$ 18,764

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

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
December 31, 2018		
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

December 31, 2017			
Sell NT$/Buy EUR	January 2018 to February 2018	NT$	6,002,786/EUR169,000
Sell NT$/Buy JPY	February 2018	NT$	996,294/JPY3,800,000
Sell US$/Buy NT$	January 2018	US$	1,643,000/NT$49,120,205

8. HEDGING FINANCIAL INSTRUMENTS

2018

	December 31, 2018
Financial assets- current	
Cash flow hedges	
Forward exchange contracts	$ 23,497
Financial liabilities- current	
Cash flow hedges	
Forward exchange contracts	$ 1,941

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 year ended December 31, 2018, refer to Note 20(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 as of 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 year ended December 31, 2018 is detailed below:

Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness
Hedging Instruments	
Forward exchange contracts	$ 34,563
Foreign currency deposits	6,412
	$ 40,975
Hedged Items	
Forecast transaction (capital expenditures)	$ (40,975)

2017

The Company s hedging policies for 2017 are the same as those mentioned previously in 2018, the instruments employed are as follows:

	December 31, 2017
Financial assets- current	
Cash flow hedges	
Forward exchange contracts	$ 7,378
Financial liabilities- current	
Cash flow hedges	
Forward exchange contracts	$ 15,562

The Company entered into forward exchange contracts to partially hedge foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). These contracts have maturities of 12 months or less.

Outstanding forward exchange contracts consisted of the following:

	Contract Amount

	Maturity Date	(In Thousands)
December 31, 2017		
Sell NT$/Buy EUR	February 2018 to May 2018	NT$2,649,104/EUR75,000

9. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2018	December 31, 2017
At amortized cost		
Notes and accounts receivable	$ 33,097,452	$ 27,124,552
Less: Loss allowance	(7,132)	(469,125)
	33,090,320	26,655,427
At FVTOCI	3,595,069	
	$36,685,389	$26,655,427

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.

2018

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 losses on credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels. Such risk levels are determined with 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, net

	December 31, 2018
Not past due	$ 29,258,313
Past due	
Past due within 30 days	6,956,366
Past due 31-60 days	464,879
Past due 61-120 days	2,872
Past due over 121 days	2,959
	$36,685,389

Movements of the loss allowance for accounts receivable

Balance at January 1, 2018 (IAS 39)	$ 469,125
Effect of retrospective application of IFRS 9	(244,773)

Balance at January 1, 2018 (IFRS 9)	224,352
Provision (Reversal)	(217,220)
Balance at December 31, 2018	$ 7,132

For the year ended December 31, 2018, the decrease in loss allowance was mainly due to the variations from accounts receivable balance of different risk levels.

2017

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 of when the invoice is issued. The allowance for doubtful receivables is assessed by reference to the collectability of receivables by performing the account aging analysis, historical experience and current financial condition of customers.

Except for those impaired, for the rest of the notes and accounts receivable, the account aging analysis at the end of the reporting period is summarized in the following table. There was no impairment concern for the accounts receivable that were past due without recognizing a specific allowance for doubtful receivables since there was no significant change in the credit quality of its customers after the assessment. In addition, the Company s subsidiary has obtained guarantee of NT$2,427,548 thousand against certain receivables.

Aging analysis of notes and accounts receivable, net

	December 31, 2017
Neither past due nor impaired	$ 19,632,314
Past due but not impaired	
Past due within 30 days	5,169,209
Past due 31-60 days	929,672
Past due 61-120 days	582,821
Past due over 121 days	341,411
	$26,655,427

Movements of the allowance for doubtful receivables

	Individually Assessed for Impairment	Collectively Assessed for Impairment	Total
Balance at January 1, 2017	$	$ 475,430	$ 475,430
Reversal/Write-off		(6,305)	(6,305)
Balance at December 31, 2017	$	$ 469,125	$ 469,125

10. INVENTORIES

	December 31, 2018	December 31, 2017
Finished goods	$ 10,920,351	$ 9,596,837

Work in process	70,405,998	52,166,234
Raw materials	14,110,534	6,566,716
Supplies and spare parts	2,651,277	1,967,658
	$98,088,160	$70,297,445

Write-down of inventories to net realizable value (excluding computer virus outbreak losses) and reversal of write-down of inventories resulting from the increase in net realizable value in the amount of NT$1,098,915 thousand and NT$878,346 thousand, respectively, were included in the cost of revenue for the years ended December 31, 2018 and 2017. Please refer to computer virus outbreak losses in Note 35.

11. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

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

	December 31, 2018	December 31, 2017
Subsidiaries	$ 531,717,913	$ 446,148,086
Associates	17,842,971	17,838,278
	$549,560,884	$463,986,364

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, 2018	December 31, 2017	December 31, 2018	December 31, 2017
TSMC Global Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	$ 393,577,931	$ 309,211,877	100%	100%
TSMC China Company Limited (TSMC China)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	55,466,911	51,060,885	100%	100%
TSMC Partners, Ltd. (TSMC Partners)	Investing in companies involved in the design, manufacture, and other related business in the	Tortola, British Virgin Islands	52,339,094	49,684,287	100%	100%

	semiconductor industry and other investment activities					
TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	20,601,413	26,493,740	100%	100%
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	4,531,929	4,667,162	87%	87%
TSMC North America	Selling and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	4,269,393	4,001,003	100%	100%
TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	445,828	407,324	100%	100%
VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in new start-up technology companies	Cayman Islands	194,660	152,836	98%	98%
VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	128,758	320,533	98%	98%
TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	141,136	129,446	100%	100%
TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	40,966	39,210	100%	100%
TSMC Solar Europe GmbH	Selling of solar related products and providing customer service	Hamburg, Germany	(20,106)	(20,217)	100%	100%

$531,717,913	$446,148,086

TSMC Solar Europe GmbH is under liquidation procedures.

In both 2018 and 2017, the Company continually increased its investment in TSMC Nanjing for the amount of NT$2,361,320 thousand and NT$21,724,892 thousand. This project was approved by the Investment Commission, Ministry of Economic Affairs, R.O.C. (MOEA).

To lower the hedging cost, in both of 2018 and 2017, the Company continually increased its investment in TSMC Global for the amount of NT$62,272,080 thousand and NT$60,683,010 thousand, respectively. This project was approved by the Investment Commission, MOEA.

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, 2018	December 31, 2017	December 31, 2018	December 31, 2017
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	$ 9,006,126	$ 8,568,344	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	5,772,815	5,677,640	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection	Taoyuan, Taiwan	1,764,607	2,292,100	41%	41%

	service					
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	1,299,423	1,300,194	35%	35%
			$ 17,842,971	$ 17,838,278		

As of December 31, 2018 and 2017, 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, 2018**	**December 31, 2017**
VIS	$ 27,621,298	$ 30,638,751
GUC	$ 9,617,699	$ 11,905,404
Xintec	$ 3,783,585	$ 9,180,759

12. PROPERTY, PLANT AND EQUIPMENT

	Land	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
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 (Deductions)		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	$ 3,212,000	$ 381,645,384	$ 2,585,629,465	$ 43,722,686	$ 171,277,329	$ 3,185,486,864
Accumulated depreciation and impairment						
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)
			423,468			423,468
Balance at December 31, 2018	$	$ 198,759,372	$ 1,931,489,635	$ 29,950,916	$	$ 2,160,199,923
Carrying amounts at December 31, 2018	$ 3,212,000	$ 182,886,012	$ 654,139,830	$ 13,771,770	$ 171,277,329	$ 1,025,286,941
Cost						
Balance at January 1, 2017	$ 3,212,000	$ 281,936,412	$ 1,960,457,480	$ 31,830,657	$ 384,197,526	$ 2,661,634,075
Additions (Deductions)		75,491,595	458,690,837	7,888,336	(239,420,648)	302,650,120
Disposals or retirements		(36,957)	(49,921,595)	(315,776)		(50,274,328)
Balance at December 31, 2017	$ 3,212,000	$ 357,391,050	$ 2,369,226,722	$ 39,403,217	$ 144,776,878	$ 2,914,009,867
Accumulated depreciation and impairment						
Balance at January 1, 2017	$	$ 156,854,513	$ 1,504,061,808	$ 21,316,417	$	$ 1,682,232,738
Additions		19,798,087	226,251,816	4,547,232		250,597,135
Disposals or retirements		(28,816)	(34,831,423)	(315,737)		(35,175,976)
Balance at December 31, 2017	$	$ 176,623,784	$ 1,695,482,201	$ 25,547,912	$	$ 1,897,653,897
Carrying amounts at December 31, 2017	$ 3,212,000	$ 180,767,266	$ 673,744,521	$ 13,855,305	$ 144,776,878	$ 1,016,355,970

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. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
Cost					
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	$ 1,567,756	$ 10,921,844	$ 29,140,011	$ 7,607,537	$ 49,237,148
Accumulated amortization and impairment					
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	$	$ 8,703,391	$ 22,863,319	$ 5,240,508	$ 36,807,218
Carrying amounts at December 31, 2018	$ 1,567,756	$ 2,218,453	$ 6,276,692	$ 2,367,029	$ 12,429,930
Cost					
Balance at January 1, 2017	$ 1,567,756	$ 9,490,320	$ 22,063,589	$ 5,241,203	$ 38,362,868
Additions		897,855	2,900,120	349,189	4,147,164
Balance at December 31, 2017	$ 1,567,756	$ 10,388,175	$ 24,963,709	$ 5,590,392	$ 42,510,032
Accumulated amortization and impairment					
Balance at January 1, 2017	$	$ 6,091,513	$ 17,991,500	$ 4,231,864	$ 28,314,877
Additions		1,548,262	2,290,957	485,809	4,325,028
Balance at December 31, 2017	$	$ 7,639,775	$ 20,282,457	$ 4,717,673	$ 32,639,905
Carrying amounts at December 31, 2017	$ 1,567,756	$ 2,748,400	$ 4,681,252	$ 872,719	$ 9,870,127

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 9.0% and 8.5% in its test of impairment as of December 31, 2018 and 2017, respectively, to reflect the relevant specific risk in

the cash-generating unit.

For the years ended December 31, 2018 and 2017, the Company did not recognize any impairment loss on goodwill.

14. OTHER ASSETS

	December 31, 2018	December 31, 2017
Tax receivable	$ 3,245,082	$ 1,992,258
Prepaid expenses	939,176	492,247
Others	660	287
	$4,184,918	$2,484,792

15. SHORT-TERM LOANS

	December 31, 2018	December 31, 2017
Unsecured loans	$ 88,754,640	$ 63,766,850
Related parties unsecured loans	3,227,700	
	$ 91,982,340	$ 91,982,340
Original loan content		
US$ (in thousands)	$ 2,715,000	$ 2,150,000
EUR(in thousands)	242,000	
Annual interest rate	0.01%-3.22%	1.54%-1.82%
Maturity date	Due by April 2019	Due by February 2018

The annual interest rate of short-term loans from related parties was not significantly different from those of sales to third parties.

16. PROVISIONS

The Company s current provisions were provisions for sales returns and allowances.

	Sales Returns and Allowances
Year Ended December 31, 2017	
Balance, beginning of year	$ 16,991,612
Provision	44,244,876
Payment	(48,061,663)
Balance, end of year	$ 13,174,825

Provisions for sales returns and allowances are estimated based on historical experience and the consideration of varying contractual terms, and are recognized as a reduction of revenue in the same year of the related product sales.

Starting from 2018, the Company recognizes the estimation of sales returns and allowance as refund liability (classified under accrued expenses and other current liabilities) upon initial application of IFRS 15.

17. BONDS PAYABLE

	December 31,	December 31,

	2018	2017
Domestic unsecured bonds	$ 91,800,000	$ 116,100,000
Less: Current portion	(34,900,000)	(24,300,000)
	$ 56,900,000	$ 91,800,000

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	A	January 2012 to January 2017	10,000,000	1.29%	The same as above
	B	January 2012 to January 2019	7,000,000	1.46%	The same as above
101-1	A	August 2012 to August 2017	9,900,000	1.28%	The same as above
	B	August 2012 to August 2019	9,000,000	1.40%	The same as above
101-2	A	September 2012 to September 2017	12,700,000	1.28%	The same as above
	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	A	August 2013 to August 2017	4,000,000	1.34%	The same as above
	B	August 2013 to August 2019	8,500,000	1.52%	The same as above

102-4	B	September 2013 to September 2017	1,500,000	1.45%	The same as above
	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)

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
102-4	D	September 2013 to March 2021	$2,600,000	1.85%	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)
	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)

18. 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$2,028,928 thousand and NT$1,905,444 thousand for the years ended December 31, 2018 and 2017, 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	
	2018	2017
Current service cost	$ 137,758	$ 145,026
Net interest expense	144,108	126,525
Components of defined benefit costs recognized in profit or loss	281,866	271,551
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(71,288)	29,290
Actuarial loss arising from experience adjustments	334,630	483,846
Actuarial loss(gain) arising from changes in financial assumptions	597,820	(258,455)
Components of defined benefit costs recognized in other comprehensive income	861,162	254,681
Total	$ 1,143,028	$ 526,232

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

	Years Ended December 31	
	2018	2017
Cost of revenue	$ 177,772	$ 175,357
Research and development expenses	79,143	75,340
General and administrative expenses	20,591	16,669
Marketing expenses	4,360	4,185
	$ 281,866	$ 271,551

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

	December 31, 2018	December 31, 2017
Present value of defined benefit obligation	$ 13,662,684	$ 12,774,593
Fair value of plan assets	(4,011,279)	(3,923,889)
Net defined benefit liability	$ 9,651,405	$ 8,850,704

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

	Years Ended December 31	
	2018	2017
Balance, beginning of year	$ 12,774,593	$ 12,480,480
Current service cost	137,758	145,026
Interest expense	207,804	185,561
Remeasurement:		
Actuarial loss arising from experience adjustments	334,630	483,846
Actuarial loss (gain) arising from changes in financial assumptions	597,820	(258,455)
Benefits paid from plan assets	(274,326)	(261,865)
Benefits paid directly by the Company	(115,595)	
Balance, end of year	$ 13,662,684	$ 12,774,593

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

	Years Ended December 31	
	2018	2017
Balance, beginning of year	$ 3,923,889	$ 3,929,072
Interest income	63,696	59,036
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	71,288	(29,290)
Contributions from employer	226,732	226,936
Benefits paid from plan assets	(274,326)	(261,865)
Balance, end of year	$ 4,011,279	$ 3,923,889

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

	December 31, 2018	December 31, 2017
Cash	$ 756,126	$ 707,477
Equity instruments	2,148,040	1,993,336
Debt instruments	1,107,113	1,223,076
	$ 4,011,279	$ 3,923,889

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, 2018	December 31, 2017
Discount rate	1.30%	1.65%
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$921,750 thousand and NT$890,116 thousand as of December 31, 2018 and 2017, 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$901,629 thousand and NT$873,801 thousand as of December 31, 2018 and 2017, 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$233,534 thousand to the defined benefit plans in the next year starting from December 31, 2018. The weighted average duration of the defined benefit obligation is 13 years.

19. GUARANTEE DEPOSITS

	December 31, 2018	December 31, 2017
Capacity guarantee	$ 9,289,628	$ 13,346,550
Others	205,020	282,572

	$ 9,494,648	$ 13,629,122
Current portion (classified under accrued expenses and other current liabilities)	$ 6,148,000	$ 6,046,643
Noncurrent portion	3,346,648	7,582,479
	$ 9,494,648	$ 13,629,122

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

20. EQUITY

a. Capital stock

	December 31, 2018	December 31, 2017
Authorized shares (in thousands)	28,050,000	28,050,000
Authorized capital	$ 280,500,000	$ 280,500,000
Issued and paid shares (in thousands)	25,930,380	25,930,380
Issued capital	$ 259,303,805	$ 259,303,805

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, 2018, 1,068,157 thousand ADSs of the Company were traded on the NYSE. The number of common shares represented by the ADSs was 5,340,787 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2018	December 31, 2017
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	121,473	118,792
From share of changes in equities of associates	282,820	289,240
Donations	29,343	19,208
	$ 56,315,932	$ 56,309,536

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 Company s Articles of Incorporation provide that, when allocating the net profits for each fiscal year, the Company shall first offset its losses in previous years and then set aside the following items accordingly:

1) Legal capital reserve at 10% of the profits left over, until the accumulated legal capital reserve equals the Company s paid-in capital;

2) Special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge;

3) Any balance left over shall be allocated according to the resolution of the shareholders meeting.

TSMC s Articles of Incorporation provide the policy about the profit sharing bonus to employees, please refer to Note 28.

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.

Any appropriations of the profits are subject to shareholders approval in the following year.

The appropriation for legal capital reserve shall be made until the reserve equals the Company s paid-in capital. 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 2017 and 2016 earnings had been approved by the Company s shareholders in its meetings held on June 5, 2018 and June 8, 2017, respectively. The appropriations and dividends per share were as follows:

	Appropriation of Earnings		Dividends Per Share (NT$)	
	For Fiscal Year 2017	For Fiscal Year 2016	For Fiscal Year 2017	For Fiscal Year 2016
Legal capital reserve	$ 34,311,148	$ 33,424,718		
Special capital reserve	26,907,527			
Cash dividends to shareholders	207,443,044	181,512,663	$ 8	$ 7

$ 268,661,719	$ 214,937,381

The Company s appropriation of earnings for 2018 had been approved in the meeting of the Board of Directors held on February 19, 2019. The appropriation and dividends per share were as follows:

	Appropriation of Earnings For Fiscal Year 2018	Dividends Per Share (NT$) For Fiscal Year 2018
Legal capital reserve	$ 35,113,088	
Special capital reserve	(11,459,458)	
Cash dividends to shareholders	207,443,044	$ 8
	$ 231,096,674	

The appropriation of earnings for 2018 is to be presented for approval in the Company s shareholders meeting to be held on June 5, 2019 (expected).

d. Others

Changes in others were as follows:

	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 Compensation	Total
Balance, beginning of year (IFRS 9)	$ (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 associates	76,850	(2,999,336)			(2,922,486)
				8,447	8,447

Share of unearned stock-based employee compensation of associates					
Income tax effect		91,828	562		92,390
Balance, end of year	$ (12,042,347)	$ (3,429,324)	$ 23,601	$ (1,843)	$ (15,449,913)

	Year Ended December 31, 2017				
	Foreign Currency Translation Reserve	Unrealized Gain/Loss from Available-for-sale Financial Assets	Cash Flow Hedges Reserve	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ 1,661,237	$ 2,641	$ 105	$	$ 1,663,983
Exchange differences arising on translation of foreign operations	(28,270,770)				(28,270,770)
Changes in fair value of available-for-sale financial assets		(310,002)			(310,002)
Cumulative (gain)/loss reclassified to profit or loss upon disposal of available-for-sale financial assets		(115,690)			(115,690)
Gain/(loss) arising on changes in the fair value of hedging instruments			99,534		99,534
Transferred to initial carrying amount of hedged items			(94,851)		(94,851)
Share of other comprehensive income (loss) of associates	(88,147)	211,951			123,804
Share of unearned stock-based employee compensation of associates				(10,290)	(10,290)
Income tax effect		(2,974)	(562)		(3,536)
Balance, end of year	$ (26,697,680)	$ (214,074)	$ 4,226	$ (10,290)	$ 26,917,818

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

21. NET REVENUE

a. Disaggregation of revenue from contracts with customers

Product	Year Ended December 31, 2018
Wafer	$ 906,992,422
Others	116,933,291
	$1,023,925,713

Geography	Year Ended December 31,

	2018
Taiwan	$ 78,260,773
United States	626,493,249
China	175,794,228
Europe, the Middle East and Africa	71,068,438
Japan	58,125,879
Others	14,183,146
	$1,023,925,713

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

Application Type	Year Ended December 31, 2018
Communication	$ 574,350,582
Industrial/Standard	232,589,200
Computer	143,744,212
Consumer	73,241,719
	$ 1,023,925,713

Resolution	Year Ended December 31, 2018
7-nanometer	$ 81,146,571
10-nanometer	96,600,008
16/20-nanometer	209,828,511
28-nanometer	177,484,309
40/45-nanometer	101,481,881
65-nanometer	75,734,952
90-nanometer	36,543,823
0.11/0.13 micron	20,638,247
0.15/0.18 micron	80,886,264
0.25 micron and above	26,647,856
Wafer revenue	$ 906,992,422

b. Contract balances

	December 31, 2018	January 1, 2018
Contract liabilities (classified under accrued expenses and other current liabilities)	$ 2,740,649	$ 31,078,331

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

For the year ended December 31, 2018, the Company recognized NT$30,742,181 thousand as revenue from the beginning balance of contract liability.

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$53,382,673 thousand for the year ended

December 31, 2018. As of December 31, 2018, the aforementioned refund liabilities amounted to NT$21,199,032 thousand (classified under accrued expenses and other current liabilities).

22. OTHER OPERATING INCOME AND EXPENSES, NET

	Years Ended December 31	
	2018	2017
Loss on disposal or retirement of property, plant and equipment, net	$ (557,598)	$ (1,008,989)
Impairment loss on property, plant and equipment, net	(423,468)	
Others	(687,168)	(252,676)
	$ (1,668,234)	$ (1,261,665)

23. OTHER INCOME

	Years Ended December 31	
	2018	2017
Interest income		
Bank deposits	$ 1,845,471	$ 1,522,579
Financial assets at amortized cost	1,731	
Held-to-maturity financial assets		32,213
	1,847,202	1,554,792
Dividend income	157,905	141,803
	$ 2,005,107	$ 1,696,595

24. FINANCE COSTS

	Years Ended December 31	
	2018	2017
Interest expense		
Corporate bonds	$ 1,485,486	$ 1,967,750
Bank loans	1,417,287	766,001
Related parties	681	15,889
	$ 2,903,454	$ 2,749,640

25. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2018	**2017**
Net gain (loss) on financial instruments at FVTPL		
Mandatorily measured at FVTPL	$ (1,498,856)	$
Held for trading		1,252,759
Gain on disposal of financial assets, net		
Available-for-sale financial assets		115,690
Impairment loss on financial assets		
Financial assets carried at cost		(6,137)
Other gains, net	130,530	229,927
	$ (1,368,326)	$ 1,592,239

26. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2018	2017
Current income tax expense		
Current tax expense recognized in the current year	$ 50,511,247	$ 55,187,468
Income tax adjustments on prior years	(963,356)	(938,292)
Other income tax adjustments	149,771	150,168
	49,697,662	54,399,344
Deferred income tax benefit		
Effect of tax rate changes	(1,466,706)	
The origination and reversal of temporary differences	(3,163,687)	(4,194,644)
	(4,630,393)	(4,191,644)
Income tax expense recognized in profit or loss	$ 45,067,269	$ 50,204,700

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

	Years Ended December 31	
	2018	2017
Income before tax	$ 396,198,153	$ 393,316,176
Income tax expense at the statutory rate	$ 79,239,631	$ 66,863,750
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	2,636,232	(1,438,813)
Tax-exempt income	(54,234,074)	(16,467,720)
Additional income tax under the Alternative Minimum Tax Act	21,455,854	
Additional income tax on unappropriated earnings	7,420,479	11,835,948
Effect of tax rate changes on deferred income tax	(1,466,706)	
The origination and reversal of temporary differences	(3,163,687)	(4,194,644)
Income tax credits	(6,006,875)	(5,605,697)
	45,880,854	50,992,824
Income tax adjustments on prior years	(963,356)	(938,292)
Other income tax adjustments	149,771	150,168
Income tax expense recognized in profit or loss	$ 45,067,269	$ 50,204,700

For the year ended December 31, 2017, the Company applied a tax rate of 17% for entities subject to the R.O.C. Income Tax Law. In February 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	
	2018	2017
Deferred income tax benefit (expense)		
Related to remeasurement of defined benefit obligation	$ 103,339	$ 30,562
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	91,828	
Related to gain/loss on cash flow hedges	562	(562)
Related to unrealized gain/loss on available-for-sale financial assets		(2,974)
	$ 195,729	$ 27,026

c. Deferred income tax balance

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

	December 31, 2018	December 31, 2017
Deferred income tax assets		
Temporary differences		
Depreciation	$ 11,177,890	$ 7,668,535
Refund liability	2,543,884	
Net defined benefit liability	1,084,874	975,324
Unrealized loss on inventories	723,835	604,635
Provision for sales returns and allowance		1,580,979
Investments in equity instruments at FVTOCI	56,191	
	$ 15,586,674	$ 10,829,473
Deferred income tax liabilities		
Temporary differences		
Unrealized exchange gains	$ (61,677)	$ (169,480)
Available-for-sale financial assets		(95,421)
Others	(171,607)	(37,304)
	$ (233,284)	$ (302,205)

	Year Ended December 31, 2018			
	Balance, Beginning of Year	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Balance, End of Year
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
	$ 10,829,473	$ 4,597,671	$ 159,530	$ 15,586,674
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)	(111,823)
	$ (302,205)	$ 32,722	$ 36,199	$ (233,284)

	Year Ended December 31, 2017			
	Balance, Beginning of Year	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Balance, End of Year
Deferred income tax assets				
Temporary differences				
Depreciation	$ 3,284,735	$ 4,383,800	$	$ 7,668,535
Provision for sales returns and allowance	1,428,787	152,192		1,580,979
Net defined benefit liability	939,543	5,219	30,562	975,324
Unrealized loss on inventories	698,858	(94,223)		604,635
Others	94,858	(94,858)		
	$ 6,446,781	$ 4,352,130	$ 30,562	$ 10,829,473
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	$ (48,736)	$ (120,744)	$	$ (169,480)
Available-for-sale financial assets	(92,447)		(2,974)	(95,421)
Others		(36,742)	(562)	(37,304)
	$ (141,183)	$ (157,486)	$ (3,536)	$ (302,205)

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

As of December 31, 2018 and 2017, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT$20,060,918 thousand and NT$26,536,307 thousand, respectively.

e. Unused tax-exemption information

As of December 31, 2018, 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 2008	2015 to 2019
Construction and expansion of 2009	2018 to 2022

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

As of December 31, 2018 and 2017, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT$112,893,001 thousand and NT$95,003,344 thousand, respectively.

g. Income tax examination

The tax authorities have examined income tax returns of the Company through 2015. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

27. EARNINGS PER SHARE

	Years Ended December 31	
	2018	2017
Basic EPS	$ 13.54	$ 13.23
Diluted EPS	$ 13.54	$ 13.23

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT$)
Year Ended December 31, 2018			
Basic/Diluted EPS			
Net income available to common shareholders	$ 351,130,884	25,930,380	$ 13.54
Year Ended December 31, 2017			
Basic/Diluted EPS			
Net income available to common shareholders	$ 343,111,476	25,930,380	$ 13.23

28. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2018	**2017**
a. Depreciation of property, plant and equipment		
Recognized in cost of revenue	$ 251,292,565	$ 231,042,615
Recognized in operating expenses	23,020,118	19,490,010
Recognized in other operating income and expenses	27,857	64,510
	$ 274,340,540	$ 250,597,135
b. Amortization of intangible assets		
Recognized in cost of revenue	$ 2,018,702	$ 2,119,899
Recognized in operating expenses	2,334,145	2,205,129
	$ 4,352,847	$ 4,325,028
c. Research and development costs expensed as incurred	$ 84,944,461	$ 79,887,723
d. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	$ 2,028,928	$ 1,905,444
Defined benefit plans	281,866	271,551
	2,310,794	2,176,995
Other employee benefits	93,694,021	90,611,476
	$ 96,004,815	$ 92,788,471
Employee benefits expense summarized by function		
Recognized in cost of revenue	$ 57,733,597	$ 55,902,877
Recognized in operating expenses	38,271,218	36,885,594
	$ 96,004,815	$ 92,788,471

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$23,570,040 thousand and NT$23,019,082 thousand for the years ended December 31, 2018 and 2017, 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$23,570,040 thousand and NT$349,272 thousand in cash for 2018, respectively, 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, and profit sharing bonus to employees and compensation to directors in the amounts of NT$22,418,339 thousand and NT$376,432 thousand in cash for 2016, respectively, had been approved by the Board of Directors of the Company held on February 19, 2019, February 13, 2018 and February 14, 2017, respectively. There is no significant difference between the

aforementioned approved amounts and the amounts charged against earnings of 2018, 2017 and 2016, 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.

29. CASH FLOW INFORMATION

Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2018	Financing Cash Flow	Non-cash changes Foreign Exchange Movement	Non-cash changes Other Changes (Note)	Balance as of December 31, 2018
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	116,100,000	(24,300,000)			91,800,000
Total	$ 193,495,972	$ 4,359,579	$ 1,457,337	$ (6,035,900)	$ 193,276,988

Note: Other changes include guarantee deposits refunded to customers by offsetting related accounts receivable.

30. 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.

31. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2018
Financial assets	
FVTPL (Note 1)	$ 54,115
FVTOCI (Note 2)	5,126,829
Hedging financial assets	23,497
Amortized cost (Note 3)	365,119,060
	$ 370,323,501

Financial liabilities	
FVTPL (Note 4)	$ 30,232
Hedging financial liabilities	1,941
Amortized cost (Note 5)	310,265,696
	$ 310,297,869

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, accrued expenses and other current liabilities, bonds payable, and guarantee deposits.

	December 31, 2017
Financial assets	
FVTPL	$ 373,351
Available-for-sale financial assets (Note 6)	2,808,606
Hedging derivative financial assets	7,378
Loans and receivables (Note 7)	362,375,885
	$ 365,565,220
Financial liabilities	
FVTPL	$ 18,764
Hedging derivative financial liabilities	15,562
Amortized cost (Note 8)	294,856,247
	$ 294,890,573

Note 6: Including financial assets carried at cost.

Note 7: Including cash and cash equivalents, notes and accounts receivable (including related parties), other receivables and refundable deposits.

Note 8: Including short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, accrued expenses and other current liabilities, bonds payable and guarantee deposits.

b. Financial risk management objectives

The Company seeks to ensure sufficient cost-efficient funding 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, 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

Most of the Company s revenues and expenditures are denominated in foreign currencies. Consequently, the Company is exposed to foreign currency risk. To protect against reductions in value and the volatility of future cash flows caused by changes in foreign exchange rates, the Company uses derivative financial instruments, such as forward exchange contracts and cross currency swaps, and non-derivative financial instruments, such as foreign currency-denominated debt, to partially hedge the Company s existing and certain forecasted currency exposure. These hedges will offset only a portion of, but do not eliminate, the financial impact from movements in foreign currency exchange rates.

The Company s sensitivity analysis of foreign currency risk mainly focuses on the foreign currency monetary items and the derivatives financial instruments at the end of the reporting period. Assuming an unfavorable 10% movement in the levels of foreign exchanges relative to the New Taiwan dollar, the net income for the years ended December 31, 2018 and 2017 would have decreased by NT$489,326 thousand and NT$849,248 thousand, respectively, and the other comprehensive income for the years ended December 31, 2018 and 2017 would have decreased by NT$315,571 thousand and NT$265,875 thousand, respectively.

Interest rate risk

The Company is exposed to interest rate risk primarily related to its outstanding debt and investments in fixed income securities. All of the Company s bonds payable have fixed interest rates and are measured at amortized cost. As such, changes in interest rates would not affect the future cash flows.

The Company classified its investments in fixed income securities as financial assets at amortized costs starting from 2018; as held-to-maturity financial assets in 2017. Because financial assets at amortized costs and held-to-maturity fixed income securities are measured at amortized cost, changes in interest rates would not affect the fair value.

Other price risk

The Company is exposed to equity price risk for 2018 and 2017 arising from financial assets at FVTOCI and available-for-sale equity investments, respectively.

Assuming a hypothetical decrease of 5% in prices of the equity investments at the end of the reporting period for the years ended December 31, 2018 and 2017, the other comprehensive income would have decreased by NT$65,097 thousand and NT$120,835 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, 2018 and 2017, the Company s ten largest customers accounted for 76% and 74% of accounts receivable, respectively. The Company believes the concentration of credit risk is not material for the remaining accounts receivable.

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%
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 year ended December 31, 2018, the Company recognizes the expected credit loss NT$0, mainly attributed to asset allocation to debt investments of higher credit rating.

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	2-3 Years	4-5 Years	5+ Years	Total
December 31, 2018					
Non-derivative financial liabilities					
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				40,889,712
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
	251,414,719	38,225,675	23,441,141		313,081,535
Derivative financial instruments					
Forward exchange contracts					
Outflows	35,608,273				35,608,273
Inflows	(35,681,524)				(35,681,524)
	(73,251)				(73,251)
	$ 251,341,468	$ 38,225,675	$ 23,441,141	$	$ 313,008,284
December 31, 2017					
Non-derivative financial liabilities					
Short-term loans	$ 63,801,977	$	$	$	$ 63,801,977
Accounts payable (including related parties)	30,434,887				30,434,887
Payables to contractors and equipment suppliers	50,363,976				50,363,976
Accrued expenses and other current liabilities	20,561,411				20,561,411
Bonds payable	25,791,842	68,378,787	7,777,715	18,203,601	120,151,945
	6,046,643	7,498,840	83,639		13,629,122

Guarantee deposits (including those classified under accrued expenses and other current liabilities)					
	197,000,736	75,877,627	7,861,354	18,203,601	298,943,318
Derivative financial instruments					
Forward exchange contracts					
Outflows	48,169,933				48,169,933
Inflows	(48,530,989)				(48,530,989)
	(361,056)				(361,056)
	$ 196,639,680	$ 75,877,627	$ 7,861,354	$ 18,203,601	$ 298,582,262

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, 2018			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at FVTPL				
Mandatorily measured at FVTPL				
Forward exchange contracts	$	$ 54,115	$	$ 54,115
Financial assets at FVTOCI				
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		3,595,069		3,595,069
	$ 568,150	$ 3,595,069	$ 963,610	$ 5,126,829
Hedging financial assets				
Cash flow hedges				
Forward exchange contracts	$	$ 23,497	$	$ 23,497
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$	$ 30,232	$	$ 30,232

Hedging financial liabilities				
Cash flow hedges				
Forward exchange contracts	$	$ 1,941	$	$ 1,941

	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Financial assets at FVTPL				
Held for trading				
Forward exchange contracts	$	$ 373,351	$	$ 373,351
Available-for-sale financial assets				
Publicly traded stocks	$ 2,393,555	$	$	$ 2,393,555
Hedging derivative financial assets				
Cash flow hedges				
Forward exchange contracts	$	$ 7,378	$	$ 7,378
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$	$ 18,764	$	$ 18,764
Hedging derivative financial liabilities				
Cash flow hedges				
Forward exchange contracts	$	$ 15,562	$	$ 15,562

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 year ended December 31, 2018 were as follows:

Balance at January 1, 2018	$ 983,590
Recognized in other comprehensive income	(16,524)
Disposals and proceeds from return of capital of investments	(3,456)
Balance at December 31, 2018	$ 963,610

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 yield 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.

To determine the fair value, the Company utilizes the asset approach and takes into account the net asset value measured at the fair value by independent parties.

The market approach is used to arrive at their fair value, for which the recent financing activities of investees, the market transaction prices of the similar companies and market conditions are considered.

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, 2018				
	Carrying Amount	Fair Value			
		Level 1	Level 2	Level 3	Total
Financial assets					
Financial assets at amortized costs					
Commercial paper	$ 2,294,098	$	$ 2,296,188	$	$ 2,296,188
Financial liabilities					
Financial liabilities at amortized costs					
Bonds payable	$ 91,800,000	$	$ 93,171,255	$	$ 93,171,255

	December 31, 2017				
	Carrying Amount	Fair Value			
		Level 1	Level 2	Level 3	Total
Financial liabilities at amortized costs					
Bonds payable	$ 116,100,000	$	$ 118,020,699	$	$ 118,020,699

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.

32. 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

Related Party Name	Related Party Categories
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

		Years Ended December 31	
		2018	2017
Item	Related Party Name/Categories		
Net revenue from sale of goods	TSMC North America	$ 650,432,820	$ 650,351,537
	Associates	6,762,827	6,941,089
	Other subsidiaries	150,407	487,112
	Other related parties	330	133
		$ 657,346,384	$ 657,779,871

Item	Related Party Categories		
Net revenue from royalties	Associates	$ 362,259	$ 482,537
	Subsidiaries	568	264
		$ 362,827	$ 482,801

c. Purchases

	Years Ended December 31	
	2018	2017
Related Party Categories		
Subsidiaries	$ 34,136,678	$ 30,843,591
Associates	8,809,394	9,903,917
	$ 42,946,072	$ 40,747,508

d. Receivables from related parties

		December 31, 2018	December 31, 2017
Item	Related Party Name/Categories		
Receivables from related parties	TSMC North America	$ 86,057,097	$ 91,329,510
	Associates	375,184	777,730
	Other subsidiaries	20,303	34,597
		$ 86,452,584	$ 92,141,837
Other receivables from related parties	TSMC North America	$ 1,035,465	$ 1,246,101
	TSMC Nanjing	89,334	1,754,484
	Associates	64,203	127,459
	Other subsidiaries	45,660	15,828
		$ 1,234,662	$ 3,143,872

e. Payables to related parties

		December 31, 2018	December 31, 2017
Item	Related Party Name/Categories		
Payables to related parties	TSMC China	$ 1,299,072	$ 1,440,141
	WaferTech	1,092,785	1,328,094
	Xintec	649,812	817,876
	SSMC	362,564	406,959

	VIS	357,080	409,950
	Other subsidiaries	778,396	405,127
	Other associates	7,043	9,517
	Other related parties		12,000
		$ 4,546,782	$ 4,829,664

f. Accrued expenses and other current liabilities

Item	Related Party Name/Categories	December 31, 2018	December 31, 2017
Accrued expenses and other current liabilities	TSMC Nanjing	$ 199,638	$
	Other subsidiaries	681	
		$ 200,319	$

g. Disposal of property, plant and equipment

	Proceeds Years Ended December 31	
	2018	2017
Related Party Name/Categories		
TSMC Nanjing	$ 2,839,622	$ 14,336,846
Other subsidiaries	25,380	120,790
Associates		1,355
	$ 2,865,002	$ 14,458,991

	Gains Years Ended December 31	
	2018	2017
Related Party Name/Categories		
TSMC Nanjing	$ 386,239	$ 81,272
Other subsidiaries	64,964	50,361
Associates		1,355
	$ 451,203	$ 132,988

	Deferred Gains from Disposal of Property, Plant and Equipment December 31,	December 31,
	2018	2017
Related Party Name/Categories		
TSMC Nanjing	$ 234,810	$ 574,633

Other subsidiaries	152,970	192,554
	$ 387,780	$ 767,187

h. Others

Item	Related Party Name/Categories	Years Ended December 31 2018	2017
Manufacturing expenses	Associates	$ 2,876,216	$ 2,098,141
	Subsidiaries	35,603	9,318
		$ 2,911,819	$ 2,107,459
Research and development expenses	Subsidiaries	$ 2,407,068	$ 2,205,906
	Associates	83,145	69,841
		$ 2,490,213	$ 2,275,747
Marketing expenses - commission	TSMC Europe	$ 463,093	$ 437,561
	Other subsidiaries	402,973	370,243
		$ 866,066	$ 807,804
General and administrative expenses	Other related parties	$ 120,756	$ 101,500
	Subsidiaries	3,426	3,910
		$ 124,182	$ 105,410

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, 2018 and 2017 were as follows:

	Years Ended December 31	
	2018	**2017**
Short-term employee benefits	$ 1,906,266	$ 2,071,171
Post-employment benefits	3,041	3,375
	$ 1,909,307	$ 2,074,546

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.

33. SIGNIFICANT OPERATING LEASE ARRANGEMENTS

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

The Company expensed the lease payments as follows:

	Years Ended December 31	
	2018	**2017**
Minimum lease payments	$ 3,773,364	$ 1,748,190

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

	December 31, 2018	**December 31, 2017**
Not later than 1 year	$ 5,510,729	$ 2,622,896
Later than 1 year and not later than 5 years	4,957,770	4,340,428
Later than 5 years	8,253,382	7,849,690
	$ 18,721,881	$ 14,813,014

34. 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, 2018, 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, 2018.

c. In May 2017, Uri Cohen filed a complaint in the U.S. District Court for the Eastern District of Texas alleging that the Company, TSMC North America and other companies infringe four U.S. patents. Cohen s case was transferred to and consolidated with the responsive declaratory judgment case for non-infringement of Cohen s asserted patents filed by the Company and TSMC North America in the U.S. District Court for the Northern District of California. In July 2018, all pending litigations between the parties in the U.S. District Court for the Northern District of California were dismissed.

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, 2018, the Company provided endorsement guarantees of NT$2,557,977 thousand to its subsidiary, TSMC North America, in respect of providing endorsement guarantees for office leasing contract.

35. SIGNIFICANT LOSSES FROM DISASTERS

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.

36. SIGNIFICANT SUBSEQUENT EVENTS

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. As of the date the accompanying parent company only financial statements were issued, a preliminary estimated loss of NT$6,100,000 thousand will be recognized in cost of revenue for the three months ended March 31, 2019.

37. 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)
December 31, 2018			
Financial assets			
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
Financial liabilities			
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
December 31, 2017			
Financial assets			
Monetary items			
USD	5,494,191	29.659	162,952,207
EUR	236,279	35.45	8,376,078
JPY	34,012,314	0.2629	8,941,837
Non-monetary items			
HKD	285,336	3.80	1,084,276
Financial liabilities			
Monetary items			
USD	3,880,441	29.659	115,090,012
EUR	410,686	35.45	14,558,807
JPY	35,365,911	0.2629	9,297,698

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, 2018 and 2017, 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.

38. 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 32.

39. OPERATING SEGMENTS INFORMATION

The Company has provided the operating segments disclosure in the consolidated financial statements.

TABLE 1

Taiwan Semiconductor Manufacturing Company Limited and Investees

FINANCINGS PROVIDED

FOR THE YEAR ENDED DECEMBER 31, 2018

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

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
Other receivables from related parties	Yes	$ 52,859,100 (RMB 7,000,000) & (US$ 700,000)	$ 46,065,560 (RMB 7,000,000) & (US$ 479,000)	$ 30,829,260 (RMB 6,000,000) & (US$ 129,000)	1.30%-1.96%	The need for short-term and long-term financing	$	Operating capital	$
Other receivables from related parties	Yes	46,110,000 (US$ 1,500,000)	46,110,000 (US$ 1,500,000)	3,227,700 (US$ 105,000)	2.53%	The need for short-term financing		Operating capital	

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 of this Article. 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 foreign subsidiaries whose voting shares are 100% owned, directly or indirectly, by TSMC 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, 2018

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

Guaranteed Party											
nent/ Provider	**Name**	**Nature of Relationship**	**Limits on Endorsement/ Guarantee Amount Provided to Each Guaranteed 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 Amount to Net Equity per Latest Financial Statements**	**Maximum Endorsement/ Guarantee Amount Allowable (Note 2)**	**Gu Pro Co**
	TSMC Global	Subsidiary	$ 419,204,416	$ 35,351,000 (US$ 1,150,000)	$	$	$		$ 419,204,416	
	TSMC North America	Subsidiary	419,204,416	2,557,977 (US$ 83,213)	2,557,977 (US$ 83,213)	2,557,977 (US$ 83,213)		0.15%	419,204,416	

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.

TABLE 3

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES HELD

DECEMBER 31, 2018

(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, 2018 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC	Commercial paper							
	Taiwan Power Company		Financial assets at amortized cost	180	$ 1,795,261	N/A	$ 1,797,107	
	CPC Corporation, Taiwan			50	498,837	N/A	499,080	
	Non-publicly traded equity investments							
	United Industrial Gases Co., Ltd.		Financial assets at fair value through other comprehensive income	21,230	493,225	10	493,225	
	Shin-Etsu Handotai Taiwan Co., Ltd.			10,500	379,176	7	379,176	
	Global Investment Holding Inc.			11,124	78,430	6	78,430	
	W.K. Technology Fund IV			806	5,747	2	5,747	
	Crimson Asia Capital				4,554	1	4,554	
	Horizon Ventures Fund				2,477	12	2,477	
	Publicly traded stocks							
				21,105	568,150		568,150	

	Semiconductor Manufacturing International Corporation	Financial assets at fair value through other comprehensive income					
TSMC Partners	Non-publicly traded equity investments						
	Shanghai Walden Venture Capital Enterprise	Financial assets at fair value through other comprehensive income	US$	8,904	6	US$	8,904
	China Walden Venture Investments II, L.P.		US$	8,175	9	US$	8,175
	China Walden Venture Investments III, L.P.		US$	1,486	4	US$	1,486
	Tela Innovations		10,440		25		
	Mcube Inc.		6,333		12		
	Sonics, Inc.		637		9		
TSMC Global	Corporate bond						
	Bank of America Corp	Financial assets at fair value through other comprehensive income	US$	44,755	N/A	US$	44,755
	JPMorgan Chase & Co		US$	44,291	N/A	US$	44,291
	Morgan Stanley		US$	40,237	N/A	US$	40,237
	Goldman Sachs Group Inc/The		US$	32,464	N/A	US$	32,464
	Citigroup Inc		US$	28,602	N/A	US$	28,602
	CVS Health Corp		US$	27,238	N/A	US$	27,238
	AT&T Inc		US$	23,123	N/A	US$	23,123
	Comcast Corp		US$	18,894	N/A	US$	18,894
	Verizon Communications Inc		US$	15,927	N/A	US$	15,927
	HSBC Holdings PLC		US$	15,571	N/A	US$	15,571
	BAT Capital Corp		US$	12,594	N/A	US$	12,594
	Apple Inc		US$	12,585	N/A	US$	12,585
	Daimler Finance North America LLC		US$	12,578	N/A	US$	12,578
	PNC Bank NA		US$	12,203	N/A	US$	12,203

Nordea Bank Abp	US$	11,704	N/A	US$	11,704
AbbVie Inc	US$	11,504	N/A	US$	11,504

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	United Technologies Corp		Financial assets at fair value through other comprehensive income		US$ 11,159	N/A	US$ 11,159	
	American International Group Inc				US$ 10,737	N/A	US$ 10,737	
	Ford Motor Credit Co LLC				US$ 10,153	N/A	US$ 10,153	
	Credit Suisse AG/New York NY				US$ 10,096	N/A	US$ 10,096	
	Sumitomo Mitsui Financial Group Inc				US$ 10,008	N/A	US$ 10,008	
	Mitsubishi UFJ Financial Group Inc				US$ 9,547	N/A	US$ 9,547	
	Duke Energy Corp				US$ 9,228	N/A	US$ 9,228	
	Macquarie Group Ltd				US$ 8,970	N/A	US$ 8,970	
	Analog Devices Inc				US$ 8,841	N/A	US$ 8,841	
	ABN AMRO Bank NV				US$ 8,652	N/A	US$ 8,652	
	ERAC USA Finance LLC				US$ 8,601	N/A	US$ 8,601	
	Wells Fargo & Co				US$ 8,495	N/A	US$ 8,495	
	Tencent Holdings Ltd				US$ 8,089	N/A	US$ 8,089	
	Intercontinental Exchange Inc				US$ 7,850	N/A	US$ 7,850	
	Celgene Corp				US$ 7,726	N/A	US$ 7,726	
	American Express Credit Corp				US$ 7,718	N/A	US$ 7,718	
	Huntington National Bank/The				US$ 7,717	N/A	US$ 7,717	
	Wells Fargo Bank NA				US$ 7,621	N/A	US$ 7,621	
	Siemens Financieringsmaatschappij NV				US$ 7,517	N/A	US$ 7,517	
	Cardinal Health Inc				US$ 7,484	N/A	US$ 7,484	
	Citizens Bank NA/Providence RI				US$ 7,469	N/A	US$ 7,469	
	Cooperatieve Rabobank UA/NY				US$ 7,462	N/A	US$ 7,462	
	QUALCOMM Inc				US$ 7,432	N/A	US$ 7,432	
	Reliance Standard Life Global Funding II				US$ 7,387	N/A	US$ 7,387	
	UBS Group Funding Switzerland AG				US$ 7,367	N/A	US$ 7,367	
	Hewlett Packard Enterprise Co				US$ 7,327	N/A	US$ 7,327	

ANZ New Zealand Int l Ltd/London	US$ 7,270	N/A	US$ 7,270
Microsoft Corp	US$ 7,152	N/A	US$ 7,152
Deutsche Telekom International Finance BV	US$ 7,110	N/A	US$ 7,110
African Development Bank	US$ 7,097	N/A	US$ 7,097
Svenska Handelsbanken AB	US$ 7,081	N/A	US$ 7,081
General Dynamics Corp	US$ 7,039	N/A	US$ 7,039
Welltower Inc	US$ 6,995	N/A	US$ 6,995
Banco Santander SA	US$ 6,907	N/A	US$ 6,907
Bank of New York Mellon Corp/The	US$ 6,907	N/A	US$ 6,907
Toyota Motor Credit Corp	US$ 6,902	N/A	US$ 6,902
Mizuho Financial Group Inc	US$ 6,783	N/A	US$ 6,783
BB&T Corp	US$ 6,703	N/A	US$ 6,703
Hyundai Capital America	US$ 6,644	N/A	US$ 6,644
Anheuser-Busch InBev Finance Inc	US$ 6,637	N/A	US$ 6,637
BP Capital Markets PLC	US$ 6,589	N/A	US$ 6,589
Southern Co/The	US$ 6,477	N/A	US$ 6,477
Westpac Banking Corp	US$ 6,474	N/A	US$ 6,474
SunTrust Bank/Atlanta GA	US$ 6,467	N/A	US$ 6,467
Tyson Foods Inc	US$ 6,213	N/A	US$ 6,213
Dominion Energy Inc	US$ 6,187	N/A	US$ 6,187
Air Lease Corp	US$ 6,161	N/A	US$ 6,161
21st Century Fox America Inc	US$ 6,152	N/A	US$ 6,152
KeyBank NA/Cleveland OH	US$ 6,049	N/A	US$ 6,049
Fifth Third Bancorp	US$ 6,045	N/A	US$ 6,045

(Continued)

				December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	Northrop Grumman Corp		Financial assets at fair value through other comprehensive income		US$ 6,036	N/A	US$ 6,036	
	KeyCorp				US$ 5,806	N/A	US$ 5,806	
	SMBC Aviation Capital Finance DAC				US$ 5,806	N/A	US$ 5,806	
	Santander UK Group Holdings PLC				US$ 5,782	N/A	US$ 5,782	
	UBS AG/London				US$ 5,772	N/A	US$ 5,772	
	DowDuPont Inc				US$ 5,757	N/A	US$ 5,757	
	BPCE SA				US$ 5,709	N/A	US$ 5,709	
	AXA Equitable Holdings Inc				US$ 5,662	N/A	US$ 5,662	
	Aviation Capital Group LLC				US$ 5,657	N/A	US$ 5,657	
	BP Capital Markets America Inc				US$ 5,616	N/A	US$ 5,616	
	Reckitt Benckiser Treasury Services PLC				US$ 5,611	N/A	US$ 5,611	
	Enterprise Products Operating LLC				US$ 5,589	N/A	US$ 5,589	
	Santander UK PLC				US$ 5,568	N/A	US$ 5,568	
	Oracle Corp				US$ 5,521	N/A	US$ 5,521	
	Penske Truck Leasing Co Lp / PTL Finance Corp				US$ 5,399	N/A	US$ 5,399	
	ITC Holdings Corp				US$ 5,350	N/A	US$ 5,350	
	Capital One NA				US$ 5,305	N/A	US$ 5,305	
	Western Union Co/The				US$ 5,218	N/A	US$ 5,218	
	International Bank for Reconstruction & Development				US$ 5,186	N/A	US$ 5,186	
	Sompo International Holdings Ltd				US$ 5,092	N/A	US$ 5,092	
	Jackson National Life Global Funding				US$ 5,069	N/A	US$ 5,069	
					US$ 5,049	N/A	US$ 5,049	

Manufacturers & Traders Trust Co				
SunTrust Banks Inc	US$ 5,044	N/A	US$ 5,044	
Toronto-Dominion Bank/The	US$ 5,000	N/A	US$ 5,000	
UBS AG/Stamford CT	US$ 4,972	N/A	US$ 4,972	
Cigna Holding Co	US$ 4,917	N/A	US$ 4,917	
Marriott International Inc/MD	US$ 4,799	N/A	US$ 4,799	
Cox Communications Inc	US$ 4,791	N/A	US$ 4,791	
Ryder System Inc	US$ 4,778	N/A	US$ 4,778	
NextEra Energy Capital Holdings Inc	US$ 4,706	N/A	US$ 4,706	
US Bank NA/Cincinnati OH	US$ 4,644	N/A	US$ 4,644	
Five Corners Funding Trust	US$ 4,624	N/A	US$ 4,624	
Credit Suisse Group Funding Guernsey Ltd	US$ 4,564	N/A	US$ 4,564	
American Express Co	US$ 4,547	N/A	US$ 4,547	
BNP Paribas SA	US$ 4,530	N/A	US$ 4,530	
Amgen Inc	US$ 4,526	N/A	US$ 4,526	
AEP Texas Inc	US$ 4,502	N/A	US$ 4,502	
New York Life Global Funding	US$ 4,448	N/A	US$ 4,448	
Barclays PLC	US$ 4,216	N/A	US$ 4,216	
Credit Agricole SA/London	US$ 4,118	N/A	US$ 4,118	
Vodafone Group PLC	US$ 4,040	N/A	US$ 4,040	
Fifth Third Bank/Cincinnati OH	US$ 4,031	N/A	US$ 4,031	
Banque Federative du Credit Mutuel SA	US$ 4,028	N/A	US$ 4,028	
Exelon Generation Co LLC	US$ 3,969	N/A	US$ 3,969	
European Investment Bank	US$ 3,903	N/A	US$ 3,903	
Bank of Nova Scotia/The	US$ 3,862	N/A	US$ 3,862	
Air Liquide Finance SA	US$ 3,827	N/A	US$ 3,827	
Edison International	US$ 3,762	N/A	US$ 3,762	
Alimentation Couche-Tard Inc	US$ 3,656	N/A	US$ 3,656	
Macquarie Bank Ltd	US$ 3,643	N/A	US$ 3,643	

(Continued)

				December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	Bayer US Finance II LLC		Financial assets at fair value through other comprehensive income		US$ 3,638	N/A	US$ 3,638	
	Barclays Bank PLC				US$ 3,621	N/A	US$ 3,621	
	Asian Development Bank				US$ 3,594	N/A	US$ 3,594	
	Canadian Imperial Bank of Commerce				US$ 3,586	N/A	US$ 3,586	
	Branch Banking & Trust Co				US$ 3,489	N/A	US$ 3,489	
	Royal Bank of Canada				US$ 3,484	N/A	US$ 3,484	
	Keurig Dr Pepper Inc				US$ 3,480	N/A	US$ 3,480	
	Capital One Financial Corp				US$ 3,426	N/A	US$ 3,426	
	BMW US Capital LLC				US$ 3,406	N/A	US$ 3,406	
	Enel Finance International NV				US$ 3,385	N/A	US$ 3,385	
	Mondelez International Holdings Netherlands BV				US$ 3,382	N/A	US$ 3,382	
	LyondellBasell Industries NV				US$ 3,366	N/A	US$ 3,366	
	Lloyds Banking Group PLC				US$ 3,222	N/A	US$ 3,222	
	Inter-American Development Bank				US$ 3,118	N/A	US$ 3,118	
	Digital Realty Trust LP				US$ 3,102	N/A	US$ 3,102	
	Bank of Montreal				US$ 3,086	N/A	US$ 3,086	
	Walgreens Boots Alliance Inc				US$ 3,075	N/A	US$ 3,075	
	Skandinaviska Enskilda Banken				US$ 3,058	N/A	US$ 3,058	

AB				
Schlumberger Holdings Corp	US$ 3,019	N/A	US$ 3,019	
State Street Corp	US$ 3,007	N/A	US$ 3,007	
Eversource Energy	US$ 2,915	N/A	US$ 2,915	
Anthem Inc	US$ 2,843	N/A	US$ 2,843	
Charles Schwab Corp/The	US$ 2,793	N/A	US$ 2,793	
National Australia Bank Ltd/New York	US$ 2,741	N/A	US$ 2,741	
Express Scripts Holding Co	US$ 2,727	N/A	US$ 2,727	
Shell International Finance BV	US$ 2,718	N/A	US$ 2,718	
ING Groep NV	US$ 2,664	N/A	US$ 2,664	
Nestle Holdings Inc	US$ 2,611	N/A	US$ 2,611	
McCormick & Co Inc/MD	US$ 2,595	N/A	US$ 2,595	
PartnerRe Finance B LLC	US$ 2,568	N/A	US$ 2,568	
Sprint Spectrum Co LLC / Sprint Spectrum Co II LLC / Sprint Spectrum Co III LLC	US$ 2,502	N/A	US$ 2,502	
Berkshire Hathaway Energy Co	US$ 2,501	N/A	US$ 2,501	
WR Berkley Corp	US$ 2,484	N/A	US$ 2,484	
Delta Air Lines 2007-1 Class A Pass Through Trust	US$ 2,483	N/A	US$ 2,483	
Lam Research Corp	US$ 2,482	N/A	US$ 2,482	
Ventas Realty LP / Ventas Capital Corp	US$ 2,416	N/A	US$ 2,416	
NiSource Inc	US$ 2,377	N/A	US$ 2,377	
DXC Technology Co	US$ 2,345	N/A	US$ 2,345	
EI du Pont de Nemours & Co	US$ 2,326	N/A	US$ 2,326	
Xylem Inc/NY	US$ 2,319	N/A	US$ 2,319	
MUFG Bank Ltd	US$ 2,296	N/A	US$ 2,296	
NBCUniversal Media LLC	US$ 2,252	N/A	US$ 2,252	

Lloyds Bank PLC	US$ 2,219	N/A	US$ 2,219
Cintas Corp No 2	US$ 2,165	N/A	US$ 2,165
Sumitomo Mitsui Banking Corp	US$ 2,164	N/A	US$ 2,164
Gilead Sciences Inc	US$ 2,101	N/A	US$ 2,101
ProAssurance Corp	US$ 2,094	N/A	US$ 2,094
HCP Inc	US$ 2,039	N/A	US$ 2,039
Volkswagen Group of America Finance LLC	US$ 2,024	N/A	US$ 2,024

(Continued)

				December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	EOG Resources Inc		Financial assets at fair value through other comprehensive income		US$ 2,003	N/A	US$ 2,003	
	Roche Holdings Inc				US$ 1,999	N/A	US$ 1,999	
	British Telecommunications PLC				US$ 1,997	N/A	US$ 1,997	
	Aetna Inc				US$ 1,997	N/A	US$ 1,997	
	Realty Income Corp				US$ 1,959	N/A	US$ 1,959	
	Caterpillar Financial Services Corp				US$ 1,938	N/A	US$ 1,938	
	American Airlines 2013-2 Class A Pass Through Trust				US$ 1,925	N/A	US$ 1,925	
	Huntington Bancshares Inc/OH				US$ 1,912	N/A	US$ 1,912	
	Duke Realty LP				US$ 1,895	N/A	US$ 1,895	
	Dow Chemical Co/The				US$ 1,881	N/A	US$ 1,881	
	Societe Generale SA				US$ 1,819	N/A	US$ 1,819	
	General Mills Inc				US$ 1,818	N/A	US$ 1,818	
	Simon Property Group LP				US$ 1,781	N/A	US$ 1,781	
	Visa Inc				US$ 1,755	N/A	US$ 1,755	
	UnitedHealth Group Inc				US$ 1,752	N/A	US$ 1,752	
	WestRock RKT Co				US$ 1,746	N/A	US$ 1,746	
	Brambles USA Inc				US$ 1,740	N/A	US$ 1,740	
	PSEG Power LLC				US$ 1,730	N/A	US$ 1,730	
	Dominion Energy Gas Holdings LLC				US$ 1,726	N/A	US$ 1,726	
	McKesson Corp				US$ 1,707	N/A	US$ 1,707	
	Danske Bank A/S				US$ 1,687	N/A	US$ 1,687	
	Standard Chartered PLC				US$ 1,680	N/A	US$ 1,680	
	Wisconsin Public Service Corp				US$ 1,678	N/A	US$ 1,678	
	Regions Financial Corp				US$ 1,658	N/A	US$ 1,658	
	Amazon.com Inc				US$ 1,581	N/A	US$ 1,581	
	Principal Life Global Funding II				US$ 1,564	N/A	US$ 1,564	

Husky Energy Inc	US$ 1,557	N/A	US$ 1,557
General Electric Co	US$ 1,552	N/A	US$ 1,552
American Electric Power Co Inc	US$ 1,546	N/A	US$ 1,546
Weyerhaeuser Co	US$ 1,537	N/A	US$ 1,537
Lincoln National Corp	US$ 1,536	N/A	US$ 1,536
AIG Global Funding	US$ 1,491	N/A	US$ 1,491
Harley-Davidson Financial Services Inc	US$ 1,490	N/A	US$ 1,490
Compass Bank	US$ 1,483	N/A	US$ 1,483
O Reilly Automotive Inc	US$ 1,470	N/A	US$ 1,470
John Deere Capital Corp	US$ 1,470	N/A	US$ 1,470
Nissan Motor Acceptance Corp	US$ 1,466	N/A	US$ 1,466
Guardian Life Global Funding	US$ 1,459	N/A	US$ 1,459
Public Service Electric & Gas Co	US$ 1,457	N/A	US$ 1,457
Fiserv Inc	US$ 1,455	N/A	US$ 1,455
Oesterreichische Kontrollbank AG	US$ 1,441	N/A	US$ 1,441
TransCanada PipeLines Ltd	US$ 1,436	N/A	US$ 1,436
HSBC Bank PLC	US$ 1,434	N/A	US$ 1,434
Eastman Chemical Co	US$ 1,433	N/A	US$ 1,433
CBS Corp	US$ 1,420	N/A	US$ 1,420
Takeda Pharmaceutical Co Ltd	US$ 1,412	N/A	US$ 1,412
IBM Credit LLC	US$ 1,407	N/A	US$ 1,407
Monongahela Power Co	US$ 1,387	N/A	US$ 1,387
Cboe Global Markets Inc	US$ 1,368	N/A	US$ 1,368
Texas Eastern Transmission LP	US$ 1,363	N/A	US$ 1,363

(Continued)

				December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	Georgia-Pacific LLC		Financial assets at fair value through other comprehensive income		US$ 1,346	N/A	US$ 1,346	
	Kreditanstalt fuer Wiederaufbau				US$ 1,331	N/A	US$ 1,331	
	Rockwell Collins Inc				US$ 1,321	N/A	US$ 1,321	
	GATX Corp				US$ 1,265	N/A	US$ 1,265	
	Entergy Arkansas LLC				US$ 1,262	N/A	US$ 1,262	
	CNA Financial Corp				US$ 1,249	N/A	US$ 1,249	
	Entergy Corp				US$ 1,226	N/A	US$ 1,226	
	CenterPoint Energy Inc				US$ 1,224	N/A	US$ 1,224	
	Consolidated Edison Inc				US$ 1,203	N/A	US$ 1,203	
	Glencore Funding LLC				US$ 1,190	N/A	US$ 1,190	
	GlaxoSmithKline Capital PLC				US$ 1,182	N/A	US$ 1,182	
	Regions Bank/Birmingham AL				US$ 1,157	N/A	US$ 1,157	
	Magellan Midstream Partners LP				US$ 1,149	N/A	US$ 1,149	
	Woolworths Group Ltd				US$ 1,099	N/A	US$ 1,099	
	Commonwealth Bank of Australia/New York NY				US$ 1,094	N/A	US$ 1,094	
	Interpublic Group of Cos Inc/The				US$ 1,086	N/A	US$ 1,086	
	Swedbank AB				US$ 1,061	N/A	US$ 1,061	
	Reinsurance Group of America Inc				US$ 1,037	N/A	US$ 1,037	
	Quest Diagnostics Inc				US$ 1,026	N/A	US$ 1,026	
	Prudential Financial Inc				US$ 1,026	N/A	US$ 1,026	
	Glencore Finance Canada Ltd				US$ 1,022	N/A	US$ 1,022	
					US$ 1,020	N/A	US$ 1,020	

Athene Global Funding					
Commonwealth Edison Co	US$	1,014	N/A	US$	1,014
DNB Bank ASA	US$	1,014	N/A	US$	1,014
Scentre Group Trust 1/Scentre Group Trust 2	US$	1,014	N/A	US$	1,014
Mitsubishi UFJ Trust & Banking Corp	US$	1,013	N/A	US$	1,013
DTE Energy Co	US$	1,010	N/A	US$	1,010
Union Pacific Corp	US$	1,008	N/A	US$	1,008
Commonwealth Bank of Australia	US$	1,003	N/A	US$	1,003
Philip Morris International Inc	US$	1,001	N/A	US$	1,001
Equinor ASA	US$	995	N/A	US$	995
Southern California Edison Co	US$	994	N/A	US$	994
Laboratory Corp of America Holdings	US$	993	N/A	US$	993
Biogen Inc	US$	992	N/A	US$	992
Halliburton Co	US$	989	N/A	US$	989
Sysco Corp	US$	988	N/A	US$	988
Unum Group	US$	987	N/A	US$	987
Orange SA	US$	986	N/A	US$	986
BOC Aviation Ltd	US$	985	N/A	US$	985
Pricoa Global Funding I	US$	985	N/A	US$	985
Entergy Texas Inc	US$	982	N/A	US$	982
Protective Life Global Funding	US$	979	N/A	US$	979
Moody s Corp	US$	978	N/A	US$	978
Holcim US Finance Sarl & Cie SCS	US$	973	N/A	US$	973
Healthcare Trust of America Holdings LP	US$	970	N/A	US$	970
State Grid Overseas Investment 2016 Ltd	US$	968	N/A	US$	968
Loews Corp	US$	965	N/A	US$	965
Citibank NA	US$	954	N/A	US$	954
Bunge Ltd Finance Corp	US$	953	N/A	US$	953
Anheuser-Busch InBev Worldwide Inc	US$	921	N/A	US$	921

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2018					
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)		Note
TSMC Global	Coca-Cola Femsa SAB de CV		Financial assets at fair value through other comprehensive income		US$ 892	N/A	US$	892	
	Lockheed Martin Corp				US$ 889	N/A	US$	889	
	CNOOC Finance 2011 Ltd				US$ 860	N/A	US$	860	
	CA Inc				US$ 857	N/A	US$	857	
	Marsh & McLennan Cos Inc				US$ 853	N/A	US$	853	
	Viterra Inc				US$ 850	N/A	US$	850	
	Baker Hughes a GE Co LLC/Baker Hughes Co-Obligor Inc				US$ 823	N/A	US$	823	
	Intesa Sanpaolo SpA				US$ 804	N/A	US$	804	
	Aon PLC				US$ 800	N/A	US$	800	
	Alterra Finance LLC				US$ 787	N/A	US$	787	
	ONEOK Partners LP				US$ 783	N/A	US$	783	
	Activision Blizzard Inc				US$ 774	N/A	US$	774	
	Suncorp-Metway Ltd				US$ 774	N/A	US$	774	
	AXIS Specialty Finance LLC				US$ 771	N/A	US$	771	
	Sinopec Capital 2013 Ltd				US$ 771	N/A	US$	771	
	Nomura Holdings Inc				US$ 769	N/A	US$	769	
	Manulife Financial Corp				US$ 769	N/A	US$	769	
	Incitec Pivot Finance LLC				US$ 767	N/A	US$	767	
	Warner Media LLC				US$ 758	N/A	US$	758	
	AutoZone Inc				US$ 753	N/A	US$	753	
	Baidu Inc				US$ 745	N/A	US$	745	
	Walmart Inc				US$ 744	N/A	US$	744	
	Metropolitan Life Global Funding I				US$ 738	N/A	US$	738	

Pinnacle West Capital Corp	US$	734	N/A	US$	734
WEC Energy Group Inc	US$	733	N/A	US$	733
Phillips 66	US$	701	N/A	US$	701
Thermo Fisher Scientific Inc	US$	701	N/A	US$	701
Australia & New Zealand Banking Group Ltd/New York NY	US$	695	N/A	US$	695
eBay Inc	US$	695	N/A	US$	695
APT Pipelines Ltd	US$	695	N/A	US$	695
Baker Hughes a GE Co LLC	US$	691	N/A	US$	691
Textron Inc	US$	685	N/A	US$	685
Reynolds American Inc	US$	670	N/A	US$	670
Vornado Realty LP	US$	669	N/A	US$	669
Rochester Gas & Electric Corp	US$	660	N/A	US$	660
National Oilwell Varco Inc	US$	659	N/A	US$	659
Norfolk Southern Railway Co	US$	656	N/A	US$	656
Ohio Power Co	US$	635	N/A	US$	635
Toledo Edison Co/The	US$	630	N/A	US$	630
Wm Wrigley Jr Co	US$	624	N/A	US$	624
ERP Operating LP	US$	623	N/A	US$	623
Alexandria Real Estate Equities Inc	US$	618	N/A	US$	618
RBC USA Holdco Corp	US$	618	N/A	US$	618
Citizens Financial Group Inc	US$	613	N/A	US$	613
Grupo Bimbo SAB de CV	US$	612	N/A	US$	612
Liberty Property LP	US$	612	N/A	US$	612
Nutrien Ltd	US$	610	N/A	US$	610
Continental Airlines 2000-1 Class A-1 Pass Through Trust	US$	605	N/A	US$	605
Continental Airlines 2007-1 Class A Pass Through Trust	US$	600	N/A	US$	600
Daiwa Securities Group Inc	US$	599	N/A	US$	599

(Continued)

				December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	MUFG Union Bank NA		Financial assets at fair value through other comprehensive income		US$ 598	N/A	US$ 598	
	OneBeacon US Holdings Inc				US$ 597	N/A	US$ 597	
	US Bancorp				US$ 595	N/A	US$ 595	
	Ontario Teachers Cadillac Fairview Properties Trust				US$ 594	N/A	US$ 594	
	BAT International Finance PLC				US$ 591	N/A	US$ 591	
	Kimco Realty Corp				US$ 589	N/A	US$ 589	
	Life Technologies Corp				US$ 585	N/A	US$ 585	
	AXIS Specialty Finance PLC				US$ 574	N/A	US$ 574	
	Nationwide Financial Services Inc				US$ 569	N/A	US$ 569	
	ABC Inc				US$ 568	N/A	US$ 568	
	Host Hotels & Resorts LP				US$ 564	N/A	US$ 564	
	AvalonBay Communities Inc				US$ 563	N/A	US$ 563	
	Duke Energy Progress LLC				US$ 551	N/A	US$ 551	
	Church & Dwight Co Inc				US$ 525	N/A	US$ 525	
	Sempra Energy				US$ 518	N/A	US$ 518	
	Fulton Financial Corp				US$ 510	N/A	US$ 510	
	ASB Bank Ltd				US$ 501	N/A	US$ 501	
	Regency Centers Corp				US$ 498	N/A	US$ 498	
	TD Ameritrade Holding Corp				US$ 497	N/A	US$ 497	
	Sumitomo Mitsui Trust Bank Ltd				US$ 496	N/A	US$ 496	
	Highwoods Realty LP				US$ 493	N/A	US$ 493	
	ORIX Corp				US$ 490	N/A	US$ 490	

International Paper Co	US$	478	N/A	US$	478
MassMutual Global Funding II	US$	477	N/A	US$	477
Diageo Capital PLC	US$	475	N/A	US$	475
Comerica Inc	US$	473	N/A	US$	473
Eni SpA	US$	472	N/A	US$	472
Spire Inc	US$	459	N/A	US$	459
Narragansett Electric Co/The	US$	456	N/A	US$	456
United Overseas Bank Ltd	US$	454	N/A	US$	454
Duke Energy Carolinas LLC	US$	453	N/A	US$	453
Eaton Corp	US$	451	N/A	US$	451
Public Service Enterprise Group Inc	US$	449	N/A	US$	449
Total Capital International SA	US$	446	N/A	US$	446
Burlington Northern Santa Fe LLC	US$	429	N/A	US$	429
Columbia Pipeline Group Inc	US$	424	N/A	US$	424
Canadian Pacific Railway Co	US$	412	N/A	US$	412
Marathon Petroleum Corp	US$	412	N/A	US$	412
Valero Energy Corp	US$	412	N/A	US$	412
Texas-New Mexico Power Co	US$	406	N/A	US$	406
Eaton Electric Holdings LLC	US$	403	N/A	US$	403
Markel Corp	US$	400	N/A	US$	400
Tanger Properties LP	US$	393	N/A	US$	393
Southern Power Co	US$	388	N/A	US$	388
Continental Airlines 2012-1 Class A Pass Through Trust	US$	385	N/A	US$	385
StanCorp Financial Group Inc	US$	379	N/A	US$	379
Aon Corp	US$	377	N/A	US$	377
	US$	364	N/A	US$	364

First Niagara Financial Group Inc					
CenterPoint Energy Resources Corp	US$	355	N/A	US$	355
American Honda Finance Corp	US$	354	N/A	US$	354

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2018						Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)		Fair Value (Foreign Currencies In Thousands)		
TSMC Global	Deutsche Bank AG		Financial assets at fair value through other comprehensive income		US$ 348	N/A		US$ 348		
	Cooperatieve Rabobank UA				US$ 340	N/A		US$ 340		
	Schlumberger Finance Canada Ltd				US$ 293	N/A		US$ 293		
	Eli Lilly & Co				US$ 289	N/A		US$ 289		
	Amphenol Corp				US$ 286	N/A		US$ 286		
	BAE Systems Holdings Inc				US$ 282	N/A		US$ 282		
	Home Depot Inc/The				US$ 277	N/A		US$ 277		
	EMD Finance LLC				US$ 277	N/A		US$ 277		
	Archer-Daniels-Midland Co				US$ 250	N/A		US$ 250		
	Hartford Financial Services Group Inc/The				US$ 228	N/A		US$ 228		
	Rolls-Royce PLC				US$ 221	N/A		US$ 221		
	Protective Life Corp				US$ 216	N/A		US$ 216		
	WestRock MWV LLC				US$ 210	N/A		US$ 210		
	ING Bank NV				US$ 207	N/A		US$ 207		
	Fidelity National Information Services Inc				US$ 202	N/A		US$ 202		
	Equifax Inc				US$ 174	N/A		US$ 174		
	Packaging Corp of America				US$ 157	N/A		US$ 157		
	Schneider Electric SE				US$ 157	N/A		US$ 157		
	Wells Fargo & Co		Financial assets at amortized cost		US$ 149,941	N/A		US$ 150,065		
	JPMorgan Chase & Co.				US$ 124,948	N/A		US$ 125,726		
	Westpac Banking Corp.				US$ 99,987	N/A		US$ 100,111		
	Goldman Sachs Group, Inc.				US$ 99,900	N/A		US$ 100,103		
	Commonwealth Bank of Australia				US$ 49,994	N/A		US$ 50,037		
	National Australia Bank				US$ 49,994	N/A		US$ 50,010		
	Bank of Nova Scotia				US$ 49,976	N/A		US$ 50,077		
	Industrial and Commercial Bank of China				US$ 9,996	N/A		US$ 10,000		
	Government bond									

	United States Treasury Note/Bond	Financial assets at fair value through other comprehensive income	US$	287,628	N/A	US$ 287,628
	United States Treasury Floating Rate Note		US$	68,164	N/A	US$ 68,164
	Abu Dhabi Government International Bond		US$	3,408	N/A	US$ 3,408
	United States Treasury Bill		US$	2,248	N/A	US$ 2,248
	Qatar Government International Bond		US$	1,315	N/A	US$ 1,315
	Agency bonds/Agency mortgage-backed securities					
	Freddie Mac REMICS	Financial assets at fair value through Profit or Loss	US$	47,996	N/A	US$ 47,996
	Fannie Mae REMICS		US$	33,767	N/A	US$ 33,767
	Government National Mortgage Association		US$	24,518	N/A	US$ 24,518
	Fannie Mae Interest Strip		US$	1,859	N/A	US$ 1,859
	Freddie Mac Multifamily Structured Pass Through Certificates		US$	1,713	N/A	US$ 1,713
	Freddie Mac Strips		US$	1,380	N/A	US$ 1,380
	Fannie Mae Pool	Financial assets at fair value through other comprehensive income	US$	398,735	N/A	US$ 398,735
	Freddie Mac Gold Pool		US$	133,948	N/A	US$ 133,948
	Fannie Mae REMICS		US$	131,341	N/A	US$ 131,341
	Government National Mortgage Association		US$	128,236	N/A	US$ 128,236
	Freddie Mac REMICS		US$	112,050	N/A	US$ 112,050
	Ginnie Mae II Pool		US$	51,015	N/A	US$ 51,015
	Fannie Mae		US$	27,141	N/A	US$ 27,141

(Continued)

				December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	Ginnie Mae		Financial assets at fair value through other comprehensive income		US$ 16,081	N/A	US$ 16,081	
	Fannie Mae-Aces				US$ 5,796	N/A	US$ 5,796	
	Freddie Mac Non Gold Pool				US$ 2,684	N/A	US$ 2,684	
	Freddie Mac Multifamily Structured Pass Through Certificates				US$ 2,554	N/A	US$ 2,554	
	Province of Quebec Canada				US$ 2,514	N/A	US$ 2,514	
	FHLMC-GNMA				US$ 1,486	N/A	US$ 1,486	
	Federal Farm Credit Banks				US$ 891	N/A	US$ 891	
	NCUA Guaranteed Notes Trust 2010-R2				US$ 842	N/A	US$ 842	
	Ginnie Mae I Pool				US$ 632	N/A	US$ 632	
	Kowloon-Canton Railway Corp				US$ 554	N/A	US$ 554	
	Federal Home Loan Mortgage Corp				US$ 500	N/A	US$ 500	
	Federal National Mortgage Association				US$ 370	N/A	US$ 370	
	NCUA Guaranteed Notes Trust 2010-R1				US$ 335	N/A	US$ 335	
	Fannie Mae Benchmark REMIC				US$ 132	N/A	US$ 132	
	Freddie Mac				US$ 15	N/A	US$ 15	
	Asset-backed securities							
	Citibank Credit Card Issuance Trust		Financial assets at fair value through other comprehensive income		US$ 68,487	N/A	US$ 68,487	
	Chase Issuance Trust				US$ 43,604	N/A	US$ 43,604	

American Express Credit Account Master Trust	US$ 42,144	N/A	US$ 42,144	
Discover Card Execution Note Trust	US$ 37,495	N/A	US$ 37,495	
Ford Credit Floorplan Master Owner Trust A	US$ 26,702	N/A	US$ 26,702	
Hyundai Auto Receivables Trust 2018-B	US$ 8,122	N/A	US$ 8,122	
BA Credit Card Trust	US$ 8,092	N/A	US$ 8,092	
Nissan Master Owner Trust Receivables	US$ 7,989	N/A	US$ 7,989	
CGDBB Commercial Mortgage Trust 2017-BIOC	US$ 7,430	N/A	US$ 7,430	
Capital One Multi-Asset Execution Trust	US$ 7,304	N/A	US$ 7,304	
BX Commercial Mortgage Trust 2018-IND	US$ 6,946	N/A	US$ 6,946	
UBS-Barclays Commercial Mortgage Trust 2012-C2	US$ 6,313	N/A	US$ 6,313	
Mercedes-Benz Master Owner Trust 2016-B	US$ 6,012	N/A	US$ 6,012	
Ford Credit Auto Owner Trust 2016-REV1	US$ 5,917	N/A	US$ 5,917	
BBCMS 2018-TALL Mortgage Trust	US$ 5,403	N/A	US$ 5,403	
Chesapeake Funding II LLC	US$ 5,328	N/A	US$ 5,328	
Morgan Stanley Bank of America Merrill Lynch Trust 2013-C10	US$ 4,879	N/A	US$ 4,879	
Ford Credit Auto Owner Trust 2015-REV1	US$ 4,871	N/A	US$ 4,871	
Volvo Financial Equipment Master	US$ 4,510	N/A	US$ 4,510	

Owner Trust					
UBS Commercial Mortgage Trust 2018-C10	US$	4,047	N/A	US$	4,047
JPMCC Commercial Mortgage Securities Trust 2017-JP7	US$	3,960	N/A	US$	3,960
J.P. Morgan Chase Commercial Mortgage Securities Trust 2016-WIKI	US$	3,932	N/A	US$	3,932
BANK 2017-BNK5	US$	3,902	N/A	US$	3,902
BANK 2017-BNK6	US$	3,899	N/A	US$	3,899
Nissan Auto Lease Trust 2016-B	US$	3,886	N/A	US$	3,886
Cold Storage Trust 2017-ICE3	US$	3,732	N/A	US$	3,732
GS Mortgage Securities Corp II	US$	3,247	N/A	US$	3,247
COMM 2015-CCRE25 Mortgage Trust	US$	2,998	N/A	US$	2,998
GS Mortgage Securities Corp Trust 2018-RIVR	US$	2,989	N/A	US$	2,989
Honda Auto Receivables 2017-2 Owner Trust	US$	2,947	N/A	US$	2,947
GM Financial Consumer Automobile Receivables Trust 2017-2	US$	2,945	N/A	US$	2,945

(Continued)

				December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	BMW Floorplan Master Owner Trust		Financial assets at fair value through other comprehensive income		US$ 2,800	N/A	US$ 2,800	
	GS Mortgage Securities Trust 2011-GC3				US$ 2,750	N/A	US$ 2,750	
	Hertz Fleet Lease Funding LP				US$ 2,672	N/A	US$ 2,672	
	Morgan Stanley Capital I Trust 2018-H3				US$ 2,596	N/A	US$ 2,596	
	GS Mortgage Securities Trust 2013-GCJ12				US$ 2,576	N/A	US$ 2,576	
	Toyota Auto Receivables 2018-C Owner Trust				US$ 2,554	N/A	US$ 2,554	
	JPMDB Commercial Mortgage Securities Trust 2016-C2				US$ 2,512	N/A	US$ 2,512	
	Nissan Auto Lease Trust 2017-A				US$ 2,386	N/A	US$ 2,386	
	Toyota Auto Receivables 2018-A Owner Trust				US$ 2,306	N/A	US$ 2,306	
	Hyundai Auto Lease Securitization Trust 2017-B				US$ 2,252	N/A	US$ 2,252	
	Wells Fargo Commercial Mortgage Trust 2015-LC20				US$ 2,127	N/A	US$ 2,127	
	UBS Commercial Mortgage Trust 2018-C11				US$ 2,083	N/A	US$ 2,083	
	COMM 2013-CCRE12				US$ 2,061	N/A	US$ 2,061	

Mortgage Trust				
Ford Credit Auto Owner Trust 2017-C	US$ 2,046	N/A	US$	2,046
BENCHMARK 2018-B4	US$ 2,034	N/A	US$	2,034
JPMBB Commercial Mortgage Securities Trust 2014-C19	US$ 2,017	N/A	US$	2,017
COMM 2015-CCRE22 Mortgage Trust	US$ 2,010	N/A	US$	2,010
Wells Fargo Commercial Mortgage Trust 2015-C30	US$ 2,006	N/A	US$	2,006
UBS-Barclays Commercial Mortgage Trust 2013-C6	US$ 1,979	N/A	US$	1,979
Toyota Auto Receivables 2016-B Owner Trust	US$ 1,977	N/A	US$	1,977
Citigroup Commercial Mortgage Trust 2017-P8	US$ 1,974	N/A	US$	1,974
Toyota Auto Receivables 2017-C Owner Trust	US$ 1,960	N/A	US$	1,960
Mercedes-Benz Auto Lease Trust 2018-B	US$ 1,953	N/A	US$	1,953
JPMDB Commercial Mortgage Securities Trust 2017-C7	US$ 1,944	N/A	US$	1,944
Morgan Stanley Bank of America Merrill Lynch Trust 2016-C31	US$ 1,940	N/A	US$	1,940
GM Financial Automobile Leasing Trust 2016-3	US$ 1,931	N/A	US$	1,931
	US$ 1,868	N/A	US$	1,868

Morgan Stanley Capital I Trust 2016-UB11				
Ford Credit Auto Lease Trust 2017-B	US$ 1,863	N/A	US$	1,863
BANK 2018-BNK14	US$ 1,811	N/A	US$	1,811
BMW Vehicle Lease Trust	US$ 1,801	N/A	US$	1,801
Ford Credit Auto Lease Trust	US$ 1,799	N/A	US$	1,799
Wheels SPV 2 LLC	US$ 1,788	N/A	US$	1,788
Citigroup Commercial Mortgage Trust 2015-GC35	US$ 1,783	N/A	US$	1,783
Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	US$ 1,771	N/A	US$	1,771
BENCHMARK 2018-B6 Mortgage Trust	US$ 1,766	N/A	US$	1,766
CarMax Auto Owner Trust	US$ 1,756	N/A	US$	1,756
Nelnet Student Loan Trust 2010-4	US$ 1,742	N/A	US$	1,742
SLM Student Loan Trust 2005-4	US$ 1,722	N/A	US$	1,722
UBS-Barclays Commercial Mortgage Trust 2013-C5	US$ 1,707	N/A	US$	1,707
Hyundai Auto Lease Securitization Trust 2016-C	US$ 1,670	N/A	US$	1,670
Ford Credit Auto Lease Trust 2017-A	US$ 1,603	N/A	US$	1,603
Edsouth Indenture No 10 LLC	US$ 1,598	N/A	US$	1,598
Ford Credit Auto Owner Trust 2015-A	US$ 1,541	N/A	US$	1,541
Navient Student Loan Trust 2017-1	US$ 1,540	N/A	US$	1,540
Nelnet Student Loan Trust 2018-3	US$ 1,538	N/A	US$	1,538

COMM 2015-PC1 Mortgage Trust	US$ 1,500	N/A	US$ 1,500	
Ford Credit Auto Lease Trust 2018-A	US$ 1,497	N/A	US$ 1,497	
Morgan Stanley Capital I Trust 2017-H1	US$ 1,481	N/A	US$ 1,481	
SLM Student Loan Trust 2013-6	US$ 1,465	N/A	US$ 1,465	
JPMCC Commercial Mortgage Securities Trust 2017-JP5	US$ 1,460	N/A	US$ 1,460	

(Continued)

			December 31, 2018			
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	ECMC Group Student Loan Trust 2018-2		Financial assets at fair value through other comprehensive income		US$ 1,448	N/A	US$ 1,448	
	Nelnet Student Loan Trust 2012-1				US$ 1,446	N/A	US$ 1,446	
	Pheaa Student Loan Trust 2018-1				US$ 1,443	N/A	US$ 1,443	
	Toyota Auto Receivables 2018-B Owner Trust				US$ 1,432	N/A	US$ 1,432	
	Mercedes-Benz Master Owner Trust 2018-BA				US$ 1,396	N/A	US$ 1,396	
	Ford Credit Auto Owner Trust 2014-REV2				US$ 1,390	N/A	US$ 1,390	
	Nelnet Student Loan Trust 2006-2				US$ 1,388	N/A	US$ 1,388	
	COMM 2013-CCRE6 Mortgage Trust				US$ 1,360	N/A	US$ 1,360	
	GM Financial Automobile Leasing Trust 2017-1				US$ 1,299	N/A	US$ 1,299	
	COMM 2015-DC1 Mortgage Trust				US$ 1,253	N/A	US$ 1,253	
	Enterprise Fleet Financing LLC				US$ 1,251	N/A	US$ 1,251	
	Hyundai Auto Lease Securitization Trust 2018-A				US$ 1,246	N/A	US$ 1,246	
	JPMBB Commercial Mortgage Securities Trust 2016-C1				US$ 1,243	N/A	US$ 1,243	
	Morgan Stanley Bank of America Merrill Lynch				US$ 1,196	N/A	US$ 1,196	

Trust 2015-C20					
Hyundai Auto Lease Securitization Trust 2017-C	US$	1,049	N/A	US$	1,049
Nissan Auto Receivables 2016-B Owner Trust	US$	1,043	N/A	US$	1,043
WFRBS Commercial Mortgage Trust 2011-C4	US$	1,036	N/A	US$	1,036
GM Financial Consumer Automobile Receivables Trust 2018-4	US$	1,023	N/A	US$	1,023
COMM 2014-CCRE20 Mortgage Trust	US$	1,009	N/A	US$	1,009
Nissan Auto Receivables 2017-B Owner Trust	US$	1,008	N/A	US$	1,008
Morgan Stanley Bank of America Merrill Lynch Trust 2014 C19	US$	1,006	N/A	US$	1,006
Nissan Auto Receivables 2018-B Owner Trust	US$	1,004	N/A	US$	1,004
JPMBB Commercial Mortgage Securities Trust 2014-C21	US$	1,002	N/A	US$	1,002
Navient Student Loan Trust 2017-3	US$	1,000	N/A	US$	1,000
GM Financial Consumer Automobile 2017-1	US$	986	N/A	US$	986
Ford Credit Auto Owner Trust 2017-REV1	US$	985	N/A	US$	985
Citigroup Commercial Mortgage Trust 2013-GC11	US$	969	N/A	US$	969

JPMBB Commercial Mortgage Securities Trust 2015-C31	US$	945	N/A	US$	945
Honda Auto Receivables 2018-2 Owner Trust	US$	911	N/A	US$	911
JP Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	US$	897	N/A	US$	897
CarMax Auto Owner Trust 2018-1	US$	873	N/A	US$	873
Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	US$	853	N/A	US$	853
Mercedes-Benz Auto Receivables Trust 2018-1	US$	841	N/A	US$	841
280 Park Avenue 2017-280P Mortgage Trust	US$	822	N/A	US$	822
SLM Student Loan Trust 2012-3	US$	816	N/A	US$	816
Ford Credit Auto Owner Trust 2015-REV2	US$	803	N/A	US$	803
Navient Student Loan Trust 2018-1	US$	799	N/A	US$	799
Ford Credit Auto Owner Trust/Ford Credit 2014-REV1	US$	798	N/A	US$	798
Honda Auto Receivables 2018-3 Owner Trust	US$	792	N/A	US$	792
SLM Student Loan Trust 2013-1	US$	786	N/A	US$	786
CFCRE Commercial Mortgage Trust 2011-C1	US$	776	N/A	US$	776
Mercedes-Benz Auto Lease Trust 2018-A	US$	770	N/A	US$	770

	GM Financial Automobile Leasing Trust 2018-1	US$	753	N/A	US$	753
	COMM 2015-LC19 Mortgage Trust	US$	716	N/A	US$	716
	Toyota Auto Receivables 2018-D Owner Trust	US$	706	N/A	US$	706
	Ally Auto Receivables Trust 2018-3	US$	699	N/A	US$	699
	SLM Student Loan Trust 2013-4	US$	688	N/A	US$	688
	Wells Fargo Commercial Mortgage Trust 2015-C28	US$	670	N/A	US$	670
	Mercedes-Benz Auto Lease Trust 2016-B	US$	649	N/A	US$	649

(Continued)

				December 31, 2018				
Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	Shares/Units (In Thousands)	Carrying Value (Foreign Currencies In Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies In Thousands)	Note
TSMC Global	Ford Credit Auto Owner Trust 2018-A		Financial assets at fair value through other comprehensive income	US$	640	N/A	US$ 640	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-C6			US$	636	N/A	US$ 636	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-WLDN			US$	607	N/A	US$ 607	
	GM Financial Automobile Leasing Trust 2018-3			US$	585	N/A	US$ 585	
	DBGS 2018-BIOD Mortgage Trust			US$	573	N/A	US$ 573	
	Hyundai Auto Receivables Trust 2015-A			US$	571	N/A	US$ 571	
	COMM 2016-SAVA Mortgage Trust			US$	555	N/A	US$ 555	
	DBUBS 2011-LC2 Mortgage Trust			US$	514	N/A	US$ 514	
	ARI Fleet Lease Trust 2018-A			US$	508	N/A	US$ 508	
	GS Mortgage Securities Trust 2014-GC18			US$	505	N/A	US$ 505	
	CD 2016-CD2 Mortgage Trust			US$	500	N/A	US$ 500	
	COMM 2014-CCRE19 Mortgage Trust			US$	499	N/A	US$ 499	
	Ford Credit Auto Owner Trust 2016-A			US$	485	N/A	US$ 485	
	Hyundai Auto Lease Securitization			US$	433	N/A	US$ 433	

	Trust 2017-A					
	WFRBS Commercial Mortgage Trust 2014-C25	US$	404	N/A	US$	404
	GM Financial Automobile Leasing Trust 2018-2	US$	390	N/A	US$	390
	Morgan Stanley Bank of America Merrill Lynch Trust 2014-C18	US$	377	N/A	US$	377
	Honda Auto Receivables 2017-4 Owner Trust	US$	366	N/A	US$	366
	Wells Fargo Commercial Mortgage Trust 2016-LC24	US$	357	N/A	US$	357
	Morgan Stanley Bank of America Merrill Lynch Trust 2014-C16	US$	337	N/A	US$	337
	ARI Fleet Lease Trust 2018-B	US$	331	N/A	US$	331
	BMW Vehicle Lease Trust 2018-1	US$	317	N/A	US$	317
	JPMBB Commercial Mortgage Securities Trust 2013-C14	US$	300	N/A	US$	300
	GM Financial Automobile Leasing Trust 2017-2	US$	269	N/A	US$	269
	Wells Fargo Commercial Mortgage Trust 2015-NXS1	US$	264	N/A	US$	264
	BMW Vehicle Lease Trust 2016-2	US$	259	N/A	US$	259
	Honda Auto Receivables 2016-2 Owner Trust	US$	248	N/A	US$	248
	Wells Fargo Commercial Mortgage Trust	US$	214	N/A	US$	214

	2015-SG1						
	Citigroup Commercial Mortgage Trust 2014-GC23			US$	199	N/A	US$ 199
	BMW Vehicle Lease Trust 2017-2			US$	187	N/A	US$ 187
	GS Mortgage Securities Trust 2010-C1			US$	141	N/A	US$ 141
	WFRBS Commercial Mortgage Trust 2011-C5			US$	123	N/A	US$ 123
	COMM 2014-CCRE15 Mortgage Trust			US$	96	N/A	US$ 96
	GS Mortgage Securities Trust 2014-GC24			US$	82	N/A	US$ 82
	GS Mortgage Securities Trust 2010-C2			US$	45	N/A	US$ 45
	Honda Auto Receivables 2015-4 Owner Trust			US$	32	N/A	US$ 32
	Commercial paper						
	Royal Bank of Canada/New York NY	Financial assets at fair value through other comprehensive income		US$	2,000	N/A	US$ 2,000
	Toronto-Dominion Bank/NY			US$	1,500	N/A	US$ 1,500
	Non-publicly traded equity investments						
	Primavera Capital Fund II L.P.	Financial assets at fair value through other comprehensive income		US$	70,460	4	US$ 70,460
VTAF II	Non-publicly traded equity investments						
	Sentelic	Financial assets at fair value through other comprehensive income	1,019	US$	2,039	4	US$ 2,039
	Aether Systems, Inc.		1,085	US$	353	20	US$ 353

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2018						
				Shares/Units (In Thousands)		Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)		Fair Value (Foreign Currencies in Thousands)	Note
VTAF II	5V Technologies, Inc.		Financial assets at fair value through other comprehensive income	364	US$	313	2	US$	313	
	Publicly traded stocks									
	Aquantia		Financial assets at fair value through other comprehensive income	83	US$	730		US$	730	
VTAF III	Non-publicly traded equity investments									
	LiquidLeds Lighting Corp.		Financial assets at fair value through other comprehensive income	1,952	US$	800	14	US$	800	
	Neoconix, 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	451	US$	2,393		US$	2,393	
	CNEX Labs, Inc.			237	US$	775		US$	775	

(Concluded)

TABLE 4

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, 2018

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

			Beginning Balance		Acquisition		Disposal			
Financial Statement Account	Counter-party	Nature of Relationship	Shares/ Units (In Thousands)	Amount	Shares/ Units (In Thousands)	Amount	Shares/ Units (In Thousands)	Amount	Carrying Value	
Financial assets at amortized cost				$	50	$ 498,837		$	$	$
Investments accounted for using equity method (Note 2)		Subsidiary	9	309,211,877	2	62,272,080				
		Subsidiary		26,493,740		2,361,320				
Financial assets at fair value through other comprehensive income			58,320	1,309,279			58,320	651,973	1,831,241	
Financial assets at fair value through other comprehensive income				US$ 40,876		US$ 10,852		US$ 5,990	US$ 6,027	US
				US$ 29,911		US$ 11,293		US$ 12,000	US$ 12,128	US
				US$ 10,018		US$ 18,102		US$ 684	US$ 692	US
				US$ 26,867		US$ 9,299		US$ 12,438	US$ 12,482	US
				US$ 1,256		US$ 18,768		US$ 1,210	US$ 1,212	US
				US$ 17,024		US$ 13,719		US$ 17,590	US$ 17,732	US
				US$ 1,761		US$ 10,490		US$ 984	US$ 1,000	US
				US$ 12,722		US$ 8,573		US$ 12,105	US$ 12,257	US

	US$	6,181	US$	10,575	US$	8,673	US$	8,860	US
	US$	1,450	US$	13,474	US$	7,326	US$	7,453	US
	US$	11,073	US$	3,576	US$	11,075	US$	11,075	US
	US$		US$	21,168	US$	21,166	US$	21,166	US
Financial assets at amortized cost	US$	10,013	US$		US$	10,000	US$	10,000	US
Financial assets at fair value through other comprehensive income	US$	202,689	US$	483,976	US$	401,246	US$	403,883	US
	US$	49,901	US$	124,504	US$	106,171	US$	106,123	US
	US$	2,997	US$	175,861	US$	176,725	US$	176,682	US

(Continued)

le Securities nd Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance Shares/ Units (In Thousands)	Beginning Balance Amount	Acquisition Shares/ Units (In Thousands)	Acquisition Amount	Disposal Shares/ Units (In Thousands)	Disposal Amount	Disposal Carrying Value	G Lo Di
nds/Agency backed											
oL BM4681	Financial assets at fair value through other comprehensive income				US$		US$ 35,947		US$ 4,026	US$ 4,089	US$
ol BM4495					US$		US$ 29,035		US$ 1,249	US$ 1,361	US$
ol BM1948					US$	41,275	US$ 5,534		US$ 18,653	US$ 19,922	US$
LN PC Pool					US$		US$ 27,059		US$ 1,256	US$ 1,387	US$
ol CA2352					US$		US$ 25,688		US$ 492	US$ 517	US$
A 30 Yr 5					US$		US$ 186,999		US$ 162,191	US$ 162,197	US$
LN PC Pool					US$		US$ 45,987		US$ 24,813	US$ 24,527	US$
LN PC Pool					US$		US$ 19,316		US$ 651	US$ 704	US$
Pool					US$		US$ 17,751		US$ 112	US$ 118	US$
ol BM4493					US$		US$ 18,362		US$ 1,279	US$ 1,325	US$
nt National Association					US$		US$ 16,433		US$ 39	US$ 39	US$
LN PC Pool					US$		US$ 15,372		US$ 244	US$ 255	US$
ol CA2169					US$		US$ 15,368		US$ 1,406	US$ 1,429	US$
Pool					US$		US$ 26,202		US$ 13,285	US$ 13,279	US$
TBA 30 Yr					US$		US$ 61,268		US$ 49,012	US$ 49,046	US$
nt National Association					US$		US$ 10,494		US$	US$	US$
TBA 30 Yr					US$	2,378	US$ 47,507		US$ 47,743	US$ 47,773	US$
A 15 Yr 3.5					US$		US$ 42,360		US$ 40,346	US$ 40,350	US$
TBA 30 Yr					US$	145	US$ 47,680		US$ 46,609	US$ 46,676	US$
LN PC Pool					US$		US$ 24,748		US$ 24,846	US$ 24,782	US$
me Loan ount Notes					US$		US$ 29,498		US$ 29,500	US$ 29,499	US$
LN PC Pool					US$	11,599	US$		US$ 11,191	US$ 11,711	US$
A 30 Yr 3.5					US$	2,866	US$ 83,271		US$ 86,356	US$ 86,144	US$

A 30 Yr 3		US$	US$ 198,586	US$ 198,614	US$ 198,586	US$
A 15 Yr 3		US$ 2,015	US$ 65,931	US$ 67,884	US$ 67,949	US$
A 30 Yr 4.5		US$ 15,758	US$ 157,210	US$ 172,818	US$ 173,014	US$
LN PC Pool		US$	US$ 10,380	US$ 10,410	US$ 10,380	US$
ed securities						
redit Card rust	Financial assets at fair value through other comprehensive income	US$ 48,328	US$ 40,865	US$ 20,343	US$ 20,346	US$
ance Trust		US$ 39,211	US$ 27,720	US$ 23,176	US$ 23,192	US$
Card Note Trust		US$ 45,722	US$ 16,266	US$ 24,230	US$ 24,268	US$
Express ount Master		US$ 12,805	US$ 25,878	US$ 11,239	US$ 11,233	US$
e et Execution		US$ 22,544	US$	US$ 15,223	US$ 15,227	US$
roduct						
subishi UFJ	Financial assets at amortized cost	US$ 50,000	US$	US$ 50,000	US$ 50,000	US$

Note 1: The ending balance includes the amortization of premium/discount on bonds investments, share of profits/losses of investees and other related adjustment.

Note 2: To lower the hedging cost, in August 2018, the Board of Directors of TSMC approved to inject US$2,000,000 thousand of capital into TSMC Global. This project was approved by the Investment Commission, Ministry of Economic Affairs, R.O.C. (MOEA). The prepayment for investment was US$100,000 thousand as of December 31, 2018.

(Concluded)

TABLE 5

Taiwan Semiconductor Manufacturing Company Limited and Investees

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, 2018

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

Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party: Owner	Prior Transaction of Related Counter-party: Relationships	Prior Transaction of Related Counter-party: Transfer Date	Prior Transaction of Related Counter-party: Amount	Price R
2017 to , 2018	$ 303,592	Monthly settlement by the construction progress and acceptance	HSIEH KUN CO., LTD		N/A	N/A	N/A	N/A	Price co and pric negotiat
2017 to 2018	301,341	Monthly settlement by the construction progress and acceptance	Jer Yih Electrical Eng. Co.		N/A	N/A	N/A	N/A	Price co and pric negotiat
2017 to 2018	607,800	Monthly settlement by the construction progress and acceptance	TRUSVAL TECHNOLOGY CO., LTD.		N/A	N/A	N/A	N/A	Price co and pric negotiat
017 to 2018	382,672	Monthly settlement by the construction progress and acceptance	M+W High Tech Project Taiwan Co., Ltd.		N/A	N/A	N/A	N/A	Price co and pric negotiat
017 to 18	1,334,403	Monthly settlement by the construction progress and acceptance	CHEN FULL INTERNATIONAL CO., LTD.		N/A	N/A	N/A	N/A	Price co and pric negotiat
017 to 018	300,874	Monthly settlement by the construction progress and acceptance	Unique Station International Corp.		N/A	N/A	N/A	N/A	Price co and pric negotiat
017 to 018	1,841,951	Monthly settlement by the construction progress and acceptance	Organo Technology Co., Ltd.		N/A	N/A	N/A	N/A	Price co and pric negotiat
017 to 018	2,559,574	Monthly settlement by the construction	YANKEY ENGINEERING		N/A	N/A	N/A	N/A	Price co and pric

		progress and acceptance	CO., LTD.					negotiat
017 to 018	413,901	Monthly settlement by the construction progress and acceptance	HUAN YU TECHNOLOGIES CO., LTD.	N/A	N/A	N/A	N/A	Price co and pric negotiat

(Continued)

Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Referenc
					Owner	Relationships	Transfer Date	Amount	
y 25, 2017 to e 21, 2018	$ 2,187,982	Monthly settlement by the construction progress and acceptance	MEGA UNION TECHNOLOGY INCORPORATED		N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
y 11, 2017 to y 31, 2018	1,422,454	Monthly settlement by the construction progress and acceptance	TASA Construction Corporation		N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
y 24, 2017 to e 21, 2018	347,431	Monthly settlement by the construction progress and acceptance	MandarTech Interiors Inc.		N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
y 28, 2017 to ril 19, 2018	348,757	Monthly settlement by the construction progress and acceptance	J.J. PAN AND PARTNERS , ARCHITECTS AND PLANNERS		N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
y 28, 2017 to y 8, 2018	574,621	Monthly settlement by the construction progress and acceptance	Trane Taiwan Distribution Limited		N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
gust 8, 2017 to e 28, 2018	337,069	Monthly settlement by the construction progress and acceptance	Lumax International Corp., Ltd		N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
gust 16, 2017 uly 31, 2018	1,012,550	Monthly settlement by the construction progress and acceptance	Air Liquide Far Eastern		N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
gust 16, 2017 uly 31, 2018	617,447	Monthly settlement by the	Kao Hsin Engineering Co., Ltd.		N/A	N/A	N/A	N/A	Price comparisc and price

		construction progress and acceptance						negotiatio
tember 5, 7 to June 1, 8	1,224,738	Monthly settlement by the construction progress and acceptance	Uangyih-Tech Industrial Co., Ltd.	N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
tember 14, 7 to March 22, 8	784,003	Monthly settlement by the construction progress and acceptance	Siemens Ltd.	N/A	N/A	N/A	N/A	Price comparisc and price negotiatio
vember 9, 2017 une 20, 2018	1,773,165	Monthly settlement by the construction progress and acceptance	MARKETECH INTERNATIONAL CORP.	N/A	N/A	N/A	N/A	Price comparisc and price negotiatio

(Continued)

Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party: Owner	Prior Transaction of Related Counter-party: Relationships	Prior Transaction of Related Counter-party: Transfer Date	Prior Transaction of Related Counter-party: Amount	Price Reference
November 10, 2017 to May 24, 2018	$ 305,783	Monthly settlement by the construction progress and acceptance	DESICCANT TECHNOLOGY CO., LTD.		N/A	N/A	N/A	N/A	Price comparison and price negotiation
November 13, 2017 to August 13, 2018	948,048	Monthly settlement by the construction progress and acceptance	Chen Yuan International Co., Ltd		N/A	N/A	N/A	N/A	Price comparison and price negotiation
November 14, 2017 to April 16, 2018	1,724,550	Monthly settlement by the construction progress and acceptance	PAN ASIA Corp.		N/A	N/A	N/A	N/A	Price comparison and price negotiation
December 5, 2017 to July 31, 2018	7,219,028	Monthly settlement by the construction progress and acceptance	UNITED INTEGRATED SERVICES CO., LTD.		N/A	N/A	N/A	N/A	Price comparison and price negotiation
December 13, 2017 to July 23, 2018	2,457,695	Monthly settlement by the construction progress and acceptance	Taiwan Puritic Corp.		N/A	N/A	N/A	N/A	Price comparison and price negotiation
December 14, 2017 to May 23, 2018	305,566	Monthly settlement by the construction progress and acceptance	WHOLETECH SYSTEM HITECH LIMITED		N/A	N/A	N/A	N/A	Price comparison and price negotiation
December 26, 2017 to February 13, 2018	525,172	Monthly settlement by the construction progress and acceptance	ABB Ltd.		N/A	N/A	N/A	N/A	Price comparison and price negotiation
January 4, 2018 to April 16,	1,744,533	Monthly settlement by the	KEDGE Construction Co., Ltd.		N/A	N/A	N/A	N/A	Price comparison and price

2018		construction progress and acceptance						negotiation
January 5, 2018 to April 16, 2018	315,886	Monthly settlement by the construction progress and acceptance	Shihlin Electric & Engineering Corp. Tainan Branch	N/A	N/A	N/A	N/A	Price comparison and price negotiation
February 5, 2018 to July 31, 2018	2,564,709	Monthly settlement by the construction progress and acceptance	L&K ENGINEERING CO.,LTD.	N/A	N/A	N/A	N/A	Price comparison and price negotiation
February 6, 2018 to August 13, 2018	5,387,421	Monthly settlement by the construction progress and acceptance	Fu Tsu Construction Co., Ltd.	N/A	N/A	N/A	N/A	Price comparison and price negotiation

(Continued)

Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party: Owner	Prior Transaction of Related Counter-party: Relationships	Prior Transaction of Related Counter-party: Transfer Date	Prior Transaction of Related Counter-party: Amount	Price Reference
ebruary 12, 018 to pril 16, 2018	$ 378,445	Monthly settlement by the construction progress and acceptance	AMPOWER INTERNATIONAL ENTERPRISE		N/A	N/A	N/A	N/A	Price comparison and price negotiation
ebruary 13, 018 to une 25, 2018	1,415,232	Monthly settlement by the construction progress and acceptance	Cica-Huntek Chemical Technology Taiwan Co., Ltd		N/A	N/A	N/A	N/A	Price comparison and price negotiation
Iarch 16, 018 to ugust 2, 018	1,068,243	Monthly settlement by the construction progress and acceptance	Chun Yuan Steel Industry Co., Ltd		N/A	N/A	N/A	N/A	Price comparison and price negotiation
Iarch 16, 018 to ecember 18, 018	3,098,269	Monthly settlement by the construction progress and acceptance	China Steel Structure Co., Ltd.		N/A	N/A	N/A	N/A	Price comparison and price negotiation
pril 13, 2018 o April 16, 018	410,000	Monthly settlement by the construction progress and acceptance	Lead Fu Industrials Corp.		N/A	N/A	N/A	N/A	Price comparison and price negotiation
pril 16, 2018 o ecember 24, 018	5,311,851	Monthly settlement by the construction progress and acceptance	DA CIN Construction Co., Ltd.		N/A	N/A	N/A	N/A	Price comparison and price negotiation

(Concluded)

TABLE 6

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, 2018

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

			Transaction Details				Abnormal Transaction		Notes/Accou Payable or Receivab
Name	Related Party	Nature of Relationships	Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)
	TSMC North America	Subsidiary	Sales	$ 650,432,820	60	Net 30 days from invoice date (Note)		Note	$ 86,057,09
	GUC	Associate	Sales	6,705,439	1	Net 30 days from the end of the month of when invoice is issued			375,18
	TSMC China	Subsidiary	Purchases	18,089,003	19	Net 30 days from the end of the month of when invoice is issued			(1,299,07
	TSMC Nanjing	Subsidiary	Purchases	7,738,425	8	Net 30 days from the			(414,40

							end of the month of when invoice is issued		
	WaferTech	Indirect subsidiary	Purchases		8,309,250	9	Net 30 days from the end of the month of when invoice is issued		(1,092,78
	VIS	Associate	Purchases		5,142,749	5	Net 30 days from the end of the month of when invoice is issued		(357,08
	SSMC	Associate	Purchases		3,666,645	4	Net 30 days from the end of the month of when invoice is issued		(362,56
rth America	GUC	Associate of TSMC	Sales	(US$	1,664,555 55,492)		Net 30 days from invoice date	(US$	106,75 3,47
ch	Xintec	Associate of TSMC	Sales		542,179	20	Net 30 days from the end of the month of when invoice is issued		102,47

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.

TABLE 7

Taiwan Semiconductor Manufacturing Company Limited and Investees

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL

DECEMBER 31, 2018

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

pany e	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue Amount	Overdue Action Taken	Amounts Received in Subsequent Period	Allo
C	TSMC North America	Subsidiary	$ 87,092,562	50	$ 2,828,842	$	39,357,357	
	GUC	Associate	375,184	31	182,416		182,416	
C a	TSMC Nanjing	The same parent company	30,986,047	Note 2				
			(RMB 6,920,699)					
	TSMC	Parent company	1,299,072	27				
			(RMB 290,149)					
rTech			1,092,785		661,841		661,841	
	TSMC	The ultimate parent of the Company	(USD 35,549)	53	(USD 21,530)	(USD	21,530)	
C ng	TSMC	Parent company	614,039	10				
			(RMB 137,146)					
C nology	TSMC	The ultimate parent of the Company	218,347 (USD 7,103)	Note 2				
C			106,750		43,023		43,023	
ica	GUC	Associate of TSMC	(USD 3,473)	39	(USD 1,400)	(USD	1,400)	
a Tech	Xintec	Associate of TSMC	102,478	44				

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 Investees

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEES OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)

FOR THE YEAR ENDED DECEMBER 31, 2018

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

		Original Investment Amount		Balance as of December 31, 2018				
Location	Main Businesses and Products	December 31, 2018 (Foreign Currencies in Thousands)	December 31, 2017 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)	Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	P in
Tortola, British Virgin Islands	Investment activities	$ 355,162,309 (Note 3)	$ 292,890,229	11	100	$ 393,577,931	$ 9,271,602	
Tortola, British Virgin Islands	Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	31,456,130	31,456,130	988,268	100	52,339,094	2,499,370	
Hsin-Chu, Taiwan	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the	10,180,677	10,180,677	464,223	28	9,006,126	6,166,269	

	manufacturing and design service of masks						
Singapore	Manufacturing and selling of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	5,772,815	3,919,068
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	4,531,929	412,283
San Jose, California, U.S.A	Selling and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	4,269,393	117,948
Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	1,764,607	(1,351,951)
Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	1,299,423	988,156
Amsterdam, the Netherlands	Customer service and supporting activities	15,749	15,749		100	445,828	41,697
Cayman Islands	Investing in new start-up technology	1,308,244	1,318,885		98	194,660	(3,416)

	companies										
Yokohama, Japan	Customer service and supporting activities		83,760		83,760	6	100		141,136		4,035
Cayman Islands	Investing in new start-up technology companies		278,800		412,831		98		128,758		(3,726)
Seoul, Korea	Customer service and supporting activities		13,656		13,656	80	100		40,966		2,170
Hamburg, Germany	Selling of solar related products and providing customer service		25,266		25,266	1	100		(20,106)		(21)
Delaware, U.S.A	Investing in companies involved in the		18,042,499		18,042,499		100		29,240,767		1,863,196
	manufacturing related business in the semiconductor industry	(US$	586,939)	(US$	586,939)			(US$	951,229)	(US$	61,803)
Delaware, U.S.A	Engineering support activities		439,029		439,029		100		587,008		47,866
		(US$	14,282)	(US$	14,282)			(US$	19,096)	(US$	1,610)
Ontario, Canada	Engineering support activities		70,702		70,702	2,300	100		205,423		32,224
		(US$	2,300)	(US$	2,300)			(US$	6,683)	(US$	1,069)
Cayman Islands	Investing in new start-up technology companies		14,607		14,607	583	97		510		
		(US$	475)	(US$	475)			(US$	17)		
Cayman Islands	Investing in new start-up technology companies					9,299	97				(6,781)
										(US$	(231))
Cayman Islands	Investing in new start-up technology companies		66,207		66,207		100		97,782		(597)
		(US$	2,154)	(US$	2,154)			(US$	3,181)	(US$	(20))
New Taipei, Taiwan	Manufacturing of electronic		48,980		48,980	4,693	39		22,867		(1,846)

parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	(US$	1,593)	(US$	1,593)		(US$	744)	(US$	(72))			

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2018			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, 2018 (Foreign Currencies in Thousands)	December 31, 2017 (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	$ 4,595,263 (US$ 149,488)	$ 1,473,555 (US$ 48,918)	Note 2	Subsidia

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

Note 3: To lower the hedging cost, in August 2018, the Board of Directors of TSMC approved to inject US$2,000,000 thousand of capital into TSMC Global. This project was approved by the Investment Commission, Ministry of Economic Affairs, R.O.C. (MOEA). The prepayment for investment was US$100,000 thousand as of December 31, 2018.

(Concluded)

TABLE 9

Taiwan Semiconductor Manufacturing Company Limited and Investees

INFORMATION ON INVESTMENT IN MAINLAND CHINA

FOR YEAR ENDED DECEMBER 31, 2018

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

Investee in Mainland China	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Investment Flows: Accumulated Outflow of Investment from Taiwan as of January 1, 2018 (US$ in Thousands)	Investment Flows: Outflow (US$ in Thousands)	Investment Flows: Inflow	Accumulated Outflow of Investment from Taiwan as of December 31, 2018 (US$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share Profit Losse
TSMC (China) Manufacturing, Testing	Wafer-aided of and ductor	$ 18,939,667		$ 18,939,667			$ 18,939,667			$ 5,364
		(RMB 4,502,080)	Note 1	(US$ 596,000)	$	$	(US$ 596,000)	$ 5,397,462	100%	(No
TSMC (Nanjing) Manufacturing, Testing	Wafer-aided of and ductor	30,521,412		28,160,092	2,361,320		30,521,412			(8,200
		(RMB 6,650,119)	Note 1	(US$ 920,000)	(US$ 80,000)		(US$ 1,000,000)	(8,215,989)	100%	(No

Accumulated Investment in Mainland China as of December, 2018 (US$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US$ in Thousands)	Upper Limit on Investment

$ 49,461,079	$	119,412,667	
(US$ 1,596,000)	(US$	3,596,000)	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: As the Company has obtained the certificate of being qualified for operating headquarters issued by Industrial Development Bureau, MOEA on August 2016, the upper limit on investment in mainland China pursuant to Principle of investment or Technical Cooperation in Mainland China is not applicable.

THE CONTENTS OF STATEMENTS OF MAJOR

ACCOUNTING ITEMS

ITEM	STATEMENT INDEX
MAJOR ACCOUNTING ITEMS IN ASSETS, LIABILITIES AND EQUITY	
STATEMENT OF CASH AND CASH EQUIVALENTS	1
STATEMENT OF NOTES AND ACCOUNTS RECEIVABLE, NET	2
STATEMENT OF RECEIVABLES FROM RELATED PARTIES	3
STATEMENT OF INVENTORIES	4
STATEMENT OF OTHER CURRENT ASSETS	Note 14
STATEMENT OF CHANGES IN INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD	5
STATEMENT OF CHANGES IN PROPERTY, PLANT AND EQUIPMENT	Note 12
STATEMENT OF CHANGES IN ACCUMULATED DEPRECIATION AND ACCUMULATED IMPAIRMENT OF PROPERTY, PLANT AND EQUIPMENT	Note 12
STATEMENT OF CHANGES IN INTANGIBLE ASSETS	Note 13
STATEMENT OF GUARANTEE DEPOSITS	Note 19
STATEMENT OF DEFERRED INCOME TAX ASSETS / LIABILITIES	Note 26
STATEMENT OF SHORT-TERM LOANS	6
STATEMENT OF ACCOUNTS PAYABLES	7
STATEMENT OF PAYABLES TO RELATED PARTIES	8
STATEMENT OF PAYABLES TO CONTRACTORS AND EQUIPMENT SUPPLIERS	9
STATEMENT OF PROVISIONS	Note 16
STATEMENT OF ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES	10
STATEMENT OF BONDS PAYABLE	11
MAJOR ACCOUNTING ITEMS IN PROFIT OR LOSS	
STATEMENT OF NET REVENUE	12
STATEMENT OF COST OF REVENUE	13
STATEMENT OF OPERATING EXPENSES	14
STATEMENT OF FINANCE COSTS	Note 24
STATEMENT OF LABOR, DEPRECIATION AND AMORTIZATION BY FUNCTION	15

STATEMENT 1

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CASH AND CASH EQUIVALENTS

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Item	Description	Amount
Cash		
Petty cash		$ 280
Cash in banks		
Checking accounts and demand deposits		17,433,341
Foreign currency deposits	Including US$389,998 thousand @30.74, JPY199,382 thousand @0.2783, EUR729 thousand @35.22 and RMB220 thousand @4.4773	12,070,686
Time deposits	From 2018.06.05 to 2019.10.31, interest rates at 0.17%-3.00%, including NT$208,317,862 thousand and US$21,200 thousand @30.74	208,969,550
Cash equivalents		
Repurchase agreements collateralized by corporate bonds	Expired by 2019.01.02, interest rates at 3.7%	1,229,600
Commercial paper	Expired by 2019.02.20, interest rates at 0.76%	499,068
Total		$ 240,202,525

STATEMENT 2

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NOTES AND ACCOUNTS RECEIVABLE, NET

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Client Name	Amount
Client A	$ 9,700,035
Client B	3,912,500
Client C	3,681,950
Client D	3,276,349
Others (Note 1)	16,121,687
	36,692,521
Less: Allowance for doubtful accounts	(7,132)
Total	$ 36,685,389

Note 1: The amount of individual client included in others does not exceed 5% of the account balance.

Note 2: The accounts receivable past due over one year amounted to NT$4 thousand for which the Company has recognized appropriate allowance for doubtful accounts.

STATEMENT 3

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF RECEIVABLES FROM RELATED PARTIES

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Client Name	Amount
TSMC North America	$ 86,057,097
Others (Note)	395,487
Total	$ 86,452,584

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, 2018

(In Thousands of New Taiwan Dollars)

Item	Amount	
	Cost	Net Realizable Value
Finished goods	$ 10,920,351	$ 24,537,764
Work in process	70,405,998	187,819,293
Raw materials	14,110,534	14,140,627
Supplies and spare parts	2,651,277	2,758,051
Total	$ 98,088,160	$ 229,255,735

STATEMENT 5

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGES IN INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

FOR THE YEAR ENDED DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

ance, January 1, 2018		Additions in Investment		Decrease in Investment		Increase (Decrease) in Using the Equity Method	Balance, December 31, 2018			Market Value / Net Assets Va	
es sands)	Amount	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Amount (Note 2)	Shares (In Thousands)	%	Amount	Unit Price (NT$)	Tota
9	$ 309,211,877	2	$ 62,272,080		$	$ 22,093,974	11	100	$ 393,577,931		$ 39
268	49,684,287					2,654,807	988,268	100	52,339,094		5
223	8,568,344					437,782	464,223	28	9,006,126	$ 59.5 (Note 1)	2
314	5,677,640					95,175	314	39	5,772,815		
20	4,667,162					(135,233)	253,120	87	4,531,929		
000	4,001,003					268,390	11,000	100	4,269,393		
282	2,292,100					(527,493)	111,282	41	1,764,607	34 (Note 1)	
588	1,300,194					(771)	46,688	35	1,299,423	206 (Note 1)	
	407,324					38,504		100	445,828		
6	129,446					11,690	6	100	141,136		
80	39,210					1,756	80	100	40,966		
1	(20,217)					111	1	100	(20,106)		
	385,958,370		62,272,080			24,938,692			473,169,142		50
	51,060,885					4,406,026		100	55,466,911		5

26,493,740	2,361,320		(8,253,647)	100	20,601,413	2
152,836		(10,641)	52,465	98	194,660	
320,533		(134,031)	(57,744)	98	128,758	
78,027,994	2,361,320	(144,672)	(3,852,900)		76,391,742	7
$ 463,986,364	$ 64,633,400	$ (144,672)	$ 21,085,792		$ 549,560,884	$ 57

Note 1: The unit price is calculated by closing price of Gre Tai Securities Market as of December 28, 2018 or by closing price of the Taiwan Stock Exchange as of December 28, 2018.

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, etc.

STATEMENT 6

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF SHORT-TERM LOANS

DECEMBER 31, 2018

(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	$ 15,831,100	2018.11.06-2019.01.08	2.89-3.22	US$	600,000	Nil	
Bank Of America	13,218,200	2018.10.11-2019.01.18	2.75-2.94	US$	600,000	Nil	
Megabank	10,144,200	2018.11.05-2019.01.11	2.75-3.00	TW$	12,000,000	Nil	
The Bank Of Tokyo-Mitsubishi UFJ, Ltd.	8,914,600	2018.11.26-2019.01.25	2.94-2.99	US$	300,000	Nil	
First Commercial Bank	6,762,800	2018.11.08-2019.01.09	2.79	TW$	8,000,000	Nil	
DBS	5,705,640	2018.12.27-2019.01.30	0.10	US$	400,000	Nil	
JPMorgan Chase Bank N.A.	5,533,200	2018.11.05-2019.01.07	2.80	US$	200,000	Nil	
HSBC	4,918,400	2018.11.07-2019.01.09	2.98-3.00	US$	160,000	Nil	
China Construction Bank	3,842,500	2018.12.03-2019.01.04	2.65	US$	500,000	Nil	
Citibank Taiwan	3,381,400	2018.11.14-2019.01.16	2.82	US$	110,000	Nil	
Taipeifubon Commercial Bank	2,817,600	2018.12.27-2019.01.25	0.01	US$	100,000	Nil	
DB	2,766,600	2018.10.05-2019.01.04	2.68	US$	100,000	Nil	
BNP Paribas Taiwan	2,151,800	2018.11.09-2019.01.09	2.99	US$	75,000	Nil	
HSBC Taiwan	1,537,000	2018.11.09-2019.01.09	3.00	US$	65,000	Nil	
Citibank Taipei	1,229,600	2018.11.14-2019.01.16	2.82	US$	484,000	Nil	
Subtotal	88,754,640						
Related parties							
TSMC Global	3,227,700	2018.12.28-2019.04.19	2.53	US$	1,500,000	Nil	
Total	$ 91,982,340						

STATEMENT 7

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCOUNTS PAYABLES

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
Vendor A	$ 1,625,875
Others (Note)	28,846,417
Total	$ 30,472,292

Note: The amount of individual vendor in others does not exceed 5% of the account balance.

STATEMENT 8

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF PAYABLES TO RELATED PARTIES

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
TSMC China	$ 1,299,072
WaferTech	1,092,785
Xintec	649,812
TSMC Nanjing	414,401
SSMC	362,564
VIS	357,080
Others (Note)	371,038
Total	$ 4,546,752

Note: The amount of individual vendor in others does not exceed 5% of the account balance.

STATEMENT 9

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF PAYABLES TO CONTRACTORS AND EQUIPMENT SUPPLIERS

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
Vendor B	$ 4,424,855
Vendor C	4,089,399
Vendor D	2,349,753
Others (Note)	30,415,903
Total	$ 41,279,910

Note: The amount of individual vendor included in others does not exceed 5% of the account balance.

STATEMENT 10

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Item	Amount
Refund liability	$ 21,199,032
Guarantee deposit	6,148,000
Receipts in advance	2,740,649
Others (Note)	19,690,361
Total	$ 49,778,042

Note: The amount of each item in others does not exceed 5% of the account balance.

STATEMENT 11

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF BONDS PAYABLE

DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Total Amount	Amount Repayment paid	Balance, End of Year	Unamortized Premiums (Discounts)	Carrying Value	Repa
ega ternational ommercial ank Co., d.	2011.09.28	on 09.28 annually	1.63	$ 7,500,000	$ 7,500,000	$	$	$	Bullet r
ega ternational ommercial ank Co., d.	2012.01.11	on 01.11 annually	1.46	7,000,000		7,000,000		7,000,000	Bullet r
ega ternational ommercial ank Co., d.	2012.08.02	on 08.02 annually	1.40	9,000,000		9,000,000		9,000,000	Bullet r
aipei Fubon ommercial ank Co., d.	2012.09.26	on 09.26 annually	1.39	9,000,000		9,000,000		9,000,000	Bullet r
	2012.10.09	on 10.09 annually	1.53	4,400,000		4,400,000		4,400,000	Bullet r

aipei Fubon ommercial ank Co., td.								
aipei Fubon ommercial ank Co., td.	2013.01.04	on 01.04 annually	1.23	10,600,000	10,600,000			Bullet r
aipei Fubon ommercial ank Co., td.	2013.01.04	on 01.04 annually	1.35	10,000,000		10,000,000	10,000,000	Bullet r
aipei Fubon ommercial ank Co., td.	2013.01.04	on 01.04 annually	1.49	3,000,000		3,000,000	3,000,000	Bullet r
aipei Fubon ommercial ank Co., td.	2013.02.06	on 02.06 annually	1.23	6,200,000	6,200,000			Bullet r
aipei Fubon ommercial ank Co., td.	2013.02.06	on 02.06 annually	1.38	11,600,000		11,600,000	11,600,000	Bullet r
aipei Fubon ommercial ank Co., td.	2013.02.06	on 02.06 annually	1.50	3,600,000		3,600,000	3,600,000	Bullet r
aipei Fubon ommercial ank Co., td.	2013.07.16	on 07.16 annually	1.50	10,200,000		10,200,000	10,200,000	Bullet r
aipei Fubon ommercial ank Co., td.	2013.07.16	on 07.16 annually	1.70	3,500,000		3,500,000	3,500,000	Bullet r
aipei Fubon ommercial ank Co.,	2013.08.09	on 08.09 annually	1.52	8,500,000		8,500,000	8,500,000	Bullet r

d.								
aipei Fubon ommercial ank Co., d.	2013.09.25	on 09.25 annually	1.60	1,400,000		1,400,000	1,400,000	Bullet r
aipei Fubon ommercial ank Co., d.	2013.09.25	on 09.25 annually	1.85	2,600,000		2,600,000	2,600,000	Bullet r
aipei Fubon ommercial ank Co., d.	2013.09.25	on 09.25 annually	2.05	5,400,000		5,400,000	5,400,000	Bullet r
aipei Fubon ommercial ank Co., d.	2013.09.25	on 09.25 annually	2.10	2,600,000		2,600,000	2,600,000	Bullet r
				$ 116,100,000	$ 24,300,000	91,800,000	91,800,000	
						(34,900,000)	(34,900,000)	
						$ 56,900,000	$ $ 56,900,000	

STATEMENT 12

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NET REVENUE

FOR THE YEAR ENDED DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Item	Shipments (Piece) (Note)	Amount
Wafer	10,751,552	$ 906,992,422
Other		116,933,291
Net revenue		$ 1,023,925,713

Note: 12-inch equivalent wafers.

STATEMENT 13

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF COST OF REVENUE

FOR THE YEAR ENDED DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Item	Amount
Raw materials used	
Balance, beginning of year	$ 6,566,716
Raw material purchased	48,003,230
Raw materials, end of year	(14,110,534)
Transferred to manufacturing or operating expenses	(6,483,906)
Others	(205,440)
Subtotal	33,770,066
Direct labor	14,099,289
Manufacturing expenses	474,764,387
Manufacturing cost	522,633,742
Work in process, beginning of year	52,166,234
Work in process, end of year	(70,405,998)
Transferred to manufacturing or operating expenses	(21,864,208)
Cost of finished goods	482,529,770
Finished goods, beginning of year	9,596,837
Finished goods purchased	45,624,012
Finished goods, end of year	(10,920,351)
Transferred to manufacturing or operating expenses	(11,067,796)
Scrapped	(103,647)
Subtotal	515,658,825
Others	15,202,341
Total	$ 530,861,166

STATEMENT 14

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

Item	Research and Development Expenses	General and Administrative Expenses	Selling Expenses
Payroll and related expense	$ 28,608,138	$ 7,541,827	$ 2,121,253
Depreciation expense	22,154,406	822,877	42,835
Consumables	21,022,083	235,779	3,050
Repair and maintenance expense	3,624,661	1,266,629	596
Moving expense	271,117	986,379	600
Service fee	75,840	1,290,476	12,050
Patents		1,558,487	
Management fees of the Science Park Administration		2,014,270	
Commission			866,068
Others (Note)	9,188,216	3,396,574	155,218
Total	$ 84,944,461	$ 19,113,298	$ 3,201,670

Note: The amount of each item in others does not exceed 5% of the account balance.

STATEMENT 15

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF LABOR, DEPRECIATION AND AMORTIZATION BY FUNCTION

FOR THE YEAR ENDED DECEMBER 31, 2018 AND 2017

(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

	Year Ended December 31, 2018				Year Ended December 31, 2017			
	Classified as Cost of Revenue	Classified as Operating Expenses	Classified as Other Operating Income and Expenses	Total	Classified as Cost of Revenue	Classified as Operating Expenses	Classified as Other Operating Income and Expenses	Total
abor cost Note)								
alary and onus	$ 51,980,310	$ 34,454,020	$	$ 86,434,330	$ 50,157,890	$ 33,221,701	$	$ 83,379,591
abor and ealth nsurance	2,610,200	1,708,463		4,399,663	2,628,261	1,589,597		4,217,858
ension	1,457,996	852,315		2,310,311	1,405,941	770,262		2,176,203
oard ompensation		378,092		378,092		412,422		412,422
thers	1,604,091	878,328		2,482,419	1,710,785	891,612		2,602,397
	$ 57,733,597	$ 38,271,218	$	$ 96,004,815	$ 55,902,877	$ 36,885,594	$	$ 92,788,471
epreciation	$ 251,292,565	$ 23,020,118	$ 27,857	$ 274,340,540	$ 231,042,615	$ 19,490,010	$ 64,510	$ 250,597,135
mortization	$ 2,018,702	$ 2,334,145	$	$ 4,352,847	$ 2,119,899	$ 2,205,129	$	$ 4,325,028

Note: As of December 31, 2018 and 2017, the Company had 43,228 and 43,139 employees, respectively. There were 8 non-employee directors for both years.