Financial Highlights and Analysis

6.1 Financial Highlights

6.1.1 Condensed Balance Sheet

Condensed Balance Sheet from 2015 to 2019 (Consolidated)

Unit: NT$ thousands

Item \ Year	2015	2016	2017	2018	2019
Current Assets	746,743,991	817,729,126	857,203,110	951,679,721	822,613,914
Long-term Investments (Note 1)	34,993,583	46,153,916	41,569,074	29,304,796	30,172,039
Property, Plant and Equipment	853,470,392	997,777,687	1,062,542,322	1,072,050,279	1,352,377,405
Right-of-use Assets	0	0	0	0	17,232,402
Intangible Assets	14,065,880	14,614,846	14,175,140	17,002,137	20,653,028
Other Assets (Note 2)	8,244,452	10,179,727	16,371,997	20,091,105	21,756,244
Total Assets	1,657,518,298	1,886,455,302	1,991,861,643	2,090,128,038	2,264,805,032
Current Liabilities					
Before Distribution	212,228,594	318,239,273	358,706,680	340,542,586	590,735,701
After Distribution	367,810,877	499,751,936	566,149,724	547,985,630	655,561,652 (Note 3)
Noncurrent Liabilities	222,655,225	178,164,903	110,395,320	72,089,056	51,973,905
Total Liabilities					
Before Distribution	434,883,819	496,404,176	469,102,000	412,631,642	642,709,606
After Distribution	590,466,102	677,916,839	676,545,044	620,074,686	707,535,557 (Note 3)
Equity Attributable to Shareholders of the Parent					
Capital Stock	259,303,805	259,303,805	259,303,805	259,303,805	259,303,805
Capital Surplus	56,300,215	56,272,304	56,309,536	56,315,932	56,339,709
Retained Earnings					
Before Distribution	894,293,586	1,072,008,169	1,233,362,010	1,376,647,841	1,333,334,979
After Distribution	738,711,303	890,495,506	1,025,918,966	1,169,204,797	1,268,509,028 (Note 3)
Others	11,774,113	1,663,983	(26,917,818)	(15,449,913)	(27,568,369)
Equity Attributable to Shareholders of the Parent					
Before Distribution	1,221,671,719	1,389,248,261	1,522,057,533	1,676,817,665	1,621,410,124
After Distribution	1,066,089,436	1,207,735,598	1,314,614,489	1,469,374,621	1,556,584,173 (Note 3)
Noncontrolling Interests	962,760	802,865	702,110	678,731	685,302
Total Equity					
Before Distribution	1,222,634,479	1,390,051,126	1,522,759,643	1,677,496,396	1,622,095,426
After Distribution	1,067,052,196	1,208,538,463	1,315,316,599	1,470,053,352	1,557,269,475 (Note 3)

Note 1: Long-term investments as of December 31, 2015, 2016 and 2017 include noncurrent available-for-sale financial assets, held-to-maturity financial assets, financial assets carried at cost and investments accounted for using equity method. Starting from 2018, upon initial application of IFRS 9 "Financial Instruments", the category includes noncurrent financial assets at fair value through other comprehensive income, noncurrent financial assets at amortized cost, and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.
Note 3: The amount approved by Board of Directors on February 11, 2020.

Condensed Balance Sheet from 2015 to 2019 (Unconsolidated)

Unit: NT$ thousands

Item \ Year	2015	2016	2017	2018	2019
Current Assets	426,913,080	443,781,164	436,769,337	469,966,106	355,118,125
Long-term Investments (Note 1)	326,330,737	397,290,976	464,401,415	550,524,494	559,380,999
Property, Plant and Equipment	831,784,912	979,401,337	1,016,355,970	1,025,286,941	1,310,900,634
Right-of-use Assets	0	0	0	0	15,030,020
Intangible Assets	9,391,418	10,047,991	9,870,127	12,429,930	16,271,444
Other Assets (Note 2)	5,265,368	6,816,676	11,992,542	17,253,537	18,774,850
Total Assets	1,599,685,515	1,837,338,144	1,939,389,391	2,075,461,008	2,275,476,072
Current Liabilities					
Before Distribution	194,299,278	308,177,214	308,383,240	328,060,518	605,540,547
After Distribution	349,881,561	489,689,877	515,826,284	535,503,562	670,366,498 (Note 3)
Noncurrent Liabilities	183,714,518	139,912,669	108,948,618	70,582,825	48,525,401
Total Liabilities					
Before Distribution	378,013,796	448,089,883	417,331,858	398,643,343	654,065,948
After Distribution	533,596,079	629,602,546	624,774,902	606,086,387	718,891,899 (Note 3)
Equity					
Capital Stock	259,303,805	259,303,805	259,303,805	259,303,805	259,303,805
Capital Surplus	56,300,215	56,272,304	56,309,536	56,315,932	56,339,709
Retained Earnings					
Before Distribution	894,293,586	1,072,008,169	1,233,362,010	1,376,647,841	1,333,334,979
After Distribution	738,711,303	890,495,506	1,025,918,966	1,169,204,797	1,268,509,028 (Note 3)
Others	11,774,113	1,663,983	(26,917,818)	(15,449,913)	(27,568,369)
Total Equity					
Before Distribution	1,221,671,719	1,389,248,261	1,522,057,533	1,676,817,665	1,621,410,124
After Distribution	1,066,089,436	1,207,735,598	1,314,614,489	1,469,374,621	1,556,584,173 (Note 3)

Note 1: Long-term investments as of December 31, 2015, 2016 and 2017 include held-to-maturity financial assets, financial assets carried at cost and investments accounted for using equity method. Starting from 2018, upon initial application of IFRS 9 "Financial Instruments", the category includes noncurrent financial assets at fair value through other comprehensive income and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.
Note 3: The amount approved by Board of Directors on February 11, 2020.

6.1.2 Condensed Statement of Comprehensive Income

Condensed Statement of Comprehensive Income from 2015 to 2019 (Consolidated)

Unit: NT$ thousands (Except EPS: NT$)

Item \ Year	2015	2016	2017	2018	2019
Net Revenue	843,497,368	947,938,344	977,447,241	1,031,473,557	1,069,985,448
Gross Profit	410,394,893	474,832,098	494,826,402	497,874,253	492,701,896
Income from Operations	320,047,775	377,957,778	385,559,223	383,623,524	372,701,090
Non-operating Income and Expenses	30,381,136	8,001,602	10,573,807	13,886,739	17,144,246
Income before Income Tax	350,428,911	385,959,380	396,133,030	397,510,263	389,845,336
Net Income	306,556,167	334,338,236	343,146,848	351,184,406	345,343,809
Other Comprehensive Income for the Year, Net of Income Tax	(14,714,182)	(11,067,189)	(28,821,631)	9,836,976	(11,823,562)
Total Comprehensive Income for the Year	291,841,985	323,271,047	314,325,217	361,021,382	333,520,247
Net Income (Loss) Attributable to:					
Shareholders of the Parent	306,573,837	334,247,180	343,111,476	351,130,884	345,263,668
Noncontrolling Interests	(17,670)	91,056	35,372	53,522	80,141
Total Comprehensive Income (Loss) Attributable to:					
Shareholders of the Parent	291,867,757	323,186,736	314,294,993	360,965,015	333,440,460
Noncontrolling Interests	(25,772)	84,311	30,224	56,367	79,787
Basic/Diluted Earnings Per Share (Note)	11.82	12.89	13.23	13.54	13.32

Note: Based on weighted average shares outstanding in each year.

Condensed Statement of Comprehensive Income from 2015 to 2019 (Unconsolidated)

Unit: NT$ thousands (Except EPS: NT$)

Item \ Year	2015	2016	2017	2018	2019
Net Revenue	837,046,888	936,387,291	969,136,109	1,023,925,713	1,059,646,793
Gross Profit	397,708,840	461,808,296	478,937,691	492,955,501	480,143,141
Income from Operations	313,408,698	369,730,533	374,690,117	384,027,838	365,923,992
Non-operating Income and Expenses	36,579,970	15,458,427	18,626,059	12,170,315	22,821,227
Income before Income Tax	349,988,668	385,188,960	393,316,176	396,198,153	388,745,219
Net Income	306,573,837	334,247,180	343,111,476	351,130,884	345,263,668
Other Comprehensive Income for the Year, Net of Income Tax	(14,706,080)	(11,060,444)	(28,816,483)	9,834,131	(11,823,208)
Total Comprehensive Income for the Year	291,867,757	323,186,736	314,294,993	360,965,015	333,440,460
Basic/Diluted Earnings Per Share (Note)	11.82	12.89	13.23	13.54	13.32

Note: Based on weighted average shares outstanding in each year.

6.1.3 Financial Analysis

Financial Analysis from 2015 to 2019 (Consolidated)

		2015	2016	2017	2018	2019
Capital Structure Analysis	Debts Ratio (%)	26.24	26.31	23.55	19.74	28.38
	Long-term Fund to Property, Plant and Equipment (%)	169.34	157.17	153.70	163.20	123.79
Liquidity Analysis	Current Ratio (%)	351.86	256.95	238.97	279.46	139.25
	Quick Ratio (%)	319.58	241.34	217.94	248.76	124.92
	Times Interest Earned (Times)	110.84	117.74	119.95	131.28	120.92
Operating Performance Analysis	Average Collection Turnover (Times)	8.37	8.78	7.74	8.19	7.95
	Days Sales Outstanding	43.61	41.57	47.16	44.57	45.91
	Average Inventory Turnover (Times)	6.49	8.18	7.88	6.02	6.20
	Average Inventory Turnover Days	56.24	44.62	46.32	60.63	58.87
	Average Payment Turnover (Times)	20.10	20.11	16.82	16.56	15.48
	Property, Plant and Equipment Turnover (Times)	1.01	1.02	0.95	0.97	0.88
	Total Assets Turnover (Times)	0.54	0.53	0.50	0.51	0.49
Profitability Analysis	Return on Total Assets (%)	19.62	19.03	17.84	17.34	15.99
	Return on Equity Attributable to Shareholders of the Parent (%)	27.04	25.60	23.57	21.95	20.94
	Operating Income to Paid-in Capital Ratio (%)	123.43	145.76	148.69	147.94	143.73
	Pre-tax Income to Paid-in Capital Ratio (%)	135.14	148.84	152.77	153.30	150.34
	Net Margin (%)	36.34	35.27	35.11	34.05	32.28
	Basic Earnings Per Share (NT$)	11.82	12.89	13.23	13.54	13.32
	Diluted Earnings Per Share (NT$)	11.82	12.89	13.23	13.54	13.32
Cash Flow	Cash Flow Ratio (%)	249.67	169.63	163.17	168.54	104.13
	Cash Flow Adequacy Ratio (%)	103.82	108.57	112.41	113.11	106.60
	Cash Flow Reinvestment Ratio (%)	13.76	11.51	11.08	9.06	8.45
Leverage	Operating Leverage	2.26	2.15	2.16	2.28	2.41
	Financial Leverage	1.01	1.01	1.01	1.01	1.01
Industry Specific Key Performance Indicator	Billing Utilization Rate (%) (Note)	93	92	91	87	81
	Advanced Technologies (16-nanometer and below) Percentage of Wafer Sales (%)	5	21	32	41	50
	Sales Growth (%)	10.58	12.38	3.11	5.53	3.73
	Net Income Growth (%)	16.18	9.03	2.65	2.34	-1.67

Analysis of deviation of 2019 vs. 2018 over 20%:
1.Debts ratio increased by 44%, current ratio decreased by 50%, quick ratio decreased by 50% and cash flow ratio decreased by 38% mainly due to increase in short-term loans, payables to contractors and equipment suppliers and cash dividends payable.
2. Long-term fund to property, plant and equipment decreased by 24% mainly due to increase in advanced technology equipment.

Note: Capacity includes wafers committed by Vanguard and SSMC.

* Glossary

1. Capital Structure Analysis
   (1) Debt Ratio = Total Liabilities / Total Assets
   (2) Long-term Fund to Property, Plant and Equipment Ratio = (Shareholders' Equity + Noncurrent Liabilities) / Net Property, Plant and Equipment
2. Liquidity Analysis
   (1) Current Ratio = Current Assets / Current Liabilities
   (2) Quick Ratio = (Current Assets - Inventories - Prepaid Expenses) / Current Liabilities
   (3) Times Interest Earned = Earnings before Interest and Taxes / Interest Expenses
3. Operating Performance Analysis
   (1) Average Collection Turnover = Net Sales / Average Trade Receivables
   (2) Days Sales Outstanding = 365 / Average Collection Turnover
   (3) Average Inventory Turnover = Cost of Sales / Average Inventory
   (4) Average Inventory Turnover Days = 365 / Average Inventory Turnover
   (5) Average Payment Turnover = Cost of Sales / Average Trade Payables
   (6) Property, Plant and Equipment Turnover = Net Sales / Average Net Property, Plant and Equipment
   (7) Total Assets Turnover = Net Sales / Average Total Assets
4. Profitability Analysis
   (1) Return on Total Assets = (Net Income + Interest Expenses * (1 - Effective Tax Rate)) / Average Total Assets
   (2) Return on Equity Attributable to Shareholders of the Parent = Net Income Attributable to Shareholders of the Parent / Average Equity Attributable to Shareholders of the Parent
   (3) Operating Income to Paid-in Capital Ratio = Operating Income / Paid-in Capital
   (4) Pre-tax Income to Paid-in Capital Ratio = Income before Tax / Paid-in Capital
   (5) Net Margin = Net Income / Net Sales
   (6) Earnings Per Share = (Net Income Attributable to Shareholders of the Parent - Preferred Stock Dividend) / Weighted Average Number of Shares Outstanding
5. Cash Flow
   (1) Cash Flow Ratio = Net Cash Provided by Operating Activities / Current Liabilities
   (2) Cash Flow Adequacy Ratio = Five-year Sum of Cash from Operations / Five-year Sum of Capital Expenditures, Inventory Additions, and Cash Dividend
   (3) Cash Flow Reinvestment Ratio = (Cash Provided by Operating Activities - Cash Dividends) / (Gross Property, Plant and Equipment + Long-term Investments + Other Noncurrent Assets + Working Capital)
6. Leverage
   (1) Operating Leverage = (Net Sales - Variable Cost) / Income from Operations
   (2) Financial Leverage = Income from Operations / (Income from Operations - Interest Expenses)

Financial Analysis from 2015 to 2019 (Unconsolidated)

		2015	2016	2017	2018	2019
Capital Structure Analysis	Debt Ratio (%)	23.63	24.39	21.52	19.21	28.74
	Long-term Fund to Property, Plant and Equipment Ratio (%)	168.96	156.13	160.48	170.43	127.39
Liquidity Analysis	Current Ratio (%)	219.72	144.00	141.63	143.26	58.64
	Quick Ratio (%)	186.00	128.65	118.68	113.07	45.81
	Times Interest Earned (Times)	144.41	146.73	144.04	137.46	122.80
Operating Performance Analysis	Average Collection Turnover (Times)	8.58	8.89	7.86	8.45	8.32
	Days Sales Outstanding	42.54	41.07	46.44	43.21	43.88
	Average Inventory Turnover (Times)	6.87	8.56	8.39	6.31	6.65
	Average Inventory Turnover Days	53.11	42.63	43.49	57.89	54.91
	Average Payment Turnover (Times)	19.73	19.04	16.39	16.22	15.10
	Property, Plant and Equipment Turnover (Times)	1.03	1.03	0.97	1.00	0.91
	Total Assets Turnover (Times)	0.55	0.54	0.51	0.51	0.49
Profitability Analysis	Return on Total Assets (%)	20.42	19.58	18.29	17.62	16.00
	Return on Equity (%)	27.04	25.60	23.57	21.95	20.94
	Operating Income to Paid-in Capital Ratio (%)	120.87	142.59	144.50	148.10	141.12
	Pre-tax Income to Paid-in Capital Ratio (%)	134.97	148.55	151.68	152.79	149.92
	Net Margin (%)	36.63	35.70	35.40	34.29	32.58
	Basic Earnings Per Share (NT$)	11.82	12.89	13.23	13.54	13.32
	Diluted Earnings Per Share (NT$)	11.82	12.89	13.23	13.54	13.32
Cash Flow	Cash Flow Ratio (%)	264.94	172.81	184.45	173.17	98.00
	Cash Flow Adequacy Ratio (%)	102.35	107.06	99.42	113.52	106.59
	Cash Flow Reinvestment Ratio (%)	13.85	11.74	10.98	9.23	8.23
Leverage	Operating Leverage	2.31	2.19	2.22	2.28	2.46
	Financial Leverage	1.01	1.01	1.01	1.01	1.01

Analysis of deviation of 2019 vs. 2018 over 20%:
1.Debts ratio increased by 50%, current ratio decreased by 59%, quick ratio decreased by 59% and cash flow ratio decreased by 43% mainly due to increase in short-term loans, payables to contractors and equipment suppliers and cash dividends payable.
2. Long-term fund to property, plant and equipment decreased by 25% mainly due to an increase in advanced technology equipment.

* Glossary

1. Capital Structure Analysis
   (1) Debt Ratio = Total Liabilities / Total Assets
   (2) Long-term Fund to Property, Plant and Equipment Ratio = (Shareholders' Equity + Noncurrent Liabilities) / Net Property, Plant and Equipment
2. Liquidity Analysis
   (1) Current Ratio = Current Assets / Current Liabilities
   (2) Quick Ratio = (Current Assets - Inventories - Prepaid Expenses) / Current Liabilities
   (3) Times Interest Earned = Earnings before Interest and Taxes / Interest Expenses
3. Operating Performance Analysis
   (1) Average Collection Turnover = Net Sales / Average Trade Receivables
   (2) Days Sales Outstanding = 365 / Average Collection Turnover
   (3) Average Inventory Turnover = Cost of Sales / Average Inventory
   (4) Average Inventory Turnover Days = 365 / Average Inventory Turnover
   (5) Average Payment Turnover = Cost of Sales / Average Trade Payables
   (6) Property, Plant and Equipment Turnover = Net Sales / Average Net Property, Plant and Equipment
   (7) Total Assets Turnover = Net Sales / Average Total Assets
4. Profitability Analysis
   (1) Return on Total Assets = (Net Income + Interest Expenses * (1 - Effective Tax Rate)) / Average Total Assets
   (2) Return on Equity = Net Income / Average Shareholders' Equity
   (3) Operating Income to Paid-in Capital Ratio = Operating Income / Paid-in Capital
   (4) Pre-tax Income to Paid-in Capital Ratio = Income before Tax / Paid-in Capital
   (5) Net Margin = Net Income / Net Sales
   (6) Earnings Per Share = (Net Income - Preferred Stock Dividend) / Weighted Average Number of Shares Outstanding
5. Cash Flow
   (1) Cash Flow Ratio = Net Cash Provided by Operating Activities / Current Liabilities
   (2) Cash Flow Adequacy Ratio = Five-year Sum of Cash from Operations / Five-year Sum of Capital Expenditures, Inventory Additions, and Cash Dividend
   (3) Cash Flow Reinvestment Ratio = (Cash Provided by Operating Activities - Cash Dividends) / (Gross Property, Plant and Equipment + Long-term Investments + Other Noncurrent Assets + Working Capital)
6. Leverage
   (1) Operating Leverage = (Net Sales - Variable Cost) / Income from Operations
   (2) Financial Leverage = Income from Operations / (Income from Operations - Interest Expenses)

6.1.4 Auditors' Opinions from 2015 to 2019

Year	CPA	Audit Opinion
2015	Yih-Hsin Kao, Hung-Wen Huang	An Unqualified Opinion
2016	Yih-Hsin Kao, Yu-Feng Huang	An Unmodified Opinion (Note)
2017	Yih-Hsin Kao, Yu-Feng Huang	An Unmodified Opinion (Note)
2018	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion (Note)
2019	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion (Note)

Note: Starting in 2016, the new auditing standard of the Republic of China requires "An Unqualified Opinion" be replaced by "An Unmodified Opinion".

Deloitte & Touche
20F, No. 100, Songren Rd., Xinyi Dist., Taipei, Taiwan, R.O.C.
Tel: 886-2-2725-9988

6.1.5 Audit Committee's Review Report

The Board of Directors has prepared the Company's 2019 Business Report, Financial Statements, and proposal for allocation of quarterly earnings. The CPA firm of Deloitte & Touche was retained to audit TSMC's Financial Statements and has issued an audit report relating to the Financial Statements. The Business Report, Financial Statements, and quarterly earnings allocation proposal have been reviewed and determined to be correct and accurate by the Audit Committee members of Taiwan Semiconductor Manufacturing Company Limited. According to relevant requirements of the Securities and Exchange Act and the Company Law, we hereby submit this report.

Taiwan Semiconductor Manufacturing Company Limited

Chairman of the Audit Committee: Sir Peter L. Bonfield

February 11, 2020

6.1.6 Financial Difficulties

The Company should disclose the financial impact to the Company if the Company and its affiliated companies have incurred any financial or cash flow difficulties in 2019 and as of the date of this Annual Report: None

6.1.7 Consolidated Financial Statements and Independent Auditors' Report along with Parent Company Only Financial Statements and Independent Auditors' Report

Please refer to Annual Report section (II), Financial Statements.

6.2 Financial Status and Operating Results

6.2.1 Financial Status

Consolidated

Unit: NT$ thousands

Item	2019	2018	Difference	%
Current Assets	822,613,914	951,679,721	(129,065,807)	-14%
Long-term Investments (Note 1)	30,172,039	29,304,796	867,243	3%
Property, Plant and Equipment	1,352,377,405	1,072,050,279	280,327,126	26%
Right-of-use Assets	17,232,402	0	17,232,402	NM
Intangible Assets	20,653,028	17,002,137	3,650,891	21%
Other Assets (Note 2)	21,756,244	20,091,105	1,665,139	8%
Total Assets	2,264,805,032	2,090,128,038	174,676,994	8%
Current Liabilities	590,735,701	340,542,586	250,193,115	73%
Noncurrent Liabilities	51,973,905	72,089,056	(20,115,151)	-28%
Total Liabilities	642,709,606	412,631,642	230,077,964	56%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	56,339,709	56,315,932	23,777	0%
Retained Earnings	1,333,334,979	1,376,647,841	(43,312,862)	-3%
Others	(27,568,369)	(15,449,913)	(12,118,456)	78%
Equity Attributable to Shareholders of the Parent	1,621,410,124	1,676,817,665	(55,407,541)	-3%
Total Equity	1,622,095,426	1,677,496,396	(55,400,970)	-3%

Note 1: Long-term investments consist of noncurrent financial assets at fair value through other comprehensive income, noncurrent financial assets at amortized cost, and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.

- **Analysis of Deviation over 20%**

Increase in property, plant and equipment: The increase was mainly due to increase in advanced technology equipment.
Increase in intangible assets: The increase was mainly due to increase in technology license and software.
Increase in current liabilities: The increase was mainly due to increase in short-term loans, payables to contractors and equipment suppliers and cash dividends payable.
Decrease in noncurrent liabilities: The decrease was mainly due to reclassification of bonds payable due in 1 year to current liabilities, partially offset by increase in lease liabilities.
Increase in total liabilities: The increase was mainly due to increase in short-term loans, payables to contractors and equipment suppliers and cash dividends payable.
Decrease in other equity: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2019.

- **Major Impact on Financial Position**

The above deviations had no major impact on TSMC's financial position.

- **Future Plan on Financial Position:** Not applicable.

Unconsolidated

Unit: NT$ thousands

Item	2019	2018	Difference	%
Current Assets	355,118,125	469,966,106	(114,847,981)	-24%
Long-term Investments (Note 1)	559,380,999	550,524,494	8,856,505	2%
Property, Plant and Equipment	1,310,900,634	1,025,286,941	285,613,693	28%
Right-of-use Assets	15,030,020	0	15,030,020	NM
Intangible Assets	16,271,444	12,429,930	3,841,514	31%
Other Assets (Note 2)	18,774,850	17,253,537	1,521,313	9%
Total Assets	2,275,476,072	2,075,461,008	200,015,064	10%
Current Liabilities	605,540,547	328,060,518	277,480,029	85%
Noncurrent Liabilities	48,525,401	70,582,825	(22,057,424)	-31%
Total Liabilities	654,065,948	398,643,343	255,422,605	64%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	56,339,709	56,315,932	23,777	0%
Retained Earnings	1,333,334,979	1,376,647,841	(43,312,862)	-3%
Others	(27,568,369)	(15,449,913)	(12,118,456)	78%
Total Equity	1,621,410,124	1,676,817,665	(55,407,541)	-3%

Note 1: Long-term investments consist of noncurrent financial assets at fair value through other comprehensive income and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.

- **Analysis of Deviation over 20%**

Decrease in current assets: The decrease was mainly due to decrease in cash and cash equivalents.
Increase in property, plant and equipment: The increase was mainly due to increase in advanced technology equipment.
Increase in intangible assets: The increase was mainly due to increase in technology license and software.
Increase in current liabilities: The increase was mainly due to increase in short-term loans, payables to contractors and equipment suppliers and cash dividends payable.
Decrease in noncurrent liabilities: The decrease was mainly due to reclassification of bonds payable due in 1 year to current liabilities, partially offset by increase in lease liabilities.
Increase in total liabilities: The increase was mainly due to increase in short-term loans, payables to contractors and equipment suppliers and cash dividends payable.
Decrease in other equity: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2019.

- **Major Impact on Financial Position**

The above deviations had no major impact on TSMC's financial position.

- **Future Plan on Financial Position:** Not applicable.

6.2.2 Financial Performance

Consolidated

Unit: NT$ thousands

Item	2019	2018	Difference	%
Net Revenue	1,069,985,448	1,031,473,557	38,511,891	4%
Cost of Revenue	577,286,947	533,487,516	43,799,431	8%
Gross Profit before Realized (Unrealized) Gross Profit on Sales to Associates	492,698,501	497,986,041	(5,287,540)	-1%
Realized (Unrealized) Gross Profit on Sales to Associates	3,395	(111,788)	115,183	NM
Gross Profit	492,701,896	497,874,253	(5,172,357)	-1%
Operating Expenses	119,504,582	112,149,280	7,355,302	7%
Other Operating Income and Expenses, Net	(496,224)	(2,101,449)	1,605,225	76%
Income from Operations	372,701,090	383,623,524	(10,922,434)	-3%
Non-operating Income and Expenses	17,144,246	13,886,739	3,257,507	23%
Income before Income Tax	389,845,336	397,510,263	(7,664,927)	-2%
Income Tax Expenses	44,501,527	46,325,857	(1,824,330)	-4%
Net Income	345,343,809	351,184,406	(5,840,597)	-2%
Other Comprehensive Income (Loss), Net of Income Tax	(11,823,562)	9,836,976	(21,660,538)	-220%
Total Comprehensive Income for the Year	333,520,247	361,021,382	(27,501,135)	-8%
Total Net Income Attributable to Shareholders of the Parent	345,263,668	351,130,884	(5,867,216)	-2%
Total Comprehensive Income Attributable to Shareholders of the Parent	333,440,460	360,965,015	(27,524,555)	-8%

- **Analysis of Deviation over 20%**

Increase in realized (unrealized) gross profit on sales to associates: The increase was mainly due to lower sales to investees in the fourth quarter of 2019.
Increase in other operating income and expenses, net: The increase was mainly due to reversal of impairment losses on property, plant and equipment in 2019.
Increase in non-operating income and expenses: The increase was mainly due to higher interest income in 2019.
Decrease in other comprehensive income (loss), net of income tax: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2019.

- **Sales Volume Forecast and Related Information**

For additional details, please refer to "1. Letter to Shareholders".

- **Major Impact on Financial Performance**

The above deviations had no major impact on TSMC's financial performance.

- **Future Plan on Financial Performance:** Not applicable.

Unconsolidated

Unit: NT$ thousands

Item	2019	2018	Difference	%
Net Revenue	1,059,646,793	1,023,925,713	35,721,080	3%
Cost of Revenue	579,507,047	530,861,166	48,645,881	9%
Gross Profit before Realized (Unrealized) Gross Profit on Sales to Subsidiaries and Associates	480,139,746	493,064,547	(12,924,801)	-3%
Realized (Unrealized) Gross Profit on Sales to Subsidiaries and Associates	3,395	(109,046)	112,441	NM
Gross Profit	480,143,141	492,955,501	(12,812,360)	-3%
Operating Expenses	114,067,919	107,259,429	6,808,490	6%
Other Operating Income and Expenses, Net	(151,230)	(1,668,234)	1,517,004	91%
Income from Operations	365,923,992	384,027,838	(18,103,846)	-5%
Non-operating Income and Expenses	22,821,227	12,170,315	10,650,912	88%
Income before Income Tax	388,745,219	396,198,153	(7,452,934)	-2%
Income Tax Expenses	43,481,551	45,067,269	(1,585,718)	-4%
Net Income	345,263,668	351,130,884	(5,867,216)	-2%
Other Comprehensive Income (Loss), Net of Income Tax	(11,823,208)	9,834,131	(21,657,339)	-220%
Total Comprehensive Income for the Year	333,440,460	360,965,015	(27,524,555)	-8%

- **Analysis of Deviation over 20%**

Increase in realized (unrealized) gross profit on sales to subsidiaries and associates: The increase was mainly due to lower sales to investees in the fourth quarter of 2019.

Increase in other operating income and expenses, net: The increase was mainly due to reversal of impairment losses on property, plant and equipment in 2019.

Increase in non-operating income and expenses: The increase was mainly due to higher share of profits of subsidiaries and associates in 2019.

Decrease in other comprehensive income (loss), net of income tax: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2019.

- **Sales Volume Forecast and Related Information**

For additional details, please refer to "1. Letter to Shareholders".

- **Major Impact on Financial Performance**

The above deviations had no major impact on TSMC's financial performance.

- **Future Plan on Financial Performance:** Not applicable.

6.2.3 Cash Flow

Consolidated

Unit: NT$ thousands

Cash Balance 12/31/2018	Net Cash Provided by Operating Activities in 2019	Net Cash Used in Investing Activities in 2019	Net Cash Used in Financing Activities in 2019	Effect of Exchange Rate Changes on Cash and Cash Equivalents in 2019	Cash Balance 12/31/2019	Remedy for Liquidity Shortfall	
						Investment Plan	Financing Plan
577,814,601	615,138,744	(458,801,647)	(269,638,166)	(9,114,196)	455,399,336	None	None

- **Analysis of Cash Flow**

NT$615.1 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT$458.8 billion net cash used in investing activities: primarily for capital expenditures.

NT$269.6 billion net cash used in financing activities: primarily for cash dividend payment and repayment of corporate bonds.

- **Remedial Actions for Liquidity Shortfall**

As a result of positive operating cash flows and cash on-hand, remedial actions are not required.

- **Cash Flow Projection for Next Year:** Not applicable.

Unconsolidated

Unit: NT$ thousands

Cash Balance 12/31/2018	Net Cash Provided by Operating Activities in 2019	Net Cash Used in Investing Activities in 2019	Net Cash Used in Financing Activities in 2019	Cash Balance 12/31/2019	Remedy for Liquidity Shortfall	
					Investment Plan	Financing Plan
240,202,525	593,432,071	(451,460,013)	(240,723,885)	141,450,698	None	None

- **Analysis of Cash Flow**

NT$593.4 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT$451.5 billion net cash used in investing activities: primarily for capital expenditures.

NT$240.7 billion net cash used in financing activities: primarily for cash dividend payment and repayment of corporate bonds.

- **Remedial Actions for Liquidity Shortfall**

As a result of positive operating cash flows and cash on-hand, remedial actions are not required.

- **Cash Flow Projection for Next Year:** Not applicable.

6.2.4 Recent Years Major Capital Expenditures and Impact on Financial and Business

Unit: NT$ thousands

Plan	Actual or Planned Source of Capital	Total Amount for 2019 and 2018	Actual Use of Capital	
			2019	2018
Production Facilities, R&D and Production Equipment	Cash flow generated from operations	768,726,829	456,424,278	312,302,551
Others	Cash flow generated from operations	7,277,202	3,997,872	3,279,330
Total		776,004,031	460,422,150	315,581,881

Based on capital expenditures listed above, TSMC's annual production capacity increased by approximately 0.2 million 12-inch equivalent wafers in 2019.

6.2.5 Long-term Investment Policy and Results

TSMC's long-term investments accounted for using equity method were all made for strategic purposes. However, when an investment is no longer of strategic value, it will be considered a financial investment. In 2019, the gains from these investments amounted to NT$2,844,222 thousand on a consolidated basis, decreasing from previous year mainly due to a decrease in product demand. In the future, TSMC's long-term investments accounted for using equity method will continue to focus on strategic purposes through prudent assessments.

6.3 Risk Management

The Board of Directors plays a key role in helping the Company identify and manage economic risks. The risk management organization periodically briefs the Audit Committee on the ever-changing risk environment facing TSMC, the focus of the Company's enterprise risk management, and risk assessment and mitigation efforts. The Audit Committee's Chairperson also reports on the risk environment and risk mitigation actions to be taken.

TSMC and its subsidiaries are committed to proactively and cost effectively integrating and managing strategic, operational, financial and hazardous risks that represent potential negative consequences to operations and financial results. TSMC operates an enterprise risk management (ERM) program based on both its corporate vision and its long-term, sustainable responsibility to both industry and society. ERM seeks to provide the appropriate management of risks on behalf of all stakeholders. The Company maintains a risk map that considers likelihood and impact severity, and is used to identify and prioritize risk controls and implement various controls and risk treatment strategies in response to risks as they are identified.

Scope of Risk Management

Strategic Perspective
- Regulatory change and compliance
- Government policies
- Changes in technology and industry
- Technology development and competition
- Demand and capacity expansion

Operational Perspective
- Sales and purchasing concentration
- Information security
- Intellectual property rights
- Recruitment of qualified personnel
- Corporate image

Financial Perspective
- Interest rate, foreign exchange, inflation, deflation and taxation
- External financing
- High-risk and/or highly leveraged investments; financial derivative transactions
- Strategic investments

Hazardous Events
- Earthquakes and natural hazards
- Fire or chemical spills
- Climate change
- Utility supply

Enterprise Risk Management Framework

Risk Identification & Assessment
- RM Steering Committee and Audit Committee review and approve implementation of risk management strategy and prioritization of risk controls
- RM Executive Council adopts risk map which considers likelihood and severity of risk events to assess risks

↓

Risk Control & Mitigation
- Cross-function risk communication to determine cost-effective risk controls
- RM Executive Council is responsible for risk control implementation
- Risk controls reviewed in annual control self assessment

↓

Risk Response
- Crisis management and response plans
- Scenario-based crisis response drills
- Business continuity plans

↓

Risk Monitoring & Reporting
- Risk Management organization reports to RM Steering Committee and Audit Committee on the focus of enterprise risk management, risk assessment, and mitigation efforts

To mitigate the operational impacts of crisis events, ERM conducts pre-crisis risk assessment and identifies feasible strategies for crisis prevention. Response procedures and recovery plans are compiled corresponding to different scenarios. For specific severe crisis events involving multiple TSMC manufacturing sites, the cross-functional central crisis command center composed of operations and support functions is responsible for internal coordination to speed up response time and proactively communicate with stakeholders. To raise risk awareness and strengthen the risk management culture in TSMC, RM task forces have been formed. Enhanced risk assessment and crisis response exercises have also been conducted for potentially critical events such as fire, earthquake, IT service disruption, IT security breach, supply chain disruption, major yield loss and utility supply disruption. In order to continuously mitigate corporate risks, crisis response exercises are used to test the integrity and effectiveness of ERM.

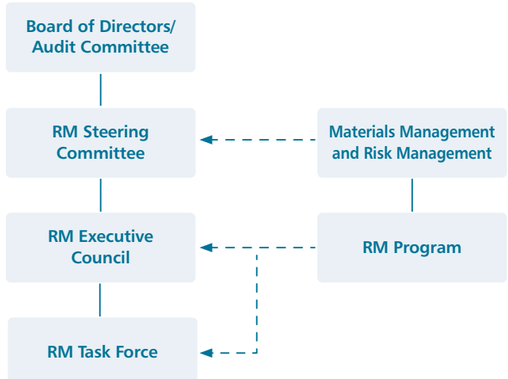
To reduce supply chain disruption risks, TSMC has created a task force comprised of members from fab operations, materials management, risk management and quality systems management to work with suppliers to develop business continuity plans and enhance supply chain resilience. Partly as a result of these efforts, there were no interruptions in TSMC's supply chain in 2019.

As production capacity continues to expand with more advanced technology, TSMC has initiated and implemented seismic protection engineering design, risk treatment practices and green manufacturing projects in all new fabs.

6.3.1 Risk Management Organization Chart

TSMC's risk management organization reports annually to the Audit Committee on the risk environment TSMC faces, enterprise risk management, risk assessment and mitigation efforts. The Audit Committee Chairperson also reports to the Board on these discussion and actions.

Organization Functions



RM Steering Committee
- Consists of functional heads (with internal audit head sitting in as an observer)
- Reports to the Audit Committee
- Reviews risk control progress
- Identifies and approves prioritization of risk controls

RM Executive Council
- Consists of representatives from each function
- Determines and implements cost-effective risk controls
- Improves risk management transparency and how risks are managed

RM Program
- Supports RM task forces to enhance effective risk control
- Coordinates and facilitates RM Executive Council on risk management activities
- Consolidates ERM reports and updates provided to the RM Steering Committee

RM Task Force
- Identifies potential scenarios and business impact
- Determines risk mitigation actions to respond to the scenarios
- Compiles crisis management procedures and conducts exercises

6.3.2 Strategic Risks

Risks Associated with Changes in Technology and Industry

- **Industry Developments**

The electronics industries and semiconductor markets are cyclical and subject to significant and often rapid fluctuations in product demand, which could impact TSMC's semiconductor foundry business. Variations in order levels from customers may result in volatility in the Company's revenue and earnings.

From time to time, the electronics and semiconductor industries have experienced significant, occasionally prolonged periods of downturns and overcapacity. Because TSMC is, and will continue to be, dependent on the requirements of electronics and semiconductor companies for TSMC's services, periods of downturns and overcapacity in the general electronics and semiconductor industries could lead to reduced demand for overall semiconductor foundry services, including TSMC's services. If TSMC cannot take appropriate actions such as reducing its costs to sufficiently offset declines in demand, the Company's revenue, margin, and earnings will likely suffer during periods of downturns and overcapacity.

- **Changes in Technology**

The semiconductor industry and its technologies are constantly changing. TSMC competes by developing process technologies using increasingly advanced nodes and on manufacturing products with more functions. The Company also competes by developing new derivative technologies. If TSMC does not anticipate these changes in technologies and rapidly develop new and innovative technologies, or the Company's competitors unforeseeably gain sudden access to additional technologies, TSMC may not be able to provide foundry services on competitive terms. In addition, TSMC's customers have significantly decreased the time in which their products or services are launched into the market. If TSMC is unable to meet these shorter product time-to-market, the Company risks losing these customers. These factors have also been intensified by the shift of the global technology market to consumer driven products such as smartphones, and increasing concentration of customers and competition (all further discussed among these risk factors). Also, the uncertainty and instability inherent in advanced technologies also impose challenges for achieving expected product quality and product yield. If TSMC fails to maintain quality, the Company may result in loss of revenue and additional costs, as well as loss of business or customer trust. For example, in January 2019, TSMC discovered the yield problems in 12- and 16-nanometer wafers caused by a batch of photoresist, which resulted in delayed delivery of products and had a negative effect on the Company's margin and operating margin in the first quarter on 2019. The Company

has strengthened inline wafer inspection and tightened control of incoming material to deal with the increasing complexity of leading-edge technologies. If TSMC is unable to innovate new technologies that meet the demand of its customers or overcome the above factors, the Company may become less competitive and our revenue may decline significantly.

Regarding the response measures for the above-mentioned risks, please refer to "2.2.4 TSMC Position, Differentiation and Strategy" on pages 14-15 of this annual report.

Risks Associated with Decrease in Demand and Average Selling Price

A vast majority of our revenue is derived from customers who use our products in smartphones, high performance computing (HPC), Internet of Things (IoT), automotive electronics, and digital consumer electronics (DCE). Any deterioration in or a slowdown in the growth of such end markets resulting in a substantial decrease in the demand for overall global semiconductor foundry services, including our products and services, could adversely affect our revenue. Further, semiconductor manufacturing facilities require substantial investment to construct and are largely fixed cost assets once they are in operation. Because we own most of our manufacturing capacities, a significant portion of our operating costs is fixed. In general, these costs do not decline when customer demand or our capacity utilization rates drop, and thus declines in customer demand, among other factors, may significantly decrease our margins. Conversely, as product demand rises and factory utilization increases, the fixed costs are spread over increased output, which can improve our margins. In addition, the historical and current trend of declining average selling prices (or "ASP") of end use applications places downward pressure on the prices of the components that go into such applications. If the ASP of end use applications continues decreasing, the pricing pressure on components produced by us may lead to a reduction of our revenue, margin and earnings.

Risks Associated with Competition

The markets for TSMC's foundry services are highly competitive. TSMC competes with other foundry service providers, as well as with a number of integrated device manufacturers. Some of these companies may have access to more advanced technologies than TSMC. Other companies may have greater financial and other resources than TSMC, such as the possibility of receiving direct or indirect government subsidy, economic stimulus funds, or other incentives that may be unavailable to TSMC. For example, Chinese companies are expected to be key players for new semiconductor fab development and fab equipment spending in part due to various incentives provided by the Chinese government.

Furthermore, the Company's competitors may, from time to time, also decide to undertake aggressive pricing initiatives in one or several technology nodes. These competitive activities may decrease TSMC's customer base, or its ASP, or both. If TSMC is unable to compete effectively with these new and aggressive competitors on technology, manufacturing capacity, product quality and customer satisfaction, it risks losing customers to these new contenders.

Risks Associated with Changes in the Government Policies and Regulatory Environment

TSMC management closely monitors all domestic and foreign governmental policies and regulations that might impact TSMC's business and financial operations. During 2019 and as of the date of this Annual Report, there were no governmental policies or regulatory changes would materially impact TSMC's operations or financial condition.

6.3.3 Operational Risks

Risks Associated with Capacity Expansion

TSMC performs long-term market demand forecast for its products and services to manage its overall capacity. Because market conditions are dynamic, TSMC's market demand forecast may change significantly at any time. During periods of decreased demand, certain manufacturing lines or tools in some of the Company's manufacturing facilities may be suspended or shut down temporarily. However, if subsequent demand increases rapidly in a short period of time, TSMC may not be able to restore the capacity in a timely manner to take advantage of the upturn.

According to the market demand forecasts, TSMC has recently been adding capacity to meet market needs for its products and services. Expansion of the Company's capacity will increase its costs. For example, the Company will need to purchase additional equipment, hire additional personnel and train personnel to operate the new equipment. If TSMC does not increase its net revenue accordingly, its financial performance may be adversely affected by these increased costs.

In order to mitigate the risk associated with capacity expansion, TSMC continuously watches for changes in market conditions and works closely with its customers. When market demand is not as expected, the Company tries to adjust its capacity plans in a timely manner to reduce the impact on its financial performance.

Risks Associated with Sales Concentration

Over the years, TSMC's customer profile and the nature of the Company's customers' businesses have changed dramatically. While the Company generates revenue from hundreds of customers worldwide, TSMC's ten largest customers in 2017, 2018, and 2019 accounted for approximately 66%, 68% and 71% of TSMC's net revenue in the respective year. TSMC's largest customer in 2017, 2018, and 2019 accounted for 23%, 22% and 23% of the Company's net revenue in the respective year. TSMC's second largest customer for each particular year accounted for less than 10% of the Company's net revenue in 2017 as well as 2018 and 14% of the Company's net revenue in 2019.

A more concentrated customer base will subject TSMC's revenue to seasonal demand fluctuations from our large customers, and cause different seasonal patterns of the Company's business. This customer concentration results in part from the changing dynamics of the electronics industry with the structural shift to mobile devices and applications and software that provide the content for such devices. There are only a limited number of customers who are successfully exploiting this new business model paradigm.

Also, in order to respond to the new business model paradigm, TSMC has seen the changes of nature in the Company's business models. For example, there is a growing trend toward the system companies developing their own designs and working directly with semiconductor foundries which makes their products and services more marketable in a changing consumer market. Also, since the global semiconductor industry is becoming increasingly competitive, some of TSMC's customers have engaged in industry consolidations in order to remain competitive. Such consolidations have taken the form of mergers and acquisitions. If more of TSMC's major customers consolidate, this will further decrease the overall number of the Company's customer pool. In addition, regulatory restrictions such as export control directed at TSMC's major customers could impact the Company's ability to supply products and services to those customers, reduce those customers' demand for TSMC's products and services and impact their business operations. The loss of, or significant curtailment of purchases by, one or more of the Company's top customers, including curtailments due to increased competitive pressures, industry consolidation, changes in applicable regulatory restrictions, product designs, manufacturing sourcing policies or practices of these customers, or the timing of customer or distributor inventory adjustments, or change in its major customers' business models may adversely affect TSMC's results of operations and financial condition.

Risks Associated with Purchasing Concentration

- **Raw Materials**

TSMC's production operations require that it obtains adequate supplies of raw materials, such as silicon wafers, gases, chemicals and photoresist, on a timely basis and at commercially reasonable prices. In the past, shortages in the supply of some materials, whether by specific vendors or by the semiconductor industry generally, have resulted in occasional industry-wide price adjustments and delivery delays. Moreover, major natural disasters, trade barriers and political or economic turmoil occurring within the country of origin of such raw materials may also significantly disrupt the availability of such raw materials or increase their prices. Also, since TSMC procures some of its raw materials from sole-sourced suppliers, there is a risk that the Company's needs for such raw materials may not be met or that back-up supplies may not be readily available. In addition, recent trade tensions could result in increased prices or even unavailability of raw materials due to tariffs, export control or other non-tariff barriers. TSMC's revenue and earnings could decline if the Company is unable to obtain adequate supplies of the necessary raw materials in a timely manner or if there are significant increases in the costs of raw materials. To reduce the supply chain risk and to manage the cost effectively, TSMC commits resources toward developing new supply sources. In addition, the Company continually encourages its suppliers to reduce their supply chain risk by decentralizing production plants and to improve their cost competitiveness by moving their production facilities to Taiwan from higher-cost areas.

Given that qualified backup suppliers are hard to obtain, TSMC engages early and extensively with primary suppliers on managing quality and capacity issues to be prepared for any unexpected need to ramp up or curtail production when the Company lacks sufficient time to re-tune its production process. For leading technology nodes, TSMC not only adopts world-class processes and facilities but also requires world-class materials. To streamline supply chain risk management, the Company has increased supplier site audits and meetings to extend supply chain best practices to its upstream suppliers. In addition, in response to the rapid increase or decrease in production capacity of new products, TSMC has continued to improve its inventory monitoring system to achieve more accurate demand forecasts and ensure that the supply chain maintains sufficient inventory levels. The Company has established a supply chain risk assessment to ensure critical suppliers meet standards in labor, ethics, ESH (Environmental, Safety and Health) and BCP (Business Continuity Plan). Onsite audits are conducted regularly to empower these suppliers to take responsibility for their supply

chain as any regulatory violations or adverse environmental impact event, or failure to meet sustainability requirements could result in business reduction or termination.

• **Equipment**

The Company's operations and ongoing expansion plans depend on its ability to obtain an appropriate amount of equipment and related services from a limited number of suppliers in a market that is characterized from time to time by limited supply and long delivery cycles. During such times, supplier-specific or industry-wide lead times for delivery can be as long as six months or more. To better manage its supply chain, the Company has implemented various business models and risk management contingencies with suppliers to shorten the procurement lead times. Further, the growing complexities, especially in advanced lithographic technologies may delay the timely availability of the equipment and parts needed to exploit time-sensitive business opportunities and also increase the market price for such equipment and parts. If TSMC is unable to obtain equipment in a timely manner to fulfill its customers' demand on technology and production capacity, or at a reasonable cost, its financial condition and results of operations could be negatively impacted.

Risks Associated with IT Security

TSMC has established a comprehensive internet and computing security network, it cannot guarantee that its computing systems which control or maintain vital corporate functions, such as its manufacturing operations and enterprise accounting, would be completely immune to crippling cyber attacks by any third party to gain unauthorized access to its internal network systems, to sabotage its operations and goodwill or otherwise. In the event of a serious cyber attack, TSMC's systems may lose important corporate data or its production lines may be shut down pending the resolution of such attack. While TSMC seeks to continuously review and assess its cybersecurity policies and procedures to ensure their adequacy and effectiveness, the Company cannot guarantee that it will not be susceptible to new and emerging risks and attacks in the evolving landscape of cybersecurity threats. These cyber attacks may also attempt to steal TSMC trade secrets and other sensitive information, such as proprietary information of its customers and other stakeholders and personal information of its employees.

Malicious hackers may also try to introduce computer viruses, corrupted software or ransomware into TSMC network systems to disrupt our operations, blackmail us to regain control of its computing systems, or spy on it for sensitive information. These attacks may result in us having to pay damages for its delayed or disrupted orders or incur significant expenses in implementing remedial and improvement measures to enhance its cybersecurity network, and may also expose us to significant legal liabilities arising from or related to legal proceedings or regulatory investigations associated with, among other things, leakage of employee, customer or third party information, which the company has an obligation to keep confidential.

TSMC experienced and may be subject to attack onward by malicious software contained in the equipment TSMC purchase and install. The cyber security risk management and solution enhancement actions have been taken continuously, such as building up an automated virus-scan system to prevent fab from installing virus infected tools, strengthening of firewall and network control to prevent computer viruses from spreading among tools and fabs, installation of proper anti-virus solutions for different computers, development and deployment of security monitor application to monitor and alert computer security issues, enhancement of computer vulnerability scan and patch updating, improving phishing email detection, employee awareness testing, external security risk assessments, and the establishment of an integrated and automatic security operation platform. While these ongoing enhancements further improved the cyber security defense solutions, there can be no assurance that the company is immune to malicious software attacks.

In addition, TSMC employs certain third party service providers for the Company and its affiliates worldwide with whom the Company needs to share highly sensitive and confidential information to enable them to provide the relevant services. Despite that the Company requires the third party service providers to comply with the confidentiality and/or internet security requirements in its service agreements with them, there is no assurance that each of them will strictly fulfill such obligations, or at all. The on-site network systems of and the off-site cloud computing networks, such as servers maintained by such service providers and/or its contractors, are also subject to risks associated with cyber attacks. If TSMC or its service providers are not able to timely resolve the respective technical difficulties caused by cyber attacks, or ensure the integrity and availability of its data (and data belonging to its customers and other third parties) or control of its or its service providers' computing systems, the Company's commitments to its customers and other stakeholders may be materially impaired and its results of operations, financial condition, prospects and reputation may also be materially and adversely affected as a result.

Risks Associated with Intellectual Property Rights

The Company's ability to compete successfully and to achieve future growth depends in part on the continued strength of its intellectual property portfolio. While we actively enforce and protect our intellectual property rights, there can be no assurance that its efforts will be adequate to prevent the misappropriation or improper use of its proprietary technologies, software, trade secrets or know-how. Also, the Company cannot assure you that, as its business or business models expand into new areas, it will be able to develop independently the technologies, patents, software, trade secrets or know-how necessary to conduct its business or that it can do so without unknowingly infringing the intellectual property rights of others. As a result, TSMC may have to rely on, to a certain degree, licensed technologies and patent licenses from others. To the extent that the Company relies on licenses from others, there can be no assurance that it will be able to obtain any or all of the necessary licenses in the future on terms it considers reasonable or at all. The lack of necessary licenses could expose TSMC to claims for damages and/or injunctions from third parties, as well as claims for indemnification by its customers in instances where it has contractually agreed to indemnify its customers against damages resulting from infringement claims.

TSMC has received, from time-to-time, communications from third parties asserting that TSMC's technologies, its manufacturing processes, or the design IPs of the semiconductors made by TSMC or the use of those semiconductors by its customers may infringe their patents or other intellectual property rights. These assertions have at times resulted in litigation. Because of the nature of the industry and its market position, the Company may continue to receive such communications in the future. The Company continues to face a number of assertions made and lawsuits initiated by litigious, well-funded, non-practicing entities who are aggressive in their monetary demand and in seeking court-issued injunctions. This Company also encounters, from time-to-time, assertions and litigations initiated by semiconductor companies seeking to disrupt its business such as the patent infringement lawsuits in August 2019 filed by GlobalFoundries ("GF") attempting to restrict its and its customers' activities in the United States and Germany. The Company responded with counter-lawsuits against GF for patent infringement in September 2019 targeting its manufacturing activities in the U.S., Germany, and Singapore. Shortly after, the Company reached an agreement with GF in October 2019 to dismiss all litigation between the parties, as well as those that involve any of its customers. Such lawsuits and assertions may increase TSMC's cost of doing business and may potentially be extremely disruptive if these asserting entities succeed in blocking the trade of products made and services offered by TSMC. Also, as the Company expended its manufacturing operations into certain non-R.O.C jurisdictions, it has faced increasing challenges to manage risks of intellectual property misappropriation. Despite our efforts to adopt robust measures to mitigate the risk of intellectual property misappropriation in such new jurisdictions, we cannot guarantee that the protection measures we adopted will be sufficient to prevent us from potential infringements by others, or at all.

If TSMC fails to obtain or maintain certain technologies or intellectual property licenses or fails to prevent our intellectual property from being misappropriated and, if litigation relating to alleged intellectual property matters occurs, it could: (1) prevent the Company from manufacturing particular products or selling particular services or applying particular technologies; and (2) reduce our ability to compete effectively against entities benefiting from our misappropriated intellectual property, which could reduce its opportunities to generate revenue.

TSMC has taken related measures to minimize potential loss of shareholder value arising from intellectual property claims and litigation filed against the Company. These measures include: strategically obtaining licenses from certain semiconductor and other technology companies as needed; timely securing intellectual property rights for defensive and/or offensive protection of TSMC technology and business; and aggressively defending against baseless litigation.

Risks Associated with Litigious and Non-litigious Matters

As is the case with many companies in the semiconductor industry, TSMC has received from time-to-time communications from third parties asserting that its technologies, its manufacturing processes, or the design of the semiconductors made by TSMC or the use of those semiconductors by its customers may infringe upon their patents or other intellectual property rights. These assertions have at times resulted in litigation by or against the Company and settlement payments by the Company. Irrespective of the validity of these claims, TSMC could incur significant costs in the defense thereof or could suffer adverse effects on its operations. TSMC is also subject to antitrust compliance requirements and scrutiny by governmental regulators in multiple jurisdictions. Any adverse results of such proceeding or other similar proceedings that may arise in

those jurisdictions could harm TSMC's business and distract its management, and thereby have a material adverse effect on its results of operations or prospects, and subject TSMC to potential significant legal liability.

Currently, TSMC's material legal proceedings are as follows:

In February 2019, Innovative Foundry Technologies LLC ("IFT") filed a complaint in the U.S. District Court for the District of Delaware alleging that TSMC and TSMC Technology Inc. infringe five U.S. patents. IFT also filed a complaint in the U.S. International Trade Commission (the "ITC") alleging that TSMC, TSMC North America, TSMC Technology Inc., and other companies infringe the same patents. The ITC instituted an investigation in March 2019. Both parties agreed to end the dispute and the ITC terminated the investigation in October 2019. The pending litigation in the U.S. District Court for the District of Delaware was dismissed at the same time.

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.

Other than the matters described above, as of the date of this Annual Report, TSMC is not currently a party to any other material legal proceedings.

Risks Associated with Mergers and Acquisitions

In 2019 and as of the date of this annual report, TSMC did not conduct any merger and acquisition.

Risks Associated with Recruiting Quality Personnel

TSMC's growth relies on the continued services and contributions of its management team, skilled technical and professional personnel. The Company's business could suffer from the inability to fulfill personnel needs with high quality professionals in a timely fashion caused by the loss of personnel or related changes in market demand for its products and services. Since there is fierce competition for talent recruitment, the Company cannot ensure timely fulfillment of its personnel demand.

Future R&D Plans and Expected R&D Spending

For additional details, see "5.2.7 Future R&D Plans" on page 76 of this annual report.

Changes in Corporate Reputation and Impact on Company's Crisis Management

TSMC has established an excellent corporate reputation around the world based on its core values of integrity, commitment, innovation and customer trust. The Company's positive image also reflects outstanding operations, rigorous corporate governance and dedication to social responsibility by serving as a good corporate citizen. TSMC continues to pursue innovation in the economic, environmental and social dimensions of CSR.

In 2019, TSMC was honored with numerous awards for achievements in operations, corporate governance, patents, profit growth, investor relations, environmental protection, corporate sustainability and other fields. These included: the Taiwan Institute for Sustainable Energy 2019 Taiwan Corporate Sustainability Awards' Most Prestigious Sustainability Award, Platinum Medal For Sustainability Report, Sustainable Water Management Award, Climate Leader Award, and Circular Economy Leadership Award; First Place in *CommonWealth* Magazine's Excellence in Corporate Social Responsibility Award for Large-Cap companies; ranked top 5% in the Taiwan Stock Exchange corporate governance evaluation; member of the *Fortune* Magazine's 2019 World's Most Admired Companies and the 2019 Global 500; the R.O.C. Ministry of Economic Affairs Industrial Development Bureau's Green Factory Label and Energy Conservation Benchmark Award ; the R.O.C. Environmental Protection Administration's Enterprise Green Procurement Award; First Place in the Greenpeace ranking of ten leading Taiwanese electronics companies; and membership of the *Corporate Knights* 100 Most Sustainable Corporations for 2019. In addition, TSMC was selected as a part of the Dow Jones Sustainability Indices for the 19th consecutive year, further strengthening the Company's corporate culture and reputation.

TSMC adheres to its vision of uplifting society, and applies technology and innovation to help humanity overcome many challenges. As TSMC strives to excel in corporate social responsibility, the Company also encourages employees to make innovative breakthroughs in how they think about things and do things, as well as nurture their empathy and broaden their horizons. In 2019, TSMC established the Corporate Social Responsibility Executive Committee, led by Chairman Dr. Mark Liu with senior vice president Lora Ho serving as the executive secretary, to work with senior management in a variety of functions to set the Company's future CSR strategy. The CSR Executive Committee acts in tandem with the existing CSR Committee to consolidate the Company's resources, drive and implement actions and cultivate CSR culture. TSMC pursues corporate sustainability and contribution to society and seeks to build further on its positive corporate reputation.

With its global reputation in mind, TSMC employs numerous preventative measures to address potential risks from earthquakes, fires, IT service disruption, yield loss, information security, supply chain disruption, environmental events, and utility supply disruption. TSMC sets crisis response and recovery measures according to possible crisis events and maintains a "TSMC crisis command center control instruction" as well as a "TSMC emergency response procedure" to establish its emergency response command structure.

TSMC holds regular monthly meetings of the Environment, Safety and Health Committee, which coordinates relevant departments in each fab to conduct regular emergency response drills and continuously improve their notification and operational procedures to ensure clear channels of communication to stakeholders in crisis management, with the public relations department serving as the designated gateway for external communications.

In the event of an emergency, all departments immediately deploy emergency response measures to eliminate or minimize impact on personnel safety, the surrounding environment, company property and manufacturing operations. Responders also alert the public relations department at the earliest stages of response to ensure timely, clear and consistent communication regarding the situation.

Risks Associated with Change in Management

During 2019 and as of the date of this Annual Report, there were no such risks for TSMC.

6.3.4 Financial Risks

Economic Risks

- **Interest Rate Fluctuation**

TSMC is exposed to interest rate risks primarily related to its investment portfolio and outstanding debt. Changes in interest rates affect the interest earned on the Company's cash and cash equivalents, and fixed income securities, the fair value of those securities, as well as interest paid on its debt.

The objective of TSMC's investment policy is to achieve a return that will allow the Company to preserve principal and support liquidity requirements. The policy generally requires securities to be investment grade and limits the amount of credit exposure to any one issuer. TSMC's cash and cash equivalents as well as fixed income investments in both fixed- and floating-rate securities carry a degree of interest rate risk. The majority of TSMC's fixed income investments are fixed-rate securities and classified as financial assets at fair value through other comprehensive income, and may have their fair value adversely affected due to a rise in interest rates, while cash and cash equivalents as well as floating-rate securities may generate less interest income than predicted if interest rates fall.

TSMC has entered, and may enter in the future, into interest rate futures to partially hedge the interest rate risk on its fixed income investments. However, these hedges can offset only a small portion of the financial impact from movement in interest rates.

As it relates to TSMC's outstanding debt, all of the Company's short-term debt are floating-rate, hence a rise in interest rates may incur higher interest expense than predicted; all of its long-term debt are fixed-rate and measured at amortized cost. As such, changes in interest rates would not affect the future cash flows and the fair value.

Certain of TSMC's fixed income investments and short-term debt are primarily based on the London Interbank Offered Rate ("LIBOR"), which is expected to be replaced by other benchmark rate after 2021. TSMC cannot predict the consequences and timing of these developments, and if such transition may cause a reduction in its interest income and/or an increase in its interest expense.

• **Foreign Exchange Volatility**

The majority of TSMC's sales are denominated in U.S. dollar and over one-half of its capital expenditures are denominated in currencies other than NT dollar, primarily in U.S. dollar, Japanese yen, and Euro. As a result, any significant fluctuations to its disadvantage in exchange rate of NT dollar against such currencies, in particular a weakening of U.S. dollar against NT dollar, would have an adverse impact on the Company's revenue and operating profit as expressed in NT dollar. For example, every one percent depreciation of the U.S. dollar against the NT dollar would result in approximately 0.4 percentage point decrease in TSMC's operating margin based on TSMC's 2019 results.

Conversely, if the U.S. dollar appreciates significantly versus other major currencies, the demand for the products and services of TSMC's customers and for TSMC's goods and services will likely decrease, which will negatively affect the Company's revenue.

TSMC uses foreign currency derivatives 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 also 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 effect of foreign currency exchange rate movements on its assets and liabilities.

Fluctuations in the exchange rate between the U.S. dollar and the NT dollar may affect the U.S. dollar value of the Company's common shares and the market price of the Company's American Depositary Shares (ADSs) and of any cash dividends paid in NT dollar on TSMC's common shares represented by ADSs.

• **Inflation**

In 2019 and as of the date of this annual report, inflation did not have a material impact on TSMC's operations, or the business operations of its customers and suppliers.

• **Amendments to Tax Regulations or Implementation of New Tax Laws**

Any amendments to existing tax regulations or the implementation of any new tax laws in the jurisdictions in which TSMC operates its business may have an adverse effect on its net income.

While the Company is subject to tax laws and regulations in various jurisdictions in which it operates or conducts business, TSMC's principal operations are in the R.O.C. and it is exposed primarily to taxes levied by the R.O.C. government. Any unfavorable changes of tax laws and regulations in this jurisdiction could increase TSMC's effective tax rate and have an adverse effect on its operating results.

In order to control tax risk, the Company closely monitors all domestic and foreign governmental policies and regulations that might impact its financial operations. TSMC has established risk management procedures to collect information, analyze potential tax implications, and develop countermeasures.

Risks Associated with External Financing

In times of market instability, sufficient external financing may not be available to the Company on a timely basis, on commercially reasonable terms to the Company, or at all. If sufficient external financing is not available, when TSMC needs such financing to meet its capital requirements, it may be forced to curtail its expansion, modify plans or delay the deployment of new or expanded services until it obtains such financing.

Risks Associated with High-Risk/Highly Leveraged Investments; Lending, Endorsements, and Guarantees for Other Parties; and Financial Derivative Transactions

In 2019 and as of the date of this annual report, TSMC did not make high-risk or highly leveraged financial investments.

Since 2014, TSMC has provided a guarantee no more than US$83.21 million to TSMC North America, a wholly-owned subsidiary of TSMC, for its obligation to an office leasing contract. Since 2020, TSMC Japan Limited has provided a guarantee no more than JPY1,320 million to TSMC Design Technology Japan, Inc., a wholly-owned subsidiary of TSMC, for its obligation to an office leasing contract.

As of February 29, 2020, there were RMB 4.8 billion and US$86 million in intercompany loans between the Company's subsidiaries, and US$1 billion in intercompany loans between the Company and its subsidiary, which were all in compliance with relevant rules and regulations.

All financial transactions of a derivative nature that TSMC entered into in 2019 were strictly for hedging and not for any trading or speculative purposes. For more transaction information and risk assessment, please refer to Note 7, Note 10, and Note 32 of the annual report section (II), Financial Statements.

To control various types of financial transactions, the Company has established internal policies and procedures based on sound financial and business practices, all in compliance with the relevant rules and regulations issued by the Taiwan Securities and Futures Bureau. TSMC policies and procedures include "Procedures for Financial Derivatives Transactions," "Procedures for Lending Funds to Other Parties," "Procedures for Acquisition or Disposal of Assets," and "Procedures for Endorsement and Guarantee."

Risks Associated with Impairment Charges

Under Taiwan-IFRSs, TSMC is required to evaluate its tangible assets, right-of-use assets and intangible assets for impairment whenever triggering events or changes in circumstances indicate that the asset may be impaired. If certain criteria are met, TSMC is required to record an impairment charge. TSMC is unable to estimate the extent or timing of any impairment charge for future years. Any impairment charge required may have a material adverse effect on the Company's net income.

The determination of an impairment charge at any given time is based significantly on the projected results of operations over several years subsequent to that time. Consequently, an impairment charge is more likely to occur during a period when the Company's operating results are otherwise already depressed. See "Note 5." CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY" in Annual Report section (II), Financial Statements for a discussion of how TSMC assesses if an impairment charge is required and, if so, how the amount is determined.

6.3.5 Hazardous Risks and Utility Supply Interruption or Shortage Risks

The frequency and severity of disruptive events, including damaging earthquakes, natural disasters and severe weather has been increasing in part due to climate change or systemic regional geological changes. TSMC has manufacturing and other operations in locations subject to natural disasters, such as flooding, earthquakes, tsunamis, typhoons and droughts that may cause interruptions or shortages in the supply of utilities, such as water and electricity, which in turn could disrupt operations. In addition, TSMC's suppliers and customers also have operations in such locations. For example, most of TSMC's production facilities, as well as those of many of its suppliers and customers and upstream providers of complementary semiconductor manufacturing services, are located in Taiwan and Japan, areas susceptible to earthquakes, tsunamis, flooding, typhoons, and droughts from time to time that may cause shortages in electricity or water or interruptions to the Company's operations.

Thus, if one or more natural disasters that result in a prolonged disruption to TSMC's operations or those of its customers or suppliers, or if any of its fabs or vendor facilities were to be damaged or cease operations as a result of an explosion or fire, it could reduce the Company's manufacturing capacity and cause the loss of important customers and thereby have an adverse and material impact on its operational and financial performance.

TSMC has occasionally suffered power outages in Taiwan caused by difficulties encountered by its electricity supplier, the Taiwan Power Company, or other power consumers on the same power grid. Some of these have resulted in interruptions to TSMC operations. Such shortages or interruptions in electricity supply could further be exacerbated by changes in the energy policy of the government, which intends to make Taiwan a nuclear-free country by 2025. If the Company is unable to secure reliable and uninterrupted supply of electricity to power its manufacturing fabs within Taiwan, its ability to fill customers' orders would be severely jeopardized.

The recent COVID-19 pandemic may materially adversely affect TSMC business and results of operations in several ways, including but not limited to: (1) interruption of the operations of global semiconductor supply chains and those of TSMC's suppliers, including those in Asia, Europe and North America; (2) downward pressure on TSMC global customer demand; and (3) potential production delays for TSMC products due to forced factory or office closures or partial operation. The Company has instituted various measures, including disinfection routines, self-quarantine, mandatory hygienic practices and segregated work teams. However, given the uncertainty surrounding the COVID-19 pandemic, the Company cannot predict that such measures will limit the spread of the virus in the Company's workplace or whether its operations would be materially disrupted by the pandemic. As of the date of this annual report, TSMC's current business and results of operations have not been materially affected by the pandemic. However, depending on unfolding developments of the pandemic, the Company could face various risks, including those identified here and others. As the pandemic is still ongoing and may worsen, there is significant uncertainty surrounding its developments and impacts, including whether the current epidemic or continued spread of COVID-19 will cause an economic slowdown or a global recession, and TSMC cannot predict at this time the impact it will have on its business or results of operations.

The recent COVID-19 pandemic has caused TSMC to modify its business practices, including but not limited to health management of employees, customers and suppliers, management of production inventory, and supply chain risk management. TSMC has formed an "Epidemic Prevention Committee" to identify, implement and monitor such actions as required by the dynamic exigencies arising from the pandemic. There is no certainty that such measures and others will be sufficient to mitigate the risks posed by COVID-19, and TSMC's ability to perform critical functions could be materially adversely affected.

TSMC maintains a comprehensive risk management system dedicated to the safety of people, the conservation of natural resources and the protection of property. In order to cope effectively with emergencies and natural disasters, management at each facility has developed comprehensive plans and procedures that focus on risk prevention, emergency response, crisis management and business continuity. All TSMC manufacturing fabs have been ISO 14001 certified (environmental management system) and ISO 45001 or OHSAS 18001 certified (occupational health and safety management system). All manufacturing fabs in Taiwan have also been TOSHMS (Taiwan Occupational Safety and Health Management System) certified. New fabs will also attain the above certifications within 18 months after acquiring factory registration certification.

TSMC has further strengthened its business continuity plans, which include periodic risk assessment, risk mitigation, and implementation through the establishment of emergency taskforces when necessary, combined with the preparation of a thorough analysis of an emergency, its impact, alternative actions, and solutions for each possible scenario together with appropriate precautionary and/or recovery measures. Each taskforce is given the responsibility of ensuring TSMC's ability to minimize personal injury, business disruption and financial impact under the circumstances. TSMC periodically reviews its business continuity plans and revise it according to exercise results and implementation.

In response to the impact of the earthquake that occurred in Taiwan, TSMC continued to improve its earthquake emergency response, tool anchorage and seismic isolation facilities, and readiness for tool salvage and production recovery. These improvements have also been integrated into new fab design. TSMC business continuity procedures were further enhanced through the compliance with ISO 22301.

TSMC and many of its suppliers use combustible and toxic materials in their manufacturing processes and are therefore subject to risks that cannot be completely eliminated arising from explosion, fire, or environmental influences. Although the Company maintains many overlapping risk prevention and protection systems, as well as fire and casualty insurance, TSMC's risk management and insurance coverage may not always be sufficient to cover all of the Company's potential losses. If any of TSMC's fabs or vendor facilities were to be damaged or cease operations as a result of an explosion, fire or environmental causes, it could reduce the Company's manufacturing capacity leading to the loss of important sales and customers and as a negative impact on TSMC's financial performance. In addition to periodic fire-protection inspections and firefighting drills, the Company has also carried out a corporate-wide fire risk mitigation project focused on managerial and hardware improvements.

6.3.6 Risks Regarding Non-Compliance with Export Control, Environmental and Climate Related Laws, Regulations and Accords, and Failure to Timely Obtain Requisite Approvals Necessary for Conducting Business

Because TSMC engages in manufacturing activities in multiple jurisdictions and conducts business with customers located worldwide, such activities are subject to a myriad of governmental regulations. For example, the manufacturing, assembling and testing of TSMC's products require the use of metals, chemicals and materials that are subject to environmental, climate-related, health and safety, and humanitarian conflict-free sourcing laws, regulations and guidelines issued worldwide.

The Company's failure to comply with any such laws or regulations, as amended from time to time, and its failure to comply with any information and document sharing requests from the relevant authorities in a timely manner could result in:

- significant penalties and legal liabilities, such as the denial of import or export permits or third party private lawsuits, criminal or administrative proceedings;
- the temporary or permanent suspension of production of the affected products;
- unfavorable alterations in TSMC manufacturing, fabrication and assembly and test processes;
- challenges from customers that place TSMC at a significant competitive disadvantage, such as loss of actual or potential sales contracts in case the Company is unable to satisfy the applicable legal standard or customer requirement;
- restrictions on TSMC operations or sales;
- loss of tax benefits, including termination of current tax incentives, disqualification of tax credit application and repayment of the tax benefits that the Company is not entitled to; and
- damages to TSMC's goodwill and reputation.

Complying with applicable laws and regulations, such as environmental and climate related laws and regulations, could also require TSMC, among other things, to do the following: (1) purchase, use or install remedial equipment; (2) implement remedial programs such as climate change mitigation programs; (3) modify product designs and manufacturing processes, or incur other significant expenses such as obtaining substitute raw materials or chemicals that may cost more or be less available for the Company's operations.

TSMC's inability to timely obtain approvals necessary for the conduct of its business could impair its operational and financial results. For example, if the Company is unable to timely obtain environmental related approvals needed to undertake the development and construction of a new fab or expansion project, then such inability may delay, limit, or increase the cost of its expansion plans that could also in turn adversely affect its business and operational results. In light of increased public interest in environmental issues, TSMC's operations and expansion plans may be adversely affected or delayed responding to public concern and social environmental pressures even if the Company complies with all applicable laws and regulations.

TSMC believes that climate change should be regarded as a significant corporate risk that must be controlled to improve competitiveness. For TSMC's climate change related risks and control measures, see the Climate Change and Energy Management section under 7.2.1 Environmental Protection on page 119 of this annual report.

6.3.7 Other Risks

Potential Impact and Risks Associated with Sales of Significant Numbers of Shares by TSMC's Directors, and/or Major Shareholders Who Own 10% or More of TSMC's Total Outstanding Shares

The value of TSMC shareholders' investment may be reduced by possible future sales of TSMC shares owned by major shareholders.

One or more of TSMC's existing shareholders may, from time to time, dispose of significant numbers of TSMC common shares or ADSs. For example, the National Development Fund, Executive Yuan, R.O.C., which owned 6.38% of TSMC's outstanding shares as of February 29, 2020, had from time to time in the past sold TSMC shares in the form of ADSs in several transactions.

As of the date of this annual report, no single shareholder owns 10% or more of TSMC's total outstanding shares.

Risks of Trade Policies

As TSMC's revenue is primarily derived from sales to major economies in the world (please refer to "2.2.4 TSMC Position, Differentiation and Strategy" on page 14 of this annual report), any changes in the trade policies (such as the increase of tariffs on certain products, the implementation of import and export controls, and the adoption of other trade barriers) of such major economies can affect the sales of TSMC or its customers and thereby affect TSMC's operating results. TSMC continues to monitor the recent shifts in trade policies and measures among the relevant major economies and will take corresponding responsive actions in accordance with subsequent developments.

Other Material Risks

In 2019 and as of the date of this annual report, TSMC's management was not aware of any other risk that could impart a potentially material impact on the financial status of the Company.