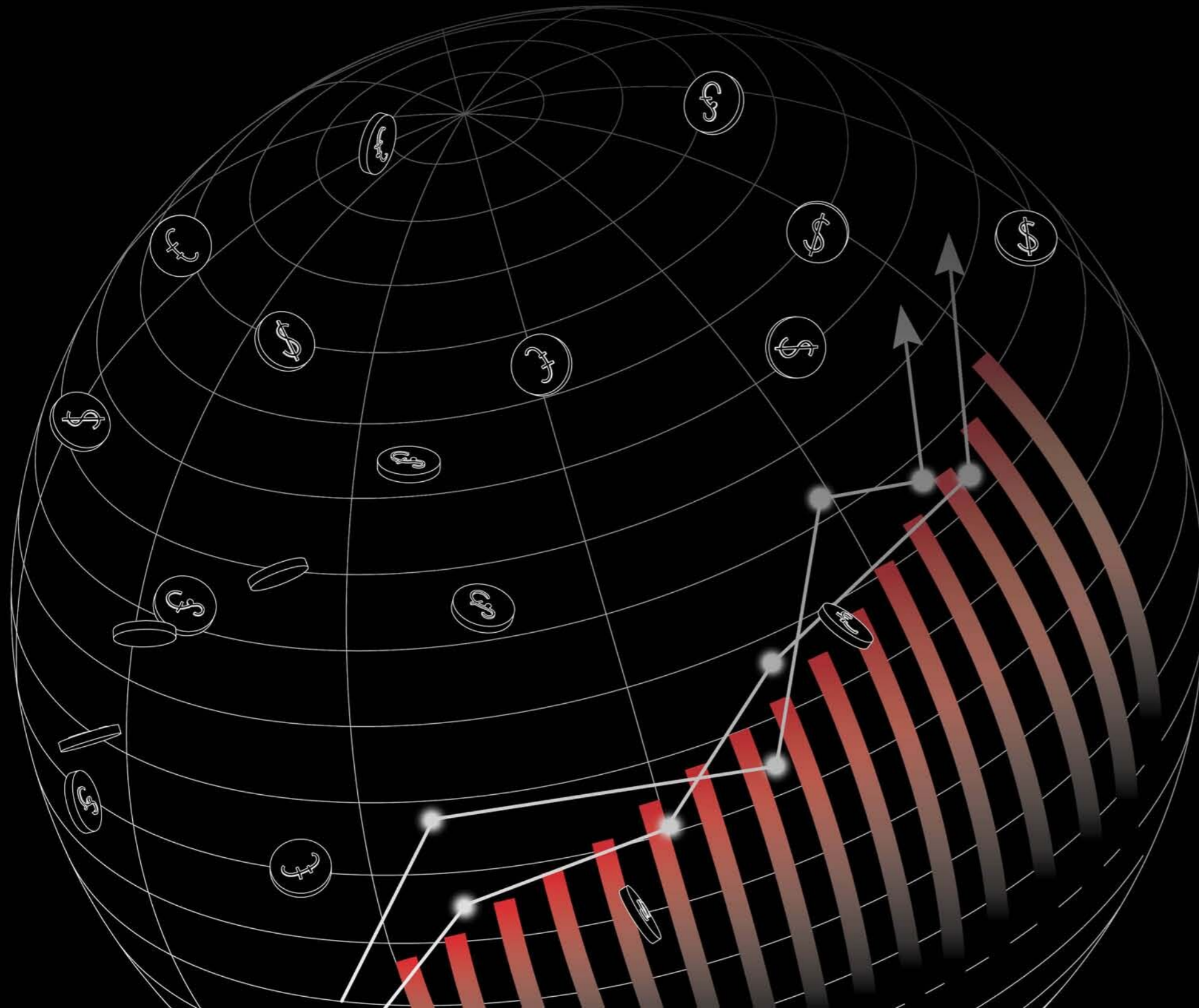


# 6 FINANCIAL HIGHLIGHTS & Analysis



TSMC delivered a thirteenth consecutive year of record revenue.

## 6.1 Financial Highlights

### 6.1.1 Condensed Balance Sheet

#### Condensed Balance Sheet from 2018 to 2022 (Consolidated)

Unit: NT\$ thousands

Item	Year	2018	2019	2020	2021	2022
Current Assets		951,679,721	822,613,914	1,092,185,308	1,607,072,907	2,052,896,744
Long-term Investments		29,304,796	30,172,039	27,728,208	29,384,701	68,927,920
Property, Plant and Equipment		1,072,050,279	1,352,377,405	1,555,589,120	1,975,118,704	2,693,836,970
Right-of-use Assets		0	17,232,402	27,728,382	32,734,537	41,914,136
Intangible Assets		17,002,137	20,653,028	25,768,179	26,821,697	25,999,155
Other Assets (Note 1)		20,091,105	21,756,244	31,712,208	54,370,909	81,203,953
Total Assets		2,090,128,038	2,264,805,032	2,760,711,405	3,725,503,455	4,964,778,878
Current Liabilities						
Before Distribution		340,542,586	590,735,701	617,151,048	739,503,358	944,226,817
After Distribution		547,985,630	655,561,652	681,976,999	810,811,904	1,015,535,363 (Note 2)
Noncurrent Liabilities		72,089,056	51,973,905	292,938,358	815,266,892	1,060,063,194
Total Liabilities						
Before Distribution		412,631,642	642,709,606	910,089,406	1,554,770,250	2,004,290,011
After Distribution		620,074,686	707,535,557	974,915,357	1,626,078,796	2,075,598,557 (Note 2)
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		56,315,932	56,339,709	56,347,243	64,761,602	69,330,328
Retained Earnings						
Before Distribution		1,376,647,841	1,333,334,979	1,588,686,081	1,906,829,661	2,637,524,688
After Distribution		1,169,204,797	1,268,509,028	1,523,860,130	1,835,521,115	2,566,216,142 (Note 2)
Others		(15,449,913)	(27,568,369)	(54,679,873)	(62,608,515)	(20,505,626)
Equity Attributable to Shareholders of the Parent						
Before Distribution		1,676,817,665	1,621,410,124	1,849,657,256	2,168,286,553	2,945,653,195
After Distribution		1,469,374,621	1,556,584,173	1,784,831,305	2,096,978,007	2,874,344,649 (Note 2)
Noncontrolling Interests		678,731	685,302	964,743	2,446,652	14,835,672
Total Equity						
Before Distribution		1,677,496,396	1,622,095,426	1,850,621,999	2,170,733,205	2,960,488,867
After Distribution		1,470,053,352	1,557,269,475	1,785,796,048	2,099,424,659	2,889,180,321 (Note 2)

Note 1: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.

Note 2: The amount was approved by Board of Directors on February 14, 2023.

#### Condensed Balance Sheet from 2018 to 2022 (Unconsolidated)

Unit: NT\$ thousands

Item	Year	2018	2019	2020	2021	2022
Current Assets		469,966,106	355,118,125	580,949,248	783,205,937	1,118,550,389
Long-term Investments		550,524,494	559,380,999	565,432,338	603,640,944	728,961,910
Property, Plant and Equipment		1,025,286,941	1,310,900,634	1,511,784,556	1,889,970,529	2,432,675,050
Right-of-use Assets		0	15,030,020	25,184,827	30,123,052	39,051,427
Intangible Assets		12,429,930	16,271,444	21,733,597	22,910,400	21,456,104
Other Assets (Note 1)		17,253,537	18,774,850	28,420,547	48,644,283	81,724,184
Total Assets		2,075,461,008	2,275,476,072	2,733,505,113	3,378,495,145	4,422,419,064
Current Liabilities						
Before Distribution		328,060,518	605,540,547	680,529,735	704,833,370	899,245,600
After Distribution		535,503,562	670,366,498	745,355,686	776,141,916	970,554,146 (Note 2)
Noncurrent Liabilities		70,582,825	48,525,401	203,318,122	505,375,222	577,520,269
Total Liabilities						
Before Distribution		398,643,343	654,065,948	883,847,857	1,210,208,592	1,476,765,869
After Distribution		606,086,387	718,891,899	948,673,808	1,281,517,138	1,548,074,415 (Note 2)
Equity						
Capital Stock		259,303,805	259,303,805	259,303,805	259,303,805	259,303,805
Capital Surplus		56,315,932	56,339,709	56,347,243	64,761,602	69,330,328
Retained Earnings						
Before Distribution		1,376,647,841	1,333,334,979	1,588,686,081	1,906,829,661	2,637,524,688
After Distribution		1,169,204,797	1,268,509,028	1,523,860,130	1,835,521,115	2,566,216,142 (Note 2)
Others		(15,449,913)	(27,568,369)	(54,679,873)	(62,608,515)	(20,505,626)
Total Equity						
Before Distribution		1,676,817,665	1,621,410,124	1,849,657,256	2,168,286,553	2,945,653,195
After Distribution		1,469,374,621	1,556,584,173	1,784,831,305	2,096,978,007	2,874,344,649 (Note 2)

Note 1: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.

Note 2: The amount was approved by Board of Directors on February 14, 2023.

## 6.1.2 Condensed Statement of Comprehensive Income

### Condensed Statement of Comprehensive Income from 2018 to 2022 (Consolidated)

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

Item	Year	2018	2019	2020	2021	2022
Net Revenue		1,031,473,557	1,069,985,448	1,339,254,811	1,587,415,037	2,263,891,292
Gross Profit		497,874,253	492,701,896	711,130,120	819,537,266	1,348,354,806
Income from Operations		383,623,524	372,701,090	566,783,698	649,980,897	1,121,278,851
Non-operating Income and Expenses		13,886,739	17,144,246	17,993,482	13,145,417	22,911,867
Income before Income Tax		397,510,263	389,845,336	584,777,180	663,126,314	1,144,190,718
Net Income		351,184,406	345,343,809	518,158,082	597,073,134	1,016,900,515
Other Comprehensive Income (Loss) for the Year, Net of Income Tax		9,836,976	(11,823,562)	(30,321,802)	(7,619,456)	42,430,165
Total Comprehensive Income for the Year		361,021,382	333,520,247	487,836,280	589,453,678	1,059,330,680
Net Income Attributable to:						
Shareholders of the Parent		351,130,884	345,263,668	517,885,387	596,540,013	1,016,530,249
Noncontrolling Interests		53,522	80,141	272,695	533,121	370,266
Total Comprehensive Income Attributable to:						
Shareholders of the Parent		360,965,015	333,440,460	487,563,478	588,918,059	1,059,124,890
Noncontrolling Interests		56,367	79,787	272,802	535,619	205,790
Basic/Diluted Earnings Per Share (Note)		13.54	13.32	19.97	23.01	39.20

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

### Condensed Statement of Comprehensive Income from 2018 to 2022 (Unconsolidated)

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

Item	Year	2018	2019	2020	2021	2022
Net Revenue		1,023,925,713	1,059,646,793	1,314,793,013	1,574,745,881	2,252,320,561
Gross Profit		492,955,501	480,143,141	682,004,023	788,629,037	1,300,392,888
Income from Operations		384,027,838	365,923,992	543,465,507	629,632,836	1,090,746,689
Non-operating Income and Expenses		12,170,315	22,821,227	39,153,435	30,869,355	49,927,127
Income before Income Tax		396,198,153	388,745,219	582,618,942	660,502,191	1,140,673,816
Net Income		351,130,884	345,263,668	517,885,387	596,540,013	1,016,530,249
Other Comprehensive Income (Loss) for the Year, Net of Income Tax		9,834,131	(11,823,208)	(30,321,909)	(7,621,954)	42,594,641
Total Comprehensive Income for the Year		360,965,015	333,440,460	487,563,478	588,918,059	1,059,124,890
Basic/Diluted Earnings Per Share (Note)		13.54	13.32	19.97	23.01	39.20

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

## 6.1.3 Financial Analysis

### Financial Analysis from 2018 to 2022 (Consolidated)

		2018	2019	2020	2021	2022
Capital Structure Analysis	Debt Ratio (%)	19.74	28.38	32.97	41.73	40.37
	Long-term Fund to Property, Plant and Equipment (%)	163.20	123.79	137.80	151.18	149.25
Liquidity Analysis	Current Ratio (%)	279.46	139.25	176.97	217.32	217.42
	Quick Ratio (%)	248.76	124.92	154.35	190.61	193.65
	Times Interest Earned (Times)	131.28	120.92	281.95	123.48	80.18
Operating Performance Analysis	Average Collection Turnover (Times)	8.19	7.95	9.35	9.20	10.52
	Days Sales Outstanding	44.57	45.91	39.04	39.67	34.70
	Average Inventory Turnover (Times)	6.02	6.20	5.70	4.65	4.42
	Average Inventory Turnover Days	60.63	58.87	64.04	78.49	82.58
	Average Payment Turnover (Times)	16.56	15.48	15.45	17.10	17.40
	Property, Plant and Equipment Turnover (Times)	0.97	0.88	0.92	0.90	0.97
Total Assets Turnover (Times)		0.51	0.49	0.53	0.49	0.52
Profitability Analysis	Return on Total Assets (%)	17.34	15.99	20.69	18.56	23.64
	Return on Equity attributable to Shareholders of the Parent (%)	21.95	20.94	29.84	29.69	39.76
	Operating Income to Paid-in Capital Ratio (%)	147.94	143.73	218.58	250.66	432.42
	Pre-tax Income to Paid-in Capital Ratio (%)	153.30	150.34	225.52	255.73	441.25
	Net Margin (%)	34.05	32.28	38.69	37.61	44.92
	Basic Earnings Per Share (NT\$)	13.54	13.32	19.97	23.01	39.20
	Diluted Earnings Per Share (NT\$)	13.54	13.32	19.97	23.01	39.20
Cash Flow	Cash Flow Ratio (%)	168.54	104.13	133.30	150.39	170.57
	Cash Flow Adequacy Ratio (%)	113.11	106.60	100.74	97.84	101.82
	Cash Flow Reinvestment Ratio (%)	9.06	8.45	11.24	13.56	17.25
Leverage	Operating Leverage	2.28	2.41	1.97	2.05	1.77
	Financial Leverage	1.01	1.01	1.00	1.01	1.01
	Advanced Technologies (7-nanometer and below) Percentage of Wafer Sales (%)	9	27	41	50	53
	Sales Growth (%)	5.53	3.73	25.17	18.53	42.61
	Net Income Growth (%)	2.34	-1.67	50.00	15.19	70.40

Analysis of deviation of 2022 vs. 2021 over 20%:

1. Times interest earned decreased by 35% mainly due to increase in interest expenses.
2. Return on Total Assets increased by 27% mainly due to increase in net income.
3. Return on Equity attributable to Shareholders of the Parent increased by 34% mainly due to increase in net income.
4. Operating Income to Paid-in Capital Ratio increased by 73% mainly due to increase in operating income.
5. Pre-tax Income to Paid-in Capital Ratio increased by 73% mainly due to increase in pre-tax income.
6. Basic Earnings Per Share and Diluted Earnings Per Share increased by 70% mainly due to increase in net income.
7. Cash Flow Reinvestment Ratio increased by 27% as a result of increase in cash generated by operating activities.

\* 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 (including Accounts Receivable and Notes Receivable originated from operation)
  - (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 (including Accounts Payable and Notes Payable originated from operation)
  - (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 2018 to 2022 (Unconsolidated)

		2018	2019	2020	2021	2022
Capital Structure Analysis	Debt Ratio (%)	19.21	28.74	32.33	35.82	33.39
	Long-term Fund to Property, Plant and Equipment Ratio (%)	170.43	127.39	135.80	141.47	144.83
Liquidity Analysis	Current Ratio (%)	143.26	58.64	85.37	111.12	124.39
	Quick Ratio (%)	113.07	45.81	65.93	84.33	100.95
	Times Interest Earned (Times)	137.46	122.80	330.85	261.58	277.57
Operating Performance Analysis	Average Collection Turnover (Times)	8.45	8.32	9.80	9.80	11.28
	Days Sales Outstanding	43.21	43.88	37.24	37.23	32.35
	Average Inventory Turnover (Times)	6.31	6.65	6.13	4.98	4.84
	Average Inventory Turnover Days	57.89	54.91	59.58	73.23	75.43
	Average Payment Turnover (Times)	16.22	15.10	14.89	17.06	17.68
	Property, Plant and Equipment Turnover (Times)	1.00	0.91	0.93	0.93	1.04
	Total Assets Turnover (Times)	0.51	0.49	0.52	0.52	0.58
Profitability Analysis	Return on Total Assets (%)	17.62	16.00	20.74	19.59	26.14
	Return on Equity (%)	21.95	20.94	29.84	29.69	39.76
	Operating Income to Paid-in Capital Ratio (%)	148.10	141.12	209.59	242.82	420.64
	Pre-tax Income to Paid-in Capital Ratio (%)	152.79	149.92	224.69	254.72	439.90
	Net Margin (%)	34.29	32.58	39.39	37.88	45.13
	Basic Earnings Per Share (NT\$)	13.54	13.32	19.97	23.01	39.20
	Diluted Earnings Per Share (NT\$)	13.54	13.32	19.97	23.01	39.20
Cash Flow	Cash Flow Ratio (%)	173.17	98.00	114.56	153.79	173.41
	Cash Flow Adequacy Ratio (%)	113.52	106.59	99.88	97.62	104.90
	Cash Flow Reinvestment Ratio (%)	9.23	8.23	10.93	14.20	18.23
Leverage	Operating Leverage	2.28	2.46	2.04	2.11	1.81
	Financial Leverage	1.01	1.01	1.00	1.00	1.00

Analysis of deviation of 2022 vs. 2021 over 20%:

1. Quick ratio increased by 20% mainly due to increase in cash and cash equivalents.
2. Return on Total Assets increased by 33% mainly due to increase in net income.
3. Return on Equity increased by 34% mainly due to increase in net income.
4. Operating Income to Paid-in Capital Ratio increased by 73% mainly due to increase in operating income.
5. Pre-tax Income to Paid-in Capital Ratio increased by 73% mainly due to increase in pre-tax income.
6. Basic Earnings Per Share and Diluted Earnings Per Share increased by 70% mainly due to increase in net income.
7. Cash Flow Reinvestment Ratio increased by 28% as a result of increase in cash generated by operating activities.

### \* 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(including Accounts Receivable and Notes Receivable originated from operation)
  - (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(including Accounts Payable and Notes Payable originated from operation)
  - (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 2018 to 2022

Year	CPA	Audit Opinion
2018	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2019	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2020	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2021	Mei Yen Chiang, Shang Chih Lin	An Unmodified Opinion
2022	Mei Yen Chiang, Shang Chih Lin	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 2022 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 14, 2023

## 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 2022 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	2022	2021	Difference	%
Current Assets	2,052,896,744	1,607,072,907	445,823,837	28%
Long-term Investments (Note 1)	68,927,920	29,384,701	39,543,219	135%
Property, Plant and Equipment	2,693,836,970	1,975,118,704	718,718,266	36%
Right-of-use Assets	41,914,136	32,734,537	9,179,599	28%
Intangible Assets	25,999,155	26,821,697	(822,542)	-3%
Other Assets (Note 2)	81,203,953	54,370,909	26,833,044	49%
Total Assets	4,964,778,878	3,725,503,455	1,239,275,423	33%
Current Liabilities	944,226,817	739,503,358	204,723,459	28%
Noncurrent Liabilities	1,060,063,194	815,266,892	244,796,302	30%
Total Liabilities	2,004,290,011	1,554,770,250	449,519,761	29%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	69,330,328	64,761,602	4,568,726	7%
Retained Earnings	2,637,524,688	1,906,829,661	730,695,027	38%
Others Equity	(20,505,626)	(62,608,515)	42,102,889	67%
Equity Attributable to Shareholders of the Parent	2,945,653,195	2,168,286,553	777,366,642	36%
Total Equity	2,960,488,867	2,170,733,205	789,755,662	36%

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 Current Assets: The increase was mainly due to increase in cash and cash equivalents.

Increase in Long-term Investments: The increase was mainly due to increase in noncurrent financial assets at amortized costs.

Increase in Property, Plant and Equipment: The increase was mainly due to increase in equipment under installation and construction in progress.

Increase in Right-of-use Assets: The increase was mainly due to increase in leases of land.

Increase in Other Assets: The increase in other assets was mainly due to increase in deferred income tax assets.

Increase in Total Assets: The increase in total assets was mainly due to increase in current assets and property, plant and equipment.

Increase in Current Liabilities: The increase was mainly due to increase in accrued expenses and other current liabilities.

Increase in Noncurrent Liabilities: The increase was mainly due to issuance of corporate bonds in 2022.

Increase in Total Liabilities: The increase was mainly due to issuance of corporate bonds and increase in accrued expenses and other current liabilities.

Increase in Retained Earnings: The increase was mainly due to net income of 2022, partially offset by distribution of earnings.

Increase in Others Equity: The increase was mainly due to increase in currency exchange gain arising from translation of foreign operations in 2022.

Increase in Equity Attributable to Shareholders of the Parent: The increase was mainly due to increase in retained earnings.

Increase in Total Equity: The increase was mainly due to increase in equity attributable to shareholders of the parent.

#### • 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	2022	2021	Difference	%
Current Assets	1,118,550,389	783,205,937	335,344,452	43%
Long-term Investments (Note 1)	728,961,910	603,640,944	125,320,966	21%
Property, Plant and Equipment	2,432,675,050	1,889,970,529	542,704,521	29%
Right-of-use Assets	39,051,427	30,123,052	8,928,375	30%
Intangible Assets	21,456,104	22,910,400	(1,454,296)	-6%
Other Assets (Note 2)	81,724,184	48,644,283	33,079,901	68%
Total Assets	4,422,419,064	3,378,495,145	1,043,923,919	31%
Current Liabilities	899,245,600	704,833,370	194,412,230	28%
Noncurrent Liabilities	577,520,269	505,375,222	72,145,047	14%
Total Liabilities	1,476,765,869	1,210,208,592	266,557,277	22%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	69,330,328	64,761,602	4,568,726	7%
Retained Earnings	2,637,524,688	1,906,829,661	730,695,027	38%
Others	(20,505,626)	(62,608,515)	42,102,889	67%
Total Equity	2,945,653,195	2,168,286,553	777,366,642	36%

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%

Increase in Current Assets: The increase was mainly due to increase in cash and cash equivalents.

Increase in Long-term Investments: The increase was mainly due to increase in investments accounted for using equity method.

Increase in Property, Plant and Equipment: The increase was mainly due to increase in equipment under installation and construction in progress.

Increase in Right-of-use Assets: The increase was mainly due to increase in leases of land.

Increase in Other Assets: The increase in other assets was mainly due to increase in deferred income tax assets.

Increase in Total Assets: The increase in total assets was mainly due to increase in current assets and property, plant and equipment.

Increase in Current Liabilities: The increase was mainly due to increase in accrued expenses and other current liabilities.

Increase in Total Liabilities: The increase was mainly due to issuance of corporate bonds and increase in accrued expenses and other current liabilities.

Increase in Retained Earnings: The increase was mainly due to net income of 2022, partially offset by distribution of earnings.

Increase in Others Equity: The increase was mainly due to increase in currency exchange gain arising from translation of foreign operations in 2022.

Increase in Total Equity: The increase was mainly due to increase in retained earnings.

#### • 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	2022	2021	Difference	%
Net Revenue	2,263,891,292	1,587,415,037	676,476,255	43%
Cost of Revenue	915,536,486	767,877,771	147,658,715	19%
Gross Profit	1,348,354,806	819,537,266	528,817,540	65%
Operating Expenses	226,707,552	169,222,934	57,484,618	34%
Other Operating Income and Expenses, Net	(368,403)	(333,435)	(34,968)	-10%
Income from Operations	1,121,278,851	649,980,897	471,297,954	73%
Non-operating Income and Expenses	22,911,867	13,145,417	9,766,450	74%
Income before Income Tax	1,144,190,718	663,126,314	481,064,404	73%
Income Tax Expenses	127,290,203	66,053,180	61,237,023	93%
Net Income	1,016,900,515	597,073,134	419,827,381	70%
Other Comprehensive Gain (Loss), Net of Income Tax	42,430,165	(7,619,456)	50,049,621	NM
Total Comprehensive Income for the Year	1,059,330,680	589,453,678	469,877,002	80%
Total Net Income Attributable to Shareholders of the Parent	1,016,530,249	596,540,013	419,990,236	70%
Total Comprehensive Income Attributable to Shareholders of the Parent	1,059,124,890	588,918,059	470,206,831	80%

#### ● Analysis of Deviation over 20%

Increase in Net Revenue: The increase was mainly attributed to rise in average selling price, higher wafer shipments and the favorable impact of change in foreign exchange rate.

Increase in Gross Profit: The increase was mainly due to the rise in average selling price, the favorable impact of change in foreign exchange rate and continuing cost improvement, partially offset by lower capacity utilization.

Increase in Operating Expenses: The increase was mainly due to higher research and development expenditures.

Increase in Income from Operations: The increase was mainly due to higher gross profit.

Increase in Non-operating Income and Expenses: The increase was mainly due to higher interest income in 2022.

Increase in Income before Income Tax: The increase was mainly due to higher income from operations.

Increase in Income Tax Expenses and Net Income: The increase was mainly due to higher income before income tax.

Increase in Other Comprehensive Gain (Loss), Net of Income Tax: The increase was mainly due to increase in currency exchange gain arising from translation of foreign operations in 2022.

Increase in Total Comprehensive Income for the Year, Total Net Income Attributable to Shareholders of the Parent and Total Comprehensive Income Attributable to Shareholders of the Parent: The increase was mainly due to higher net income in 2022.

#### ● 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	2022	2021	Difference	%
Net Revenue	2,252,320,561	1,574,745,881	677,574,680	43%
Cost of Revenue	951,927,673	786,116,844	165,810,829	21%
Gross Profit	1,300,392,888	788,629,037	511,763,851	65%
Operating Expenses	209,637,924	158,667,757	50,970,167	32%
Other Operating Income and Expenses, Net	(8,275)	(328,444)	320,169	97%
Income from Operations	1,090,746,689	629,632,836	461,113,853	73%
Non-operating Income and Expenses	49,927,127	30,869,355	19,057,772	62%
Income before Income Tax	1,140,673,816	660,502,191	480,171,625	73%
Income Tax Expenses	124,143,567	63,962,178	60,181,389	94%
Net Income	1,016,530,249	596,540,013	419,990,236	70%
Other Comprehensive Gain (Loss), Net of Income Tax	42,594,641	(7,621,954)	50,216,595	NM
Total Comprehensive Income for the Year	1,059,124,890	588,918,059	470,206,831	80%

#### ● Analysis of Deviation over 20%

Increase in Net Revenue: The increase was mainly attributed to rise in average selling price, higher wafer shipments and the favorable impact of change in foreign exchange rate.

Increase in Cost of Revenue: The increase was mainly due to higher sales.

Increase in Gross Profit: The increase was mainly due to the rise in average selling price, the favorable impact of change in foreign exchange rate and continuing cost improvement, partially offset by lower capacity utilization.

Increase in Operating Expenses: The increase was mainly due to higher research and development expenditures.

Increase in other Operating Income and Expenses, Net: The increase was mainly due to a net gain on disposal of property, plant and equipment in 2022.

Increase in Income from Operations: The increase was mainly due to higher gross profit.

Increase in Non-operating Income and Expenses: The increase was mainly due to higher share of profits of subsidiaries and associates in 2022.

Increase in Income before Income Tax: The increase was mainly due to higher income from operations.

Increase in Income Tax Expenses and Net Income: The increase was mainly due to higher income before income tax.

Increase in Other Comprehensive Gain (Loss), Net of Income Tax: The increase was mainly due to increase in currency exchange gain arising from translation of foreign operations in 2022.

Increase in Total Comprehensive Income for the Year: The increase was mainly due to higher net income in 2022.

#### ● 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 12/31/2021	Net Cash Provided by Operating Activities in 2022	Net Cash Used in Investing Activities in 2022	Net Cash Used in Financing Activities in 2022	Effect of Exchange Rate Changes on Cash and Cash Equivalents in 2022	Cash Balance 12/31/2022	Remedy for Liquidity Shortfall	
						Investment Plan	Financing Plan
1,064,990,192	1,610,599,188	(1,190,928,235)	(200,244,032)	58,396,970	1,342,814,083	None	None

#### • Analysis of Cash Flow

NT\$1,610.6 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT\$1,190.9 billion net cash used in investing activities: primarily for capital expenditures.

NT\$200.2 billion net cash used in financing activities: mainly for net decrease in short-term loans and payment of cash dividend, partially offset by issuance 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 12/31/2021	Net Cash Provided by Operating Activities in 2022	Net Cash Used in Investing Activities in 2022	Net Cash Used in Financing Activities in 2022	Cash Balance 12/31/2022	Remedy for Liquidity Shortfall	
					Investment Plan	Financing Plan
396,294,241	1,559,417,480	(944,001,551)	(382,834,273)	628,875,897	None	None

#### • Analysis of Cash Flow

NT\$1559.4 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT\$944.0 billion net cash used in investing activities: primarily for capital expenditures.

NT\$382.8 billion net cash used in financing activities: mainly for net decrease in short-term loans and cash dividend payment, partially offset by issuance 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 2022 and 2021	Actual Use of Capital	
			2022	2021
Production Facilities, R&D and Production Equipment	Cash flow generated from operations and issuance of corporate bonds	1,903,407,434	1,072,310,836	831,096,598
Others	Cash flow generated from operations	18,460,404	10,361,294	8,099,110
Total		1,921,867,838	1,082,672,130	839,195,708

Based on capital expenditures listed above, TSMC's annual production capacity increased by approximately 1.2 million 12-inch equivalent wafers in 2022.

### 6.2.5 Long-term Equity Investment Policy and Results

TSMC's long-term equity investments, accounted for using the equity method, were all made for strategic purposes. In 2022, the gains from these investments amounted to NT\$7,798,359 thousand on a consolidated basis, up from the previous year mainly due to increases in product demand. In the future, TSMC's long-term equity investments, accounted for using the equity method, will continue to focus on strategic purposes through prudent assessments.

## 6.3 Risk Management

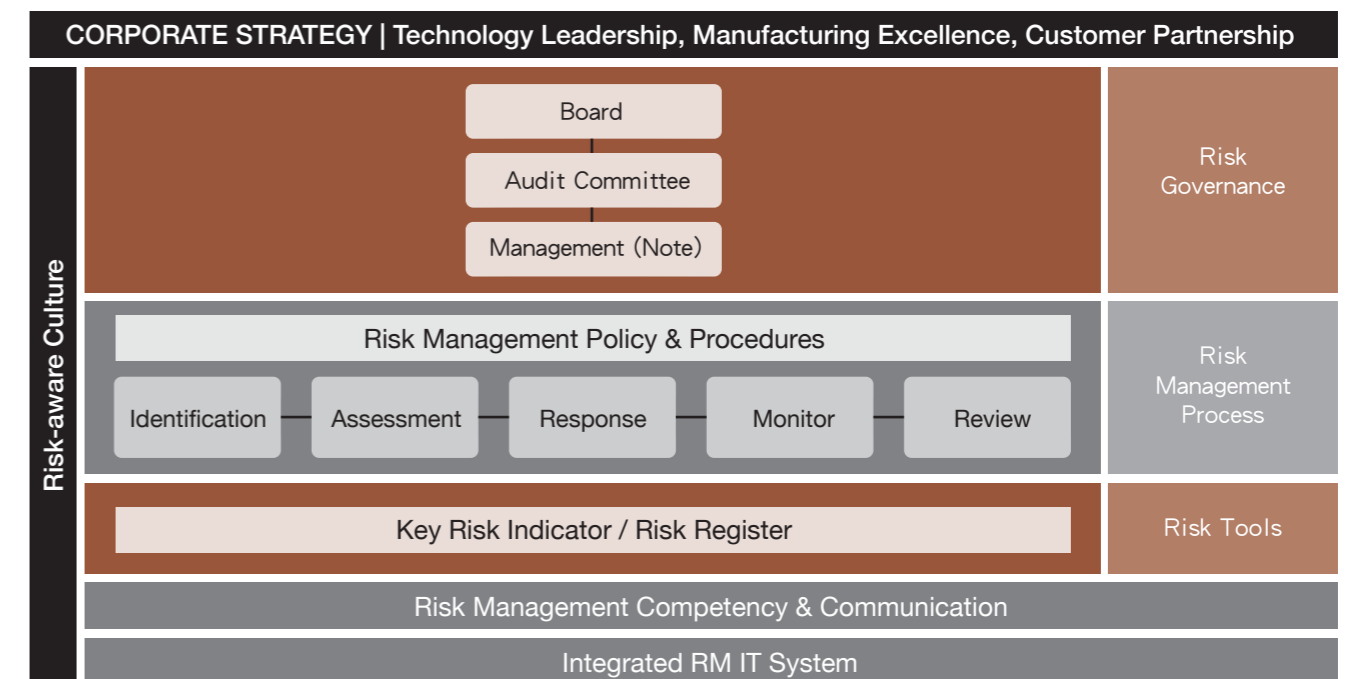
### 6.3.1 Risk Management Overview

#### Risk Management Policy and Framework

TSMC adopts a balanced risk-reward approach to risk management to optimize business returns while considering the holistic impact on corporate sustainability. TSMC's "Risk Management Policy" ([https://esg.tsmc.com/download/file/riskManagementPolicy\\_e.pdf](https://esg.tsmc.com/download/file/riskManagementPolicy_e.pdf)), approved by the Board of Directors and signed off by Chairman, affirms the commitment for proactive and robust risk management system in assisting TSMC in making well-considered and risk-based decisions, that fulfills its corporate vision and to deliver sustainable value for TSMC and its stakeholders.

Adhering closely to the ISO 31000: 2018 Risk Management System and the Committee of Sponsoring Organizations of the Treadway Commission (COSO)'s Enterprise Risk Management – Integrated Framework, TSMC's Enterprise Risk Management (ERM) framework was established to provide a systematic approach to risk management. It outlines the risk governance structure, process, tools, competency, communication, and culture to assist the management in making informed decisions, to implement business strategies and achieve corporate objectives.

#### • Enterprise Risk Management Framework



Note: comprising of Risk Management Steering Committee, Risk Management Executive Council, Risk Management Taskforces, Central Crisis Command Centre and Crisis Management Team

**Risk Appetite and Risk Management Scope**

TSMC has defined its risk appetite statements, which outline the nature and extent of the risks which TSMC is willing to take in pursuit of its business goals. These risk appetite statements are:

- Risk taken should be carefully evaluated, commensurate with rewards and be in line with the Company’s strategic, investment, financial and corporate objectives.
- Risk considerations are embedded into business operations and managed within the risk tolerance (risk indicators) of the divisions, functions and Company.
- TSMC will not invest or participate in any business activities that exceeds our risk tolerance. The Company does not condone safety related breaches or lapses, non-compliance with laws and regulations, as well as acts such as fraud, bribery and corruption.

Adopting the five-step risk management process consisting of the identification, assessment, response, monitor and review of risks, risks assessments are performed by key functional units, to form the enterprise-level risk map and mitigation plans, that are presented to the Audit Committee. This process is supported by ongoing education and awareness efforts in fostering a risk-aware culture and building risk competencies.

**• Risk Management Scope**

Strategic Risks	Operational Risks
<ul style="list-style-type: none"> <li>• Industry developments</li> <li>• Changes in technology (including IT security)</li> <li>• Decrease in demand and average selling price</li> <li>• Competition</li> <li>• Changes in the government policies and regulatory environment</li> </ul>	<ul style="list-style-type: none"> <li>• Natural and man-made disasters</li> <li>• Capacity expansion</li> <li>• Construction of new fabs</li> <li>• Sales concentration</li> <li>• Purchasing concentration</li> <li>• Intellectual property rights</li> <li>• Litigious and non-litigious matters</li> </ul>
Financial Risks	
<ul style="list-style-type: none"> <li>• Economic risks (including interest rate fluctuation, foreign exchange volatility, inflation, and amendments to tax regulations or implementation of new tax laws)</li> <li>• External financing</li> <li>• High-risk/highly leveraged investments; lending, endorsements, and guarantees for other parties; and financial derivative transactions</li> <li>• Impairment charges</li> </ul>	<ul style="list-style-type: none"> <li>• Mergers and acquisitions</li> <li>• Recruiting quality personnel</li> <li>• Future R&amp;D plans and expected R&amp;D spending</li> <li>• Change in corporate reputation and impact on the Company’s crisis management</li> <li>• Change in management</li> <li>• Non-compliance with export control, environmental and climate change related laws, regulations and accords, and failure to timely obtain requisite approvals necessary for conducting business</li> </ul>
Other Risks	
<ul style="list-style-type: none"> <li>• Sales of significant numbers of shares by TSMC’s directors, and/or shareholders who own 10% or more of TSMC’s total outstanding shares</li> <li>• Trade policies</li> </ul>	

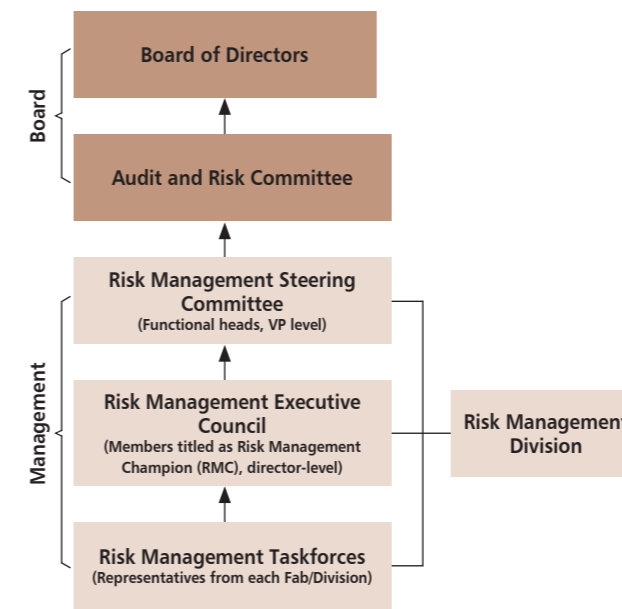
TSMC recognizes that its systems and processes provide reasonable but not absolute assurance and hence continually improve to ensure that its ability to manage and respond to risks and opportunities remain relevant and effective.

**Risk Management Organization**

Risk management in TSMC involves the reporting and oversight structure involving both Board of Directors and management of TSMC that seeks to embed sound risk management practices in business decisions and operations across TSMC. The Board of Directors is responsible for the governance of risk and has authorized the Audit Committee to review TSMC’s ERM framework. At the management level, the risk management organization is composed of the Risk Management Steering Committee, the Risk Management Executive Council, the Risk Management Taskforces and the Risk Management Division.

The Risk Management Division works with each function in applying the ERM framework to assess and mitigate risks throughout TSMC by risk monitoring, conducting workshops, and implementing risk related policies and guidelines. Annually, the risk management organization reports to the Audit Committee on TSMC’s key risks and mitigation efforts, and the Audit Committee’s Chairperson reports to the Board of Directors on the risk profile and risk mitigation measures being taken.

**• Risk Management Organization Chart**



Risk management is a shared responsibility of both management and employees. All employees are required to be competent and accountable for managing risks related to their area of responsibility with an emphasis on clear risk ownership. The roles and responsibilities of the risk management organization are defined as below:

**• Risk Management Steering Committee**

1. Advises the Board in determining overall risk appetite, tolerance, strategy and resources allocation (taking into account of the current and prospective macroeconomic, technological, regulatory, environmental and social developments and trends).
2. Reviews and oversees the applicability and performances of risk management framework, policy and procedures.
3. Provides advice and assurance to the Board by adopting a holistic view of the key risks that TSMC is exposed to and approves the prioritization of risk mitigations.
4. Sets the tone at the top, provides sponsorship to risk management initiatives and activities bringing about the desired risk culture, awareness and capabilities of effectively and sufficiently managing the key risks and new type of risks, including clarifying the risk ownership.
5. Ensures that risk management is incorporated into strategic business development and operational planning, day-to-day management and decision making.
6. Advises the Board on proposed transactions to address the strategic risks and capitalize on opportunities.

**• Risk Management Executive Council**

1. Identifies potential/emerging risks that may impact TSMC in achieving our objectives and/or the continued effectiveness and efficiency of our business operations.
2. Conducts risk assessments, defines risk mitigation plans, including incident management plans as well as provides sponsorship and allocate sufficient resources to enable timely and effective mitigations.
3. Leads and drives cross-functional taskforce, meetings, or activities to ensure that risks are adequately & effectively mitigated, including collaboration with Risk Management Division and various parties.
4. Defines key risk indicators (KRIs) to proactively monitor risk dynamics to respond in a timely and effective manner.
5. Builds a risk-aware culture and raise risk competency in fab/division, including but not limited to training/exercises and continuous improvements.
6. Defines and facilitates action plans based on root cause analysis to prevent reoccurrences of major incidents, high-risk events and major findings raised from internal/external reviews.
7. Reports to Risk Management Steering Committee on the progress, effectiveness review, lesson learned and implements the decisions made by Risk Management Steering Committee.

**• Risk Management Taskforces**

1. Identifies and assesses potential risks/threats that may impact TSMC achieving its business objectives, as well as deploying the risk mitigations.
2. Plans and executes risk prevention and mitigations in accordance with risk scenarios.
3. Organizes and/or participates in cross-functional meetings, in addressing risks that cross multi-disciplines or divisions/fabs.
4. Participates in the implementation and execution of risk management initiatives and activities.
5. Reviews the investigation of major incidents, high-risk events and major findings raised from internal/external checks for division. Monitor the effectiveness of action plans.

**• Risk Management Division**

1. Assists the board in establishing, overseeing a proactive and effective management system of risk management and business continuity management, including risk appetite and tolerance, risk strategy and risk management framework, policy, and procedures.
2. Strengthens risk culture, awareness, and risk management capabilities through continuous training, education and awareness programs.



3. Identifies and analyzes the sources and categories of risks of the company, and regularly review their applicability.
4. Facilitates risk management committees, risk owners in the implementation of risk management activities and initiatives to identify and manage risks, including the review of risk mitigation plans, business continuity, crisis and incident management plans, review the effectiveness of risk management activities through documentary risk report reviews, management discussions, meetings, to provide reasonable assurance.
5. Coordinates cross-department/functional interaction and communication of risk management operations and decisions, including implementing the risk management decisions of Risk Management Steering Committee.
6. Consults with management, consultants and peers on best practices and standards for continuous improvement and benchmarking.
7. Prepares reports to stakeholders that may be required from time to time by regulators, government agencies, insurers/brokers and customers, including an annual report on the implementation of company's risk management system.

#### **Crisis Management and Business Continuity Management**

TSMC is committed to maintaining operational resilience with close reference to business continuity management standards that enables the Company to respond effectively to business disruption. The Company is cognizant of the major risks of natural and man-made disasters, including earthquakes, flooding, typhoons, droughts, tsunamis, sandstorms, wildfires, volcanic eruptions, fire, gas/chemical leakage, pandemic, cyber-attacks, sabotage, failure of critical facilities and equipment, shortages in the supply of utilities, such as water, electricity and natural gas, etc. could disrupt TSMC's operations.

To mitigate the operational impacts of crisis events, the Risk Management Division implements pre-crisis risk assessment, response procedures and recovery plans. Exercises and drills are also conducted to validate our emergency responses, crisis management, business continuity plans to enhance operational preparedness. In major incidents or crisis events, the Crisis Management Guideline guides in the management and responses. The Central Crisis Command Centre (C4), headed by CEO and comprised of senior executives across key functions, provides guidance and decision-making to ensure a constant readiness-to-respond capability, including rapid responses and communication to key stakeholders.

### **6.3.2 Strategic Risks**

#### **Risks Associated with Changes in Technology and Industry**

##### **• Industry Developments**

The electronics industries and semiconductor market 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 TSMC's customers may result in volatility in the Company's revenue and earnings.

From time to time, the electronics and semiconductor industries have experienced significant and occasionally prolonged periods of downturns and overcapacity. Because TSMC is, and will continue to be, dependent on the demand of electronics and semiconductor companies for its 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, margins 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 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, it 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 competition and concentration of customers (all further discussed among these risk factors).

Also, the uncertainty and instability inherent in advanced technologies impose challenges for achieving expected product quality and product yield. If TSMC fails to maintain quality, it may result in loss of revenue and additional cost, as well as loss of business or customer trust. If TSMC is unable to overcome

the above factors, it may become less competitive and its 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 page 18-20 of this Annual Report.

##### **• IT Security**

Even though TSMC has established a comprehensive internet and computing security network, the Company 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 cyberattacks. In the event of a serious cyberattack, TSMC's systems may lose important corporate data or its production lines may be shut down pending the resolution of such attack. Major cyberattacks could also lead to loss or divulgence of trade secrets and other sensitive information, such as proprietary information of its customers and other stakeholders and personal information of its employees. 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.

Malicious hackers may also try to introduce computer viruses, corrupted software or ransomware into TSMC's network systems to disrupt its operations, blackmail the Company to regain control of its computing systems, or spy on it for sensitive information. These attacks may result in TSMC having to pay damages for its delayed or disrupted orders or incur significant expenses in implementing remedial and improvement measures to further enhance its cybersecurity network, and may also expose the Company to significant legal liabilities arising from or related to legal proceedings or regulatory investigations associated with such breaches.

In the past, TSMC has experienced and may in the future be subject to attack by malicious software. TSMC has implemented and continually updated rigorous cybersecurity measures to prevent and minimize harm caused by such attacks. Such measures include advanced virus scanning tools to protect fab equipment, strengthening firewall and network controls to prevent computer viruses from spreading among tools and fabs, installing advanced malware defense solutions for critical computers, introducing new solution architecture to secure internet access, adopting advanced solutions against distributed denial-of-service attacks from the internet,

introducing new technology for data protection, enhancing and certifying office computer security compliance, improving email phishing defense and implementing employee awareness testing. TSMC also established an integrated and automatic security operation platform, enabled the automation of cybersecurity event detection and response, enhanced internal security assessment automation, conducted external red team testing and practiced responses to ransomware attacks. For supply chain risks reduction, through collaboration, TSMC helped major suppliers improve their security maturity and share industry security events and best practices on demand and by schedule. Moreover, TSMC has collaborated with Semiconductor Equipment and Materials Institute ("SEMI") to set up a Semiconductor Cybersecurity Committee to promote security standards (SEMI E187) as well as security assessment methodology for improving the resilience of semiconductor supply chain. While these ongoing enhancements further improve Company's cybersecurity defense solutions, there can be no assurance that the Company is immune to cyberattacks.

In addition, TSMC employs certain third-party service providers for it and its affiliates worldwide with whom it needs to share highly sensitive and confidential information to enable them to provide the relevant services. While TSMC requires such third-party service providers to strictly fulfill the confidentiality and/or internet security requirements in its service agreements with them, there is no assurance that each of them will comply with such obligations. Moreover, such third-party service providers may also be susceptible to cyberattacks. If TSMC or its service providers are not able to timely resolve the respective technical difficulties caused by such cyberattacks, or ensure the integrity and availability of its data (and data belonging to its customers and other third parties) or maintain 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.

#### **Risks Associated with Decrease in Demand and Average Selling Price**

A vast majority of the Company's revenue is derived from customers who use TSMC's products in smartphones, high performance computing, IoT, automotive, and digital consumer electronics. 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 TSMC's products and services, could adversely affect the Company's revenue. Further, semiconductor manufacturing

facilities require substantial investment to construct and are largely fixed cost assets once they are in operation. Because the Company owns most of its manufacturing capacities, a significant portion of its operating costs is fixed. In general, these costs do not decline when customer demand or TSMC's capacity utilization rates drop, and thus declines in customer demand, among other factors, may significantly decrease TSMC's margins. Conversely, as product demand rises and factory utilization increases, the fixed costs are spread over increased output, which can improve TSMC's margins. In addition, the historical trend of declining average selling prices ("ASP") of end use applications places downward pressure on the prices of the components that go into such applications. Decreases in the ASP of end use applications may increase pricing pressure on components produced by TSMC, which, in turn, may negatively impact the Company's revenue, margin and earnings.

#### **Risks Associated with Competition**

The markets for TSMC's foundry services are highly competitive. The Company competes with other foundry service providers, as well as 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 subsidies, economic stimulus funds, or other incentives that may be unavailable to TSMC. The governments of the United States, China, Europe, South Korea, and Japan provide various incentive programs to promote developments of their domestic semiconductor industries, such as the Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022 (the "U.S. CHIPS Act"), which provides financial incentives to incentivize the development of U.S. semiconductor industry. Although governments in certain of the countries or regions where TSMC is currently expanding or planning to expand its production capacity have extended or may in the future extend certain financial incentives to the Company, there is no assurance that TSMC will be able to apply for or receive such financial incentives at the levels TSMC expects or at all. Additionally, any financial incentives the Company receive may be subject to strict conditions, or the grantors could seek to recover any funds provided to TSMC, or cancel, reduce or deny our requested subsidies or grants in the future. This could materially increase TSMC's operating costs and adversely affect its results of operations.

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 such new and aggressive competitors on technology, manufacturing capacity, product quality and customer satisfaction, it risks losing customers to such 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 2022 and as of the date of this Annual Report, the following changes or developments in governmental policies and regulations may influence the Company's business operations:

The manufacturing, assembling and testing of TSMC's products require the use of chemicals and materials that are subject to environmental, climate related, health and safety laws and regulations issued worldwide as well as international accords such as the Paris Agreement. Climate change related laws or regulations currently are too indefinite for the Company to assess the impact on our future financial condition with any degree of reasonable certainty. For example, the Taiwan "Greenhouse Gas Reduction and Management Act", which became effective on July 1, 2015, was amended and was renamed as "Climate Change Response Act". The amendment became effective in February 2023, which set a goal of reaching net-zero emissions in Taiwan by 2050 and also established a carbon fee system that will collect carbon fees on direct and indirect emissions from emitters whose emissions reach certain thresholds. The carbon fee system is expected to take effect by 2024 and the rate for such fees has yet to be determined by the relevant authorities. We may be required to pay any incurred carbon fees if our emission levels exceed applicable thresholds pursuant to the carbon fee system, which could result in increased operating costs for us and affect us financially to a certain extent. We expect to see more of its relevant regulations promulgated by the regulators in the future. Also, the R.O.C. legislative authority is reviewing, at all times, various environmental issues to develop laws and regulations relating to environmental protection and climate related changes. The impact of such laws and regulations, as well as of the carbon fee, is indeterminable at the moment.

It is not expected that other governmental policies or regulatory changes would materially impact TSMC's operations or financial condition.

#### **6.3.3 Operational Risks**

##### **Natural and Man-Made Disaster**

TSMC is committed to maintaining operational resilience in accordance with business continuity management standards that equips it with the capability to respond effectively to business disruption. Disruptions caused by natural and man-made disasters, including earthquakes, flooding, typhoons, droughts, tsunamis, sandstorms, wildfires, volcanic eruptions, fire, gas/chemical leakage, pandemic, cyber-attacks, sabotage, failure of critical facilities and equipment, shortages in the supply of utilities, such as water, electricity and natural gas, etc. could interrupt TSMC's operations.

Most of TSMC's production facilities, as well as those of many of its suppliers, customers and upstream providers of complementary semiconductor manufacturing services, are located in areas susceptible to natural disasters and may face potential shortages of electricity or water, which could cause interruptions to TSMC's operations.

Thus, if one or more natural disasters 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 unforeseen disruptive event, it could reduce TSMC's manufacturing capacity and cause the loss of important customers and thereby have an adverse, material impact on its operational and financial performance.

To cope with possible droughts resulted from severe climate change, TSMC implemented manufacturing process water saving, as well as building up industrial water recycling plants, using household water cooperating with government to mitigate water shortage risk. TSMC also implemented its business continuity plans, including water conservation measures, the use of more alternative water sources, water supplied by tank cars, stress tests and various exercises. As a result, there was no material impact to TSMC's business or operational performance.

TSMC has occasionally suffered power outages, dips or surges caused by difficulties encountered by its electricity supplier or other power consumers on the same power grid. Some of these have resulted in interruptions to TSMC's operations. Such shortages or interruptions in electricity supply could further be exacerbated by changes in the energy policy of the governments. If TSMC is unable to secure reliable and uninterrupted supply of electricity to power its manufacturing fabs, its ability to fill customers' orders would be jeopardized.

If such events were to occur over prolonged periods of time, TSMC's operations and financial performance may be materially adversely affected. Moreover, TSMC's future capacity expansions in Taiwan and elsewhere could be curtailed by utility shortages.

The COVID-19 pandemic has had impacts on worldwide economic activity. Prolonged impacts of COVID-19 or future similar events could adversely affect TSMC's business and results of operations in several ways, including but not limited to: (1) interruption of the operations of TSMC's supply chains for equipment, parts and materials in terms of manufacturing, logistics, and manpower arrangements for tool installation; (2) fluctuation in TSMC customers' demands for certain products, leading to uncertainties for TSMC's capacity planning and also for meeting customer demand, which may harm TSMC's business with its customers and subject TSMC to the risk of legal disputes; and (3) potential production delays for TSMC's products due to forced fab or office closures or partial operation.

TSMC has formed an "Epidemic Prevention Committee" to identify, implement and monitor actions stemming from the dynamic exigencies of the pandemic, including but not limited to, health management of its employees, splitting operation and work from home arrangements, identification and control of high risk individuals, rapid investigation of confirmed cases, management of production inventory, supply chain management, and capacity management for demand changes. As of the date of this annual report, TSMC's current business and results of operations have not been materially affected by the COVID-19 pandemic, and with the easing of the COVID-19 pandemic, TSMC does not expect its business and results of operations will be directly affected. Nevertheless, the Company could still face the post-pandemic downward changes in consumers' demand for electronic products, which in turn lead to reduced demand for and place downward pressure on the price of TSMC's products and services.

TSMC has further strengthened its business continuity management, which includes periodic risk assessments and mitigations, and the establishment of taskforces before emergency events. The taskforces define emergency response, crisis communication, recovery plans and preventative measures based on the thorough analysis of derivative effects and alternative solutions to ensure the impacts of people injury, business interruption, finance are minimized. TSMC reviews periodically its business continuity plans and refines them to reflect exercise results and implementation. In response to

the impact of the earthquakes that occurs in Taiwan, TSMC continues to improve its earthquake emergency response, tool anchorage and seismic isolation facilities, and readiness for tool salvage and production recovery. These improvements have been integrated into new fab design. TSMC's business continuity procedures were further enhanced through the compliance with ISO 22301 business continuity management system (BCMS).

TSMC maintains a comprehensive risk management system dedicated to human safety, 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) and ISO 45001 certified (occupational health and safety management). 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 and many of its suppliers use flammable 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 TSMC maintains multiple layers of risk prevention and protection, as well as fire and casualty insurance, TSMC's risk management and insurance coverage may not always be sufficient to cover all of its 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 TSMC's manufacturing capacity leading to the loss of important sales and customers and have a negative impact on TSMC's financial performance. In addition to periodic fire-protection inspections and firefighting drills, TSMC has also carried out a corporate-wide fire risk mitigation project focused on managerial and hardware improvements.

TSMC continues to monitor key disruptive threats to its business operations and adapt the plans to ensure operational resilience.

#### **Risks Associated with Capacity Expansion**

TSMC performs long-term market demand forecasts for its products and services to manage its overall capacity. Based on its market demand forecasts, the Company has continued

to add capacity to meet market needs for its products and services, including in Taiwan, in Arizona, U.S., in Nanjing, China and in Kumamoto, Japan.

Implementing these capacity expansion plans will increase its costs, and the increases may be substantial. For example, the Company would need to build new facilities, purchase additional equipment and hire 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 addition, market conditions are dynamic and TSMC's market demand forecasts 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 demand subsequently increases rapidly over a short period of time, TSMC may not be able to restore the capacity in a timely manner to take advantage of the upturn. In such circumstances, its financial performance and competitiveness may be adversely affected.

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 Construction of New Fabs**

The Company has multiple expansion projects that are currently underway, including the design and construction of new fabs worldwide. Global expansion has required and will continue to require considerable managerial, financial and other resources. The Company expects to face particular challenges in global expansion and operations, including but not limited to:

- higher costs associated with construction of new fabs, establishing supply chains for various materials in different overseas locations, the impact on the Company's ability to sustain its current level of productivity and manufacturing efficiency provided by its ecosystem of interconnected semiconductor fabs, employees and suppliers in the R.O.C., and recruiting and retaining talent in various overseas locations;
- labor shortages, interruptions in the supply chains for various materials, and construction issues, which could substantially delay the completion of the Company's expansion projects, and could further result in substantial additional costs or failure to meet its capacity expansion plans;

- disruptions to the Company's operations caused by natural or man-made disasters, including earthquakes, flooding, typhoons, droughts, tsunamis, sandstorms, wildfires, volcanic eruptions, fire, gas/chemical leakage, pandemic, sabotage, failure of critical facilities and equipment and shortages in the supply of utilities, such as water and electricity;
- scarcity of industrial-use land, which could limit the Company's future expansion of operations;
- compliance with applicable foreign laws and regulations, and the risk of penalties if the Company's practices are deemed not to be in compliance;
- challenges in managing information technology infrastructure in multiple locations and across different systems and risks of our information technology infrastructure succumbing to cyberattacks by third parties worldwide;
- adverse changes relating to government grants or other government incentives;
- challenges relating to work culture differences and inherent in efficiently managing an increased number of employees over large geographic distances;
- limited or insufficient intellectual property protection or difficulties enforcing the Company's rights to intellectual property; and
- exposure to different tax jurisdictions and potential adverse tax consequences.

If TSMC is unable to overcome the above challenges, the Company's business, financial condition and results of operations could be adversely affected.

#### **Risks Associated with Sales Concentration**

Over the years, the Company's customer profile and the nature of the Company's customers' business have changed dramatically. While TSMC generates revenue from hundreds of customers worldwide, TSMC's ten largest customers in 2020, 2021 and 2022 accounted for approximately, 74%, 71% and 68% of TSMC's net revenue in the respective year. TSMC's largest customer in 2020, 2021 and 2022 accounted for 25%, 26% and 23% of the Company's net revenue in the respective year. TSMC's second largest customer in 2020 and 2021 accounted for 12% and 10% of TSMC's net revenue in the respective year. In 2022, TSMC's second largest customer accounted for less than 10% of TSMC's net revenue.

A more concentrated customer base will subject TSMC's revenue to seasonal demand fluctuations from the Company's large customers, and cause different seasonal patterns in the Company's business. This customer concentration results in part from the changing dynamics of the electronics industry

with the structural shift to mobile and high performance computing (HPC) 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, TSMC has seen the changes of nature in its customers' business models in response to this new business model paradigm. For example, there is a growing trend toward the system companies developing their own designed semiconductors 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 controls directed at TSMC's major customers, could impact the Company's ability to supply products 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 or outsourcing policies or practices of these customers, the timing of customer inventory adjustments, or changes 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 obtain 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 suppliers 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, including military conflicts and inflation 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. Importation and domestic production limitations may also limit our ability to obtain adequate supplies of raw materials as well as materials of the necessary quality. 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 it 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. Further, 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 find, TSMC engages early and extensively with primary suppliers on managing quality and capacity issues so as 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, 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 that critical suppliers meet various standards in labor, ethics, ESH (environmental, safety and health) and BCP (business continuity plan). Onsite audits are conducted regularly to encourage 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 available from a limited number of suppliers. TSMC may encounter the situation of limited

supply and long delivery cycles. To better manage its supply chain, the Company evaluates and projects delivery lead times to minimize the impact of supply chain risks on operating costs. TSMC has also implemented various collaborative business models and risk management contingencies with suppliers to ensure supply and shorten the procurement lead time. However, if TSMC is unable to acquire in a timely manner the equipment and parts it needs, it may fail to successfully implement capacity expansion plans and exploit time sensitive business opportunities. Additionally, ongoing trade tensions could result in increased prices for, or even unavailability of, key equipment, through delay or denial of necessary export licenses, adoption of additional export control measures and other tariff or non-tariff barriers. If TSMC is unable to obtain equipment in a timely fashion to fulfill its customers' demand for technology and production capacity, or unable to do so at a reasonable cost, its financial condition and results of operations could be negatively impacted.

#### 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 the Company actively enforces and protects 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, the Company 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 the Company 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.

The Company has received, from time to time, communications from third parties, including non-practicing entities and semiconductor companies, 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. Because of the nature of the industry, its market position, and the expansion of its manufacturing operations outside of Taiwan, the Company may receive an increased number of such communications in the future. The assertions made and lawsuits initiated by litigious, well-funded, non-practicing entities are particularly aggressive in their monetary demand and in seeking court-issued injunctions. 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, with the expansion of its manufacturing operations into certain non-R.O.C jurisdictions, it has faced increased challenges in managing 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 the Company 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.

The Company has taken related measures to minimize potential loss of shareholder value arising from intellectual property claims and litigation filed against it. These measures include: strategically obtaining licenses from certain semiconductor and other technology companies as needed; timely securing intellectual property rights originating within and outside of TSMC 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, the Company 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, the Company could incur significant costs in the defense thereof or could suffer adverse effects on its operations. The Company 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 the Company to potential significant legal liability.

Currently, TSMC's material legal proceeding is as follows: In September 2022, Daedalus Prime LLC ("Daedalus") filed complaints in the U.S. International Trade Commission ("ITC") and the U.S. District Court for the Eastern District of Texas alleging that TSMC, TSMC North America, and other companies infringe four U.S. patents. The ITC instituted an investigation in October 2022. The outcome cannot be determined and we cannot make a reliable estimate of the contingent liability at this time.

Other than the matter 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 2022 and as of the date of this Annual Report, TSMC had not conducted any merger or acquisition.

#### Risks Associated with Recruiting Quality Personnel

TSMC relies on the continued service and contribution 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, talent shortages, illegal talent poaching, immigration controls, 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.

In order to reduce the risk of talent recruitment challenges, TSMC encourages job rotation and employs an on-the-job training and certification system. In this way, employees can learn and enhance their work efficiency and effectiveness in the actual workplace. Moreover, TSMC creates multiple recruitment

channels and continues to hire various top-notch, talented professionals from Taiwan and overseas. At the same time, the Company continues to expand industry-academic cooperation to meet outstanding talented individuals at an early phase in order to recruit them in the future.

#### **Future R&D Plans and Expected R&D Spending**

For additional details, see “5.2.7 Future R&D Plans” on page 102 of this Annual Report.

#### **Changes in Corporate Reputation and Impact on the Company’s Crisis Management**

TSMC has established an excellent reputation 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 sustainable responsibility by serving as a good corporate citizen. TSMC continues to pursue innovation in economic, environmental and social dimensions.

In 2022, TSMC was honored with numerous awards for achievements in various areas including operations, corporate governance, patents, profit growth, investor relations, environmental protection, corporate sustainability, and other fields. The Company was selected as a part of the Dow Jones Sustainability World Index for the 22<sup>nd</sup> consecutive year and received the following awards: the inaugural Honorable Legion of Corporate Sustainability Top 100 launched by *CommonWealth Magazine* the Excellence in Corporate Social Responsibility Award; the Taiwan Institute for Sustainable Energy 2022 Taiwan Corporate Sustainability Awards’ First Place in Taiwan Top Ten Sustainability Exemplary Awards – the Corporate Sustainability Report Award – the Climate Leadership Award, the Circular Economy Leadership Award, the Supply Chain Management Award, the Sustainable Water Management Award, the Growth Through Innovation Leadership Award, and the Information Security Leadership Award. TSMC ranked in the top 5% in the Taiwan Stock Exchange corporate governance evaluation. The Company was named a member of: *Fortune Magazine’s* 2022 World’s Most Admired Companies and the Fortune Global 500; the *Corporate Knights* Global 100 Most Sustainable Corporations for 2022; and of the 2022 Carbon Clean 200™ list by *Corporate Knights* and *As You Sow*. In addition, TSMC was selected as part of the Morgan Stanley Capital International All Country World Index (MSCI ACWI) ESG Leaders Index.

To promote sustainability, TSMC’s ESG Steering Committee, led by Chairman Dr. Mark Liu, presented the third TSMC ESG Award in 2022, honoring internal organizations and divisions for tangible achievements in the Company’s five ESG strategic directions: Drive Green Manufacturing, Build a Responsible Supply Chain, Create a Diverse and Inclusive Workplace, Develop Talent, and Care For The Disadvantaged. At the same time, this award presentation encouraged all employees to propose new ideas for sustainability to be assessed for feasibility and potential incorporation in the Company’s implementation plans. Compared with 1,257 sustainability proposals in the second year, the third annual ESG Award received 1,880 innovative ideas, adding new energy to the Company’s culture of sustainability.

Mindful of its global reputation, TSMC employs numerous preventative measures to address potential risks from earthquakes, fires, IT service disruption, yield loss, information security, supply chain disruption, pandemics, environmental events, and utility supply disruption. TSMC practices crisis management and implements recovery measures to deal with possible crisis events and maintains a crisis command center for control guideline and prepares emergency response procedures” to ensure timely and prompt responses during a crisis. TSMC also performs regular exercises for crisis scenarios to ensure that crisis management procedures are comprehensive and validated. In 2022, TSMC received a rating of “Low ESG Risk” from the Sustainalytics ESG Risk Ratings.

TSMC’s environment, safety and health committee holds monthly meetings to coordinate with relevant departments in each fab to conduct emergency response drills and continuously improve their notification and operational procedures to ensure clear channels of communication to stakeholders if a crisis arises, with the public relations division 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 the impact on personnel safety, the surrounding environment, and company property and manufacturing operations. Responders also alert the public relations division at the earliest stages to ensure timely, clear and consistent communication regarding the situation.

#### **Risks Associated with Change in Management**

In 2022 and as of the date of this Annual Report, there were no such risks for TSMC.

#### **Risks Regarding Non-Compliance with Export Control, Environmental and Climate Change 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 its 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 equipment that is subject to export control laws and regulations, as well as metals, chemicals, and materials that are subject to environmental, climate-related, health and safety, and humanitarian forced labor prohibition and 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, or 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;
- the temporary or permanent inability to procure or use certain production critical chemicals or materials;
- unfavorable alterations in TSMC’s manufacturing, fabrication and assembly and test processes;
- challenges from its 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’s 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 its product designs and manufacturing processes, or incur other significant expenses such as paying any incurred carbon fees if the Company’s emission levels exceed applicable thresholds, and obtaining renewable energy sources, renewable energy certificates or carbon credits,

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 managed 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 156-157 of this Annual Report.

#### **6.3.4 Financial Risks**

##### **Economic Risks**

Any future systemic political, economic or financial crisis or market volatility, including but not limited to interest rate and foreign exchange rate fluctuations, inflation or deflation and changes in economic, fiscal and monetary policies in major economies, could cause revenue or profits for the semiconductor industry as a whole to decline dramatically, and if the economic conditions or financial conditions of the Company’s customers were to deteriorate, the demand for its products and services may decrease and additional accounting related allowances may be required, which could reduce our operating income and net income. For example, starting in March 2023, the capital and credit markets have experienced volatility and disruption as a result of the failures of Silicon Valley Bank and Signature Bank as well as UBS’ announced acquisition of Credit Suisse. Concerns about the soundness of the banking system may cause small- and medium-sized banks to tighten their lending to preserve liquidity, which in turn could weigh on economic growth. If such levels of market volatility and disruption continue or escalate into systematic financial crisis or global economic downturn, it could result in a number of adverse follow-on effects on TSMC, including decreased customer demand, delays in the payment of account receivables to us, and insolvency of suppliers or customers.

#### ● Interest Rate Fluctuation

TSMC is exposed to interest rate risks primarily in relation 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 the 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 the Company to invest in investment grade securities 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, which are 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. At the same time, if interest rates fall, cash and cash equivalents as well as floating-rate securities may generate less interest income than expected.

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

The majority of TSMC's long-term debt is fixed-rate and measured at amortized cost and, as such, changes in interest rates would not affect future cash flows or the carrying amount.

Certain of TSMC's fixed income investments are primarily based on the London Interbank Offered Rate (LIBOR), which will be replaced by alternative benchmark rates after June 30, 2023. The transition from LIBOR to alternative benchmark rates might result in a reduction in TSMC's interest income.

#### ● Foreign Exchange Volatility

Substantially all of TSMC's sales are denominated in U.S. dollars and over half of its capital expenditures are denominated in currencies other than the NT dollar, primarily in U.S. dollars, Euros and Japanese yen. As a result, any significant fluctuations to its disadvantage in the exchange rate of the NT dollar against such currencies, in particular a weakening of the U.S. dollar against the NT dollar, would have an adverse impact on the Company's revenue and operating profit as expressed in NT dollars. For example, every one percent depreciation of the U.S.

dollar against the NT dollar would result in an approximately 0.4 percentage point decrease in the Company's operating margin based on its 2022 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 its goods and services will likely decrease, which will negatively affect the Company's revenue.

TSMC 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. 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) as well as any cash dividends paid in NT dollar on TSMC's common shares represented by ADSs.

#### ● Inflation

TSMC is subject to the effects of inflation through increases in the cost of raw materials used to produce our products, wage expenses and employee benefits, and costs in relation to construction of fabs. Although TSMC does not believe that inflation has had a material impact on its financial position or results of operations to date, a high inflation in the future may have an adverse effect on the Company's ability to maintain current levels of profit margin if the selling prices of its products and services do not increase with these increased costs.

#### 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. The R.O.C. Controlled Foreign Company ("CFC") rules enacted in 2016

have been implemented since January 1, 2023, pursuant to which, certain profits retained at a CFC located in a low-tax jurisdiction would be taxable at its parent company in Taiwan. On the other hand, effective from January 1, 2023, the R.O.C. Statute for Industrial Innovation was amended such that eligible companies that develop innovative technologies domestically and possess leading position in global supply chain may claim investment tax credit of 25% on qualified R&D expenditure and 5% on procurement of machinery/equipment for advanced processes over a fiscal year. The Company anticipates that it will be eligible for these new incentives pursuant to the R.O.C. Statute for Industrial Innovation. Additionally, changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organization for Economic Cooperation and Development (OECD). These changes may increase tax uncertainty and have an adverse effect on TSMC's 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, the Company 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 2022 and as of the date of this annual report, TSMC made no high-risk or highly leveraged financial investments. All financial derivative transactions engaged by TSMC were strictly for hedging and not for trading or speculative purposes. All guarantees and intercompany loans provided by TSMC and TSMC's subsidiaries were solely for TSMC and/or TSMC's wholly-owned subsidiaries. All guarantees and intercompany loans were in compliance with relevant rules and regulations.

To manage risks of various financial transactions, TSMC has established internal control policies and procedures based on sound financial and business practices, all in compliance with

the relevant rules and regulations issued by the R.O.C. Financial Supervisory Commission. TSMC's 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 not able 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 mainly based 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 Other Risks

##### Potential Impact and Risks Associated with Sales of Significant Numbers of Shares by TSMC's Directors, and/or 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.

As of the date of this Annual Report, no single shareholder owned 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 18-20 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.

In May 2020 and again in August 2020, the U.S. tightened its export control measures against Huawei Technology Co. Ltd. and its affiliates (collectively, “Huawei”), including an expanded license requirement for providing Huawei with items subject to the U.S. export control jurisdiction. To comply with relevant laws and regulations, we have discontinued shipment of products to Huawei since September 15, 2020. Since February 2022, there have been expansive measures, including sanctions and export controls, imposed by several countries and regions against Russia, including certain individuals and entities, in connection with the military conflict in Ukraine. In October 2022, the U.S. adopted additional export controls over China on advanced computing integrated circuits (“ICs”), computer commodities that contain such ICs, and certain semiconductor manufacturing items, as well as controls on transactions involving items for supercomputer and semiconductor manufacturing end-uses. The new controls add new license requirements for items destined to a semiconductor fabrication facility in China that fabricates ICs meeting specified advanced node parameters as well as U.S. persons’ activities supporting such facility or semiconductor manufacturing like TSMC, will be decided on a case-by-case basis. In the same month, we secured a one-year general authorization from the U.S. government, which allows us to maintain the Company’s fab’s operations in Nanjing, China. However, there is no assurance that we will be able to continue securing such general authorization on a timely basis or at all. On the other hand, measures adopted by an affected country to counteract the impact of another country’s actions or regulations could lead to significant legal liability to multinational corporations including our own. For example, in January 2021, China adopted a blocking statute that, among other matters, entitles Chinese entities incurring damages from a multinational’s compliance with foreign laws to seek civil remedies.

Imposition of trade barriers, including protectionist measures, sanctions and import and export controls, could increase our manufacturing costs, limit our access to certain supplies, make our pricing less competitive, and impact the sales of TSMC or its customers. In 2022 and as of the date of this annual report, our current results of operations have not been materially affected. Nevertheless, depending on future developments of global trade tensions, such relevant regulations, rules, or measures may have an adverse impact on our business and operations, and we may incur significant legal liability and financial losses as a result.

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 2022 and as of the date of this Annual Report, TSMC’s management was not aware of any other risk that could potentially have a material impact on the financial status of the Company.