

**Taiwan Semiconductor Manufacturing
Company Limited and Subsidiaries**

**Consolidated Financial Statements for the
Six Months Ended June 30, 2019 and 2018 and
Independent Auditors' Review Report**

INDEPENDENT AUDITORS' REVIEW REPORT

The Board of Directors and Shareholders
Taiwan Semiconductor Manufacturing Company Limited

Introduction

We have reviewed the accompanying consolidated balance sheets of Taiwan Semiconductor Manufacturing Company Limited and its subsidiaries (collectively, the "Company") as of June 30, 2019 and 2018, the related consolidated statements of comprehensive income for the three months ended June 30, 2019 and 2018 and for the six months ended June 30, 2019 and 2018, the consolidated statements of changes in equity and cash flows for the six months then ended, and the related notes to the consolidated financial statements, including a summary of significant accounting policies (collectively referred to as 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 International Accounting Standard 34 "Interim Financial Reporting" endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China. Our responsibility is to express a conclusion on the consolidated financial statements based on our reviews.

Scope of Review

We conducted our reviews in accordance with Statement of Auditing Standards No. 65 "Review of Financial Information Performed by the Independent Auditor of the Entity". A review of consolidated financial statements consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

Conclusion

Based on our reviews, nothing has come to our attention that caused us to believe that the accompanying consolidated financial statements do not present fairly, in all material respects the consolidated financial position of the Company as of June 30, 2019 and 2018, its consolidated financial performance for the three months ended June 30, 2019 and 2018, and its consolidated financial performance and its consolidated cash flows for the six months ended June 30, 2019 and 2018 in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and International Accounting Standard 34 "Interim Financial Reporting" endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China.

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



Deloitte & Touche
Taipei, Taiwan
Republic of China



August 13, 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 review such consolidated financial statements are those generally applied in the Republic of China.

For the convenience of readers, the independent auditors' review 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' review report and consolidated financial statements shall prevail.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED BALANCE SHEETS (In Thousands of New Taiwan Dollars)

ASSETS	June 30, 2019 (Reviewed)		December 31, 2018 (Audited)		June 30, 2018 (Reviewed)	
	Amount	%	Amount	%	Amount	%
CURRENT ASSETS						
Cash and cash equivalents (Note 6)	\$ 649,697,262	29	\$ 577,814,601	28	\$ 632,229,880	31
Financial assets at fair value through profit or loss (Note 7)	1,322,756	-	3,504,590	-	1,205,036	-
Financial assets at fair value through other comprehensive income (Note 8)	113,594,232	5	99,561,740	5	102,027,608	5
Financial assets at amortized cost (Note 9)	-	-	14,277,615	1	13,427,398	1
Hedging financial assets (Note 10)	576	-	23,497	-	31,692	-
Notes and accounts receivable, net (Note 11)	115,725,802	5	128,613,391	6	87,096,847	4
Receivables from related parties (Note 30)	404,906	-	584,412	-	1,099,472	-
Other receivables from related parties (Note 30)	1,541,754	-	65,028	-	3,185,522	-
Inventories (Note 12)	108,231,879	5	103,230,976	5	99,032,077	5
Other financial assets (Note 31)	14,934,531	1	18,597,448	1	13,393,142	1
Other current assets	4,725,640	-	5,406,423	-	6,314,005	-
Total current assets	<u>1,010,179,338</u>	<u>45</u>	<u>951,679,721</u>	<u>46</u>	<u>959,042,679</u>	<u>47</u>
NONCURRENT ASSETS						
Financial assets at fair value through other comprehensive income (Note 8)	4,040,800	-	3,910,681	-	5,694,784	-
Financial assets at amortized cost (Note 9)	7,921,781	-	7,528,277	-	7,476,874	-
Investments accounted for using equity method (Note 13)	17,352,733	1	17,865,838	1	15,663,648	1
Property, plant and equipment (Note 14)	1,142,871,184	51	1,072,050,279	51	1,034,268,062	50
Right-of-use assets (Notes 4 and 15)	18,042,308	1	-	-	-	-
Intangible assets (Note 16)	17,500,830	1	17,002,137	1	13,792,211	1
Deferred income tax assets (Note 4)	17,123,994	1	16,806,387	1	13,632,059	1
Refundable deposits	2,570,491	-	1,700,071	-	2,110,444	-
Other noncurrent assets	1,740,212	-	1,584,647	-	1,732,193	-
Total noncurrent assets	<u>1,229,164,333</u>	<u>55</u>	<u>1,138,448,317</u>	<u>54</u>	<u>1,094,370,275</u>	<u>53</u>
TOTAL	<u>\$ 2,239,343,671</u>	<u>100</u>	<u>\$ 2,090,128,038</u>	<u>100</u>	<u>\$ 2,053,412,954</u>	<u>100</u>
LIABILITIES AND EQUITY						
CURRENT LIABILITIES						
Short-term loans (Notes 17 and 28)	\$ 78,261,120	4	\$ 88,754,640	4	\$ 30,835,300	1
Financial liabilities at fair value through profit or loss (Note 7)	30,767	-	40,825	-	1,057,719	-
Hedging financial liabilities (Note 10)	34,542	-	155,832	-	30,718	-
Accounts payable	31,802,685	1	32,980,933	2	29,711,846	1
Payables to related parties (Note 30)	767,451	-	1,376,499	-	951,332	-
Salary and bonus payable	10,130,299	-	14,471,372	1	10,047,025	1
Accrued profit sharing bonus to employees and compensation to directors and supervisors (Note 27)	32,638,050	2	23,981,154	1	34,462,523	2
Payables to contractors and equipment suppliers	71,028,923	3	43,133,659	2	39,602,732	2
Cash dividends payable (Note 20)	259,379,871	12	-	-	207,519,110	10
Income tax payable (Note 4)	22,068,494	1	38,987,053	2	28,789,175	1
Long-term liabilities - current portion (Notes 18 and 28)	48,100,000	2	34,900,000	2	15,900,000	1
Accrued expenses and other current liabilities (Notes 15, 19, 21 and 28)	68,014,176	3	61,760,619	3	64,089,684	3
Total current liabilities	<u>622,256,378</u>	<u>28</u>	<u>340,542,586</u>	<u>17</u>	<u>462,997,164</u>	<u>22</u>
NONCURRENT LIABILITIES						
Bonds payable (Notes 18 and 28)	35,300,000	2	56,900,000	3	83,400,000	4
Deferred income tax liabilities (Note 4)	147,176	-	233,284	-	242,158	-
Lease liabilities (Notes 4, 15 and 28)	15,405,489	1	-	-	-	-
Net defined benefit liability (Note 4)	9,400,580	-	9,651,405	-	8,765,705	1
Guarantee deposits (Notes 19 and 28)	210,970	-	3,353,378	-	5,365,159	-
Others	2,201,551	-	1,950,989	-	2,007,483	-
Total noncurrent liabilities	<u>62,665,766</u>	<u>3</u>	<u>72,089,056</u>	<u>3</u>	<u>99,780,505</u>	<u>5</u>
Total liabilities	<u>684,922,144</u>	<u>31</u>	<u>412,631,642</u>	<u>20</u>	<u>562,777,669</u>	<u>27</u>
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT						
Capital stock (Note 20)	259,303,805	12	259,303,805	12	259,303,805	13
Capital surplus (Note 20)	56,320,929	2	56,315,932	3	56,307,720	3
Retained earnings (Note 20)						
Appropriated as legal capital reserve	311,146,899	14	276,033,811	13	276,033,811	14
Appropriated as special capital reserve	10,724,130	-	26,907,527	1	26,907,527	1
Unappropriated earnings	923,704,756	41	1,073,706,503	52	886,529,173	43
	<u>1,245,575,785</u>	<u>55</u>	<u>1,376,647,841</u>	<u>66</u>	<u>1,189,470,511</u>	<u>58</u>
Others (Note 20)	(7,385,940)	-	(15,449,913)	(1)	(15,080,494)	(1)
Equity attributable to shareholders of the parent	1,553,814,579	69	1,676,817,665	80	1,490,001,542	73
NON - CONTROLLING INTERESTS	<u>606,948</u>	<u>-</u>	<u>678,731</u>	<u>-</u>	<u>633,743</u>	<u>-</u>
Total equity	<u>1,554,421,527</u>	<u>69</u>	<u>1,677,496,396</u>	<u>80</u>	<u>1,490,635,285</u>	<u>73</u>
TOTAL	<u>\$ 2,239,343,671</u>	<u>100</u>	<u>\$ 2,090,128,038</u>	<u>100</u>	<u>\$ 2,053,412,954</u>	<u>100</u>

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)
(Reviewed, Not Audited)

	For the Three Months Ended June 30				For the Six Months Ended June 30			
	2019		2018		2019		2018	
	Amount	%	Amount	%	Amount	%	Amount	%
NET REVENUE (Notes 21, 30 and 36)	\$ 240,998,475	100	\$ 233,276,811	100	\$ 459,702,944	100	\$ 481,355,482	100
COST OF REVENUE (Notes 12, 27, 30 and 34)	<u>137,325,245</u>	<u>57</u>	<u>121,688,707</u>	<u>52</u>	<u>265,677,589</u>	<u>58</u>	<u>244,792,684</u>	<u>51</u>
GROSS PROFIT BEFORE REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO ASSOCIATES	103,673,230	43	111,588,104	48	194,025,355	42	236,562,798	49
REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO ASSOCIATES	<u>56,830</u>	<u>-</u>	<u>(57,170)</u>	<u>-</u>	<u>62,262</u>	<u>-</u>	<u>(174,325)</u>	<u>-</u>
GROSS PROFIT	<u>103,730,060</u>	<u>43</u>	<u>111,530,934</u>	<u>48</u>	<u>194,087,617</u>	<u>42</u>	<u>236,388,473</u>	<u>49</u>
OPERATING EXPENSES (Notes 27 and 30)								
Research and development	21,393,728	9	19,891,553	8	41,811,039	9	40,320,147	8
General and administrative	4,288,263	2	5,070,594	2	8,428,992	2	9,922,302	2
Marketing	<u>1,483,004</u>	<u>-</u>	<u>1,477,977</u>	<u>1</u>	<u>2,942,977</u>	<u>-</u>	<u>2,926,069</u>	<u>1</u>
Total operating expenses	<u>27,164,995</u>	<u>11</u>	<u>26,440,124</u>	<u>11</u>	<u>53,183,008</u>	<u>11</u>	<u>53,168,518</u>	<u>11</u>
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 14, 15 and 27)	<u>(261,012)</u>	<u>-</u>	<u>(662,664)</u>	<u>(1)</u>	<u>(334,533)</u>	<u>-</u>	<u>(1,964,863)</u>	<u>-</u>
INCOME FROM OPERATIONS (Note 36)	<u>76,304,053</u>	<u>32</u>	<u>84,428,146</u>	<u>36</u>	<u>140,570,076</u>	<u>31</u>	<u>181,255,092</u>	<u>38</u>
NON-OPERATING INCOME AND EXPENSES								
Share of profits of associates	628,535	-	266,493	-	1,062,026	-	948,284	-
Other income (Note 22)	4,791,347	2	3,729,835	2	9,200,123	2	6,884,477	1
Foreign exchange gain (loss), net (Note 33)	(738,611)	-	2,330,616	1	(507,929)	-	1,653,636	-
Finance costs (Note 23)	(864,751)	(1)	(628,284)	-	(1,763,816)	(1)	(1,436,250)	-
Other gains and losses, net (Note 24)	<u>424,867</u>	<u>-</u>	<u>(2,539,198)</u>	<u>(1)</u>	<u>166,612</u>	<u>-</u>	<u>(1,774,010)</u>	<u>-</u>
Total non-operating income and expenses	<u>4,241,387</u>	<u>1</u>	<u>3,159,462</u>	<u>2</u>	<u>8,157,016</u>	<u>1</u>	<u>6,276,137</u>	<u>1</u>
INCOME BEFORE INCOME TAX	80,545,440	33	87,587,608	38	148,727,092	32	187,531,229	39
INCOME TAX EXPENSE (Notes 4 and 25)	<u>13,769,589</u>	<u>5</u>	<u>15,294,233</u>	<u>7</u>	<u>20,563,931</u>	<u>4</u>	<u>25,450,280</u>	<u>5</u>
NET INCOME	<u>66,775,851</u>	<u>28</u>	<u>72,293,375</u>	<u>31</u>	<u>128,163,161</u>	<u>28</u>	<u>162,080,949</u>	<u>34</u>
OTHER COMPREHENSIVE INCOME (LOSS) (Notes 20 and 25)								
Items that will not be reclassified subsequently to profit or loss:								
Unrealized gain/(loss) on investments in equity instruments at fair value through other comprehensive income	175,258	-	(869,369)	-	228,799	-	(888,876)	-
Gain (loss) on hedging instruments	106,554	-	(21,939)	-	12,006	-	15,343	-
Share of other comprehensive income (loss) of associates	(11,134)	-	5,551	-	(10,886)	-	5,613	-
Income tax benefit (expense) related to items that will not be reclassified subsequently	<u>12,557</u>	<u>-</u>	<u>(2,821)</u>	<u>-</u>	<u>(5,494)</u>	<u>-</u>	<u>36,385</u>	<u>-</u>
Total	<u>283,235</u>	<u>-</u>	<u>(888,578)</u>	<u>-</u>	<u>224,425</u>	<u>-</u>	<u>(831,535)</u>	<u>-</u>
Items that may be reclassified subsequently to profit or loss:								
Exchange differences arising on translation of foreign operations	2,289,984	1	20,310,158	8	5,508,062	1	13,833,672	3
Unrealized gain/(loss) on investments in debt instruments at fair value through other comprehensive income	935,894	-	(282,360)	-	2,384,284	1	(1,009,770)	(1)
Share of other comprehensive income of associates	<u>16,907</u>	<u>-</u>	<u>116,455</u>	<u>-</u>	<u>25,235</u>	<u>-</u>	<u>77,103</u>	<u>-</u>
Total	<u>3,242,785</u>	<u>1</u>	<u>20,144,253</u>	<u>8</u>	<u>7,917,581</u>	<u>2</u>	<u>12,901,005</u>	<u>2</u>
Other comprehensive income for the period, net of income tax	<u>3,526,020</u>	<u>1</u>	<u>19,255,675</u>	<u>8</u>	<u>8,142,006</u>	<u>2</u>	<u>12,069,470</u>	<u>2</u>
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD	<u>\$ 70,301,871</u>	<u>29</u>	<u>\$ 91,549,050</u>	<u>39</u>	<u>\$ 136,305,167</u>	<u>30</u>	<u>\$ 174,150,419</u>	<u>36</u>
NET INCOME ATTRIBUTABLE TO:								
Shareholders of the parent	\$ 66,764,850	28	\$ 72,290,539	31	\$ 128,158,701	28	\$ 162,075,161	34
Non-controlling interests	<u>11,001</u>	<u>-</u>	<u>2,836</u>	<u>-</u>	<u>4,460</u>	<u>-</u>	<u>5,788</u>	<u>-</u>
	<u>\$ 66,775,851</u>	<u>28</u>	<u>\$ 72,293,375</u>	<u>31</u>	<u>\$ 128,163,161</u>	<u>28</u>	<u>\$ 162,080,949</u>	<u>34</u>
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:								
Shareholders of the parent	\$ 70,290,835	29	\$ 91,545,881	39	\$ 136,300,654	30	\$ 174,141,933	36
Non-controlling interests	<u>11,036</u>	<u>-</u>	<u>3,169</u>	<u>-</u>	<u>4,513</u>	<u>-</u>	<u>8,486</u>	<u>-</u>
	<u>\$ 70,301,871</u>	<u>29</u>	<u>\$ 91,549,050</u>	<u>39</u>	<u>\$ 136,305,167</u>	<u>30</u>	<u>\$ 174,150,419</u>	<u>36</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

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

(Reviewed, Not Audited)

	For the Three Months Ended June 30		For the Six Months Ended June 30	
	2019	2018	2019	2018
	Income Attributable to Shareholders of the Parent	Income Attributable to Shareholders of the Parent	Income Attributable to Shareholders of the Parent	Income Attributable to Shareholders of the Parent
EARNINGS PER SHARE (NT\$, Note 26)				
Basic earnings per share	\$ 2.57	\$ 2.79	\$ 4.94	\$ 6.25
Diluted earnings per share	\$ 2.57	\$ 2.79	\$ 4.94	\$ 6.25

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

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(In Thousands of New Taiwan Dollars, Except Dividends Per Share)
(Reviewed, Not Audited)

	Equity Attributable to Shareholders of the Parent													Non-controlling Interests	Total Equity
	Capital Stock - Common Stock							Others							
	Shares (In Thousands)	Amount	Capital Surplus	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total	Total		
BALANCE, JANUARY 1, 2019	25,930,380	\$ 259,303,805	\$ 56,315,932	\$ 276,033,811	\$ 26,907,527	\$1,073,706,503	\$1,376,647,841	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)	\$1,676,817,665	\$ 678,731	\$1,677,496,396
Appropriations of earnings															
Legal capital reserve	-	-	-	35,113,088	-	(35,113,088)	-	-	-	-	-	-	-	-	-
Special capital reserve	-	-	-	-	(16,183,397)	16,183,397	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(259,303,805)	(259,303,805)	-	-	-	-	-	(259,303,805)	-	(259,303,805)
Total	-	-	-	35,113,088	(16,183,397)	(278,233,496)	(259,303,805)	-	-	-	-	-	(259,303,805)	-	(259,303,805)
Net income for the six months ended June 30, 2019	-	-	-	-	-	128,158,701	128,158,701	-	-	-	-	-	128,158,701	4,460	128,163,161
Other comprehensive income for the six months ended June 30, 2019, net of income tax	-	-	-	-	-	-	-	5,533,346	2,596,706	11,901	-	8,141,953	8,141,953	53	8,142,006
Total comprehensive income for the six months ended June 30, 2019	-	-	-	-	-	128,158,701	128,158,701	5,533,346	2,596,706	11,901	-	8,141,953	136,300,654	4,513	136,305,167
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	73,048	73,048	-	(73,048)	-	-	(73,048)	-	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(6,775)	-	(6,775)	(6,775)	-	(6,775)
Adjustments to share of changes in equities of associates	-	-	4,627	-	-	-	-	-	-	-	1,843	1,843	6,470	110	6,580
From share of changes in equities of subsidiaries	-	-	370	-	-	-	-	-	-	-	-	-	370	(370)	-
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	(76,036)	(76,036)
BALANCE, JUNE 30, 2019	<u>25,930,380</u>	<u>\$ 259,303,805</u>	<u>\$ 56,320,929</u>	<u>\$ 311,146,899</u>	<u>\$ 10,724,130</u>	<u>\$ 923,704,756</u>	<u>\$1,245,575,785</u>	<u>\$ (6,509,001)</u>	<u>\$ (905,666)</u>	<u>\$ 28,727</u>	<u>\$ -</u>	<u>\$ (7,385,940)</u>	<u>\$1,553,814,579</u>	<u>\$ 606,948</u>	<u>\$1,554,421,527</u>
BALANCE, JANUARY 1, 2018	25,930,380	\$ 259,303,805	\$ 56,309,536	\$ 241,722,663	\$ -	\$ 993,195,668	\$1,234,918,331	\$ (26,697,680)	\$ (524,915)	\$ 4,226	\$ (10,290)	\$ (27,228,659)	\$1,523,303,013	\$ 702,452	\$1,524,005,465
Appropriations of earnings															
Legal capital reserve	-	-	-	34,311,148	-	(34,311,148)	-	-	-	-	-	-	-	-	-
Special capital reserve	-	-	-	-	26,907,527	(26,907,527)	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(207,443,044)	(207,443,044)	-	-	-	-	-	(207,443,044)	-	(207,443,044)
Total	-	-	-	34,311,148	26,907,527	(268,661,719)	(207,443,044)	-	-	-	-	-	(207,443,044)	-	(207,443,044)
Net income for the six months ended June 30, 2018	-	-	-	-	-	162,075,161	162,075,161	-	-	-	-	-	162,075,161	5,788	162,080,949
Other comprehensive income (loss) for the six months ended June 30, 2018, net of income tax	-	-	-	-	-	-	-	13,910,521	(1,857,564)	13,815	-	12,066,772	12,066,772	2,698	12,069,470
Total comprehensive income (loss) for the six months ended June 30, 2018	-	-	-	-	-	162,075,161	162,075,161	13,910,521	(1,857,564)	13,815	-	12,066,772	174,141,933	8,486	174,150,419
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	(79,937)	(79,937)	-	79,937	-	-	79,937	-	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(2,605)	-	(2,605)	(2,605)	-	(2,605)
Adjustments to share of changes in equities of associates	-	-	(1,856)	-	-	-	-	-	-	-	4,061	4,061	2,205	-	2,205
Donation from shareholders	-	-	40	-	-	-	-	-	-	-	-	-	40	6	46
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	(77,201)	(77,201)
BALANCE, JUNE 30, 2018	<u>25,930,380</u>	<u>\$ 259,303,805</u>	<u>\$ 56,307,720</u>	<u>\$ 276,033,811</u>	<u>\$ 26,907,527</u>	<u>\$ 886,529,173</u>	<u>\$1,189,470,511</u>	<u>\$ (12,787,159)</u>	<u>\$ (2,302,542)</u>	<u>\$ 15,436</u>	<u>\$ (6,229)</u>	<u>\$ (15,080,494)</u>	<u>\$1,490,001,542</u>	<u>\$ 633,743</u>	<u>\$1,490,635,285</u>

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

(Reviewed, Not Audited)

	Six Months Ended June 30	
	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	\$ 148,727,092	\$ 187,531,229
Adjustments for:		
Depreciation expense	149,897,048	140,813,756
Amortization expense	2,699,106	2,092,805
Reversal of expected credit losses on investments in debt instruments	(987)	(1,453)
Finance costs	1,763,816	1,436,250
Share of profits of associates	(1,062,026)	(948,284)
Interest income	(8,955,693)	(6,726,119)
Loss on disposal or retirement of property, plant and equipment, net	700,386	793,090
Loss (gain) on disposal of intangible assets, net	2,377	(436)
Impairment loss (reversal of impairment loss) on property, plant and equipment	(301,384)	488,336
Loss on financial instruments at fair value through profit or loss, net	890,206	60,541
Loss (gain) on disposal of investments in debt instruments at fair value through other comprehensive income, net	(172,465)	512,267
Loss from disposal of subsidiaries	4,598	-
Unrealized (realized) gross profit on sales to associates	(62,262)	174,325
Loss on foreign exchange, net	1,722,527	2,098,700
Dividend income	(244,430)	(158,358)
Gain arising from fair value hedges, net	(17,826)	(7,725)
Loss on lease modification	196	-
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	(80,241)	1,241,998
Notes and accounts receivable, net	9,178,788	31,318,729
Receivables from related parties	179,506	84,652
Other receivables from related parties	8,789	14,353
Inventories	(5,000,903)	(25,171,076)
Other financial assets	4,363,408	(4,930,978)
Other current assets	511,681	(1,388,497)
Other noncurrent assets	-	56,329
Accounts payable	(1,669,615)	1,093,210
Payables to related parties	(609,048)	(705,024)
Salary and bonus payable	(4,341,073)	(4,207,846)
Accrued profit sharing bonus to employees and compensation to directors and supervisors	8,656,896	11,043,388
Accrued expenses and other current liabilities	1,721,475	(14,314,806)
Net defined benefit liability	(250,825)	(84,999)
Cash generated from operations	308,259,117	322,208,357
Income taxes paid	(37,827,811)	(31,709,079)
Net cash generated by operating activities	<u>270,431,306</u>	<u>290,499,278</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

(Reviewed, Not Audited)

	Six Months Ended June 30	
	2019	2018
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial instruments at fair value through profit or loss - debt instruments	\$ -	\$ (212,254)
Financial assets at fair value through other comprehensive income	(98,468,264)	(47,523,622)
Financial assets at amortized cost	(313,958)	-
Property, plant and equipment	(192,294,786)	(131,528,345)
Intangible assets	(2,682,181)	(1,391,186)
Proceeds from disposal or redemption of:		
Financial instruments at fair value through profit or loss - debt instruments	1,387,817	63,150
Financial assets at fair value through other comprehensive income	86,851,335	39,921,113
Financial assets at amortized cost	14,349,190	498,542
Property, plant and equipment	155,320	116,927
Intangible assets	-	492
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	-	127,878
Derecognition of hedging financial instruments	(294,290)	162,699
Interest received	9,396,746	6,635,893
Proceeds from government grants - property, plant and equipment	2,565,338	-
Proceeds from government grants - land use right and others	850,623	-
Other dividends received	218,705	139,342
Dividends received from investments accounted for using equity method	233,439	233,439
Refundable deposits paid	(1,336,839)	(2,110,165)
Refundable deposits refunded	<u>475,381</u>	<u>1,331,308</u>
Net cash used in investing activities	<u>(178,906,424)</u>	<u>(133,534,789)</u>
CASH FLOWS FROM FINANCING ACTIVITIES		
Decrease in short-term loans	(11,198,385)	(33,743,725)
Repayment of bonds	(8,400,000)	(50,524,900)
Repayment of the principal portion of lease liabilities	(1,814,471)	-
Interest paid	(1,625,029)	(1,542,784)
Guarantee deposits received	42,659	639,802
Guarantee deposits refunded	(347,951)	(1,800,830)
Donation from shareholders	-	46
Increase (decrease) in non-controlling interests	<u>30</u>	<u>(1,135)</u>
Net cash used in financing activities	<u>(23,343,147)</u>	<u>(86,973,526)</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

(Reviewed, Not Audited)

	<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	\$ <u>3,700,926</u>	\$ <u>8,847,221</u>
NET INCREASE IN CASH AND CASH EQUIVALENTS	71,882,661	78,838,184
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	<u>577,814,601</u>	<u>553,391,696</u>
CASH AND CASH EQUIVALENTS, END OF PERIOD	\$ <u>649,697,262</u>	\$ <u>632,229,880</u>

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

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

FOR THE SIX MONTHS ENDED JUNE 30, 2019 and 2018

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

(Reviewed, Not Audited)

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 reported to the Board of Directors and issued on August 13, 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 16 "Leases"

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

Definition of a lease

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

The Company as lessee

Except for payments for short-term leases which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases on the consolidated balance sheets. On the consolidated statements of comprehensive income, the Company presents the depreciation expense charged on right-of-use assets separately from the interest expense accrued on lease liabilities 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.

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

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

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

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

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

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

The Company as lessor

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

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

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

- b. The IFRSs issued by International Accounting Standards Board (IASB) and endorsed by FSC with effective date starting 2020

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Amendments to IFRS 3 "Definition of a Business"	January 1, 2020 (Note 1)
Amendments to 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.

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

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Amendments to IFRS 10 and IAS 28 "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture"	To be determined by IASB

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

Except for the following, the accounting policies applied in these consolidated financial statements are consistent with those applied in the consolidated financial statements for the year ended December 31, 2018.

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 IAS 34, “Interim Financial Reporting,” endorsed and issued into effect by the FSC. The consolidated financial statements do not present all the disclosures required for a complete set of annual consolidated financial statements prepared under the IFRSs endorsed and issued into effect by the FSC (collectively, “Taiwan-IFRSs”).

Basis of Consolidation

The basis of preparation and the basis for the consolidated financial statements

The basis of preparation and the basis for the consolidated financial statements applied in these consolidated financial statements are consistent with those applied in the consolidated financial statements for the year ended December 31, 2018.

The subsidiaries in the consolidated financial statements

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

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership			Note
				June 30, 2019	December 31, 2018	June 30, 2018	
TSMC	TSMC North America	Selling and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	100%	100%	100%	-
	TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	100%	100%	100%	a)
	TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	100%	100%	100%	a)
	TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	100%	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%	100%	a)
	TSMC Global, Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	100%	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%	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%	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%	87%	-
	VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	98%	98%	98%	a)
	VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in new start-up technology companies	Cayman Islands	98%	98%	98%	a)
	TSMC Solar Europe GmbH	Selling of solar related products and providing customer service	Hamburg, Germany	-	100%	100%	a), c)

(Continued)

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership			Note
				June 30, 2019	December 31, 2018	June 30, 2018	
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%	100%	-
	TSMC Technology, Inc. (TSMC Technology)	Engineering support activities	Delaware, U.S.A.	100%	100%	100%	a)
	TSMC Design Technology Canada Inc. (TSMC Canada)	Engineering support activities	Ontario, Canada	100%	100%	100%	a)
	InveStar Semiconductor Development Fund, Inc. (ISDF)	Investing in new start-up technology companies	Cayman Islands	97%	97%	97%	a), d)
	InveStar Semiconductor Development Fund, Inc. (II) LDC. (ISDF II)	Investing in new start-up technology companies	Cayman Islands	97%	97%	97%	a), d)
TSMC Development	WaferTech, LLC (WaferTech)	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	Washington, U.S.A.	100%	100%	100%	-
VTAF III	Growth Fund Limited (Growth Fund)	Investing in new start-up technology companies	Cayman Islands	100%	100%	100%	a)

(Concluded)

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

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

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

Note d: The subsidiary is under liquidation procedures.

Leases

2019

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

The Company as lessor

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

The Company as lessee

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

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

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

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

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

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

2018

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

The Company as lessor

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

The Company as lessee

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

Retirement Benefits

Pension cost for an interim period is calculated on a year-to-date basis by using the actuarially determined pension cost rate at the end of the prior financial year.

Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax. The interim period income tax expense is accrued using the tax rate that would be applicable to expected total annual earnings, that is, the estimated average annual effective income tax rate applied to the pre-tax income of the interim period. When tax rate changes during the interim period, the effect of the change in tax rate relating to transactions recognized outside scope of profit or loss is recognized in full in the period in which the change in tax rate occurs. The effect of the change in tax rate relating to transactions recognized in profit or loss is incorporated into estimation of the average annual income tax rate, with corresponding effect recognized throughout the interim periods.

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

Except for the following paragraphs, the same critical accounting judgments and key sources of estimates and uncertainty have been followed in these consolidated financial statements as were applied in the preparation of the Company's consolidated financial statements for the year ended December 31, 2018.

Recognition of Right-of-Use Assets and Lease Liabilities

Lease terms and lessee's incremental borrowing rates used in discounting lease payments are main factors considered in recognizing right-of-use assets and lease liabilities

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

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

6. CASH AND CASH EQUIVALENTS

	June 30, 2019	December 31, 2018	June 30, 2018
Cash and deposits in banks	\$ 645,551,180	\$ 575,825,502	\$ 627,258,280
Government bonds	2,226,627	-	-
Commercial paper	1,301,817	759,499	419,850
Agency bonds	617,638	-	-
Repurchase agreements collateralized by corporate bonds	-	1,229,600	4,551,750
	<u>\$ 649,697,262</u>	<u>\$ 577,814,601</u>	<u>\$ 632,229,880</u>

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

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

	June 30, 2019	December 31, 2018	June 30, 2018
<u>Financial assets</u>			
Mandatorily measured at FVTPL			
Agency mortgage-backed securities	\$ 1,144,137	\$ 3,419,287	\$ 717,735
Forward exchange contracts	178,619	85,303	356,335
Asset-backed securities	-	-	130,966
	<u>\$ 1,322,756</u>	<u>\$ 3,504,590</u>	<u>\$ 1,205,036</u>
<u>Financial liabilities</u>			
Held for trading			
Forward exchange contracts	<u>\$ 30,767</u>	<u>\$ 40,825</u>	<u>\$ 1,057,719</u>

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)
<u>June 30, 2019</u>		
Sell NT\$/Buy EUR	July 2019 to August 2019	NT\$15,849,715/EUR450,000
Sell NT\$/Buy JPY	July 2019 to August 2019	NT\$6,108,352/JPY21,100,000
Sell US\$/Buy EUR	July 2019	US\$267,073/EUR235,000
Sell US\$/Buy JPY	July 2019	US\$15,186/JPY1,628,000
Sell US\$/Buy RMB	July 2019	US\$335,000/RMB2,311,464
Sell US\$/Buy NT\$	July 2019 to August 2019	US\$53,500/NT\$1,681,756
Sell RMB/Buy US\$	July 2019	RMB462,079/US\$67,000
<u>December 31, 2018</u>		
Sell NT\$/Buy EUR	January 2019 to March 2019	NT\$18,545,854/EUR527,000
Sell NT\$/Buy JPY	January 2019 to March 2019	NT\$4,757,858/JPY17,200,000
Sell US\$/Buy EUR	January 2019	US\$495/EUR434
Sell US\$/Buy JPY	January 2019	US\$175,591/JPY19,389,014
Sell US\$/Buy RMB	January 2019	US\$318,000/RMB2,188,747
Sell US\$/Buy NT\$	January 2019 to February 2019	US\$127,000/NT\$3,908,635
Sell RMB/Buy US\$	January 2019	RMB667,539/US\$97,000
<u>June 30, 2018</u>		
Sell NT\$/Buy EUR	July 2018 to September 2018	NT\$8,748,750/EUR248,000
Sell NT\$/Buy JPY	July 2018 to August 2018	NT\$6,661,029/JPY24,396,000
Sell US\$/Buy RMB	July 2018 to August 2018	US\$698,000/RMB4,540,519
Sell US\$/Buy NT\$	July 2018 to August 2018	US\$962,500/NT\$28,710,052
Sell US\$/Buy JPY	July 2018	US\$34,627/JPY3,796,536
Sell US\$ /Buy EUR	July 2018	US\$5,301/EUR4,530
Sell US\$/Buy GBP	July 2018	US\$55/GBP41
Sell RMB/Buy US\$	July 2018 to August 2018	RMB2,050,582/US\$315,000

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	June 30, 2019	December 31, 2018	June 30, 2018
Investments in debt instruments at FVTOCI			
Corporate bonds	\$ 48,978,969	\$ 40,753,582	\$ 40,298,039
Agency bonds/Agency mortgage-backed securities	43,422,635	31,288,762	35,043,747
Government bonds	10,920,257	11,151,359	10,370,874
Asset-backed securities	10,009,050	15,670,295	14,321,226
Commercial paper	-	107,590	228,618
	<u>113,330,911</u>	<u>98,971,588</u>	<u>100,262,504</u>

(Continued)

	June 30, 2019	December 31, 2018	June 30, 2018
Investments in equity instruments at FVTOCI			
Non-publicly traded equity investments	\$ 4,040,800	\$ 3,910,681	\$ 5,694,784
Publicly traded stocks	<u>263,321</u>	<u>590,152</u>	<u>1,765,104</u>
	<u>4,304,121</u>	<u>4,500,833</u>	<u>7,459,888</u>
	<u>\$ 117,635,032</u>	<u>\$ 103,472,421</u>	<u>\$ 107,722,392</u>
Current	\$ 113,594,232	\$ 99,561,740	\$ 102,027,608
Noncurrent	<u>4,040,800</u>	<u>3,910,681</u>	<u>5,694,784</u>
	<u>\$ 117,635,032</u>	<u>\$ 103,472,421</u>	<u>\$ 107,722,392</u>

(Concluded)

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

For the six months ended June 30, 2019 and 2018, as the Company adjusted its investment portfolio or the non-publicly traded investee was merged, equity investments designated at FVTOCI were divested for NT\$598,308 thousand and NT\$206,165 thousand, respectively. The related other equity-unrealized gain/loss on financial assets at FVTOCI of NT\$70,052 thousand and NT\$79,937 thousand were transferred to decrease retained earnings.

For dividends from equity investments designated as at FVTOCI recognized during the three months and six months ended June 30, 2019 and 2018, please refer to Note 22. All the dividends are from investments held at the end of the reporting period.

As of June 30, 2019 and 2018, the cumulative loss allowance for expected credit loss of NT\$34,194 thousand and NT\$29,807 thousand are recognized under investments in debt instruments at FVTOCI, respectively. Refer to Note 29 for information relating to their credit risk management and expected credit loss.

9. FINANCIAL ASSETS AT AMORTIZED COST

	June 30, 2019	December 31, 2018	June 30, 2018
Corporate bonds	\$ 7,924,814	\$ 19,519,941	\$ 19,386,500
Commercial paper	-	2,294,098	-
Structured product	-	-	1,526,500
Less: Allowance for impairment loss	<u>(3,033)</u>	<u>(8,147)</u>	<u>(8,728)</u>
	<u>\$ 7,921,781</u>	<u>\$ 21,805,892</u>	<u>\$ 20,904,272</u>
Current	\$ -	\$ 14,277,615	\$ 13,427,398
Noncurrent	<u>7,921,781</u>	<u>7,528,277</u>	<u>7,476,874</u>
	<u>\$ 7,921,781</u>	<u>\$ 21,805,892</u>	<u>\$ 20,904,272</u>

Refer to Note 29 for information relating to credit risk management and expected credit loss for financial assets at amortized cost.

10. HEDGING FINANCIAL INSTRUMENTS

	June 30, 2019	December 31, 2018	June 30, 2018
<u>Financial assets- current</u>			
Fair value hedges			
Interest rate futures contracts	\$ -	\$ -	\$ 14,279
Cash flow hedges			
Forward exchange contracts	<u>576</u>	<u>23,497</u>	<u>17,413</u>
	<u>\$ 576</u>	<u>\$ 23,497</u>	<u>\$ 31,692</u>
<u>Financial liabilities- current</u>			
Fair value hedges			
Interest rate futures contracts	\$ 32,873	\$ 153,891	\$ 1,244
Cash flow hedges			
Forward exchange contracts	<u>1,669</u>	<u>1,941</u>	<u>29,474</u>
	<u>\$ 34,542</u>	<u>\$ 155,832</u>	<u>\$ 30,718</u>

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 futures contracts. No other sources of ineffectiveness emerged from these hedging relationships. Amount of hedge ineffectiveness recognized in profit or loss is classified under other gains and losses.

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

June 30, 2019

Hedging Instruments	Contract Amount (US\$ in Thousands)	Maturity
US treasury bonds interest rate futures contracts	US\$ 106,100	September 2019
Hedged Items	Asset Carrying Amount as of June 30, 2019	Asset Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	\$ 4,965,269	\$ 106,483

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)

June 30, 2018

Hedging Instruments	Contract Amount (US\$ in Thousands)	Maturity
US treasury bonds interest rate futures contracts	US\$ 217,100	September 2018
Hedged Items	Asset Carrying Amount as of June 30, 2018	Asset Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	\$ 13,914,694	\$ (54,821)

The effect on comprehensive income for the six months ended June 30, 2019 and 2018 are detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness Six Months Ended June 30	
	2019	2018
Hedging Instruments		
US treasury bonds interest rate futures contracts	\$ (165,721)	\$ 99,363
Hedged Items		
Financial assets at FVTOCI	<u>183,547</u>	<u>(91,638)</u>
	<u>\$ 17,826</u>	<u>\$ 7,725</u>

Cash flow hedge

The Company entered into forward exchange contracts 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 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. No other sources of ineffectiveness emerged from these hedging relationships. For the six months ended June 30, 2019 and 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.

June 30, 2019

Hedging Instruments	Contract Amount (in Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	NT\$ 1,983,719 /EUR 56,000	July 2019	\$ 28,727

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

June 30, 2018

Hedging Instruments	Contract Amount (in Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	NT\$ 3,575,476 /EUR 100,000	July 2018 to September 2018	\$ 15,436

The effect on comprehensive income for the six months ended June 30, 2019 and 2018 are detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Six Months Ended June 30	
	2019	2018
Hedging Instruments		
Forward exchange contracts	<u>\$ 12,006</u>	<u>\$ 15,343</u>
Hedged Items		
Forecast transaction (capital expenditures)	<u>\$ (12,006)</u>	<u>\$ (15,343)</u>

11. NOTES AND ACCOUNTS RECEIVABLE, NET

	June 30, 2019	December 31, 2018	June 30, 2018
At amortized cost			
Notes and accounts receivable	\$ 112,213,697	\$ 125,025,575	\$ 84,650,270
Less: Loss allowance	<u>(9,358)</u>	<u>(7,253)</u>	<u>(63,527)</u>
	112,204,339	125,018,322	84,586,743
At FVTOCI	<u>3,521,463</u>	<u>3,595,069</u>	<u>2,510,104</u>
	<u>\$ 115,725,802</u>	<u>\$ 128,613,391</u>	<u>\$ 87,096,847</u>

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

In principle, the payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month when the invoice is issued. Aside from recognizing impairment loss for credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels. 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

	June 30, 2019	December 31, 2018	June 30, 2018
Not past due	\$ 105,228,390	\$ 113,126,484	\$ 79,391,718
Past due			
Past due within 30 days	7,836,494	15,006,461	7,323,783
Past due 31-60 days	2,642,764	472,833	140,500
Past due 61-120 days	18,154	4,654	57,183
Past due over 121 days	<u>-</u>	<u>2,959</u>	<u>183,663</u>
	<u>\$ 115,725,802</u>	<u>\$ 128,613,391</u>	<u>\$ 87,096,847</u>

Movements of the loss allowance for accounts receivable

	<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>
Balance, beginning of period	\$ 7,253	\$ 226,968
Provision (Reversal)	2,104	(163,437)
Effect of exchange rate changes	<u>1</u>	<u>(4)</u>
Balance, end of period	<u>\$ 9,358</u>	<u>\$ 63,527</u>

For the six months ended June 30, 2019 and 2018, the changes in loss allowance were mainly due to the variations from accounts receivable balance of different risk levels and the decrease in the balance of accounts receivable, respectively.

12. INVENTORIES

	June 30, 2019	December 31, 2018	June 30, 2018
Finished goods	\$ 9,680,034	\$ 11,329,802	\$ 10,771,461
Work in process	77,670,698	72,071,861	73,688,538
Raw materials	15,913,150	15,233,877	10,151,101
Supplies and spare parts	<u>4,967,997</u>	<u>4,595,436</u>	<u>4,420,977</u>
	<u>\$ 108,231,879</u>	<u>\$ 103,230,976</u>	<u>\$ 99,032,077</u>

Write-down of inventories to net realizable value and reversal of write-down of inventories resulting from the increase in net realizable value (excluding wafer contamination losses) were included in the cost of revenue, as illustrated below:

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Inventory losses (reversal of write-down of inventories)	<u>\$ 243,133</u>	<u>\$ 365,574</u>	<u>\$ (276,735)</u>	<u>\$ 1,066,014</u>

Please refer to wafer contamination losses in Note 34.

13. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount			% of Ownership and Voting Rights Held by the Company		
			June 30, 2019	December 31, 2018	June 30, 2018	June 30, 2019	December 31, 2018	June 30, 2018
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	\$ 8,341,406	\$ 9,006,126	\$ 7,991,101	28%	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	6,141,048	5,772,815	4,928,611	39%	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	1,618,487	1,764,607	1,679,997	41%	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	1,219,064	1,299,423	1,044,164	35%	35%	35%
Mutual-Pak	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	New Taipei, Taiwan	32,728	22,867	19,775	30%	39%	39%
			<u>\$ 17,352,733</u>	<u>\$ 17,865,838</u>	<u>\$ 15,663,648</u>			

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	June 30, 2019	December 31, 2018	June 30, 2018
VIS	<u>\$ 30,267,372</u>	<u>\$ 27,621,298</u>	<u>\$ 32,402,800</u>
GUC	<u>\$ 10,574,800</u>	<u>\$ 9,617,699</u>	<u>\$ 12,769,129</u>
Xintec	<u>\$ 3,822,534</u>	<u>\$ 3,783,585</u>	<u>\$ 6,765,941</u>

14. PROPERTY, PLANT AND EQUIPMENT

2019

	June 30, 2019
Assets used by the Company	\$1,142,795,610
Assets subject to operating leases	<u>75,574</u>
	<u>\$1,142,871,184</u>

a. Assets used by the Company

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Cost</u>						
Balance at January 1, 2019	\$ 4,011,353	\$ 418,151,675	\$ 2,728,760,127	\$ 48,382,279	\$ 172,910,989	\$ 3,372,216,423
Additions	-	14,237,637	84,910,236	3,704,926	119,296,516	222,149,315
Disposals or retirements	-	(19,898)	(10,253,703)	(350,645)	-	(10,624,246)
Transfers from right-of-use assets	-	-	619,779	-	-	619,779
Effect of disposal of subsidiary	-	-	-	(508)	-	(508)
Effect of exchange rate changes	8,217	353,301	1,511,090	45,669	(122,291)	1,795,986
Balance at June 30, 2019	<u>\$ 4,019,570</u>	<u>\$ 432,722,715</u>	<u>\$ 2,805,547,529</u>	<u>\$ 51,781,721</u>	<u>\$ 292,085,214</u>	<u>\$ 3,586,156,749</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2019	\$ 550,575	\$ 217,899,243	\$ 2,049,278,908	\$ 32,525,129	\$ -	\$ 2,300,253,855
Additions	819	12,969,115	132,558,851	3,043,567	-	148,572,352
Disposals or retirements	-	(19,854)	(6,136,626)	(349,457)	-	(6,505,937)
Transfers from right-of-use assets	-	-	20,659	-	-	20,659
Reversal of impairment	-	-	(301,384)	-	-	(301,384)
Effect of disposal of subsidiary	-	-	-	(508)	-	(508)
Effect of exchange rate changes	5,662	186,060	1,104,630	25,750	-	1,322,102
Balance at June 30, 2019	<u>\$ 557,056</u>	<u>\$ 231,034,564</u>	<u>\$ 2,176,525,038</u>	<u>\$ 35,244,481</u>	<u>\$ -</u>	<u>\$ 2,443,361,139</u>
Carrying amounts at January 1, 2019	<u>\$ 3,460,778</u>	<u>\$ 200,252,432</u>	<u>\$ 679,481,219</u>	<u>\$ 15,857,150</u>	<u>\$ 172,910,989</u>	<u>\$ 1,071,962,568</u>
Carrying amounts at June 30, 2019	<u>\$ 3,462,514</u>	<u>\$ 201,688,151</u>	<u>\$ 629,022,491</u>	<u>\$ 16,537,240</u>	<u>\$ 292,085,214</u>	<u>\$ 1,142,795,610</u>

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

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

b. Assets subject to operating leases

	Buildings
<u>Cost</u>	
Balance at January 1, 2019	<u>\$ 562,610</u>
Balance at June 30, 2019	<u>\$ 562,610</u>
<u>Accumulated depreciation</u>	
Balance at January 1, 2019	\$ 474,899
Additions	<u>12,137</u>
Balance at June 30, 2019	<u>\$ 487,036</u>
Carrying amounts at January 1, 2019	<u>\$ 87,711</u>
Carrying amounts at June 30, 2019	<u>\$ 75,574</u>

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

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

	June 30, 2019
Year 1	\$ 27,060
Year 2	16,992
Year 3	16,992
Year 4	<u>8,496</u>
	<u>\$ 69,540</u>

The buildings subject to operating leases are depreciated using the estimated useful lives of 20 years.

2018

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Cost</u>						
Balance at January 1, 2018	\$ 3,983,243	\$ 379,134,613	\$ 2,487,752,265	\$ 42,391,516	\$ 167,353,490	\$ 3,080,615,127
Additions (Deductions)	-	22,038,114	131,502,040	3,906,855	(44,079,362)	113,367,647
Disposals or retirements	-	(18,624)	(2,721,863)	(337,434)	-	(3,077,921)
Effect of exchange rate changes	<u>22,649</u>	<u>365,959</u>	<u>2,414,939</u>	<u>51,032</u>	<u>(110,352)</u>	<u>2,744,227</u>
Balance at June 30, 2018	<u>\$ 4,005,892</u>	<u>\$ 401,520,062</u>	<u>\$ 2,618,947,381</u>	<u>\$ 46,011,969</u>	<u>\$ 123,163,776</u>	<u>\$ 3,193,649,080</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2018	\$ 510,498	\$ 194,446,521	\$ 1,795,448,842	\$ 27,666,944	\$ -	\$ 2,018,072,805
Additions	13,462	12,016,411	126,065,287	2,718,596	-	140,813,756
Disposals or retirements	-	(6,764)	(1,823,921)	(337,219)	-	(2,167,904)
Impairment	-	-	488,336	-	-	488,336
Effect of exchange rate changes	<u>15,454</u>	<u>323,661</u>	<u>1,793,585</u>	<u>41,325</u>	<u>-</u>	<u>2,174,025</u>
Balance at June 30, 2018	<u>\$ 539,414</u>	<u>\$ 206,779,829</u>	<u>\$ 1,921,972,129</u>	<u>\$ 30,089,646</u>	<u>\$ -</u>	<u>\$ 2,159,381,018</u>
Carrying amounts at January 1, 2018	<u>\$ 3,472,745</u>	<u>\$ 184,688,092</u>	<u>\$ 692,303,423</u>	<u>\$ 14,724,572</u>	<u>\$ 167,353,490</u>	<u>\$ 1,062,542,322</u>
Carrying amounts at June 30, 2018	<u>\$ 3,466,478</u>	<u>\$ 194,740,233</u>	<u>\$ 696,975,252</u>	<u>\$ 15,922,323</u>	<u>\$ 123,163,776</u>	<u>\$ 1,034,268,062</u>

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

In the second quarter of 2018, the Company recognized an impairment loss of NT\$488,336 thousand for certain machinery and equipment that was assessed to have no future use, and the recoverable amount of certain machinery and equipment was nil. Such impairment loss was recognized in other operating income and expenses.

15. LEASE ARRANGEMENTS

2019

a. Right-of-use assets

	June 30, 2019	
<u>Carrying amounts</u>		
Land		\$ 14,162,766
Buildings		2,476,634
Machinery and equipment		1,357,667
Office equipment		<u>45,241</u>
		<u>\$ 18,042,308</u>
		Six Months Ended June 30, 2019
Additions to right-of-use assets		<u>\$ 335,976</u>
	Three Months Ended June 30, 2019	Six Months Ended June 30, 2019
Depreciation of right-of-use assets		
Land	\$ 238,916	\$ 481,561
Buildings	111,335	217,443
Machinery and equipment	290,929	602,516
Office equipment	<u>5,512</u>	<u>11,039</u>
	<u>\$ 646,692</u>	<u>\$ 1,312,559</u>
Income from subleasing right-of-use assets (classified under other operating income and expenses, net)	<u>\$ 13,426</u>	<u>\$ 26,898</u>

b. Lease liabilities

	June 30, 2019	
<u>Carrying amounts</u>		
Current portion (classified under accrued expenses and other current liabilities)		\$ 2,685,318
Noncurrent portion		<u>15,405,489</u>
		<u>\$ 18,090,807</u>

Ranges of discount rates for lease liabilities are as follows:

	June 30, 2019
Land	0.70%-2.14%
Buildings	0.69%-3.88%
Machinery and equipment	3.24%
Office equipment	0.69%-3.88%

c. Material terms of right-of-use assets

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

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

d. Subleases of right-of-use assets

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

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

	June 30, 2019
Year 1	\$ 50,511
Year 2	<u>27</u>
	<u>\$ 50,538</u>

e. Other lease information

	Three Months Ended June 30, 2019	Six Months Ended June 30, 2019
Expenses relating to short-term leases	<u>\$ 1,346,204</u>	<u>\$ 2,793,777</u>
Expenses relating to low-value asset leases	<u>\$ 50</u>	<u>\$ 254</u>
Expenses relating to variable lease payments not included in the measurement of lease liabilities	<u>\$ 46,985</u>	<u>\$ 97,643</u>
		Six Months Ended June 30, 2019
Total cash outflow for leases		<u>\$ 4,219,404</u>

The Company applies the recognition exemption to leases of machinery and equipment and others qualifying as short-term leases and low-value asset leases and does not recognize right-of-use assets and lease liabilities for these leases.

2018

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

	December 31, 2018	June 30, 2018
Not later than 1 year	\$ 5,824,119	\$ 4,118,574
Later than 1 year and not later than 5 years	5,834,884	4,737,445
Later than 5 years	<u>9,190,582</u>	<u>9,521,057</u>
	<u>\$ 20,849,585</u>	<u>\$ 18,377,076</u>

16. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
<u>Cost</u>					
Balance at January 1, 2019	\$ 5,795,488	\$ 10,974,458	\$ 29,594,483	\$ 7,656,524	\$ 54,020,953
Additions	-	976,675	2,164,701	11,919	3,153,295
Disposals or retirements	-	-	(53,406)	-	(53,406)
Effect of exchange rate changes	<u>42,909</u>	<u>2,654</u>	<u>4,389</u>	<u>711</u>	<u>50,663</u>
Balance at June 30, 2019	<u>\$ 5,838,397</u>	<u>\$ 11,953,787</u>	<u>\$ 31,710,167</u>	<u>\$ 7,669,154</u>	<u>\$ 57,171,505</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2019	\$ -	\$ 8,756,005	\$ 23,023,498	\$ 5,239,313	\$ 37,018,816
Additions	-	509,744	1,857,978	331,384	2,699,106
Disposals or retirements	-	-	(51,029)	-	(51,029)
Effect of exchange rate changes	<u>-</u>	<u>2,654</u>	<u>936</u>	<u>192</u>	<u>3,782</u>
Balance at June 30, 2019	<u>\$ -</u>	<u>\$ 9,268,403</u>	<u>\$ 24,831,383</u>	<u>\$ 5,570,889</u>	<u>\$ 39,670,675</u>
Carrying amounts at January 1, 2019	<u>\$ 5,795,488</u>	<u>\$ 2,218,453</u>	<u>\$ 6,570,985</u>	<u>\$ 2,417,211</u>	<u>\$ 17,002,137</u>
Carrying amounts at June 30, 2019	<u>\$ 5,838,397</u>	<u>\$ 2,685,384</u>	<u>\$ 6,878,784</u>	<u>\$ 2,098,265</u>	<u>\$ 17,500,830</u>
<u>Cost</u>					
Balance at January 1, 2018	\$ 5,648,702	\$ 10,443,257	\$ 25,186,218	\$ 5,716,146	\$ 46,994,323
Additions	-	133,572	1,121,841	332,608	1,588,021
Disposals or retirements	-	-	(65,173)	(31,183)	(96,356)
Effect of exchange rate changes	<u>118,271</u>	<u>(1,257)</u>	<u>2,209</u>	<u>3,268</u>	<u>122,491</u>
Balance at June 30, 2018	<u>\$ 5,766,973</u>	<u>\$ 10,575,572</u>	<u>\$ 26,245,095</u>	<u>\$ 6,020,839</u>	<u>\$ 48,608,479</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2018	\$ -	\$ 7,694,857	\$ 20,376,693	\$ 4,747,633	\$ 32,819,183
Additions	-	543,815	1,290,224	258,766	2,092,805
Disposals or retirements	-	-	(65,117)	(31,183)	(96,300)
Effect of exchange rate changes	<u>-</u>	<u>(1,257)</u>	<u>934</u>	<u>903</u>	<u>580</u>
Balance at June 30, 2018	<u>\$ -</u>	<u>\$ 8,237,415</u>	<u>\$ 21,602,734</u>	<u>\$ 4,976,119</u>	<u>\$ 34,816,268</u>
Carrying amounts at January 1, 2018	<u>\$ 5,648,702</u>	<u>\$ 2,748,400</u>	<u>\$ 4,809,525</u>	<u>\$ 968,513</u>	<u>\$ 14,175,140</u>
Carrying amounts at June 30, 2018	<u>\$ 5,766,973</u>	<u>\$ 2,338,157</u>	<u>\$ 4,642,361</u>	<u>\$ 1,044,720</u>	<u>\$ 13,792,211</u>

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

17. SHORT-TERM LOANS

	June 30, 2019	December 31, 2018	June 30, 2018
Unsecured loans			
Amount	<u>\$ 78,261,120</u>	<u>\$ 88,754,640</u>	<u>\$ 30,835,300</u>
Original loan content			
US\$ (in thousands)	\$ 2,520,000	\$ 2,610,000	\$ 1,010,000
EUR (in thousands)	-	242,000	-
Annual interest rate	2.70%-2.86%	0.01%-3.22%	2.30%-2.42%
Maturity date	Due by July 2019	Due by January 2019	Due by July 2018

18. BONDS PAYABLE

	June 30, 2019	December 31, 2018	June 30, 2018
Domestic unsecured bonds	\$ 83,400,000	\$ 91,800,000	\$ 99,300,000
Less: Current portion	<u>(48,100,000)</u>	<u>(34,900,000)</u>	<u>(15,900,000)</u>
	<u>\$ 35,300,000</u>	<u>\$ 56,900,000</u>	<u>\$ 83,400,000</u>

The major terms of overseas unsecured bonds are as follows:

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

19. GUARANTEE DEPOSITS

	June 30, 2019	December 31, 2018	June 30, 2018
Capacity guarantee	\$ 5,658,403	\$ 9,289,628	\$ 11,296,100
Receivables guarantee	330,077	653,686	788,071
Others	<u>275,058</u>	<u>245,731</u>	<u>242,094</u>
	<u>\$ 6,263,538</u>	<u>\$ 10,189,045</u>	<u>\$ 12,326,265</u>
Current portion (classified under accrued expenses and other current liabilities)	\$ 6,052,568	\$ 6,835,667	\$ 6,961,106
Noncurrent portion	<u>210,970</u>	<u>3,353,378</u>	<u>5,365,159</u>
	<u>\$ 6,263,538</u>	<u>\$ 10,189,045</u>	<u>\$ 12,326,265</u>

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

20. EQUITY

a. Capital stock

	June 30, 2019	December 31, 2018	June 30, 2018
Authorized shares (in thousands)	<u>28,050,000</u>	<u>28,050,000</u>	<u>28,050,000</u>
Authorized capital	<u>\$ 280,500,000</u>	<u>\$ 280,500,000</u>	<u>\$ 280,500,000</u>
Issued and paid shares (in thousands)	<u>25,930,380</u>	<u>25,930,380</u>	<u>25,930,380</u>
Issued capital	<u>\$ 259,303,805</u>	<u>\$ 259,303,805</u>	<u>\$ 259,303,805</u>

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

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

As of June 30, 2019, 1,065,160 thousand ADSs of TSMC were traded on the NYSE. The number of common shares represented by the ADSs was 5,325,802 thousand shares (one ADS represents five common shares).

b. Capital surplus

	June 30, 2019	December 31, 2018	June 30, 2018
Additional paid-in capital	\$ 24,184,939	\$ 24,184,939	\$ 24,184,939
From merger	22,804,510	22,804,510	22,804,510
From convertible bonds	8,892,847	8,892,847	8,892,847
From share of changes in equities of subsidiaries	121,843	121,473	118,792
From share of changes in equities of associates	287,447	282,820	287,384
Donations	<u>29,343</u>	<u>29,343</u>	<u>19,248</u>
	<u>\$ 56,320,929</u>	<u>\$ 56,315,932</u>	<u>\$ 56,307,720</u>

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

c. Retained earnings and dividend policy

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

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

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

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

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

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

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

The appropriations of second quarter and first quarter of 2019 earnings have been approved by TSMC's Board of Directors in its meeting held on August 13, 2019 and June 5, 2019, respectively. The appropriations and cash dividends per share were as follows:

	Appropriation of Earnings		Cash Dividends Per Share	
	Second Quarter of 2019	First Quarter of 2019	(NT\$)	
			Second Quarter of 2019	First Quarter of 2019
Special capital reserve	<u>\$ (3,338,190)</u>	<u>\$ (4,723,939)</u>		
Cash dividends to shareholders	<u>\$ 64,825,951</u>	<u>\$ 51,860,761</u>	\$2.5	\$2.0

d. Others

Changes in others were as follows:

	Six Months Ended June 30, 2019				
	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 period	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)
Exchange differences arising on translation of foreign operations	5,503,408	-	-	-	5,503,408
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	228,802	-	-	228,802
Debt instruments	-	2,552,571	-	-	2,552,571
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(73,048)	-	-	(73,048)
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	(172,465)	-	-	(172,465)
Loss allowance adjustments from debt instruments	-	4,178	-	-	4,178
Other comprehensive income transferred to profit or loss due to disposal of subsidiary	4,598	-	-	-	4,598
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	12,006	-	12,006
Transferred to initial carrying amount of hedged items	-	-	(6,775)	-	(6,775)
Share of other comprehensive income (loss) of associates	25,340	(10,886)	(105)	-	14,349
Share of unearned stock-based employee compensation of associates	-	-	-	1,843	1,843
Income tax effect	-	(5,494)	-	-	(5,494)
Balance, end of period	<u>\$ (6,509,001)</u>	<u>\$ (905,666)</u>	<u>\$ 28,727</u>	<u>\$ -</u>	<u>\$ (7,385,940)</u>
	Six Months Ended June 30, 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 period	\$ (26,697,680)	\$ (524,915)	\$ 4,226	\$ (10,290)	\$ (27,228,659)
Exchange differences arising on translation of foreign operations	13,833,418	-	-	-	13,833,418
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	(891,320)	-	-	(891,320)
Debt instruments	-	(1,520,336)	-	-	(1,520,336)
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	79,937	-	-	79,937
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	512,267	-	-	512,267
Loss allowance adjustments from debt instruments	-	(1,701)	-	-	(1,701)
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	15,343	-	15,343
Transferred to initial carrying amount of hedged items	-	-	(2,605)	-	(2,605)
Share of other comprehensive income (loss) of associates	77,103	5,613	-	-	82,716
Share of unearned stock-based employee compensation of associates	-	-	-	4,061	4,061
Income tax effect	-	37,913	(1,528)	-	36,385
Balance, end of period	<u>\$ (12,787,159)</u>	<u>\$ (2,302,542)</u>	<u>\$ 15,436</u>	<u>\$ (6,229)</u>	<u>\$ (15,080,494)</u>

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

21. NET REVENUE

a. Disaggregation of revenue from contracts with customers

Product	Three Months Ended June 30		Six Months Ended June 30	
	2019	2018	2019	2018
Wafer	\$ 210,829,901	\$ 211,826,066	\$ 400,929,912	\$ 431,005,462
Others	<u>30,168,574</u>	<u>21,450,745</u>	<u>58,773,032</u>	<u>50,350,020</u>
	<u>\$ 240,998,475</u>	<u>\$ 233,276,811</u>	<u>\$ 459,702,944</u>	<u>\$ 481,355,482</u>
Geography	Three Months Ended June 30		Six Months Ended June 30	
	2019	2018	2019	2018
Taiwan	\$ 20,184,598	\$ 19,628,992	\$ 37,543,160	\$ 38,458,827
United States	146,076,898	125,297,981	275,100,237	274,126,183
China	41,446,276	52,782,045	80,998,135	97,751,609
Europe, the Middle East and Africa	15,163,142	17,982,855	31,442,695	35,674,828
Japan	13,411,353	13,928,047	26,599,278	28,613,399
Others	<u>4,716,208</u>	<u>3,656,891</u>	<u>8,019,439</u>	<u>6,730,636</u>
	<u>\$ 240,998,475</u>	<u>\$ 233,276,811</u>	<u>\$ 459,702,944</u>	<u>\$ 481,355,482</u>

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

Platform	Three Months Ended June 30		Six Months Ended June 30	
	2019	2018	2019	2018
Smartphone	\$ 108,860,866	\$ 82,753,245	\$ 212,071,135	\$ 196,021,160
High Performance Computing	77,376,963	93,089,339	140,201,936	172,077,698
Internet of Things	19,150,847	15,747,791	35,868,472	31,126,818
Automotive	10,960,006	13,285,974	21,586,521	26,193,762
Digital Consumer Electronics	14,183,705	15,511,894	28,811,454	31,235,686
Others	<u>10,466,088</u>	<u>12,888,568</u>	<u>21,163,426</u>	<u>24,700,358</u>
	<u>\$ 240,998,475</u>	<u>\$ 233,276,811</u>	<u>\$ 459,702,944</u>	<u>\$ 481,355,482</u>

Resolution	Three Months Ended June 30		Six Months Ended June 30	
	2019	2018	2019	2018
7-nanometer	\$ 43,852,620	\$ 908,187	\$ 86,061,338	\$ 908,187
10-nanometer	6,957,387	26,723,379	13,938,593	67,481,672
16-nanometer	48,069,217	44,874,162	78,118,917	84,552,645
20-nanometer	2,740,789	8,158,617	5,504,624	15,692,680
28-nanometer	37,527,722	47,643,052	74,670,082	91,696,778
40/45-nanometer	22,769,629	24,193,665	46,056,509	49,375,049
65-nanometer	16,444,732	18,182,104	32,273,267	38,579,650
90-nanometer	5,692,407	10,632,510	11,992,409	20,647,248
0.11/0.13 micron	4,005,768	3,768,981	9,054,344	9,205,078
0.15/0.18 micron	17,920,542	19,470,244	33,593,308	38,719,119
0.25 micron and above	<u>4,849,088</u>	<u>7,271,165</u>	<u>9,666,521</u>	<u>14,147,356</u>
Wafer revenue	<u>\$ 210,829,901</u>	<u>\$ 211,826,066</u>	<u>\$ 400,929,912</u>	<u>\$ 431,005,462</u>

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

Commencing in the fourth quarter of 2018, the Company began to break down the net revenue by product, by geography and by resolution 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 three months and six months ended June 30, 2018 have been revised accordingly.

b. Contract balances

	June 30, 2019	December 31, 2018	June 30, 2018	January 1, 2018
Contract liabilities (classified under accrued expenses and other current liabilities)	<u>\$ 9,689,982</u>	<u>\$ 4,684,024</u>	<u>\$ 14,164,016</u>	<u>\$ 32,434,829</u>

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

The Company recognized revenue from the beginning balance of contract liability, which amounted to NT\$906,798 thousand and NT\$4,546,815 thousand for the three months ended June 30, 2019 and 2018, respectively; and NT\$3,474,824 thousand and NT\$31,512,796 thousand for the six months ended June 30, 2019 and 2018, respectively.

22. OTHER INCOME

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Interest income				
Bank deposits	\$ 3,374,090	\$ 2,491,474	\$ 6,524,362	\$ 4,665,301
Financial assets at FVTPL	137,765	22,197	324,082	52,933
Financial assets at FVTOCI	802,130	842,003	1,587,346	1,553,810
Financial assets at amortized cost	<u>232,932</u>	<u>216,256</u>	<u>519,903</u>	<u>454,075</u>
	4,546,917	3,571,930	8,955,693	6,726,119
Dividend income	<u>244,430</u>	<u>157,905</u>	<u>244,430</u>	<u>158,358</u>
	<u>\$ 4,791,347</u>	<u>\$ 3,729,835</u>	<u>\$ 9,200,123</u>	<u>\$ 6,884,477</u>

23. FINANCE COSTS

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Interest expense				
Bank loans	\$ 486,931	\$ 244,854	\$ 993,512	\$ 528,264
Corporate bonds	316,825	383,379	641,827	907,900
Lease liabilities	60,839	-	128,164	-
Others	<u>156</u>	<u>51</u>	<u>313</u>	<u>86</u>
	<u>\$ 864,751</u>	<u>\$ 628,284</u>	<u>\$ 1,763,816</u>	<u>\$ 1,436,250</u>

24. OTHER GAINS AND LOSSES, NET

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Gain (loss) on disposal of financial assets, net				
Investments in debt instruments at FVTOCI	\$ 225,570	\$ (259,939)	\$ 172,465	\$ (512,267)
Loss on disposal of subsidiaries	-	-	(4,598)	-
Gain (loss) on financial instruments at FVTPL, net				
Mandatorily measured at FVTPL	139,839	(2,393,628)	(356,924)	(1,284,918)
Gain arising from fair value hedges, net	6,068	7,373	17,826	7,725
The reversal (accrual) of expected credit loss of financial assets				
Investments in debt instruments at FVTOCI	(4,689)	1,418	(4,178)	1,701
Financial assets at amortized cost	791	(1,722)	5,165	(248)
Other gains, net	<u>57,288</u>	<u>107,300</u>	<u>336,856</u>	<u>13,997</u>
	<u>\$ 424,867</u>	<u>\$ (2,539,198)</u>	<u>\$ 166,612</u>	<u>\$ (1,774,010)</u>

25. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Current income tax expense				
Current tax expense				
recognized in the current				
period	\$ 14,021,282	\$ 16,873,624	\$ 21,007,345	\$ 27,858,570
Income tax adjustments on				
prior years	(42,989)	(963,356)	(44,655)	(963,356)
Other income tax				
adjustments	<u>(833)</u>	<u>35,161</u>	<u>(2,576)</u>	<u>74,546</u>
	<u>13,977,460</u>	<u>15,945,429</u>	<u>20,960,114</u>	<u>26,969,760</u>
Deferred income tax benefit				
Effect of tax rate changes	-	(340,032)	-	(716,097)
The origination and reversal				
of temporary differences	<u>(207,871)</u>	<u>(311,164)</u>	<u>(396,183)</u>	<u>(803,383)</u>
	<u>(207,871)</u>	<u>(651,196)</u>	<u>(396,183)</u>	<u>(1,519,480)</u>
Income tax expense recognized				
in profit or loss	<u>\$ 13,769,589</u>	<u>\$ 15,294,233</u>	<u>\$ 20,563,931</u>	<u>\$ 25,450,280</u>

In 2018, the Income Tax Law in the R.O.C. was amended and, starting from 2018, the corporate income tax rate was adjusted from 17% to 20%. For the year ended December 31, 2018, the effect of the change in tax rate on deferred tax income to be recognized in profit or loss was NT\$1,474,808 thousand, of which NT\$758,711 thousand had not been recognized as of June 30, 2018, with corresponding effect recognized throughout the interim periods of 2018. 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

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Deferred income tax benefit				
(expense)				
Related to unrealized				
gain/loss on investments in				
equity instruments at				
FVTOCI	\$ 12,557	\$ (5,767)	\$ (5,494)	\$ 37,913
Related to gain/loss on cash				
flow hedges	<u>-</u>	<u>2,946</u>	<u>-</u>	<u>(1,528)</u>
	<u>\$ 12,557</u>	<u>\$ (2,821)</u>	<u>\$ (5,494)</u>	<u>\$ 36,385</u>

c. Income tax examination

The tax authorities have examined income tax returns of TSMC through 2016. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

26. EARNINGS PER SHARE

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Basic EPS	<u>\$2.57</u>	<u>\$2.79</u>	<u>\$4.94</u>	<u>\$6.25</u>
Diluted EPS	<u>\$2.57</u>	<u>\$2.79</u>	<u>\$4.94</u>	<u>\$6.25</u>

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT\$)
<u>Three months ended June 30, 2019</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 66,764,850</u>	<u>25,930,380</u>	<u>\$2.57</u>
<u>Three months ended June 30, 2018</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 72,290,539</u>	<u>25,930,380</u>	<u>\$2.79</u>
<u>Six months ended June 30, 2019</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 128,158,701</u>	<u>25,930,380</u>	<u>\$4.94</u>
<u>Six months ended June 30, 2018</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 162,075,161</u>	<u>25,930,380</u>	<u>\$6.25</u>

27. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
a. Depreciation of property, plant and equipment and right-of-use assets				
Recognized in cost of revenue	\$ 67,257,072	\$ 64,558,463	\$ 137,191,248	\$ 129,357,365
Recognized in operating expenses	6,441,494	5,786,785	12,693,663	11,439,316
Recognized in other operating income and expenses	<u>6,014</u>	<u>6,222</u>	<u>12,137</u>	<u>17,075</u>
	<u>\$ 73,704,580</u>	<u>\$ 70,351,470</u>	<u>\$ 149,897,048</u>	<u>\$ 140,813,756</u>
b. Amortization of intangible assets				
Recognized in cost of revenue	\$ 729,526	\$ 493,629	\$ 1,442,619	\$ 978,226
Recognized in operating expenses	<u>614,244</u>	<u>563,585</u>	<u>1,256,487</u>	<u>1,114,579</u>
	<u>\$ 1,343,770</u>	<u>\$ 1,057,214</u>	<u>\$ 2,699,106</u>	<u>\$ 2,092,805</u>
c. Research and development costs expensed as incurred	<u>\$ 21,393,728</u>	<u>\$ 19,891,553</u>	<u>\$ 41,811,039</u>	<u>\$ 40,320,147</u>
d. Employee benefits expenses				
Post-employment benefits				
Defined contribution plans	\$ 653,810	\$ 691,513	\$ 1,307,129	\$ 1,311,003
Defined benefit plans	<u>64,899</u>	<u>70,466</u>	<u>129,779</u>	<u>140,902</u>
	718,709	761,979	1,436,908	1,451,905
Other employee benefits	<u>23,877,246</u>	<u>24,316,454</u>	<u>46,830,710</u>	<u>50,707,496</u>
	<u>\$ 24,595,955</u>	<u>\$ 25,078,433</u>	<u>\$ 48,267,618</u>	<u>\$ 52,159,401</u>
Employee benefits expense summarized by function				
Recognized in cost of revenue	\$ 14,500,165	\$ 14,817,855	\$ 28,575,145	\$ 30,696,262
Recognized in operating expenses	<u>10,095,790</u>	<u>10,260,578</u>	<u>19,692,473</u>	<u>21,463,139</u>
	<u>\$ 24,595,955</u>	<u>\$ 25,078,433</u>	<u>\$ 48,267,618</u>	<u>\$ 52,159,401</u>

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

TSMC accrued profit sharing bonus to employees based on a percentage of net income before income tax, profit sharing bonus to employees and compensation to directors during the period, which amounted to NT\$4,481,248 thousand and NT\$4,848,398 thousand for the three months ended June 30, 2019 and 2018, respectively; and NT\$8,600,929 thousand and NT\$10,872,392 thousand for the six months ended June 30, 2019 and 2018, respectively; compensation to directors was expensed based on estimated amount payable. If there is a change in the proposed amounts after the annual consolidated financial statements are authorized for issue, the differences are recorded as a change in accounting estimate.

TSMC's profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,570,040 thousand and NT\$349,272 thousand in cash for 2018, respectively, and profit sharing bonus to employees and compensation to directors in the amounts of NT\$23,019,082 thousand and NT\$368,919 thousand in cash for 2017, respectively, had been approved by the Board of Directors of TSMC held on February 19, 2019 and February 13, 2018, respectively. There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2018 and 2017, respectively.

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

28. CASH FLOW INFORMATION

Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2019	Financing Cash Flow	Non-cash changes			Balance as of June 30, 2019
			Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	
Short-term loans	\$ 88,754,640	\$ (11,198,385)	\$ 704,865	\$ -	\$ -	\$ 78,261,120
Guarantee deposits	10,189,045	(305,292)	88,585	-	(3,708,800)	6,263,538
Lease liabilities	19,903,615	(1,825,488)	37,717	(153,201)	128,164	18,090,807
Bonds payable	<u>91,800,000</u>	<u>(8,400,000)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>83,400,000</u>
Total	<u>\$ 210,647,300</u>	<u>\$ (21,729,165)</u>	<u>\$ 831,167</u>	<u>\$ (153,201)</u>	<u>\$ (3,580,636)</u>	<u>\$ 186,015,465</u>

	Balance as of January 1, 2018	Financing Cash Flow	Non-cash changes		Balance as of June 30, 2018
			Foreign Exchange Movement	Other Changes (Note)	
Short-term loans	\$ 63,766,850	\$ (33,743,725)	\$ 812,175	\$ -	\$ 30,835,300
Guarantee deposits	16,080,619	(1,161,028)	369,124	(2,962,450)	12,326,265
Bonds payable	<u>150,201,122</u>	<u>(50,524,900)</u>	<u>(382,878)</u>	<u>6,656</u>	<u>99,300,000</u>
Total	<u>\$ 230,048,591</u>	<u>\$ (85,429,653)</u>	<u>\$ 798,421</u>	<u>\$ (2,955,794)</u>	<u>\$ 142,461,565</u>

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

29. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	June 30, 2019	December 31, 2018	June 30, 2018
Financial assets			
FVTPL (Note 1)	\$ 1,322,756	\$ 3,504,590	\$ 1,205,036
FVTOCI (Note 2)	121,156,495	107,067,490	110,232,496
Hedging financial assets	576	23,497	31,692
Amortized cost (Note 3)	<u>789,275,064</u>	<u>745,585,774</u>	<u>757,509,475</u>
	<u>\$ 911,754,891</u>	<u>\$ 856,181,351</u>	<u>\$ 868,978,699</u>
Financial liabilities			
FVTPL (Note 4)	\$ 30,767	\$ 40,825	\$ 1,057,719
Hedging financial liabilities	34,542	155,832	30,718
Amortized cost (Note 5)	<u>580,489,897</u>	<u>318,475,704</u>	<u>463,211,148</u>
	<u>\$ 580,555,206</u>	<u>\$ 318,672,361</u>	<u>\$ 464,299,585</u>

Note 1: Financial assets mandatorily measured at FVTPL.

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

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

Note 4: Held for trading.

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

b. Financial risk management objectives

The Company seeks to ensure 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

More than 90% of the Company's revenue is denominated in U.S. dollar and over one-half of its capital expenditures are denominated in currencies other than NT dollar, primarily in U.S. dollar, Japanese yen

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

Based on a sensitivity analysis performed on the Company's total monetary assets and liabilities for the six months ended June 30, 2019 and 2018, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT\$849,695 thousand and NT\$261,642 thousand, respectively, and decreased its other comprehensive income by NT\$158,511 thousand and NT\$356,200 thousand, respectively, after taking into account hedges and offsetting positions.

Interest rate risk

The Company is exposed to interest rate risk primarily related to its investments in fixed income securities and outstanding debt.

Financial assets at amortized costs are measured at amortized cost, and therefore changes in interest rates would not affect the fair value. On the other hand, financial assets at FVTPL and financial assets at FVTOCI are exposed to fair value fluctuations caused by changes in interest rates. The Company entered into interest rate futures to partially hedge the interest rate risk on its financial assets at FVTPL and financial assets at FVTOCI. These hedges can offset only a small portion of the financial impact from movements in interest rates.

Based on a sensitivity analysis performed on fixed income investments at the end of the reporting period, interest rate increase of 100 basis points (1.00%) across all maturities would have decreased the fair value by NT\$2,693,155 thousand and NT\$2,409,566 thousand for the six months ended June 30, 2019 and 2018, respectively. The decreases were composed of NT\$3,036,106 thousand decrease and NT\$2,280,513 thousand decrease in other comprehensive income, and NT\$342,951 thousand increase and NT\$129,053 thousand decrease in net income for the six months ended June 30, 2019 and 2018, respectively.

All of the Company's long-term debts are fixed-rate, NT dollar denominated bonds and measured at amortized cost. As such, changes in interest rates would not affect the future cash flows and fair value.

Other price risk

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

Assuming a hypothetical decrease of 10% in prices of the equity investments at the end of the reporting period for the six months ended June 30, 2019 and 2018, the other comprehensive income would have decreased by NT\$414,268 thousand and NT\$707,088 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 June 30, 2019, December 31, 2018 and June 30, 2018, the Company's ten largest customers accounted for 72%, 79% and 62% of accounts receivable, respectively. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

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

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

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

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

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

For the six months ended June 30, 2019 and 2018, the expected credit loss decreases NT\$643 thousand and NT\$375 thousand, respectively. The changes mainly reflected the latest probability of default and loss given default data from external credit rating agencies and increase in debt investments of higher credit rating, respectively.

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
<u>June 30, 2019</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 78,320,203	\$ -	\$ -	\$ -	\$ 78,320,203
Accounts payable (including related parties)	32,570,136	-	-	-	32,570,136
Payables to contractors and equipment suppliers	71,028,923	-	-	-	71,028,923
Accrued expenses and other current liabilities	49,586,309	-	-	-	49,586,309
Bonds payable	48,911,241	13,623,019	22,784,016	-	85,318,276
Lease liabilities (including those classified under accrued expenses and other current liabilities)	2,689,917	3,061,122	2,466,732	11,282,057	19,499,828
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	<u>6,052,568</u>	<u>123,392</u>	<u>87,578</u>	<u>-</u>	<u>6,263,538</u>
	<u>289,159,297</u>	<u>16,807,533</u>	<u>25,338,326</u>	<u>11,282,057</u>	<u>342,587,213</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	46,862,226	-	-	-	46,862,226
Inflows	<u>(46,995,933)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(46,995,933)</u>
	<u>(133,707)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(133,707)</u>
	<u>\$ 289,025,590</u>	<u>\$ 16,807,533</u>	<u>\$ 25,338,326</u>	<u>\$ 11,282,057</u>	<u>\$ 342,453,506</u>

Additional information about the maturity analysis for lease liabilities:

	Less than 5 Years	6-10 Years	11-15 Years	16-20 Years	20+ Years
Lease liabilities	<u>\$ 8,217,771</u>	<u>\$ 5,623,174</u>	<u>\$ 3,770,399</u>	<u>\$ 1,736,135</u>	<u>\$ 152,349</u>

	Less Than 1 Year	2-3 Years	4-5 Years	5+ Years	Total
<u>December 31, 2018</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 88,810,737	\$ -	\$ -	\$ -	\$ 88,810,737
Accounts payable (including related parties)	34,357,432	-	-	-	34,357,432
Payables to contractors and equipment suppliers	43,133,659	-	-	-	43,133,659
Accrued expenses and other current liabilities	50,240,928	-	-	-	50,240,928
Bonds payable	36,039,935	35,340,742	22,979,426	-	94,360,103
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	6,835,667	2,891,663	461,715	-	10,189,045
	<u>259,418,358</u>	<u>38,232,405</u>	<u>23,441,141</u>	<u>-</u>	<u>321,091,904</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	49,302,325	-	-	-	49,302,325
Inflows	(49,393,679)	-	-	-	(49,393,679)
	<u>(91,354)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(91,354)</u>
	<u>\$ 259,327,004</u>	<u>\$ 38,232,405</u>	<u>\$ 23,441,141</u>	<u>\$ -</u>	<u>\$ 321,000,550</u>
<u>June 30, 2018</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 30,858,667	\$ -	\$ -	\$ -	\$ 30,858,667
Accounts payable (including related parties)	30,663,178	-	-	-	30,663,178
Payables to contractors and equipment suppliers	39,602,732	-	-	-	39,602,732
Accrued expenses and other current liabilities	42,964,563	-	-	-	42,964,563
Bonds payable	17,267,702	62,143,440	17,059,545	6,115,291	102,585,978
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	6,961,106	5,277,912	87,247	-	12,326,265
	<u>168,317,948</u>	<u>67,421,352</u>	<u>17,146,792</u>	<u>6,115,291</u>	<u>259,001,383</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	78,855,358	-	-	-	78,855,358
Inflows	(78,118,962)	-	-	-	(78,118,962)
	<u>736,396</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>736,396</u>
	<u>\$ 169,054,344</u>	<u>\$ 67,421,352</u>	<u>\$ 17,146,792</u>	<u>\$ 6,115,291</u>	<u>\$ 259,737,779</u>

f. Fair value of financial instruments

1) Fair value measurements recognized in the consolidated balance sheets

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

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

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:

	June 30, 2019			
	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>				
Mandatorily measured at FVTPL				
Agency mortgage-backed securities	\$ -	\$ 1,144,137	\$ -	\$ 1,144,137
Forward exchange contracts	-	178,619	-	178,619
	<u>\$ -</u>	<u>\$ 1,322,756</u>	<u>\$ -</u>	<u>\$ 1,322,756</u>
<u>Financial assets at FVTOCI</u>				
Investments in debt instruments				
Corporate bonds	\$ -	\$ 48,978,969	\$ -	\$ 48,978,969
Agency bonds/Agency mortgage-backed securities	-	43,422,635	-	43,422,635
Government bonds	10,769,515	150,742	-	10,920,257
Asset-backed securities	-	10,009,050	-	10,009,050
Investments in equity instruments				
Non-publicly traded equity investments	-	-	4,040,800	4,040,800
Publicly traded stocks	263,321	-	-	263,321
Notes and accounts receivable, net	-	3,521,463	-	3,521,463
	<u>\$ 11,032,836</u>	<u>\$ 106,082,859</u>	<u>\$ 4,040,800</u>	<u>\$ 121,156,495</u>
<u>Hedging financial assets</u>				
Cash flow hedges				
Forward exchange contracts	<u>\$ -</u>	<u>\$ 576</u>	<u>\$ -</u>	<u>\$ 576</u>
<u>Financial liabilities at FVTPL</u>				
Held for trading				
Forward exchange contracts	<u>\$ -</u>	<u>\$ 30,767</u>	<u>\$ -</u>	<u>\$ 30,767</u>
<u>Hedging financial liabilities</u>				
Fair value hedges				
Interest rate futures contracts	\$ 32,873	\$ -	\$ -	\$ 32,873
Cash flow hedges				
Forward exchange contracts	-	1,669	-	1,669
	<u>\$ 32,873</u>	<u>\$ 1,669</u>	<u>\$ -</u>	<u>\$ 34,542</u>

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

	June 30, 2018			
	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>				
Mandatorily measured at FVTPL				
Agency mortgage-backed securities	\$ -	\$ 717,735	\$ -	\$ 717,735
Forward exchange contracts	-	356,335	-	356,335
Asset-backed securities	-	130,966	-	130,966
	<u>\$ -</u>	<u>\$ 1,205,036</u>	<u>\$ -</u>	<u>\$ 1,205,036</u>

(Continued)

June 30, 2018

	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTOCI</u>				
Investments in debt instruments				
Corporate bonds	\$ -	\$ 40,298,039	\$ -	\$ 40,298,039
Agency bonds/Agency mortgage-backed securities	-	35,043,747	-	35,043,747
Asset-backed securities	-	14,321,226	-	14,321,226
Government bonds	10,228,027	142,847	-	10,370,874
Commercial paper	-	228,618	-	228,618
Investments in equity instruments				
Non-publicly traded equity investments	-	-	5,694,784	5,694,784
Publicly traded stocks	1,765,104	-	-	1,765,104
Notes and accounts receivable, net	-	2,510,104	-	2,510,104
	<u>\$ 11,993,131</u>	<u>\$ 92,544,581</u>	<u>\$ 5,694,784</u>	<u>\$ 110,232,496</u>
<u>Hedging financial assets</u>				
Fair value hedges				
Interest rate futures contracts	\$ 14,279	\$ -	\$ -	\$ 14,279
Cash flow hedges				
Forward exchange contracts	-	17,413	-	17,413
	<u>\$ 14,279</u>	<u>\$ 17,413</u>	<u>\$ -</u>	<u>\$ 31,692</u>
<u>Financial liabilities at FVTPL</u>				
Held for trading				
Forward exchange contracts	<u>\$ -</u>	<u>\$ 1,057,719</u>	<u>\$ -</u>	<u>\$ 1,057,719</u>
<u>Hedging financial liabilities</u>				
Fair value hedges				
Interest rate futures contracts	\$ 1,244	\$ -	\$ -	\$ 1,244
Cash flow hedges				
Forward exchange contracts	-	29,474	-	29,474
	<u>\$ 1,244</u>	<u>\$ 29,474</u>	<u>\$ -</u>	<u>\$ 30,718</u>

(Concluded)

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 six months ended June 30, 2019 and 2018 were as follows:

	<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>
Balance, beginning of period	\$ 3,910,681	\$ 5,841,384
Additions	143,382	152,430
Recognized in other comprehensive income	32,806	(262,436)
Disposals and proceeds from return of capital of investments	(75,425)	(173,088)
Effect of exchange rate changes	29,356	136,494
Balance, end of period	<u>\$ 4,040,800</u>	<u>\$ 5,694,784</u>

Valuation techniques and assumptions used in Level 2 fair value measurement

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

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

Valuation techniques and assumptions used in Level 3 fair value measurement

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

The asset approach takes into account the net asset value measured at the fair value by independent parties. On June 30, 2019, December 31, 2018 and June 30, 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\$33,528 thousand, NT\$31,420 thousand and NT\$31,749 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 June 30, 2019, December 31, 2018 and June 30, 2018, the Company uses significant unobservable inputs, which include expected returns, discount rate of 10%, discount for lack of marketability of 10%, and discounts for lack of control of 10%. On June 30, 2018, when other inputs remain equal, if discount rate increases by 1%, the fair value will decrease by NT\$72,776 thousand; if discount for lack of marketability increases by 1%, the fair value will decrease by NT\$19,016 thousand; if discount for lack of control increases by 1%, the fair value will decrease by NT\$19,016 thousand.

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

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:

	June 30, 2019	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Corporate bonds	<u>\$ 7,921,781</u>	<u>\$ 8,025,818</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 83,400,000</u>	<u>\$ 84,512,133</u>
	December 31, 2018	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Corporate bonds	\$ 19,511,794	\$ 19,554,553
Commercial paper	<u>2,294,098</u>	<u>2,296,188</u>
	<u>\$ 21,805,892</u>	<u>\$ 21,850,741</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 91,800,000</u>	<u>\$ 93,171,255</u>
	June 30, 2018	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Corporate bonds	\$ 19,378,409	\$ 19,530,079
Structured product	<u>1,525,863</u>	<u>1,518,939</u>
	<u>\$ 20,904,272</u>	<u>\$ 21,049,018</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 99,300,000</u>	<u>\$ 101,016,267</u>

Valuation techniques and assumptions used in Level 2 fair value measurement

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

30. RELATED PARTY TRANSACTIONS

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

a. Related party name and categories

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

b. Net revenue

<u>Item</u>	<u>Related Party Categories</u>	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
		<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Net revenue from sale of goods	Associates	\$ 1,102,709	\$ 2,121,528	\$ 2,572,307	\$ 4,296,064
	Other related parties	-	330	-	330
		<u>\$ 1,102,709</u>	<u>\$ 2,121,858</u>	<u>\$ 2,572,307</u>	<u>\$ 4,296,394</u>
Net revenue from royalties	Associates	<u>\$ 36,787</u>	<u>\$ 134,212</u>	<u>\$ 80,706</u>	<u>\$ 260,314</u>

c. Purchases

<u>Related Party Categories</u>	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Associates	<u>\$ 1,232,156</u>	<u>\$ 2,174,704</u>	<u>\$ 2,782,558</u>	<u>\$ 4,398,054</u>

d. Receivables from related parties

		June 30, 2019	December 31, 2018	June 30, 2018
<u>Item</u>	<u>Related Party Name/Categories</u>			
Receivables from related parties	GUC	\$ 327,375	\$ 481,934	\$ 1,072,994
	Xintec	<u>77,531</u>	<u>102,478</u>	<u>26,478</u>
		<u>\$ 404,906</u>	<u>\$ 584,412</u>	<u>\$ 1,099,472</u>
Other receivables from related parties	VIS	\$ 1,498,109	\$ 10,423	\$ 1,486,788
	SSMC	43,255	53,780	1,698,519
	Other associates	<u>390</u>	<u>825</u>	<u>215</u>
		<u>\$ 1,541,754</u>	<u>\$ 65,028</u>	<u>\$ 3,185,522</u>

e. Payables to related parties

		June 30, 2019	December 31, 2018	June 30, 2018
<u>Item</u>	<u>Related Party Name/Categories</u>			
Payables to related parties	Xintec	\$ 340,936	\$ 649,812	\$ 125,820
	SSMC	282,611	362,564	344,699
	VIS	123,504	357,080	475,506
	Others	<u>20,400</u>	<u>7,043</u>	<u>5,307</u>
		<u>\$ 767,451</u>	<u>\$ 1,376,499</u>	<u>\$ 951,332</u>

f. Others

		<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
		<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
<u>Item</u>	<u>Related Party Categories</u>				
Manufacturing expenses	Associates	<u>\$ 400,823</u>	<u>\$ 326,254</u>	<u>\$ 597,509</u>	<u>\$ 999,186</u>
General and administrative expenses	Other related parties	<u>\$ 30,000</u>	<u>\$ 25,227</u>	<u>\$ 60,000</u>	<u>\$ 70,301</u>

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

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

g. Compensation of key management personnel

The compensation to directors and other key management personnel for the three months and six months ended June 30, 2019 and 2018 were as follows:

	<u>Three Months Ended June 30</u>		<u>Six Months Ended June 30</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Short-term employee benefits	\$ 400,691	\$ 485,585	\$ 734,889	\$ 1,020,528
Post-employment benefits	<u>754</u>	<u>950</u>	<u>1,515</u>	<u>1,937</u>
	<u>\$ 401,445</u>	<u>\$ 486,535</u>	<u>\$ 736,404</u>	<u>\$ 1,022,465</u>

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

31. PLEDGED ASSETS

The Company provided certificate of deposits recorded in other financial assets as collateral mainly for building lease agreements. As of June 30, 2019, December 31, 2018 and June 30, 2018, the aforementioned other financial assets amounted to NT\$118,568 thousand, NT\$124,244 thousand and NT\$122,348 thousand, respectively.

32. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

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

- a. Under a technical cooperation agreement with Industrial Technology Research Institute, the R.O.C. Government or its designee approved by 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 June 30, 2019, the R.O.C. Government did not invoke such right.
- b. Under a Shareholders Agreement entered into with Philips and EDB Investments Pte Ltd. on March 30, 1999, the parties formed a joint venture company, SSMC, which is an integrated circuit foundry in Singapore. TSMC's equity interest in SSMC was 32%. Nevertheless, in September 2006, Philips spun-off its semiconductor subsidiary which was renamed as NXP B.V. Further, TSMC and NXP B.V. purchased all the SSMC shares owned by EDB Investments Pte Ltd. pro rata according to the Shareholders Agreement on November 15, 2006. After the purchase, TSMC and NXP B.V. currently own approximately 39% and 61% of the SSMC shares, respectively. TSMC and NXP B.V. are required, in the aggregate, to purchase at least 70% of SSMC's capacity, but TSMC alone is not required to purchase more than 28% of the capacity. If any party defaults on the commitment and the capacity utilization of SSMC falls below a specific percentage of its capacity, the defaulting party is required to compensate SSMC for all related unavoidable costs. There was no default from the aforementioned commitment as of June 30, 2019.

- c. In February 2019, Innovative Foundry Technologies LLC (“IFT”) filed a complaint in the U.S. District Court for the District of Delaware alleging that TSMC and TSMC Technology Inc. infringe five U.S. patents. IFT also filed a complaint in the U.S. International Trade Commission (the “ITC”) alleging that TSMC, TSMC North America, TSMC Technology Inc., and other companies infringe the same patents. The ITC instituted an investigation in March 2019. The outcome cannot be determined and we cannot make a reliable estimate of the contingent liability at this time.
- d. On September 28, 2017, TSMC was contacted by the European Commission (the “Commission”), which has asked us for information and documents concerning alleged anti-competitive practices in relation to semiconductor sales. We are cooperating with the Commission to provide the requested information and documents. In light of the fact that this proceeding is still in its preliminary stage, it is premature to predict how the case will proceed, the outcome of the proceeding or its impact.
- e. TSMC entered into long-term purchase agreements of material with multiple suppliers. The relative minimum purchase quantity and price are specified in the agreements.
- f. TSMC entered into a long-term purchase agreement of equipment. The relative purchase quantity and price are specified in the agreement.
- g. TSMC entered into long-term energy purchase agreements with multiple suppliers. The relative purchase period, quantity and price are specified in the agreements.
- h. Amounts available under unused letters of credit as of June 30, 2019, December 31, 2018 and June 30, 2018 were NT\$62,112 thousand, NT\$70,702 thousand and NT\$70,219 thousand, respectively.

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

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

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
<u>June 30, 2019</u>			
<u>Financial assets</u>			
Monetary items			
USD	\$ 4,287,768	31.056	\$ 133,160,925
USD	364,032	6.868 (Note 2)	11,305,378
EUR	175,203	35.382	6,199,023
JPY	22,523,883	0.2888	6,504,898
<u>Financial liabilities</u>			
Monetary items			
USD	4,206,952	31.056	130,651,116
EUR	735,517	35.382	26,024,073
JPY	41,319,019	0.2888	11,932,933

(Continued)

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
<u>December 31, 2018</u>			
<u>Financial assets</u>			
Monetary items			
USD	\$ 4,618,566	30.740	\$ 141,974,734
USD	343,132	6.866 (Note 2)	10,547,875
EUR	7,561	35.22	266,307
JPY	490,635	0.2783	136,544
Non-monetary items			
HKD	144,567	3.93	568,150
<u>Financial liabilities</u>			
Monetary items			
USD	4,323,763	30.740	132,912,486
EUR	477,776	35.22	16,827,260
JPY	35,084,436	0.2783	9,763,999
<u>June 30, 2018</u>			
<u>Financial assets</u>			
Monetary items			
USD	3,648,964	30.530	111,402,872
USD	719,564	6.625 (Note 2)	21,968,279
EUR	14,282	35.62	508,731
JPY	2,069,358	0.2768	572,798
Non-monetary items			
HKD	215,268	3.89	837,393
<u>Financial liabilities</u>			
Monetary items			
USD	2,992,719	30.530	91,367,715
EUR	212,005	35.62	7,551,601
JPY	30,435,996	0.2768	8,424,684
			(Concluded)

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

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

Please refer to the consolidated statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss for the three months and the six months ended June 30, 2019 and 2018, respectively. Since there were varieties of foreign currency transactions and functional currencies within the subsidiaries of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

34. SIGNIFICANT OPERATION LOSSES

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

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

35. ADDITIONAL DISCLOSURES

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

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

- 2) Significant direct or indirect transactions with the investee, its prices and terms of payment, unrealized gain or loss, and other related information which is helpful to understand the impact of investment in mainland China on financial reports: Please see Table 8 attached.

36. OPERATING SEGMENTS INFORMATION

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.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

FINANCINGS PROVIDED

FOR THE SIX MONTHS ENDED JUNE 30, 2019

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

No.	Financing Company	Counter-party	Financial Statement Account	Related Party	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign currencies in Thousands)	Interest Rate	Nature for Financing (Note 4)	Transaction Amounts	Reason for Financing (Note 4)	Allowance for Bad Debt	Collateral		Financing Limits for Each Borrowing Company (Notes 1 and 2)	Financing Company's Total Financing Amount Limits (Notes 1 and 2)
													Item	Value		
1	TSMC China	TSMC Nanjing	Other receivables from related parties	Yes	\$ 46,527,024 (RMB 7,000,000)& (USD 479,000)	\$ 45,170,544 (RMB 6,700,000)& (USD 479,000)	\$ 29,779,344 (RMB 5,700,000)& (USD 129,000)	1.50%-1.96%	The need for long-term financing	\$ -	Operating capital	\$ -	-	\$ -	\$ 57,328,626	\$ 57,328,626
2	TSMC Global	TSMC	Other receivables from related parties	Yes	46,584,000 (US\$ 1,500,000)	-	-	2.53%	The need for short-term financing	-	Operating capital	-	-	-	405,916,175	405,916,175

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.

Note 5: The Board of Directors of TSMC Global approved lending to TSMC in July 2019. As of the report date of the accompanying financial statements, the amount actually drawn down by TSMC was US\$1,000,000 thousand.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

**ENDORSEMENTS/GUARANTEES PROVIDED
FOR THE SIX MONTHS ENDED JUNE 30, 2019**

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

No.	Endorsement/ Guarantee Provider	Guaranteed Party		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 to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Note 2)	Guarantee Provided by Parent Company	Guarantee Provided by A Subsidiary	Guarantee Provided to Subsidiaries in Mainland China
		Name	Nature of Relationship										
0	TSMC	TSMC North America	Subsidiary	\$ 388,453,645	\$ 2,584,272 (US\$ 83,213)	\$ 2,584,272 (US\$ 83,213)	\$ 2,584,272 (US\$ 83,213)	\$ -	0.17%	\$ 388,453,645	Yes	No	No

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

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

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES HELD

JUNE 30, 2019

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

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC	<u>Non-publicly traded equity investments</u>							
	United Industrial Gases Co., Ltd.	-	Financial assets at fair value through other comprehensive income	21,230	\$ 477,769	10	\$ 477,769	
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	"	10,500	333,732	7	333,732	
	Global Investment Holding Inc.	-	"	11,124	82,072	6	82,072	
	W.K. Technology Fund IV	-	"	806	4,900	2	4,900	
	Crimson Asia Capital	-	"	-	2,471	1	2,471	
	Horizon Ventures Fund	-	"	-	2,327	12	2,327	
	<u>Publicly traded stocks</u>							
	Semiconductor Manufacturing International Corporation	-	Financial assets at fair value through other comprehensive income	7,605	263,321	-	263,321	
TSMC Partners	<u>Non-publicly traded equity investments</u>							
	China Walden Venture Investments II, L.P.	-	Financial assets at fair value through other comprehensive income	-	US\$ 8,959	9	US\$ 8,959	
	Shanghai Walden Venture Capital Enterprise	-	"	-	US\$ 5,904	6	US\$ 5,904	
	China Walden Venture Investments III, L.P.	-	"	-	US\$ 2,900	4	US\$ 2,900	
	Tela Innovations	-	"	10,440	-	25	-	
	Mcube Inc.	-	"	6,333	-	12	-	
TSMC Global	<u>Corporate bond</u>							
	Bank of America Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 49,445	N/A	US\$ 49,445	
	Morgan Stanley	-	"	-	US\$ 45,637	N/A	US\$ 45,637	
	JPMorgan Chase & Co	-	"	-	US\$ 44,962	N/A	US\$ 44,962	
	Citigroup Inc	-	"	-	US\$ 40,655	N/A	US\$ 40,655	
	Goldman Sachs Group Inc/The	-	"	-	US\$ 40,487	N/A	US\$ 40,487	
	CVS Health Corp	-	"	-	US\$ 25,217	N/A	US\$ 25,217	
	AT&T Inc	-	"	-	US\$ 24,919	N/A	US\$ 24,919	
	HSBC Holdings PLC	-	"	-	US\$ 18,632	N/A	US\$ 18,632	
	Mitsubishi UFJ Financial Group Inc	-	"	-	US\$ 15,833	N/A	US\$ 15,833	
	Verizon Communications Inc	-	"	-	US\$ 15,781	N/A	US\$ 15,781	
	BAT Capital Corp	-	"	-	US\$ 15,188	N/A	US\$ 15,188	
	AbbVie Inc	-	"	-	US\$ 14,089	N/A	US\$ 14,089	
	Banco Santander SA	-	"	-	US\$ 13,958	N/A	US\$ 13,958	
	Bristol-Myers Squibb Co	-	"	-	US\$ 13,570	N/A	US\$ 13,570	
	Wells Fargo & Co	-	"	-	US\$ 13,542	N/A	US\$ 13,542	
	United Technologies Corp	-	"	-	US\$ 12,889	N/A	US\$ 12,889	
Sumitomo Mitsui Financial Group Inc	-	"	-	US\$ 12,554	N/A	US\$ 12,554		
UBS Group Funding Switzerland AG	-	"	-	US\$ 12,137	N/A	US\$ 12,137		
Fiserv Inc	-	"	-	US\$ 11,807	N/A	US\$ 11,807		
Credit Suisse AG/New York NY	-	"	-	US\$ 11,582	N/A	US\$ 11,582		
Toronto-Dominion Bank/The	-	"	-	US\$ 11,522	N/A	US\$ 11,522		

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Comcast Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 11,133	N/A	US\$ 11,133	
	American International Group Inc	-	"	-	US\$ 10,931	N/A	US\$ 10,931	
	Nordea Bank Abp	-	"	-	US\$ 10,430	N/A	US\$ 10,430	
	Hyundai Capital America	-	"	-	US\$ 10,170	N/A	US\$ 10,170	
	BNP Paribas SA	-	"	-	US\$ 10,016	N/A	US\$ 10,016	
	Welltower Inc	-	"	-	US\$ 10,010	N/A	US\$ 10,010	
	NextEra Energy Capital Holdings Inc	-	"	-	US\$ 9,867	N/A	US\$ 9,867	
	Macquarie Group Ltd	-	"	-	US\$ 9,597	N/A	US\$ 9,597	
	International Business Machines Corp	-	"	-	US\$ 9,580	N/A	US\$ 9,580	
	Tyson Foods Inc	-	"	-	US\$ 9,400	N/A	US\$ 9,400	
	Celgene Corp	-	"	-	US\$ 9,138	N/A	US\$ 9,138	
	Apple Inc	-	"	-	US\$ 9,103	N/A	US\$ 9,103	
	Bank of Montreal	-	"	-	US\$ 8,970	N/A	US\$ 8,970	
	Metropolitan Life Global Funding I	-	"	-	US\$ 8,934	N/A	US\$ 8,934	
	Wells Fargo Bank NA	-	"	-	US\$ 8,908	N/A	US\$ 8,908	
	Ryder System Inc	-	"	-	US\$ 8,859	N/A	US\$ 8,859	
	DTE Energy Co	-	"	-	US\$ 8,792	N/A	US\$ 8,792	
	New York Life Global Funding	-	"	-	US\$ 8,789	N/A	US\$ 8,789	
	ERAC USA Finance LLC	-	"	-	US\$ 8,780	N/A	US\$ 8,780	
	PNC Bank NA	-	"	-	US\$ 8,589	N/A	US\$ 8,589	
	Daimler Finance North America LLC	-	"	-	US\$ 8,487	N/A	US\$ 8,487	
	Suncorp-Metway Ltd	-	"	-	US\$ 8,479	N/A	US\$ 8,479	
	American Express Co	-	"	-	US\$ 8,427	N/A	US\$ 8,427	
	ANZ New Zealand Int'l Ltd/London	-	"	-	US\$ 8,426	N/A	US\$ 8,426	
	BPCE SA	-	"	-	US\$ 8,261	N/A	US\$ 8,261	
	Mizuho Financial Group Inc	-	"	-	US\$ 8,109	N/A	US\$ 8,109	
	Cooperatieve Rabobank UA/NY	-	"	-	US\$ 7,987	N/A	US\$ 7,987	
	Lloyds Banking Group PLC	-	"	-	US\$ 7,885	N/A	US\$ 7,885	
	Cox Communications Inc	-	"	-	US\$ 7,728	N/A	US\$ 7,728	
	ABN AMRO Bank NV	-	"	-	US\$ 7,684	N/A	US\$ 7,684	
	BP Capital Markets America Inc	-	"	-	US\$ 7,668	N/A	US\$ 7,668	
	SunTrust Bank/Atlanta GA	-	"	-	US\$ 7,591	N/A	US\$ 7,591	
	Athene Global Funding	-	"	-	US\$ 7,538	N/A	US\$ 7,538	
	Reliance Standard Life Global Funding II	-	"	-	US\$ 7,478	N/A	US\$ 7,478	
	Microsoft Corp	-	"	-	US\$ 7,427	N/A	US\$ 7,427	
	NatWest Markets PLC	-	"	-	US\$ 7,423	N/A	US\$ 7,423	
	Hewlett Packard Enterprise Co	-	"	-	US\$ 7,414	N/A	US\$ 7,414	
	Prudential Funding LLC	-	"	-	US\$ 7,388	N/A	US\$ 7,388	
	Air Lease Corp	-	"	-	US\$ 7,336	N/A	US\$ 7,336	
	Midwest Connector Capital Co LLC	-	"	-	US\$ 7,277	N/A	US\$ 7,277	
	African Development Bank	-	"	-	US\$ 7,234	N/A	US\$ 7,234	
	Altria Group Inc	-	"	-	US\$ 7,045	N/A	US\$ 7,045	
	Aviation Capital Group LLC	-	"	-	US\$ 7,016	N/A	US\$ 7,016	
	Scentre Group Trust 1/Scentre Group Trust 2	-	"	-	US\$ 6,973	N/A	US\$ 6,973	
	Fox Corp	-	"	-	US\$ 6,926	N/A	US\$ 6,926	
	SMBC Aviation Capital Finance DAC	-	"	-	US\$ 6,765	N/A	US\$ 6,765	
	Toyota Motor Credit Corp	-	"	-	US\$ 6,763	N/A	US\$ 6,763	
	Santander UK PLC	-	"	-	US\$ 6,642	N/A	US\$ 6,642	
	Anheuser-Busch InBev Worldwide Inc	-	"	-	US\$ 6,627	N/A	US\$ 6,627	
	AIG Global Funding	-	"	-	US\$ 6,520	N/A	US\$ 6,520	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Penske Truck Leasing Co Lp/PTL Finance Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 6,492	N/A	US\$ 6,492	
	Anthem Inc	-	"	-	US\$ 6,486	N/A	US\$ 6,486	
	QUALCOMM Inc	-	"	-	US\$ 6,396	N/A	US\$ 6,396	
	Regions Financial Corp	-	"	-	US\$ 6,311	N/A	US\$ 6,311	
	John Deere Capital Corp	-	"	-	US\$ 6,258	N/A	US\$ 6,258	
	Citizens Bank NA/Providence RI	-	"	-	US\$ 6,139	N/A	US\$ 6,139	
	Tencent Holdings Ltd	-	"	-	US\$ 6,047	N/A	US\$ 6,047	
	Santander UK Group Holdings PLC	-	"	-	US\$ 6,026	N/A	US\$ 6,026	
	Anheuser-Busch InBev Finance Inc	-	"	-	US\$ 5,970	N/A	US\$ 5,970	
	General Dynamics Corp	-	"	-	US\$ 5,903	N/A	US\$ 5,903	
	Westpac Banking Corp	-	"	-	US\$ 5,820	N/A	US\$ 5,820	
	WPP Finance 2010	-	"	-	US\$ 5,812	N/A	US\$ 5,812	
	Western Union Co/The	-	"	-	US\$ 5,770	N/A	US\$ 5,770	
	Bayer US Finance II LLC	-	"	-	US\$ 5,680	N/A	US\$ 5,680	
	BB&T Corp	-	"	-	US\$ 5,665	N/A	US\$ 5,665	
	Canadian Imperial Bank of Commerce	-	"	-	US\$ 5,632	N/A	US\$ 5,632	
	Capital One Financial Corp	-	"	-	US\$ 5,605	N/A	US\$ 5,605	
	Credit Suisse Group Funding Guernsey Ltd	-	"	-	US\$ 5,583	N/A	US\$ 5,583	
	Analog Devices Inc	-	"	-	US\$ 5,570	N/A	US\$ 5,570	
	Kinder Morgan Energy Partners LP	-	"	-	US\$ 5,533	N/A	US\$ 5,533	
	KeyBank NA/Cleveland OH	-	"	-	US\$ 5,522	N/A	US\$ 5,522	
	Jackson National Life Global Funding	-	"	-	US\$ 5,483	N/A	US\$ 5,483	
	Skandinaviska Enskilda Banken AB	-	"	-	US\$ 5,361	N/A	US\$ 5,361	
	ING Groep NV	-	"	-	US\$ 5,335	N/A	US\$ 5,335	
	Keurig Dr Pepper Inc	-	"	-	US\$ 5,229	N/A	US\$ 5,229	
	Macquarie Bank Ltd	-	"	-	US\$ 5,214	N/A	US\$ 5,214	
	Sompo International Holdings Ltd	-	"	-	US\$ 5,197	N/A	US\$ 5,197	
	Enterprise Products Operating LLC	-	"	-	US\$ 5,079	N/A	US\$ 5,079	
	Saudi Arabian Oil Co	-	"	-	US\$ 5,039	N/A	US\$ 5,039	
	BG Energy Capital PLC	-	"	-	US\$ 5,027	N/A	US\$ 5,027	
	UBS AG/Stamford CT	-	"	-	US\$ 5,001	N/A	US\$ 5,001	
	Capital One NA	-	"	-	US\$ 4,976	N/A	US\$ 4,976	
	Duke Energy Corp	-	"	-	US\$ 4,941	N/A	US\$ 4,941	
	Marriott International Inc/MD	-	"	-	US\$ 4,929	N/A	US\$ 4,929	
	CNA Financial Corp	-	"	-	US\$ 4,913	N/A	US\$ 4,913	
	HCP Inc	-	"	-	US\$ 4,911	N/A	US\$ 4,911	
	Bank of Nova Scotia/The	-	"	-	US\$ 4,885	N/A	US\$ 4,885	
	Credit Agricole SA/London	-	"	-	US\$ 4,875	N/A	US\$ 4,875	
	Eversource Energy	-	"	-	US\$ 4,861	N/A	US\$ 4,861	
	Svenska Handelsbanken AB	-	"	-	US\$ 4,850	N/A	US\$ 4,850	
	Enel Finance International NV	-	"	-	US\$ 4,846	N/A	US\$ 4,846	
	Five Corners Funding Trust	-	"	-	US\$ 4,823	N/A	US\$ 4,823	
	Exelon Generation Co LLC	-	"	-	US\$ 4,735	N/A	US\$ 4,735	
	American Express Credit Corp	-	"	-	US\$ 4,648	N/A	US\$ 4,648	
	BP Capital Markets PLC	-	"	-	US\$ 4,603	N/A	US\$ 4,603	
	BMW US Capital LLC	-	"	-	US\$ 4,600	N/A	US\$ 4,600	
	Shire Acquisitions Investments Ireland DAC	-	"	-	US\$ 4,422	N/A	US\$ 4,422	
	NiSource Inc	-	"	-	US\$ 4,395	N/A	US\$ 4,395	
	McKesson Corp	-	"	-	US\$ 4,253	N/A	US\$ 4,253	
	Verisk Analytics Inc	-	"	-	US\$ 4,201	N/A	US\$ 4,201	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Societe Generale SA	-	Financial assets at fair value through other comprehensive income	-	US\$ 4,129	N/A	US\$ 4,129	
	Exelon Corp	-	"	-	US\$ 4,022	N/A	US\$ 4,022	
	Intercontinental Exchange Inc	-	"	-	US\$ 4,003	N/A	US\$ 4,003	
	Duke Realty LP	-	"	-	US\$ 3,988	N/A	US\$ 3,988	
	WEC Energy Group Inc	-	"	-	US\$ 3,981	N/A	US\$ 3,981	
	European Investment Bank	-	"	-	US\$ 3,969	N/A	US\$ 3,969	
	Barclays PLC	-	"	-	US\$ 3,840	N/A	US\$ 3,840	
	Dominion Energy Gas Holdings LLC	-	"	-	US\$ 3,832	N/A	US\$ 3,832	
	Southern Co/The	-	"	-	US\$ 3,751	N/A	US\$ 3,751	
	Amgen Inc	-	"	-	US\$ 3,746	N/A	US\$ 3,746	
	Barclays Bank PLC	-	"	-	US\$ 3,712	N/A	US\$ 3,712	
	Monongahela Power Co	-	"	-	US\$ 3,701	N/A	US\$ 3,701	
	Quest Diagnostics Inc	-	"	-	US\$ 3,661	N/A	US\$ 3,661	
	Asian Development Bank	-	"	-	US\$ 3,626	N/A	US\$ 3,626	
	Royal Bank of Canada	-	"	-	US\$ 3,521	N/A	US\$ 3,521	
	Stryker Corp	-	"	-	US\$ 3,515	N/A	US\$ 3,515	
	Charles Schwab Corp/The	-	"	-	US\$ 3,479	N/A	US\$ 3,479	
	Dow Chemical Co/The	-	"	-	US\$ 3,476	N/A	US\$ 3,476	
	Mondelez International Holdings Netherlands BV	-	"	-	US\$ 3,434	N/A	US\$ 3,434	
	Huntington National Bank/The	-	"	-	US\$ 3,218	N/A	US\$ 3,218	
	ONE Gas Inc	-	"	-	US\$ 3,203	N/A	US\$ 3,203	
	Cardinal Health Inc	-	"	-	US\$ 3,182	N/A	US\$ 3,182	
	Inter-American Development Bank	-	"	-	US\$ 3,161	N/A	US\$ 3,161	
	Ventas Realty LP/Ventas Capital Corp	-	"	-	US\$ 3,157	N/A	US\$ 3,157	
	Reckitt Benckiser Treasury Services PLC	-	"	-	US\$ 3,155	N/A	US\$ 3,155	
	Takeda Pharmaceutical Co Ltd	-	"	-	US\$ 3,129	N/A	US\$ 3,129	
	Rockwell Collins Inc	-	"	-	US\$ 3,099	N/A	US\$ 3,099	
	People's United Financial Inc	-	"	-	US\$ 3,088	N/A	US\$ 3,088	
	Banque Federative du Credit Mutuel SA	-	"	-	US\$ 3,062	N/A	US\$ 3,062	
	Oncor Electric Delivery Co LLC	-	"	-	US\$ 3,055	N/A	US\$ 3,055	
	Danske Bank A/S	-	"	-	US\$ 3,036	N/A	US\$ 3,036	
	Cigna Holding Co	-	"	-	US\$ 3,025	N/A	US\$ 3,025	
	Kroger Co/The	-	"	-	US\$ 3,021	N/A	US\$ 3,021	
	Schlumberger Holdings Corp	-	"	-	US\$ 3,021	N/A	US\$ 3,021	
	DuPont de Nemours Inc	-	"	-	US\$ 2,972	N/A	US\$ 2,972	
	Nutrien Ltd	-	"	-	US\$ 2,922	N/A	US\$ 2,922	
	Thermo Fisher Scientific Inc	-	"	-	US\$ 2,883	N/A	US\$ 2,883	
	Barrick Gold Corp	-	"	-	US\$ 2,843	N/A	US\$ 2,843	
	RELX Capital Inc	-	"	-	US\$ 2,840	N/A	US\$ 2,840	
	Express Scripts Holding Co	-	"	-	US\$ 2,804	N/A	US\$ 2,804	
	Shell International Finance BV	-	"	-	US\$ 2,785	N/A	US\$ 2,785	
	Textron Inc	-	"	-	US\$ 2,783	N/A	US\$ 2,783	
	Xylem Inc/NY	-	"	-	US\$ 2,781	N/A	US\$ 2,781	
	Public Service Enterprise Group Inc	-	"	-	US\$ 2,746	N/A	US\$ 2,746	
	McCormick & Co Inc/MD	-	"	-	US\$ 2,738	N/A	US\$ 2,738	
	Ventas Realty LP	-	"	-	US\$ 2,737	N/A	US\$ 2,737	
	Eastman Chemical Co	-	"	-	US\$ 2,725	N/A	US\$ 2,725	
	Ford Motor Credit Co LLC	-	"	-	US\$ 2,691	N/A	US\$ 2,691	
	Standard Chartered PLC	-	"	-	US\$ 2,683	N/A	US\$ 2,683	
	Biogen Inc	-	"	-	US\$ 2,669	N/A	US\$ 2,669	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Delta Air Lines 2007-1 Class A Pass Through Trust	-	Financial assets at fair value through other comprehensive income	-	US\$ 2,654	N/A	US\$ 2,654	
	Berkshire Hathaway Energy Co	-	"	-	US\$ 2,599	N/A	US\$ 2,599	
	Alimentation Couche-Tard Inc	-	"	-	US\$ 2,588	N/A	US\$ 2,588	
	Xcel Energy Inc	-	"	-	US\$ 2,580	N/A	US\$ 2,580	
	Husky Energy Inc	-	"	-	US\$ 2,577	N/A	US\$ 2,577	
	LyondellBasell Industries NV	-	"	-	US\$ 2,574	N/A	US\$ 2,574	
	PartnerRe Finance B LLC	-	"	-	US\$ 2,572	N/A	US\$ 2,572	
	GlaxoSmithKline Capital PLC	-	"	-	US\$ 2,545	N/A	US\$ 2,545	
	EOG Resources Inc	-	"	-	US\$ 2,534	N/A	US\$ 2,534	
	WR Berkley Corp	-	"	-	US\$ 2,491	N/A	US\$ 2,491	
	Bank of New York Mellon Corp/The	-	"	-	US\$ 2,437	N/A	US\$ 2,437	
	AutoZone Inc	-	"	-	US\$ 2,420	N/A	US\$ 2,420	
	Compass Bank	-	"	-	US\$ 2,413	N/A	US\$ 2,413	
	Volkswagen Group of America Finance LLC	-	"	-	US\$ 2,390	N/A	US\$ 2,390	
	DXC Technology Co	-	"	-	US\$ 2,386	N/A	US\$ 2,386	
	Realty Income Corp	-	"	-	US\$ 2,376	N/A	US\$ 2,376	
	JPMorgan Chase Bank NA	-	"	-	US\$ 2,373	N/A	US\$ 2,373	
	Nationwide Building Society	-	"	-	US\$ 2,348	N/A	US\$ 2,348	
	Berkshire Hathaway Inc	-	"	-	US\$ 2,329	N/A	US\$ 2,329	
	Huntington Bancshares Inc/OH	-	"	-	US\$ 2,312	N/A	US\$ 2,312	
	National Australia Bank Ltd/New York	-	"	-	US\$ 2,302	N/A	US\$ 2,302	
	Northrop Grumman Corp	-	"	-	US\$ 2,302	N/A	US\$ 2,302	
	NBCUniversal Media LLC	-	"	-	US\$ 2,281	N/A	US\$ 2,281	
	Simon Property Group LP	-	"	-	US\$ 2,261	N/A	US\$ 2,261	
	Lloyds Bank PLC	-	"	-	US\$ 2,259	N/A	US\$ 2,259	
	Cintas Corp No 2	-	"	-	US\$ 2,237	N/A	US\$ 2,237	
	Siemens Financieringsmaatschappij NV	-	"	-	US\$ 2,196	N/A	US\$ 2,196	
	ProAssurance Corp	-	"	-	US\$ 2,174	N/A	US\$ 2,174	
	Canadian Natural Resources Ltd	-	"	-	US\$ 2,172	N/A	US\$ 2,172	
	Aetna Inc	-	"	-	US\$ 2,102	N/A	US\$ 2,102	
	Roche Holdings Inc	-	"	-	US\$ 2,095	N/A	US\$ 2,095	
	Fifth Third Bank/Cincinnati OH	-	"	-	US\$ 2,093	N/A	US\$ 2,093	
	US Bancorp	-	"	-	US\$ 2,089	N/A	US\$ 2,089	
	Suncor Energy Inc	-	"	-	US\$ 2,085	N/A	US\$ 2,085	
	Walt Disney Co/The	-	"	-	US\$ 2,075	N/A	US\$ 2,075	
	Fifth Third Bancorp	-	"	-	US\$ 2,039	N/A	US\$ 2,039	
	AstraZeneca PLC	-	"	-	US\$ 2,033	N/A	US\$ 2,033	
	American Airlines 2013-2 Class A Pass Through Trust	-	"	-	US\$ 2,032	N/A	US\$ 2,032	
	Sempra Energy	-	"	-	US\$ 2,015	N/A	US\$ 2,015	
	Deutsche Telekom International Finance BV	-	"	-	US\$ 1,998	N/A	US\$ 1,998	
	Oracle Corp	-	"	-	US\$ 1,990	N/A	US\$ 1,990	
	General Electric Co	-	"	-	US\$ 1,969	N/A	US\$ 1,969	
	Avangrid Inc	-	"	-	US\$ 1,931	N/A	US\$ 1,931	
	CenterPoint Energy Resources Corp	-	"	-	US\$ 1,913	N/A	US\$ 1,913	
	TransCanada PipeLines Ltd	-	"	-	US\$ 1,847	N/A	US\$ 1,847	
	WestRock RKT LLC	-	"	-	US\$ 1,797	N/A	US\$ 1,797	
	PSEG Power LLC	-	"	-	US\$ 1,792	N/A	US\$ 1,792	
	CenterPoint Energy Inc	-	"	-	US\$ 1,791	N/A	US\$ 1,791	
	Dominion Energy Inc	-	"	-	US\$ 1,786	N/A	US\$ 1,786	
	Baker Hughes a GE Co LLC/Baker Hughes Co-Obligor Inc	-	"	-	US\$ 1,777	N/A	US\$ 1,777	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Brookfield Finance Inc	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,750	N/A	US\$ 1,750	
	Brambles USA Inc	-	"	-	US\$ 1,742	N/A	US\$ 1,742	
	General Mills Inc	-	"	-	US\$ 1,739	N/A	US\$ 1,739	
	ASB Bank Ltd	-	"	-	US\$ 1,717	N/A	US\$ 1,717	
	Marathon Petroleum Corp	-	"	-	US\$ 1,708	N/A	US\$ 1,708	
	Wisconsin Public Service Corp	-	"	-	US\$ 1,708	N/A	US\$ 1,708	
	Woolworths Group Ltd	-	"	-	US\$ 1,701	N/A	US\$ 1,701	
	Vodafone Group PLC	-	"	-	US\$ 1,668	N/A	US\$ 1,668	
	Digital Realty Trust LP	-	"	-	US\$ 1,644	N/A	US\$ 1,644	
	Walgreens Boots Alliance Inc	-	"	-	US\$ 1,629	N/A	US\$ 1,629	
	Principal Life Global Funding II	-	"	-	US\$ 1,599	N/A	US\$ 1,599	
	American Electric Power Co Inc	-	"	-	US\$ 1,581	N/A	US\$ 1,581	
	CK Hutchison International 16 Ltd	-	"	-	US\$ 1,578	N/A	US\$ 1,578	
	Nestle Holdings Inc	-	"	-	US\$ 1,557	N/A	US\$ 1,557	
	Lincoln National Corp	-	"	-	US\$ 1,556	N/A	US\$ 1,556	
	Marsh & McLennan Cos Inc	-	"	-	US\$ 1,539	N/A	US\$ 1,539	
	Lam Research Corp	-	"	-	US\$ 1,525	N/A	US\$ 1,525	
	Sprint Spectrum Co LLC/Sprint Spectrum Co II LLC/Sprint Spectrum Co III LLC	-	"	-	US\$ 1,519	N/A	US\$ 1,519	
	Reynolds American Inc	-	"	-	US\$ 1,511	N/A	US\$ 1,511	
	Healthcare Trust of America Holdings LP	-	"	-	US\$ 1,511	N/A	US\$ 1,511	
	Public Service Electric & Gas Co	-	"	-	US\$ 1,509	N/A	US\$ 1,509	
	Lockheed Martin Corp	-	"	-	US\$ 1,505	N/A	US\$ 1,505	
	Nissan Motor Acceptance Corp	-	"	-	US\$ 1,503	N/A	US\$ 1,503	
	Guardian Life Global Funding	-	"	-	US\$ 1,491	N/A	US\$ 1,491	
	CBS Corp	-	"	-	US\$ 1,481	N/A	US\$ 1,481	
	Prudential Financial Inc	-	"	-	US\$ 1,461	N/A	US\$ 1,461	
	Ameriprise Financial Inc	-	"	-	US\$ 1,456	N/A	US\$ 1,456	
	Protective Life Global Funding	-	"	-	US\$ 1,453	N/A	US\$ 1,453	
	HSBC Bank PLC	-	"	-	US\$ 1,452	N/A	US\$ 1,452	
	Sumitomo Mitsui Banking Corp	-	"	-	US\$ 1,439	N/A	US\$ 1,439	
	ORIX Corp	-	"	-	US\$ 1,419	N/A	US\$ 1,419	
	Texas Eastern Transmission LP	-	"	-	US\$ 1,405	N/A	US\$ 1,405	
	American Honda Finance Corp	-	"	-	US\$ 1,355	N/A	US\$ 1,355	
	Georgia-Pacific LLC	-	"	-	US\$ 1,352	N/A	US\$ 1,352	
	National Oilwell Varco Inc	-	"	-	US\$ 1,330	N/A	US\$ 1,330	
	Entergy Arkansas LLC	-	"	-	US\$ 1,305	N/A	US\$ 1,305	
	UnitedHealth Group Inc	-	"	-	US\$ 1,285	N/A	US\$ 1,285	
	GATX Corp	-	"	-	US\$ 1,277	N/A	US\$ 1,277	
	Toyota Industries Corp	-	"	-	US\$ 1,272	N/A	US\$ 1,272	
	Entergy Corp	-	"	-	US\$ 1,269	N/A	US\$ 1,269	
	Aflac Inc	-	"	-	US\$ 1,268	N/A	US\$ 1,268	
	ITC Holdings Corp	-	"	-	US\$ 1,254	N/A	US\$ 1,254	
	Spectra Energy Partners LP	-	"	-	US\$ 1,245	N/A	US\$ 1,245	
	Consolidated Edison Inc	-	"	-	US\$ 1,216	N/A	US\$ 1,216	
	KeyCorp	-	"	-	US\$ 1,208	N/A	US\$ 1,208	
	Alexandria Real Estate Equities Inc	-	"	-	US\$ 1,186	N/A	US\$ 1,186	
	Voya Financial Inc	-	"	-	US\$ 1,179	N/A	US\$ 1,179	
	UBS AG/London	-	"	-	US\$ 1,179	N/A	US\$ 1,179	
	Regions Bank/Birmingham AL	-	"	-	US\$ 1,176	N/A	US\$ 1,176	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Branch Banking & Trust Co	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,174	N/A	US\$ 1,174	
	AXA Equitable Holdings Inc	-	"	-	US\$ 1,171	N/A	US\$ 1,171	
	Magellan Midstream Partners LP	-	"	-	US\$ 1,165	N/A	US\$ 1,165	
	Alterra Finance LLC	-	"	-	US\$ 1,152	N/A	US\$ 1,152	
	Interpublic Group of Cos Inc/The	-	"	-	US\$ 1,101	N/A	US\$ 1,101	
	Citizens Financial Group Inc	-	"	-	US\$ 1,079	N/A	US\$ 1,079	
	Swedbank AB	-	"	-	US\$ 1,074	N/A	US\$ 1,074	
	Glencore Finance Canada Ltd	-	"	-	US\$ 1,048	N/A	US\$ 1,048	
	Reinsurance Group of America Inc	-	"	-	US\$ 1,048	N/A	US\$ 1,048	
	O'Reilly Automotive Inc	-	"	-	US\$ 1,039	N/A	US\$ 1,039	
	Commonwealth Bank of Australia	-	"	-	US\$ 1,036	N/A	US\$ 1,036	
	Halliburton Co	-	"	-	US\$ 1,034	N/A	US\$ 1,034	
	DNB Bank ASA	-	"	-	US\$ 1,032	N/A	US\$ 1,032	
	Weyerhaeuser Co	-	"	-	US\$ 1,031	N/A	US\$ 1,031	
	Southern California Edison Co	-	"	-	US\$ 1,028	N/A	US\$ 1,028	
	Mitsubishi UFJ Trust & Banking Corp	-	"	-	US\$ 1,028	N/A	US\$ 1,028	
	Daiwa Securities Group Inc	-	"	-	US\$ 1,024	N/A	US\$ 1,024	
	Grupo Bimbo SAB de CV	-	"	-	US\$ 1,020	N/A	US\$ 1,020	
	BOC Aviation Ltd	-	"	-	US\$ 1,017	N/A	US\$ 1,017	
	Baker Hughes a GE Co LLC	-	"	-	US\$ 1,014	N/A	US\$ 1,014	
	Commonwealth Edison Co	-	"	-	US\$ 1,014	N/A	US\$ 1,014	
	Equinor ASA	-	"	-	US\$ 1,009	N/A	US\$ 1,009	
	Amazon.com Inc	-	"	-	US\$ 1,009	N/A	US\$ 1,009	
	Loews Corp	-	"	-	US\$ 1,008	N/A	US\$ 1,008	
	Unum Group	-	"	-	US\$ 1,005	N/A	US\$ 1,005	
	Bunge Ltd Finance Corp	-	"	-	US\$ 1,004	N/A	US\$ 1,004	
	Pricoa Global Funding I	-	"	-	US\$ 1,004	N/A	US\$ 1,004	
	Sysco Corp	-	"	-	US\$ 1,003	N/A	US\$ 1,003	
	Laboratory Corp of America Holdings	-	"	-	US\$ 1,001	N/A	US\$ 1,001	
	Kimco Realty Corp	-	"	-	US\$ 1,001	N/A	US\$ 1,001	
	Entergy Texas Inc	-	"	-	US\$ 999	N/A	US\$ 999	
	State Grid Overseas Investment 2016 Ltd	-	"	-	US\$ 993	N/A	US\$ 993	
	Liberty Property LP	-	"	-	US\$ 978	N/A	US\$ 978	
	Citibank NA	-	"	-	US\$ 973	N/A	US\$ 973	
	Ontario Teachers' Cadillac Fairview Properties Trust	-	"	-	US\$ 969	N/A	US\$ 969	
	Holcim US Finance Sarl & Cie SCS	-	"	-	US\$ 963	N/A	US\$ 963	
	Eni SpA	-	"	-	US\$ 915	N/A	US\$ 915	
	MassMutual Global Funding II	-	"	-	US\$ 897	N/A	US\$ 897	
	CA Inc	-	"	-	US\$ 894	N/A	US\$ 894	
	Coca-Cola Femsa SAB de CV	-	"	-	US\$ 887	N/A	US\$ 887	
	APT Pipelines Ltd	-	"	-	US\$ 876	N/A	US\$ 876	
	CNOOC Finance 2011 Ltd	-	"	-	US\$ 871	N/A	US\$ 871	
	Intesa Sanpaolo SpA	-	"	-	US\$ 869	N/A	US\$ 869	
	Viterra Inc	-	"	-	US\$ 853	N/A	US\$ 853	
	Aon PLC	-	"	-	US\$ 816	N/A	US\$ 816	
	ONEOK Partners LP	-	"	-	US\$ 816	N/A	US\$ 816	
	Sinopec Capital 2013 Ltd	-	"	-	US\$ 809	N/A	US\$ 809	
	Activision Blizzard Inc	-	"	-	US\$ 807	N/A	US\$ 807	
	Church & Dwight Co Inc	-	"	-	US\$ 806	N/A	US\$ 806	
	Columbia Pipeline Group Inc	-	"	-	US\$ 805	N/A	US\$ 805	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Nationwide Financial Services Inc	-	Financial assets at fair value through other comprehensive income	-	US\$ 781	N/A	US\$ 781	
	AXIS Specialty Finance LLC	-	"	-	US\$ 773	N/A	US\$ 773	
	Manulife Financial Corp	-	"	-	US\$ 773	N/A	US\$ 773	
	Incitec Pivot Finance LLC	-	"	-	US\$ 760	N/A	US\$ 760	
	Baidu Inc	-	"	-	US\$ 753	N/A	US\$ 753	
	Pinnacle West Capital Corp	-	"	-	US\$ 749	N/A	US\$ 749	
	British Airways 2013-1 Class A Pass Through Trust	-	"	-	US\$ 735	N/A	US\$ 735	
	Cooperatieve Rabobank UA	-	"	-	US\$ 724	N/A	US\$ 724	
	Merck & Co Inc	-	"	-	US\$ 708	N/A	US\$ 708	
	Phillips 66	-	"	-	US\$ 705	N/A	US\$ 705	
	BAE Systems Holdings Inc	-	"	-	US\$ 703	N/A	US\$ 703	
	Australia & New Zealand Banking Group Ltd/New York NY	-	"	-	US\$ 700	N/A	US\$ 700	
	Three Gorges Finance I Cayman Islands Ltd	-	"	-	US\$ 696	N/A	US\$ 696	
	Rochester Gas & Electric Corp	-	"	-	US\$ 651	N/A	US\$ 651	
	Norfolk Southern Railway Co	-	"	-	US\$ 642	N/A	US\$ 642	
	Ohio Power Co	-	"	-	US\$ 641	N/A	US\$ 641	
	Wm Wrigley Jr Co	-	"	-	US\$ 626	N/A	US\$ 626	
	US Bank NA/Cincinnati OH	-	"	-	US\$ 625	N/A	US\$ 625	
	ERP Operating LP	-	"	-	US\$ 625	N/A	US\$ 625	
	RBC USA Holdco Corp	-	"	-	US\$ 621	N/A	US\$ 621	
	Toledo Edison Co/The	-	"	-	US\$ 619	N/A	US\$ 619	
	OneBeacon US Holdings Inc	-	"	-	US\$ 615	N/A	US\$ 615	
	Gilead Sciences Inc	-	"	-	US\$ 601	N/A	US\$ 601	
	BAT International Finance PLC	-	"	-	US\$ 601	N/A	US\$ 601	
	Continental Airlines 2007-1 Class A Pass Through Trust	-	"	-	US\$ 594	N/A	US\$ 594	
	Life Technologies Corp	-	"	-	US\$ 582	N/A	US\$ 582	
	Host Hotels & Resorts LP	-	"	-	US\$ 576	N/A	US\$ 576	
	Duke Energy Progress LLC	-	"	-	US\$ 573	N/A	US\$ 573	
	AvalonBay Communities Inc	-	"	-	US\$ 568	N/A	US\$ 568	
	ABC Inc	-	"	-	US\$ 565	N/A	US\$ 565	
	MUFG Union Bank NA	-	"	-	US\$ 562	N/A	US\$ 562	
	Manufacturers & Traders Trust Co	-	"	-	US\$ 549	N/A	US\$ 549	
	Ingersoll-Rand Global Holding Co Ltd	-	"	-	US\$ 528	N/A	US\$ 528	
	Continental Airlines 2012-1 Class A Pass Through Trust	-	"	-	US\$ 524	N/A	US\$ 524	
	Fulton Financial Corp	-	"	-	US\$ 522	N/A	US\$ 522	
	Regency Centers Corp	-	"	-	US\$ 519	N/A	US\$ 519	
	Nomura Holdings Inc	-	"	-	US\$ 514	N/A	US\$ 514	
	SunTrust Banks Inc	-	"	-	US\$ 504	N/A	US\$ 504	
	Highwoods Realty LP	-	"	-	US\$ 503	N/A	US\$ 503	
	Sumitomo Mitsui Trust Bank Ltd	-	"	-	US\$ 499	N/A	US\$ 499	
	TD Ameritrade Holding Corp	-	"	-	US\$ 493	N/A	US\$ 493	
	International Paper Co	-	"	-	US\$ 485	N/A	US\$ 485	
	Diageo Capital PLC	-	"	-	US\$ 478	N/A	US\$ 478	
	Duke Energy Carolinas LLC	-	"	-	US\$ 465	N/A	US\$ 465	
	United Overseas Bank Ltd	-	"	-	US\$ 463	N/A	US\$ 463	
	Spire Inc	-	"	-	US\$ 461	N/A	US\$ 461	
	Union Pacific Corp	-	"	-	US\$ 458	N/A	US\$ 458	
	Narragansett Electric Co/The	-	"	-	US\$ 456	N/A	US\$ 456	
	Canadian Pacific Railway Co	-	"	-	US\$ 410	N/A	US\$ 410	
	Eaton Electric Holdings LLC	-	"	-	US\$ 407	N/A	US\$ 407	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Markel Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 404	N/A	US\$ 404	
	Southern Power Co	-	"	-	US\$ 401	N/A	US\$ 401	
	IBM Credit LLC	-	"	-	US\$ 397	N/A	US\$ 397	
	StanCorp Financial Group Inc	-	"	-	US\$ 383	N/A	US\$ 383	
	Aon Corp	-	"	-	US\$ 378	N/A	US\$ 378	
	PPL Capital Funding Inc	-	"	-	US\$ 375	N/A	US\$ 375	
	First Niagara Financial Group Inc	-	"	-	US\$ 361	N/A	US\$ 361	
	Principal Financial Group Inc	-	"	-	US\$ 353	N/A	US\$ 353	
	Commonwealth Bank of Australia/New York NY	-	"	-	US\$ 350	N/A	US\$ 350	
	Continental Airlines 2000-1 Class A-1 Pass Through Trust	-	"	-	US\$ 310	N/A	US\$ 310	
	Schlumberger Finance Canada Ltd	-	"	-	US\$ 300	N/A	US\$ 300	
	Florida Power & Light Co	-	"	-	US\$ 300	N/A	US\$ 300	
	Eli Lilly & Co	-	"	-	US\$ 297	N/A	US\$ 297	
	Amphenol Corp	-	"	-	US\$ 289	N/A	US\$ 289	
	Home Depot Inc/The	-	"	-	US\$ 284	N/A	US\$ 284	
	EMD Finance LLC	-	"	-	US\$ 280	N/A	US\$ 280	
	Archer-Daniels-Midland Co	-	"	-	US\$ 258	N/A	US\$ 258	
	Bank of America NA	-	"	-	US\$ 256	N/A	US\$ 256	
	Hartford Financial Services Group Inc/The	-	"	-	US\$ 227	N/A	US\$ 227	
	Rolls-Royce PLC	-	"	-	US\$ 225	N/A	US\$ 225	
	US Airways 2013-1 Class A Pass Through Trust	-	"	-	US\$ 221	N/A	US\$ 221	
	Protective Life Corp	-	"	-	US\$ 213	N/A	US\$ 213	
	Fidelity National Information Services Inc	-	"	-	US\$ 210	N/A	US\$ 210	
	ING Bank NV	-	"	-	US\$ 210	N/A	US\$ 210	
	WestRock MWV LLC	-	"	-	US\$ 208	N/A	US\$ 208	
	Glencore Funding LLC	-	"	-	US\$ 201	N/A	US\$ 201	
	GE Capital International Funding Co Unlimited Co	-	"	-	US\$ 199	N/A	US\$ 199	
	Equifax Inc	-	"	-	US\$ 179	N/A	US\$ 179	
	Schneider Electric SE	-	"	-	US\$ 163	N/A	US\$ 163	
	Packaging Corp of America	-	"	-	US\$ 160	N/A	US\$ 160	
	Boeing Co/The	-	"	-	US\$ 148	N/A	US\$ 148	
	Wells Fargo & Co	-	Financial assets at amortized cost	-	US\$ 160,117	N/A	US\$ 161,313	
	JPMorgan Chase & Co.	-	"	-	US\$ 84,967	N/A	US\$ 87,100	
	Industrial and Commercial Bank of China	-	"	-	US\$ 9,996	N/A	US\$ 10,018	
	<u>Government bond</u>							
	United States Treasury Note/Bond	-	Financial assets at fair value through other comprehensive income	-	US\$ 346,678	N/A	US\$ 346,678	
	Abu Dhabi Government International Bond	-	"	-	US\$ 3,492	N/A	US\$ 3,492	
	Qatar Government International Bond	-	"	-	US\$ 1,362	N/A	US\$ 1,362	
	United States Treasury Bill	-	"	-	US\$ 99	N/A	US\$ 99	
	<u>Agency mortgage-backed securities</u>							
	Freddie Mac REMICS	-	Financial assets at fair value through profit or loss	-	US\$ 18,100	N/A	US\$ 18,100	
	Fannie Mae REMICS	-	"	-	US\$ 8,523	N/A	US\$ 8,523	
	Government National Mortgage Association	-	"	-	US\$ 6,919	N/A	US\$ 6,919	
	Freddie Mac Multifamily Structured Pass Through Certificates	-	"	-	US\$ 1,558	N/A	US\$ 1,558	
	Freddie Mac Strips	-	"	-	US\$ 1,092	N/A	US\$ 1,092	
	Fannie Mae Interest Strip	-	"	-	US\$ 649	N/A	US\$ 649	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	<u>Agency bonds/Agency mortgage-backed securities</u> Fannie Mae Pool	-	Financial assets at fair value through other comprehensive income	-	US\$ 443,702	N/A	US\$ 443,702	
	Freddie Mac Gold Pool	-	"	-	US\$ 203,007	N/A	US\$ 203,007	
	Fannie Mae REMICS	-	"	-	US\$ 156,583	N/A	US\$ 156,583	
	Freddie Mac REMICS	-	"	-	US\$ 134,577	N/A	US\$ 134,577	
	Government National Mortgage Association	-	"	-	US\$ 106,342	N/A	US\$ 106,342	
	Fannie Mae or Freddie Mac	-	"	-	US\$ 106,298	N/A	US\$ 106,298	
	Ginnie Mae	-	"	-	US\$ 62,088	N/A	US\$ 62,088	
	Ginnie Mae II Pool	-	"	-	US\$ 58,489	N/A	US\$ 58,489	
	Freddie Mac Pool	-	"	-	US\$ 45,116	N/A	US\$ 45,116	
	Freddie Mac Multifamily Structured Pass Through Certificates	-	"	-	US\$ 41,757	N/A	US\$ 41,757	
	Fannie Mae-Aces	-	"	-	US\$ 25,601	N/A	US\$ 25,601	
	Federal Farm Credit Banks	-	"	-	US\$ 3,868	N/A	US\$ 3,868	
	Freddie Mac Non Gold Pool	-	"	-	US\$ 2,503	N/A	US\$ 2,503	
	Federal Home Loan Mortgage Corp	-	"	-	US\$ 2,065	N/A	US\$ 2,065	
	FHLMC-GNMA	-	"	-	US\$ 1,236	N/A	US\$ 1,236	
	Freddie Mac Strips	-	"	-	US\$ 1,117	N/A	US\$ 1,117	
	Province of Quebec Canada	-	"	-	US\$ 1,011	N/A	US\$ 1,011	
	NCUA Guaranteed Notes Trust 2010-R2	-	"	-	US\$ 765	N/A	US\$ 765	
	FRESB 2019-SB61 Mortgage Trust	-	"	-	US\$ 671	N/A	US\$ 671	
	Ginnie Mae I Pool	-	"	-	US\$ 587	N/A	US\$ 587	
	FRESB 2019-SB60 Mortgage Trust	-	"	-	US\$ 417	N/A	US\$ 417	
	NCUA Guaranteed Notes Trust 2010-R1	-	"	-	US\$ 277	N/A	US\$ 277	
	Fannie Mae Benchmark REMIC	-	"	-	US\$ 125	N/A	US\$ 125	
	<u>Asset-backed securities</u> Citibank Credit Card Issuance Trust	-	Financial assets at fair value through other comprehensive income	-	US\$ 8,917	N/A	US\$ 8,917	
	CGDBB Commercial Mortgage Trust 2017-BIOC	-	"	-	US\$ 7,500	N/A	US\$ 7,500	
	Citigroup Commercial Mortgage Trust 2014-GC21	-	"	-	US\$ 7,432	N/A	US\$ 7,432	
	American Express Credit Account Master Trust	-	"	-	US\$ 6,900	N/A	US\$ 6,900	
	UBS-Barclays Commercial Mortgage Trust 2012-C2	-	"	-	US\$ 6,279	N/A	US\$ 6,279	
	Benchmark 2019-B11 Mortgage Trust	-	"	-	US\$ 6,236	N/A	US\$ 6,236	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	"	-	US\$ 6,026	N/A	US\$ 6,026	
	Ford Credit Auto Owner Trust 2016-REV1	-	"	-	US\$ 6,022	N/A	US\$ 6,022	
	BX Commercial Mortgage Trust 2018-IND	-	"	-	US\$ 5,690	N/A	US\$ 5,690	
	BBCMS 2018-TALL Mortgage Trust	-	"	-	US\$ 5,479	N/A	US\$ 5,479	
	COMM 2015-CCRE24 Mortgage Trust	-	"	-	US\$ 5,245	N/A	US\$ 5,245	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C7	-	"	-	US\$ 5,244	N/A	US\$ 5,244	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C10	-	"	-	US\$ 5,044	N/A	US\$ 5,044	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C30	-	"	-	US\$ 4,992	N/A	US\$ 4,992	
	Ford Credit Auto Owner Trust 2015-REV1	-	"	-	US\$ 4,914	N/A	US\$ 4,914	
	Hyundai Auto Receivables Trust 2016-A	-	"	-	US\$ 4,186	N/A	US\$ 4,186	
	UBS Commercial Mortgage Trust 2018-C10	-	"	-	US\$ 4,166	N/A	US\$ 4,166	
	JPMCC Commercial Mortgage Securities Trust 2017-JP7	-	"	-	US\$ 4,153	N/A	US\$ 4,153	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C29	-	"	-	US\$ 4,119	N/A	US\$ 4,119	
	BANK 2017-BNK6	-	"	-	US\$ 4,105	N/A	US\$ 4,105	
	BANK 2019-BNK17	-	"	-	US\$ 4,104	N/A	US\$ 4,104	
	BANK 2017-BNK5	-	"	-	US\$ 4,091	N/A	US\$ 4,091	
	Chesapeake Funding II LLC	-	"	-	US\$ 3,869	N/A	US\$ 3,869	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Nissan Auto Lease Trust 2017-B	-	Financial assets at fair value through other comprehensive income	-	US\$ 3,067	N/A	US\$ 3,067	
	GS Mortgage Securities Corp II	-	"	-	US\$ 3,043	N/A	US\$ 3,043	
	J.P. Morgan Chase Commercial Mortgage Securities Trust 2016-WIKI	-	"	-	US\$ 3,030	N/A	US\$ 3,030	
	COMM 2015-CCRE25 Mortgage Trust	-	"	-	US\$ 3,020	N/A	US\$ 3,020	
	GS Mortgage Securities Corp Trust 2018-RIVR	-	"	-	US\$ 3,004	N/A	US\$ 3,004	
	GM Financial Consumer Automobile Receivables Trust 2017-2	-	"	-	US\$ 2,991	N/A	US\$ 2,991	
	WFRBS Commercial Mortgage Trust 2013-C13	-	"	-	US\$ 2,874	N/A	US\$ 2,874	
	Honda Auto Receivables 2019-1 Owner Trust	-	"	-	US\$ 2,834	N/A	US\$ 2,834	
	GM Financial Automobile Leasing Trust 2018-3	-	"	-	US\$ 2,812	N/A	US\$ 2,812	
	GS Mortgage Securities Trust 2011-GC3	-	"	-	US\$ 2,706	N/A	US\$ 2,706	
	Morgan Stanley Capital I Trust 2018-H3	-	"	-	US\$ 2,669	N/A	US\$ 2,669	
	GS Mortgage Securities Trust 2013-GCJ12	-	"	-	US\$ 2,669	N/A	US\$ 2,669	
	Toyota Auto Receivables 2018-C Owner Trust	-	"	-	US\$ 2,599	N/A	US\$ 2,599	
	Capital One Multi-Asset Execution Trust	-	"	-	US\$ 2,497	N/A	US\$ 2,497	
	ARI Fleet Lease Trust 2019-A	-	"	-	US\$ 2,405	N/A	US\$ 2,405	
	Discover Card Execution Note Trust	-	"	-	US\$ 2,278	N/A	US\$ 2,278	
	COMM 2014-CCRE17 Mortgage Trust	-	"	-	US\$ 2,229	N/A	US\$ 2,229	
	UBS Commercial Mortgage Trust 2018-C11	-	"	-	US\$ 2,180	N/A	US\$ 2,180	
	GS Mortgage Securities Trust 2014-GC22	-	"	-	US\$ 2,174	N/A	US\$ 2,174	
	Hyundai Auto Receivables Trust 2018-B	-	"	-	US\$ 2,147	N/A	US\$ 2,147	
	BENCHMARK 2018-B4	-	"	-	US\$ 2,131	N/A	US\$ 2,131	
	COMM 2013-CCRE12 Mortgage Trust	-	"	-	US\$ 2,128	N/A	US\$ 2,128	
	Wells Fargo Commercial Mortgage Trust 2015-C30	-	"	-	US\$ 2,073	N/A	US\$ 2,073	
	Citigroup Commercial Mortgage Trust 2017-P8	-	"	-	US\$ 2,062	N/A	US\$ 2,062	
	COMM 2015-CCRE22 Mortgage Trust	-	"	-	US\$ 2,048	N/A	US\$ 2,048	
	JPMDB Commercial Mortgage Securities Trust 2017-C7	-	"	-	US\$ 2,045	N/A	US\$ 2,045	
	UBS-Barclays Commercial Mortgage Trust 2013-C6	-	"	-	US\$ 2,044	N/A	US\$ 2,044	
	JPMBB Commercial Mortgage Securities Trust 2014-C19	-	"	-	US\$ 2,044	N/A	US\$ 2,044	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C31	-	"	-	US\$ 2,029	N/A	US\$ 2,029	
	Toyota Auto Receivables 2017-C Owner Trust	-	"	-	US\$ 1,997	N/A	US\$ 1,997	
	Toyota Auto Receivables 2016-B Owner Trust	-	"	-	US\$ 1,994	N/A	US\$ 1,994	
	Hertz Fleet Lease Funding LP	-	"	-	US\$ 1,988	N/A	US\$ 1,988	
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	"	-	US\$ 1,980	N/A	US\$ 1,980	
	Mercedes-Benz Auto Lease Trust 2018-B	-	"	-	US\$ 1,967	N/A	US\$ 1,967	
	JPMDB Commercial Mortgage Securities Trust 2016-C2	-	"	-	US\$ 1,877	N/A	US\$ 1,877	
	Hyundai Auto Receivables Trust 2017-A	-	"	-	US\$ 1,855	N/A	US\$ 1,855	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	-	"	-	US\$ 1,836	N/A	US\$ 1,836	
	WFRBS Commercial Mortgage Trust 2013-C17	-	"	-	US\$ 1,822	N/A	US\$ 1,822	
	Ford Credit Auto Lease Trust	-	"	-	US\$ 1,816	N/A	US\$ 1,816	
	Citigroup Commercial Mortgage Trust 2015-GC35	-	"	-	US\$ 1,799	N/A	US\$ 1,799	
	BENCHMARK 2018-B6 Mortgage Trust	-	"	-	US\$ 1,762	N/A	US\$ 1,762	
	UBS-Barclays Commercial Mortgage Trust 2013-C5	-	"	-	US\$ 1,707	N/A	US\$ 1,707	
	BANK 2018-BNK14	-	"	-	US\$ 1,680	N/A	US\$ 1,680	
	Wells Fargo Commercial Mortgage Trust 2015-NXS1	-	"	-	US\$ 1,649	N/A	US\$ 1,649	
	Morgan Stanley Capital I Trust 2017-H1	-	"	-	US\$ 1,543	N/A	US\$ 1,543	
	Nelnet Student Loan Trust 2018-3	-	"	-	US\$ 1,541	N/A	US\$ 1,541	
	Nelnet Student Loan Trust 2015-2	-	"	-	US\$ 1,532	N/A	US\$ 1,532	
	Ford Credit Auto Owner Trust 2019-A	-	"	-	US\$ 1,524	N/A	US\$ 1,524	
	Hyundai Auto Receivables Trust 2019-A	-	"	-	US\$ 1,516	N/A	US\$ 1,516	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				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 Lease Trust 2018-A	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,507	N/A	US\$ 1,507	
	COMM 2015-PC1 Mortgage Trust	-	"	-	US\$ 1,506	N/A	US\$ 1,506	
	Morgan Stanley Capital I Trust 2016-UB11	-	"	-	US\$ 1,498	N/A	US\$ 1,498	
	SLM Student Loan Trust 2005-4	-	"	-	US\$ 1,496	N/A	US\$ 1,496	
	Honda Auto Receivables 2017-2 Owner Trust	-	"	-	US\$ 1,495	N/A	US\$ 1,495	
	Morgan Stanley Bank of America Merrill Lynch Trust 2015-C24	-	"	-	US\$ 1,492	N/A	US\$ 1,492	
	Toyota Auto Receivables 2018-B Owner Trust	-	"	-	US\$ 1,454	N/A	US\$ 1,454	
	Nelnet Student Loan Trust 2010-4	-	"	-	US\$ 1,425	N/A	US\$ 1,425	
	North Carolina State Education Assistance Authority	-	"	-	US\$ 1,422	N/A	US\$ 1,422	
	COMM 2013-CCRE6 Mortgage Trust	-	"	-	US\$ 1,401	N/A	US\$ 1,401	
	Ford Credit Auto Owner Trust 2014-REV2	-	"	-	US\$ 1,399	N/A	US\$ 1,399	
	ECMC Group Student Loan Trust 2018-2	-	"	-	US\$ 1,367	N/A	US\$ 1,367	
	BA Credit Card Trust	-	"	-	US\$ 1,359	N/A	US\$ 1,359	
	Edsouth Indenture No 10 LLC	-	"	-	US\$ 1,354	N/A	US\$ 1,354	
	SLM Student Loan Trust 2013-6	-	"	-	US\$ 1,324	N/A	US\$ 1,324	
	Nelnet Student Loan Trust 2012-1	-	"	-	US\$ 1,301	N/A	US\$ 1,301	
	JPMBB Commercial Mortgage Securities Trust 2016-C1	-	"	-	US\$ 1,294	N/A	US\$ 1,294	
	JPMCC Commercial Mortgage Securities Trust 2017-JP5	-	"	-	US\$ 1,268	N/A	US\$ 1,268	
	GS Mortgage Securities Trust 2015-GC32	-	"	-	US\$ 1,255	N/A	US\$ 1,255	
	Hyundai Auto Lease Securitization Trust 2018-A	-	"	-	US\$ 1,255	N/A	US\$ 1,255	
	Nissan Auto Lease Trust 2019-A	-	"	-	US\$ 1,245	N/A	US\$ 1,245	
	Wheels SPV 2 LLC	-	"	-	US\$ 1,225	N/A	US\$ 1,225	
	Ford Credit Auto Owner Trust 2017-C	-	"	-	US\$ 1,218	N/A	US\$ 1,218	
	Morgan Stanley Bank of America Merrill Lynch Trust 2015-C20	-	"	-	US\$ 1,197	N/A	US\$ 1,197	
	GS Mortgage Securities Trust 2019-GC39	-	"	-	US\$ 1,190	N/A	US\$ 1,190	
	Carmax Auto Owner Trust 2019-2	-	"	-	US\$ 1,186	N/A	US\$ 1,186	
	COMM 2014-LC17 Mortgage Trust	-	"	-	US\$ 1,162	N/A	US\$ 1,162	
	JPMBB Commercial Mortgage Securities Trust 2014-C21	-	"	-	US\$ 1,149	N/A	US\$ 1,149	
	Navient Student Loan Trust 2017-1	-	"	-	US\$ 1,125	N/A	US\$ 1,125	
	COMM 2015-DC1 Mortgage Trust	-	"	-	US\$ 1,103	N/A	US\$ 1,103	
	Pheaa Student Loan Trust 2018-1	-	"	-	US\$ 1,092	N/A	US\$ 1,092	
	Navient Student Loan Trust 2019-1	-	"	-	US\$ 1,063	N/A	US\$ 1,063	
	COMM 2015-CCRE27 Mortgage Trust	-	"	-	US\$ 1,062	N/A	US\$ 1,062	
	WFRBS Commercial Mortgage Trust 2011-C4	-	"	-	US\$ 1,042	N/A	US\$ 1,042	
	GM Financial Consumer Automobile Receivables Trust 2018-4	-	"	-	US\$ 1,040	N/A	US\$ 1,040	
	Morgan Stanley Bank of America Merrill Lynch Trust 2014 C19	-	"	-	US\$ 1,029	N/A	US\$ 1,029	
	COMM 2014-CCRE20 Mortgage Trust	-	"	-	US\$ 1,028	N/A	US\$ 1,028	
	Nissan Auto Receivables 2017-B Owner Trust	-	"	-	US\$ 1,021	N/A	US\$ 1,021	
	Nissan Auto Receivables 2018-B Owner Trust	-	"	-	US\$ 1,016	N/A	US\$ 1,016	
	Ford Credit Auto Owner Trust 2017-REV1	-	"	-	US\$ 1,012	N/A	US\$ 1,012	
	GS Mortgage Securities Corp Trust 2016-RENT	-	"	-	US\$ 1,011	N/A	US\$ 1,011	
	Citigroup Commercial Mortgage Trust 2013-GC11	-	"	-	US\$ 1,007	N/A	US\$ 1,007	
	GM Financial Consumer Automobile 2017-1	-	"	-	US\$ 1,000	N/A	US\$ 1,000	
	BBCMS MORTGAGE TRUST 2017-C1	-	"	-	US\$ 1,000	N/A	US\$ 1,000	
	Morgan Stanley Capital Barclays Bank Trust 2016-MART	-	"	-	US\$ 999	N/A	US\$ 999	
	Toyota Auto Receivables 2019-B Owner Trust	-	"	-	US\$ 992	N/A	US\$ 992	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	-	"	-	US\$ 931	N/A	US\$ 931	
	Honda Auto Receivables 2018-2 Owner Trust	-	"	-	US\$ 922	N/A	US\$ 922	
	CarMax Auto Owner Trust 2018-1	-	"	-	US\$ 882	N/A	US\$ 882	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	-	Financial assets at fair value through other comprehensive income	-	US\$ 873	N/A	US\$ 873	
	Nissan Auto Receivables 2019-A Owner Trust	-	"	-	US\$ 855	N/A	US\$ 855	
	Mercedes-Benz Auto Receivables Trust 2018-1	-	"	-	US\$ 851	N/A	US\$ 851	
	280 Park Avenue 2017-280P Mortgage Trust	-	"	-	US\$ 830	N/A	US\$ 830	
	GM Financial Automobile Leasing Trust 2019-2	-	"	-	US\$ 825	N/A	US\$ 825	
	Ford Credit Auto Owner Trust 2015-REV2	-	"	-	US\$ 811	N/A	US\$ 811	
	Honda Auto Receivables 2018-3 Owner Trust	-	"	-	US\$ 807	N/A	US\$ 807	
	Navient Student Loan Trust 2018-1	-	"	-	US\$ 797	N/A	US\$ 797	
	Citigroup Commercial Mortgage Trust 2015-GC27	-	"	-	US\$ 787	N/A	US\$ 787	
	Mercedes-Benz Auto Lease Trust 2018-A	-	"	-	US\$ 775	N/A	US\$ 775	
	BMW Vehicle Lease Trust	-	"	-	US\$ 772	N/A	US\$ 772	
	CFCRE Commercial Mortgage Trust 2011-C1	-	"	-	US\$ 767	N/A	US\$ 767	
	GM Financial Automobile Leasing Trust 2018-1	-	"	-	US\$ 760	N/A	US\$ 760	
	SLM Student Loan Trust 2012-3	-	"	-	US\$ 755	N/A	US\$ 755	
	COMM 2015-LC19 Mortgage Trust	-	"	-	US\$ 736	N/A	US\$ 736	
	SLM Student Loan Trust 2013-1	-	"	-	US\$ 716	N/A	US\$ 716	
	Enterprise Fleet Financing 2019-1 LLC	-	"	-	US\$ 714	N/A	US\$ 714	
	Toyota Auto Receivables 2018-D Owner Trust	-	"	-	US\$ 714	N/A	US\$ 714	
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	"	-	US\$ 705	N/A	US\$ 705	
	Ally Auto Receivables Trust 2019-1	-	"	-	US\$ 672	N/A	US\$ 672	
	Ford Credit Auto Owner Trust 2018-A	-	"	-	US\$ 647	N/A	US\$ 647	
	JPMBB Commercial Mortgage Securities Trust 2015-C31	-	"	-	US\$ 641	N/A	US\$ 641	
	SLM Student Loan Trust 2013-4	-	"	-	US\$ 633	N/A	US\$ 633	
	Mercedes-Benz Auto Lease Trust 2019-A	-	"	-	US\$ 622	N/A	US\$ 622	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-WLDN	-	"	-	US\$ 614	N/A	US\$ 614	
	CarMax Auto Owner Trust	-	"	-	US\$ 610	N/A	US\$ 610	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C5	-	"	-	US\$ 603	N/A	US\$ 603	
	DBGS 2018-BIOD Mortgage Trust	-	"	-	US\$ 594	N/A	US\$ 594	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-C6	-	"	-	US\$ 591	N/A	US\$ 591	
	Nelnet Student Loan Trust 2006-2	-	"	-	US\$ 584	N/A	US\$ 584	
	Hyundai Auto Receivables Trust 2015-C	-	"	-	US\$ 550	N/A	US\$ 550	
	DBUBS 2011-LC2 Mortgage Trust	-	"	-	US\$ 517	N/A	US\$ 517	
	CD 2016-CD2 Mortgage Trust	-	"	-	US\$ 507	N/A	US\$ 507	
	Navient Student Loan Trust 2017-3	-	"	-	US\$ 506	N/A	US\$ 506	
	Nissan Auto Receivables 2016-B Owner Trust	-	"	-	US\$ 498	N/A	US\$ 498	
	Hyundai Auto Lease Securitization Trust 2017-C	-	"	-	US\$ 482	N/A	US\$ 482	
	COMM 2015-CCRE26 Mortgage Trust	-	"	-	US\$ 475	N/A	US\$ 475	
	GS Mortgage Securities Trust 2014-GC18	-	"	-	US\$ 473	N/A	US\$ 473	
	Hyundai Auto Lease Securitization Trust 2017-A	-	"	-	US\$ 435	N/A	US\$ 435	
	GS Mortgage Securities Corp Trust 2012-ALOHA	-	"	-	US\$ 424	N/A	US\$ 424	
	WFRBS Commercial Mortgage Trust 2014-C25	-	"	-	US\$ 410	N/A	US\$ 410	
	GM Financial Automobile Leasing Trust 2018-2	-	"	-	US\$ 393	N/A	US\$ 393	
	Ford Credit Auto Lease Trust 2017-B	-	"	-	US\$ 385	N/A	US\$ 385	
	ARI Fleet Lease Trust 2018-A	-	"	-	US\$ 375	N/A	US\$ 375	
	Morgan Stanley Capital I Trust 2019-H6	-	"	-	US\$ 367	N/A	US\$ 367	
	GM Financial Automobile Leasing Trust 2017-1	-	"	-	US\$ 352	N/A	US\$ 352	
	ARI Fleet Lease Trust 2018-B	-	"	-	US\$ 333	N/A	US\$ 333	
	Ford Credit Auto Owner Trust 2016-A	-	"	-	US\$ 326	N/A	US\$ 326	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	June 30, 2019				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	BMW Vehicle Lease Trust 2018-1	-	Financial assets at fair value through other comprehensive income	-	US\$ 321	N/A	US\$ 321	
	Toyota Auto Receivables 2019-A Owner Trust	-	"	-	US\$ 278	N/A	US\$ 278	
	Morgan Stanley Bank of America Merrill Lynch Trust 2014-C18	-	"	-	US\$ 265	N/A	US\$ 265	
	COMM 2014-CCRE19 Mortgage Trust	-	"	-	US\$ 235	N/A	US\$ 235	
	Wells Fargo Commercial Mortgage Trust 2015-SG1	-	"	-	US\$ 215	N/A	US\$ 215	
	BMW Vehicle Lease Trust 2017-2	-	"	-	US\$ 189	N/A	US\$ 189	
	Wells Fargo Commercial Mortgage Trust 2016-LC24	-	"	-	US\$ 178	N/A	US\$ 178	
	Enterprise Fleet Financing LLC	-	"	-	US\$ 138	N/A	US\$ 138	
	WFRBS Commercial Mortgage Trust 2011-C5	-	"	-	US\$ 92	N/A	US\$ 92	
	GS Mortgage Securities Trust 2010-C1	-	"	-	US\$ 75	N/A	US\$ 75	
	COMM 2014-CCRE15 Mortgage Trust	-	"	-	US\$ 46	N/A	US\$ 46	
	GS Mortgage Securities Trust 2010-C2	-	"	-	US\$ 33	N/A	US\$ 33	
	Morgan Stanley Bank of America Merrill Lynch Trust 2014-C16	-	"	-	US\$ 7	N/A	US\$ 7	
	Honda Auto Receivables 2016-2 Owner Trust	-	"	-	US\$ 4	N/A	US\$ 4	
		<u>Non-publicly traded equity investments</u>						
	Primavera Capital Fund II L.P.	-	Financial assets at fair value through other comprehensive income	-	US\$ 76,446	4	US\$ 76,446	
VTAF II	<u>Non-publicly traded equity investments</u>							
	Sentelic	-	Financial assets at fair value through other comprehensive income	1,019	US\$ 2,018	4	US\$ 2,018	
	Aether Systems, Inc.	-	"	1,085	US\$ 349	20	US\$ 349	
	5V Technologies, Inc.	-	"	364	US\$ 310	2	US\$ 310	
VTAF III	<u>Non-publicly traded equity investments</u>							
	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	<u>Non-publicly traded equity investments</u>							
	Innovium, Inc.	-	Financial assets at fair value through other comprehensive income	230	US\$ 1,219	-	US\$ 1,219	
	Innovium, Inc.	-	"	221	US\$ 1,173	-	US\$ 1,173	
	CNEX Labs, Inc.	-	"	237	US\$ 775	-	US\$ 775	

(Concluded)

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 SIX MONTHS ENDED JUNE 30, 2019
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)		
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)	Amount
TSMC	<u>Commercial paper</u> Taiwan Power Company	Financial assets at amortized cost	-	-	180	\$ 1,795,261	-	\$ -	180	\$ 1,800,000	\$ 1,800,000	\$ -	-	\$ -
	CPC Corporation, Taiwan	"	-	-	50	498,837	-	-	50	500,000	500,000	-	-	-
	<u>Publicly traded stocks</u> Semiconductor Manufacturing International Corporation	Financial assets at fair value through other comprehensive income	-	-	21,105	568,150	-	-	13,500	500,120	334,530	165,590	7,605	263,321
TSMC Global	<u>Corporate bond</u> Bank of America Corp	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 44,755	-	US\$ 11,004	-	US\$ 7,772	US\$ 7,811	US\$ (39)	-	US\$ 49,445
	Citigroup Inc	"	-	-	-	US\$ 28,602	-	US\$ 15,969	-	US\$ 4,823	US\$ 4,861	US\$ (38)	-	US\$ 40,655
	Morgan Stanley	"	-	-	-	US\$ 19,581	-	US\$ 15,612	-	US\$ 6,545	US\$ 6,501	US\$ 44	-	US\$ 29,204
	JPMorgan Chase & Co	"	-	-	-	US\$ 16,577	-	US\$ 9,768	-	US\$ 9,563	US\$ 9,600	US\$ (37)	-	US\$ 17,376
	Bristol-Myers Squibb Co	"	-	-	-	-	-	US\$ 14,856	-	US\$ 1,590	US\$ 1,586	US\$ 4	-	US\$ 13,570
	Fiserv Inc	"	-	-	-	US\$ 1,455	-	US\$ 10,185	-	-	-	-	-	US\$ 11,807
	Toronto-Dominion Bank/The	"	-	-	-	US\$ 5,000	-	US\$ 10,877	-	US\$ 4,577	US\$ 4,494	US\$ 83	-	US\$ 11,522
	Comcast Corp	"	-	-	-	US\$ 18,894	-	US\$ 1,764	-	US\$ 10,245	US\$ 9,842	US\$ 403	-	US\$ 11,133
	International Business Machines Corp	"	-	-	-	-	-	US\$ 12,552	-	US\$ 3,060	US\$ 3,066	US\$ (6)	-	US\$ 9,580
	Anheuser-Busch InBev Worldwide Inc	"	-	-	-	-	-	US\$ 11,039	-	US\$ 6,093	US\$ 5,824	US\$ 269	-	US\$ 5,640
	AXA Equitable Holdings Inc	"	-	-	-	US\$ 5,662	-	US\$ 6,131	-	US\$ 10,961	US\$ 10,737	US\$ 224	-	US\$ 1,171
	Wells Fargo & Co	Financial assets at amortized cost	-	-	-	US\$ 149,941	-	US\$ 10,187	-	-	-	-	-	US\$ 160,117
	JPMorgan Chase & Co.	"	-	-	-	US\$ 124,948	-	-	-	US\$ 40,000	US\$ 40,000	-	-	US\$ 84,967
	Commonwealth Bank of Australia	"	-	-	-	US\$ 49,994	-	-	-	US\$ 50,000	US\$ 50,000	-	-	-
	Westpac Banking Corp.	"	-	-	-	US\$ 99,987	-	-	-	US\$ 100,000	US\$ 100,000	-	-	-
	Bank of Nova Scotia	"	-	-	-	US\$ 49,976	-	-	-	US\$ 50,000	US\$ 50,000	-	-	-
	National Australia Bank	"	-	-	-	US\$ 49,994	-	-	-	US\$ 50,000	US\$ 50,000	-	-	-
	Goldman Sachs Group, Inc.	"	-	-	-	US\$ 99,900	-	-	-	US\$ 100,000	US\$ 100,000	-	-	-
	<u>Government bond</u> United States Treasury Note/Bond	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 283,314	-	US\$ 686,928	-	US\$ 631,743	US\$ 628,616	US\$ 3,127	-	US\$ 346,678
	United States Treasury Floating Rate Note	"	-	-	-	US\$ 68,164	-	-	-	US\$ 68,186	US\$ 68,239	US\$ (53)	-	-

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)		
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)	Amount
TSMC Global	<u>Agency bonds/Agency mortgage-backed securities</u> FNMA TBA 30 Yr 4.5	Financial assets at fair value through other comprehensive income	-	-	-	\$ -	-	US\$ 218,741	-	US\$ 151,377	US\$ 151,330	US\$ 47	-	US\$ 67,448
	GNMA II TBA 30 Yr 3.5	"	-	-	-	US\$ 1,157	-	US\$ 47,461	-	US\$ 17,080	US\$ 17,040	US\$ 40	-	US\$ 31,622
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 26,015	-	US\$ 197	US\$ 197	US\$ -	-	US\$ 26,190
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 24,951	-	US\$ 337	US\$ 342	US\$ (5)	-	US\$ 24,885
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 21,757	-	US\$ 355	US\$ 360	US\$ (5)	-	US\$ 21,665
	Freddie Mac Pool	"	-	-	-	-	-	US\$ 19,993	-	-	-	US\$ -	-	US\$ 20,144
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 19,999	-	-	-	US\$ -	-	US\$ 20,135
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 19,951	-	-	-	US\$ -	-	US\$ 20,108
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 19,605	-	-	-	US\$ -	-	US\$ 19,616
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 16,982	-	-	-	US\$ -	-	US\$ 16,924
	GNMA II TBA 30 Yr 4	"	-	-	-	US\$ 2,129	-	US\$ 29,472	-	US\$ 15,049	US\$ 15,020	US\$ 29	-	US\$ 16,588
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 16,008	-	-	-	US\$ -	-	US\$ 16,124
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 16,687	-	US\$ 712	US\$ 731	US\$ (19)	-	US\$ 16,097
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 15,995	-	-	-	US\$ -	-	US\$ 16,021
	Fannie Mae Pool	"	-	-	-	US\$ 40,059	-	-	-	US\$ 26,762	US\$ 27,292	US\$ (530)	-	US\$ 14,142
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 14,610	-	US\$ 633	US\$ 650	US\$ (17)	-	US\$ 14,067
	FNMA TBA 30 Yr 3	"	-	-	-	-	-	US\$ 115,075	-	US\$ 101,509	US\$ 101,277	US\$ 232	-	US\$ 13,832
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 13,778	-	US\$ 253	US\$ 257	US\$ (4)	-	US\$ 13,728
	GNMA II TBA 30 Yr 3	"	-	-	-	-	-	US\$ 22,963	-	US\$ 9,806	US\$ 9,726	US\$ 80	-	US\$ 13,285
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 12,893	-	-	-	US\$ -	-	US\$ 13,005
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 12,515	-	US\$ 120	US\$ 122	US\$ (2)	-	US\$ 12,507
	FNMA Pool BM1948	"	-	-	-	US\$ 26,046	-	-	-	US\$ 14,360	US\$ 14,647	US\$ (287)	-	US\$ 12,379
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	-	-	-	US\$ 33,864	-	US\$ 23,139	US\$ 22,616	US\$ 523	-	US\$ 11,519
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 11,390	-	-	-	US\$ -	-	US\$ 11,362
	Fannie Mae-Aces	"	-	-	-	-	-	US\$ 10,575	-	-	-	US\$ -	-	US\$ 10,696
	Fannie Mae or Freddie Mac	"	-	-	-	-	-	US\$ 34,701	-	US\$ 24,183	US\$ 24,140	US\$ 43	-	US\$ 10,570
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 10,212	-	US\$ 106	US\$ 108	US\$ (2)	-	US\$ 10,208
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	-	-	-	US\$ 9,824	-	-	-	US\$ -	-	US\$ 10,109
	Fannie Mae-Aces	"	-	-	-	-	-	US\$ 11,110	-	US\$ 4,153	US\$ 4,033	US\$ 120	-	US\$ 7,129
	FNMA TBA 30 Yr 3.5	"	-	-	-	-	-	US\$ 215,966	-	US\$ 210,550	US\$ 210,074	US\$ 476	-	US\$ 5,906
	FNMA TBA 30 Yr 5	"	-	-	-	US\$ 24,761	-	US\$ 71,893	-	US\$ 93,238	US\$ 93,137	US\$ 101	-	US\$ 3,562
	Fannie Mae-Aces	"	-	-	-	-	-	US\$ 19,910	-	US\$ 17,377	US\$ 16,813	US\$ 564	-	US\$ 3,267
	FNMA TBA 15 Yr 3	"	-	-	-	-	-	US\$ 25,820	-	US\$ 23,316	US\$ 23,277	US\$ 39	-	US\$ 2,550
	FNMA TBA 15 Yr 3.5	"	-	-	-	US\$ 2,020	-	US\$ 24,497	-	US\$ 24,509	US\$ 24,450	US\$ 59	-	US\$ 2,064
	FNMA Pool BM4493	"	-	-	-	US\$ 16,915	-	US\$ 1,795	-	US\$ 17,232	US\$ 17,091	US\$ 141	-	US\$ 1,737
	Freddie Mac Multifamily Structured Pass Through Certificates	"	-	-	-	US\$ 513	-	US\$ 10,877	-	US\$ 11,154	US\$ 11,003	US\$ 151	-	US\$ 407
	FED HM LN PC Pool G61592	"	-	-	-	US\$ 21,507	-	US\$ (40)	-	US\$ 21,673	US\$ 21,448	US\$ 225	-	-
	FNMA Pool BM4495	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 27,324	-	-	-	US\$ 28,065	US\$ 27,635	US\$ 430	-	-
	GNMA II TBA 30 Yr 5	"	-	-	-	US\$ 12,209	-	US\$ 37,505	-	US\$ 49,776	US\$ 49,727	US\$ 49	-	-
	FED HM LN PC Pool G61603	"	-	-	-	US\$ 25,515	-	-	-	US\$ 25,966	US\$ 25,627	US\$ 339	-	-
	FED HM LN PC Pool G61553	"	-	-	-	US\$ 15,045	-	-	-	US\$ 15,177	US\$ 15,109	US\$ 68	-	-
	Freddie Mac Gold Pool	"	-	-	-	-	-	US\$ 15,441	-	US\$ 15,631	US\$ 15,460	US\$ 171	-	-
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 15,430	-	US\$ 15,615	US\$ 15,461	US\$ 154	-	-

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-party	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)		
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)	Amount
TSMC Global	Freddie Mac Gold Pool	Financial assets at fair value through other comprehensive income	-	-	-	\$ -	-	US\$ 20,044	-	US\$ 20,302	US\$ 20,081	US\$ 221	-	\$ -
	FNMA PooL BM4681	"	-	-	-	US\$ 31,784	-	-	-	US\$ 32,259	US\$ 31,819	US\$ 440	-	-
	FNMA Pool CA2352	"	-	-	-	US\$ 25,130	-	-	-	US\$ 25,161	US\$ 25,104	US\$ 57	-	-
	Fannie Mae Pool	"	-	-	-	-	-	US\$ 21,932	-	US\$ 22,196	US\$ 21,977	US\$ 219	-	-
	GNMA II Pool MA5468	"	-	-	-	US\$ 17,490	-	-	-	US\$ 17,460	US\$ 17,639	US\$ (179)	-	-
	Fannie Mae Pool	"	-	-	-	US\$ 9,743	-	-	-	US\$ 9,881	US\$ 10,148	US\$ (267)	-	-
	FNMA TBA 30 Yr 4	"	-	-	-	-	-	US\$ 16,541	-	US\$ 16,535	US\$ 16,541	US\$ (6)	-	-
	FED HM LN PC Pool G61654	"	-	-	-	US\$ 18,555	-	-	-	US\$ 18,883	US\$ 18,606	US\$ 277	-	-
	FHLMC TBA 30 Yr 3	"	-	-	-	US\$ 15	-	US\$ 43,768	-	US\$ 43,961	US\$ 43,782	US\$ 179	-	-
	FNMA Pool CA2169	"	-	-	-	US\$ 13,859	-	-	-	US\$ 13,966	US\$ 13,962	US\$ 4	-	-
	<u>Asset-backed securities</u>													
	Citibank Credit Card Issuance Trust	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 68,487	-	US\$ 995	-	US\$ 60,899	US\$ 60,848	US\$ 51	-	US\$ 8,917
	Discover Card Execution Note Trust	"	-	-	-	US\$ 37,495	-	-	-	US\$ 35,357	US\$ 35,410	US\$ (53)	-	US\$ 2,278
	American Express Credit Account Master Trust	"	-	-	-	US\$ 27,285	-	-	-	US\$ 25,515	US\$ 25,563	US\$ (48)	-	US\$ 1,896
	Chase Issuance Trust	"	-	-	-	US\$ 43,604	-	-	-	US\$ 43,763	US\$ 43,697	US\$ 66	-	-
	Ford Credit Floorplan Master Owner Trust A	"	-	-	-	US\$ 26,702	-	-	-	US\$ 26,696	US\$ 26,748	US\$ (52)	-	-

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

(Concluded)

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 SIX MONTHS ENDED JUNE 30, 2019

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

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab	March 25, 2019	\$ 888,800	Monthly settlement by the construction progress and acceptance	PAN ASIA Corp.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

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 SIX MONTHS ENDED JUNE 30, 2019

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

Company Name	Related Party	Nature of Relationships	Transaction Details				Abnormal Transaction		Notes/Accounts Payable or Receivable		Note
			Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)	% to Total	
TSMC	TSMC North America GUC	Subsidiary Associate	Sales	\$ 278,153,694	58	Net 30 days from invoice date (Note)	-	Note	\$ 65,954,123	61	
			Sales	1,740,066	-	Net 30 days from the end of the month of when invoice is issued	-	-	272,758	-	
	TSMC China	Subsidiary	Purchases	7,172,556	17	Net 30 days from the end of the month of when invoice is issued	-	-	(1,271,997)	4	
	TSMC Nanjing	Subsidiary	Purchases	6,670,180	16	Net 30 days from the end of the month of when invoice is issued	-	-	(1,173,952)	3	
	WaferTech	Indirect subsidiary	Purchases	3,226,686	8	Net 30 days from the end of the month of when invoice is issued	-	-	(918,738)	3	
	VIS	Associate	Purchases	1,733,952	4	Net 30 days from the end of the month of when invoice is issued	-	-	(123,504)	-	
	SSMC	Associate	Purchases	1,048,607	3	Net 30 days from the end of the month of when invoice is issued	-	-	(282,611)	1	
TSMC North America	GUC	Associate of TSMC	Sales	709,841 (US\$ 22,964)	-	Net 30 days from invoice date	-	-	54,617 (US\$ 1,759)	-	
VisEra Tech	Xintec	Associate of TSMC	Sales	106,519	9	Net 30 days from the end of the month of when invoice is issued	-	-	77,531	19	

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT\$100 MILLION OR 20% OF THE PAID-IN CAPITAL
JUNE 30, 2019

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

Company Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue		Amounts Received in Subsequent Period	Allowance for Bad Debts
					Amount	Action Taken		
TSMC	TSMC North America	Subsidiary	\$ 66,785,780	50	\$ 2,297,693	-	\$ 33,996,777	\$ -
	VIS	Associate	1,498,109	Note 2	-	-	-	-
	VisEra	Subsidiary	512,768	Note 2	-	-	-	-
	TSMC Nanjing	Subsidiary	378,314	Note 2	-	-	-	-
	GUC	Associate	272,901	34	-	-	-	-
TSMC China	TSMC Nanjing	The same parent company	30,022,044 (RMB 6,639,695)	Note 2	-	-	-	-
	TSMC	Parent company	1,271,997 (RMB 281,313)	33	-	-	-	-
TSMC Nanjing	TSMC	Parent company	1,173,952 (RMB 259,629)	21	-	-	-	-
WaferTech	TSMC	The ultimate parent of the Company	918,738 (USD 29,583)	57	489,765 (USD 15,770)	-	489,765 (USD 15,770)	-
	TSMC Development	Parent company	231,741 (USD 7,462)	Note 2	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	321,858 (USD 10,364)	Note 2	-	-	-	-

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

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INTERCOMPANY RELATIONSHIPS AND SIGNIFICANT INTERCOMPANY TRANSACTIONS
FOR THE SIX MONTHS ENDED JUNE 30, 2019
(Amounts in Thousands of New Taiwan Dollars)

No.	Company Name	Counter Party	Nature of Relationship (Note 1)	Intercompany Transactions			
				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	\$ 278,153,694	-	61%
				Receivables from related parties	65,954,123	-	3%
				Other receivables from related parties	831,657	-	-
		TSMC Japan	1	Marketing expenses - commission	112,048	-	-
				TSMC Europe	1	Marketing expenses - commission	224,701
		TSMC China	1	Purchases	7,172,556	-	2%
				Payables to related parties	1,271,997	-	-
		TSMC Nanjing	1	Purchases	6,670,180	-	1%
				Proceeds from disposal of property, plant and equipment	935,683	-	-
				Other receivables from related parties	378,314	-	-
Payables to related parties	1,173,952			-	-		
TSMC Canada	1	Research and development expenses	156,323	-	-		
TSMC Technology	1	Research and development expenses	1,250,432	-	-		
		Payables to related parties	321,858	-	-		
WaferTech	1	Purchases	3,226,686	-	1%		
		Payables to related parties	918,738	-	-		
VisEra	1	Other receivables from related parties	506,859	-	-		
1	TSMC China	TSMC Nanjing	3	Other receivables from related parties	30,022,044	-	1%
2	TSMC Development	WaferTech	3	Other receivables from related parties	231,741	-	-

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.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEEES OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
 FOR THE SIX MONTHS ENDED JUNE 30, 2019
 (Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of June 30, 2019			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				June 30, 2019 (Foreign Currencies in Thousands)	December 31, 2018 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC	TSMC Global	Tortola, British Virgin Islands	Investment activities	\$ 355,162,309 (Note 3)	\$ 355,162,309	11	100	\$ 405,916,175	\$ 5,807,657	\$ 5,807,657	Subsidiary
	TSMC Partners	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	53,939,480	1,014,267	1,014,267	Subsidiary
	VIS	Hsin-Chu, Taiwan	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	10,180,677	464,223	28	8,341,406	2,867,302	809,573	Associate
	SSMC	Singapore	Manufacturing and selling of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	6,141,048	793,917	307,960	Associate
	TSMC North America	San Jose, California, U.S.A	Selling and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	4,549,226	234,975	234,975	Subsidiary
	VisEra Tech	Hsin-Chu, Taiwan	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	5,005,171	5,005,171	253,120	87	4,055,152	33,909	29,463	Subsidiary
	Xintec	Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	1,618,487	(365,255)	(149,587)	Associate
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	1,219,064	256,455	89,349	Associate
	TSMC Europe	Amsterdam, the Netherlands	Customer service and supporting activities	15,749	15,749	-	100	468,060	19,998	19,998	Subsidiary
	VTAF III	Cayman Islands	Investing in new start-up technology companies	1,309,772	1,308,244	-	98	205,415	2,718	2,664	Subsidiary
	TSMC Japan	Yokohama, Japan	Customer service and supporting activities	83,760	83,760	6	100	149,390	2,864	2,864	Subsidiary
	VTAF II	Cayman Islands	Investing in new start-up technology companies	260,300	278,800	-	98	109,645	(2,001)	(1,960)	Subsidiary
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	80	100	41,245	1,324	1,324	Subsidiary
	TSMC Solar Europe GmbH	Hamburg, Germany	Selling of solar related products and providing customer service	-	25,266	-	-	-	-	-	Subsidiary
TSMC Partners	TSMC Development	Delaware, U.S.A	Investing in companies involved in the manufacturing related business in the semiconductor industry	18,227,972 (US\$ 586,939)	18,227,972 (US\$ 586,939)	-	100	30,065,574 (US\$ 968,108)	522,768 (US\$ 16,880)	Note 2	Subsidiary
	TSMC Technology	Delaware, U.S.A	Engineering support activities	443,542 (US\$ 14,282)	443,542 (US\$ 14,282)	-	100	654,783 (US\$ 21,084)	61,541 (US\$ 1,988)	Note 2	Subsidiary
	TSMC Canada	Ontario, Canada	Engineering support activities	71,429 (US\$ 2,300)	71,429 (US\$ 2,300)	2,300	100	230,603 (US\$ 7,425)	14,512 (US\$ 468)	Note 2	Subsidiary
	ISDF	Cayman Islands	Investing in new start-up technology companies	14,758 (US\$ 475)	14,758 (US\$ 475)	583	97	525 (US\$ 17)	10 (US\$ -)	Note 2	Subsidiary
	ISDF II	Cayman Islands	Investing in new start-up technology companies	-	-	9,299	97	-	-	Note 2	Subsidiary
VTAF III	Growth Fund	Cayman Islands	Investing in new start-up technology companies	68,440 (US\$ 2,204)	66,887 (US\$ 2,154)	-	100	99,718 (US\$ 3,211)	(619) (US\$ (20))	Note 2	Subsidiary
	Mutual-Pak	New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	49,483 (US\$ 1,593)	49,483 (US\$ 1,593)	4,693	30	32,728 (US\$ 1,054)	15,678 (US\$ 504)	Note 2	Associate

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of June 30, 2019			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				June 30, 2019 (Foreign Currencies in Thousands)	December 31, 2018 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC Development	WaferTech	Washington, U.S.A	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	\$ -	\$ -	293,637	100	\$ 4,903,123 (US\$ 157,880)	\$ 259,931 (US\$ 8,392)	Note 2	Subsidiary

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

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

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 June 30, 2019.

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR SIX MONTHS ENDED JUNE 30, 2019

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

Investee Company	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Accumulated Outflow of Investment from Taiwan as of January 1, 2019 (US\$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of June 30, 2019 (US\$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of June 30, 2019	Accumulated Inward Remittance of Earnings as of June 30, 2019
					Outflow (US\$ in Thousands)	Inflow						
TSMC China	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	\$ 18,939,667 (RMB 4,502,080)	Note 1	\$ 18,939,667 (US\$ 596,000)	\$ -	\$ -	\$ 18,939,667 (US\$ 596,000)	\$ 1,203,240	100%	\$ 1,242,461 (Note 2)	\$ 57,252,726	\$ -
TSMC Nanjing	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	30,521,412 (RMB 6,650,119)	Note 1	30,521,412 (US\$ 1,000,000)	-	-	30,521,412 (US\$ 1,000,000)	(2,292,382)	100%	(2,403,955) (Note 2)	18,609,825	-

Accumulated Investment in Mainland China as of June 30, 2019 (US\$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US\$ in Thousands)	Upper Limit on Investment
\$ 49,461,079 (US\$ 1,596,000)	\$ 119,412,667 (US\$ 3,596,000)	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 reviewed 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.