

4Q23

Quarterly Management Report  
January 18, 2024

## Operating Results Review:

## CONTACT

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## Topics in This Report:

- Revenue Analysis
- Profit & Expense Analysis
- Financial Condition Review
- Cash Flow
- CapEx
- Recap of Recent Important Events & Announcements

**Summary:**

(Amounts are on consolidated basis and are in NT\$ billions unless otherwise noted)

	4Q23	3Q23	4Q22	QoQ	YoY	2023	2022
EPS (NT\$ per common share)	9.21	8.14	11.41	13.1%	-19.3%	32.34	39.20
(US\$ per ADR unit)	1.44	1.29	1.82			5.18	6.57
Net Revenue (US\$ billions)	19.62	17.28	19.93	13.6%	-1.5%	69.30	75.88
Net Revenue	625.53	546.73	625.53	14.4%	0.0%	2,161.74	2,263.89
Gross Profit	331.77	296.64	389.19	11.8%	-14.8%	1,175.11	1,348.35
Gross Margin	53.0%	54.3%	62.2%			54.4%	59.6%
Operating Expenses	(71.62)	(68.70)	(64.54)	4.2%	11.0%	(253.83)	(226.70)
Other Operating Income and Expenses	0.06	0.13	0.39			0.19	(0.37)
Operating Income	260.21	228.07	325.04	14.1%	-19.9%	921.47	1,121.28
Operating Margin	41.6%	41.7%	52.0%			42.6%	49.5%
Non-Operating Items	18.07	13.87	9.63			57.70	22.91
Net Income Attributable to Shareholders of the Parent Company	238.71	211.00	295.90	13.1%	-19.3%	838.50	1,016.53
Net Profit Margin	38.2%	38.6%	47.3%			38.8%	44.9%
Wafer Shipment (kpcs 12 inch-equiv.)	2,957	2,902	3,702	1.9%	-20.1%	12,002	15,253
Average Exchange Rate--USD/NTD	31.88	31.64	31.39	0.7%	1.6%	31.19	29.84

Note: Diluted weighted average outstanding shares were 25,929mn units in 4Q23

**Financial Highlights:****Fourth Quarter 2023**

- Net revenue was NT\$625.53 billion, representing a 14.4% increase from NT\$546.73 billion in 3Q23 and essentially flat compared to NT\$625.53 billion in 4Q22.
- Gross margin was 53.0%, 1.3 percentage points lower than 3Q23 and 9.2 percentage points lower than 4Q22.
- Operating margin was 41.6%, down 0.1 percentage point from 3Q23 and down 10.4 percentage points from 4Q22.
- Non-operating items were a gain of NT\$18.07 billion, as compared to a gain of NT\$13.87 billion in 3Q23 and a gain of NT\$9.63 billion in 4Q22.
- Net income attributable to shareholders of the parent company was NT\$238.71 billion, up 13.1% from 3Q23 and down 19.3% from 4Q22. Net profit margin was 38.2% and diluted EPS was NT\$9.21.

**Full Year 2023**

- Net revenue was NT\$2,161.74 billion, representing a 4.5% decrease from 2022. In US dollar terms, net revenue decreased 8.7% to US\$69.30 billion in 2023.
- Gross margin was 54.4%, down 5.2 percentage points from 59.6% in 2022. Operating margin was 42.6%, down 6.9 percentage points from 49.5% in 2022.
- Diluted EPS was NT\$32.34, down 17.5% from NT\$39.20 in 2022. Net profit margin was 38.8%, down 6.1 percentage points from 44.9% in 2022.

## I. Revenue Analysis

Wafer Revenue by Technology	4Q23	3Q23	4Q22
3nm	15%	6%	0%
5nm	35%	37%	32%
7nm	17%	16%	22%
16nm	8%	9%	12%
20nm	0%	1%	0%
28nm	7%	10%	11%
40/45nm	4%	6%	7%
65nm	5%	6%	5%
90nm	1%	1%	2%
0.11/0.13um	3%	3%	3%
0.15/0.18um	4%	4%	5%
0.25um and above	1%	1%	1%

Net Revenue by Platform	4Q23	3Q23	4Q22
High Performance Computing	43%	42%	42%
Smartphone	43%	39%	38%
Internet of Things	5%	9%	8%
Automotive	5%	5%	6%
Digital Consumer Electronics	2%	2%	2%
Others	2%	3%	4%

Net Revenue by Geography	4Q23	3Q23	4Q22
North America	72%	69%	69%
China	11%	12%	12%
Asia Pacific	8%	8%	7%
Japan	5%	6%	6%
EMEA	4%	5%	6%

Wafer Revenue by Technology	2023	2022
3nm	6%	0%
5nm	33%	26%
7nm	19%	27%
16nm	10%	13%
20nm	1%	0%
28nm	10%	10%
40/45nm	6%	7%
65nm	6%	5%
90nm	1%	2%
0.11/0.13um	2%	3%
0.15/0.18um	5%	6%
0.25um and above	1%	1%

Net Revenue by Platform	2023	2022
High Performance Computing	43%	41%
Smartphone	38%	39%
Internet of Things	8%	9%
Automotive	6%	5%
Digital Consumer Electronics	2%	3%
Others	3%	3%

Net Revenue by Geography	2023	2022
North America	68%	68%
China	12%	11%
Asia Pacific	8%	11%
Japan	6%	5%
EMEA	6%	5%

### Revenue Analysis:

In the fourth quarter, revenue increased 14.4% sequentially, supported by the continued strong ramp of our industry-leading 3-nanometer technology.

By technology, 3nm process technology contributed 15% of total wafer revenue in 4Q23 while 5nm and 7nm accounted for 35% and 17% respectively. Advanced technologies (7nm and below) accounted for 67% of total wafer revenue.

By platform, both HPC and Smartphone represented 43% of net revenue, while IoT, Automotive, DCE, and Others each represented 5%, 5%, 2%, and 2%.

Sequentially, revenue from HPC, Smartphone, and Automotive increased 17%, 27%, and 13% respectively from 3Q23, while IoT, DCE, and others decreased 29%, 35%, and 16% respectively.

From a geographic perspective, revenue from customers based in North America accounted for 72% of total net revenue in 4Q23, while revenue from China, Asia Pacific, Japan, and EMEA (Europe, Middle East, and Africa) accounted for 11%, 8%, 5%, and 4% of total net revenue respectively.

On a full year basis, 3nm contribution reached 6% of total wafer revenue in 2023 while 5nm and 7nm process technology contributed 33% and 19% respectively. Advanced technologies (7nm and below) accounted for 58% of total wafer revenue, up from 53% in 2022.

By platform, revenue from Smartphone, IoT, DCE and Others decreased 8%, 17%, 16%, and 6% respectively from 2022, while HPC kept flat and Automotive increased 15% from 2022.

In 2023, revenue from customers based in North America accounted for 68% of total net revenue, while revenue from China, Asia Pacific, Japan, and EMEA (Europe, Middle East, and Africa) accounted for 12%, 8%, 6%, and 6% of total net revenue respectively.

## II. Profit & Expense Analysis

<b>II - 1. Gross Profit Analysis</b>					
(In NT\$ billions)	<u>4Q23</u>	<u>3Q23</u>	<u>4Q22</u>	<u>2023</u>	<u>2022</u>
<b>Net Revenue</b>	625.53	546.73	625.53	2,161.74	2,263.89
Cost of Revenue	(293.76)	(250.09)	(236.34)	(986.63)	(915.54)
<b>Gross Profit</b>	331.77	296.64	389.19	1,175.11	1,348.35
<b>Gross Margin</b>	53.0%	54.3%	62.2%	54.4%	59.6%

### **Gross Profit Analysis:**

Gross margin was 53.0% in 4Q23, 1.3 percentage points lower than 3Q23, mainly due to margin dilution from N3 ramp.

On a full year basis, gross margin was 54.4% in 2023, down 5.2 percentage points from 2022, mainly reflecting lower capacity utilization and N3 ramp, partially offset by favorable foreign exchange rate.

<b>II - 2. Operating Income Analysis</b>					
(In NT\$ billions)	<u>4Q23</u>	<u>3Q23</u>	<u>4Q22</u>	<u>2023</u>	<u>2022</u>
<b>Total Operating Expenses</b>	(71.62)	(68.70)	(64.54)	(253.83)	(226.70)
Research & Development	(50.41)	(51.13)	(44.59)	(182.37)	(163.26)
SG&A	(21.21)	(17.57)	(19.95)	(71.46)	(63.44)
<b>Other Operating Income and Expenses</b>	0.06	0.13	0.39	0.19	(0.37)
<b>Operating Income</b>	260.21	228.07	325.04	921.47	1,121.28
<b>Operating Margin</b>	41.6%	41.7%	52.0%	42.6%	49.5%
<b>Total Operating Expenses as % of Net Revenue</b>	11.4%	12.6%	10.3%	11.8%	10.0%

### **Operating Income Analysis:**

Total operating expenses increased NT\$2.92 billion to NT\$71.62 billion in 4Q23. Operating margin declined 0.1 percentage point sequentially to 41.6% in 4Q23.

For full year 2023, total operating expenses represented 11.8% of net revenue as compared to 10.0% in 2022, mainly attributable to higher R&D expenses for 3nm and 2nm development and a lower revenue base in 2023.

<b>II - 3. Non-Operating Items</b>					
(In NT\$ billions)	<u>4Q23</u>	<u>3Q23</u>	<u>4Q22</u>	<u>2023</u>	<u>2022</u>
<b>L-T Investments</b>	1.31	1.17	1.74	4.65	7.80
<b>Net Interest Income (Expenses)</b>	14.49	12.48	7.25	48.29	10.67
<b>Other Gains and Losses</b>	2.27	0.22	0.64	4.76	4.44
<b>Total Non-Operating Items</b>	18.07	13.87	9.63	57.70	22.91

### **Non-Operating Items:**

Total non-operating items were a gain of NT\$18.07 billion in 4Q23, as compared to a gain of NT\$13.87 billion in 3Q23. The increase was mainly due to higher interest income.

On a full year basis, total non-operating items increased by NT\$34.79 billion to a gain of NT\$57.70 billion in 2023, also mainly reflecting a higher interest income.

<b>II - 4. Net Profit and EPS</b>					
(In NT\$ billions)	<u>4Q23</u>	<u>3Q23</u>	<u>4Q22</u>	<u>2023</u>	<u>2022</u>
<b>Income before Tax</b>	278.28	241.94	334.67	979.17	1,144.19
<b>Income Tax Expenses</b>	(39.97)	(31.14)	(38.79)	(141.40)	(127.29)
<b>Effective Tax Rate</b>	14.4%	12.9%	11.7%	14.5%	11.2%
<b>Net Income Attributable to the Parent Company</b>	238.71	211.00	295.90	838.50	1,016.53
<b>Net Profit Margin</b>	38.2%	38.6%	47.3%	38.8%	44.9%
<b>EPS (NT\$ per common share)</b>	9.21	8.14	11.41	32.34	39.20

### **Net Profit and EPS:**

Net income attributable to shareholders of the parent company was NT\$238.71 billion in 4Q23, up 13.1% from 3Q23, and down 19.3% from 4Q22.

On a full year basis, both net income and EPS decreased by 17.5% from 2022.

### III. Financial Condition Review

<b>III - 1. Liquidity Analysis</b>			
<b>(Balance Sheet Items)</b>			
(In NT\$ billions)	<u>4Q23</u>	<u>3Q23</u>	<u>4Q22</u>
Cash & Marketable Securities	1,687.65	1,551.32	1,561.49
Accounts Receivable	201.94	222.83	231.34
Inventories	250.99	262.09	221.15
Other Current Assets	53.45	46.24	38.92
<b>Total Current Assets</b>	<b>2,194.03</b>	<b>2,082.48</b>	<b>2,052.90</b>
Accounts Payable	228.78	284.62	270.02
Current Portion of Bonds Payable and Bank Loans	9.29	7.42	19.32
Dividends Payable	168.56	155.60	142.62
Accrued Liabilities and Others	506.95	522.40	512.27
<b>Total Current Liabilities</b>	<b>913.58</b>	<b>970.04</b>	<b>944.23</b>
Current Ratio (x)	2.4	2.1	2.2
<b>Net Working Capital</b>	<b>1,280.45</b>	<b>1,112.44</b>	<b>1,108.67</b>

#### **Liquidity Analysis:**

On a sequential basis, total current assets increased by NT\$111.55 billion, mainly due to the increase of NT\$136.33 billion in cash and marketable securities, partially offset by the decrease of NT\$20.89 billion in accounts receivable and NT\$11.10 billion in inventories.

Total current liabilities decreased by NT\$56.46 billion, mainly due to the decrease of NT\$55.84 billion in accounts payable.

Net working capital was NT\$1,280.45 billion and current ratio was 2.4x in 4Q23.

<b>III - 2. Receivable/Inventory Days</b>			
<b>(In Number of Days)</b>			
	<u>4Q23</u>	<u>3Q23</u>	<u>4Q22</u>
Days of Receivable	31	35	36
Days of Inventory	85	96	93

#### **Receivable and Inventory Days:**

Days of receivable decreased 4 days to 31 days in 4Q23.

Days of inventory decreased 11 days to 85 days in 4Q23, primarily due to higher N3 wafer shipments.

<b>III - 3. Debt Service</b>			
<b>(In NT\$ billions)</b>			
	<u>4Q23</u>	<u>3Q23</u>	<u>4Q22</u>
Cash & Marketable Securities	1,687.65	1,551.32	1,561.49
Interest-Bearing Debts	(954.87)	(971.79)	(858.41)
<b>Net Cash Reserves</b>	<b>732.78</b>	<b>579.53</b>	<b>703.08</b>

#### **Debt Service:**

Net cash reserves increased NT\$153.25 billion to NT\$732.78 billion in 4Q23, due to the increase of NT\$136.33 billion in cash and marketable securities and the decrease of NT\$16.92 billion in interest-bearing debts in 4Q23.

## IV. Cash Flow

<b>IV - 1. Quarterly Cash Flow Analysis</b>			
(In NT\$ billions)	<b>4Q23</b>	<b>3Q23</b>	<b>4Q22</b>
Income before Tax	278.28	241.94	334.67
Depreciation & Amortization	150.65	147.28	107.59
Other Operating Sources/(Uses)	(34.10)	(94.57)	44.62
<b>Net Operating Sources/(Uses)</b>	<b>394.83</b>	<b>294.65</b>	<b>486.88</b>
Capital Expenditures	(170.16)	(226.62)	(336.84)
Marketable Financial Instruments	(3.15)	(39.66)	(19.59)
Other Investing Sources/(Uses)	40.99	24.04	13.90
<b>Net Investing Sources/(Uses)</b>	<b>(132.32)</b>	<b>(242.24)</b>	<b>(342.53)</b>
Cash Dividends	(77.80)	(71.30)	(71.30)
Bonds Payable	9.80	9.80	5.80
Other Financing Sources/(Uses)	(7.37)	23.05	(4.33)
<b>Net Financing Sources/(Uses)</b>	<b>(75.37)</b>	<b>(38.45)</b>	<b>(69.83)</b>
<b>Exchange Rate Changes</b>	<b>(33.52)</b>	<b>21.13</b>	<b>(27.72)</b>
<b>Cash Position Net Changes</b>	<b>153.62</b>	<b>35.09</b>	<b>46.80</b>
<b>Ending Cash Balance</b>	<b>1,465.43</b>	<b>1,311.81</b>	<b>1,342.81</b>

### **Summary of Cash Flow:**

During the fourth quarter, cash generated from operating activities totaled NT\$394.83 billion, including (1) NT\$278.28 billion from income before tax, (2) NT\$150.65 billion from depreciation & amortization expenses, and (3) NT\$34.10 billion for other operating uses. The decrease of other operating uses compared to 3Q23 were mainly attributable to changes in working capital.

Net cash used in investing activities was NT\$132.32 billion in 4Q23, primarily attributable to capital expenditures of NT\$170.16 billion.

Net cash used in financing activities was NT\$75.37 billion, mainly reflecting the payment of 1Q23 cash dividends of NT\$77.80 billion.

As a result, cash position increased NT\$153.62 billion to NT\$1,465.43 billion at the end of 4Q23.

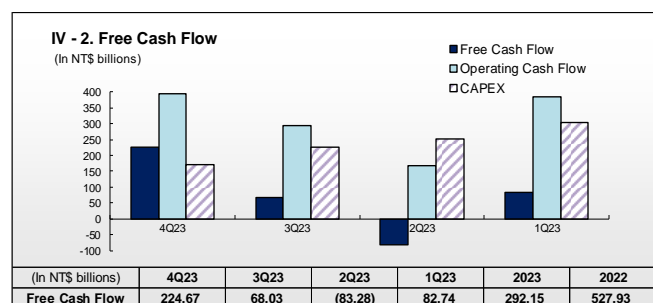
<b>IV - 1.2. Annual Cash Flow Analysis</b>			
(In NT\$ billions)	<b>2023</b>	<b>2022</b>	<b>Diff.</b>
Income before Tax	979.17	1,144.19	(165.02)
Depreciation & Amortization	532.19	437.26	94.93
Other Operating Sources/(Uses)	(269.39)	29.15	(298.54)
<b>Net Operating Sources/(Uses)</b>	<b>1,241.97</b>	<b>1,610.60</b>	<b>(368.63)</b>
Capital Expenditures	(949.82)	(1,082.67)	132.85
Marketable Financial Instruments	(55.97)	(130.53)	74.56
Other Investing Sources/(Uses)	99.67	22.27	77.40
<b>Net Investing Sources/(Uses)</b>	<b>(906.12)</b>	<b>(1,190.93)</b>	<b>284.81</b>
Short-term Loans	0.00	(111.96)	111.96
Cash Dividends	(291.72)	(285.24)	(6.48)
Bonds Payable	67.60	193.89	(126.29)
Other Financing Sources/(Uses)	19.23	3.06	16.17
<b>Net Financing Sources/(Uses)</b>	<b>(204.89)</b>	<b>(200.25)</b>	<b>(4.64)</b>
<b>Exchange Rate Changes</b>	<b>(8.34)</b>	<b>58.40</b>	<b>(66.74)</b>
<b>Cash Position Net Changes</b>	<b>122.62</b>	<b>277.82</b>	<b>(155.20)</b>
<b>Ending Cash Balance</b>	<b>1,465.43</b>	<b>1,342.81</b>	<b>122.62</b>

On a full year basis, cash generated from operating activities totaled NT\$1,241.97 billion, including (1) NT\$979.17 billion from income before tax, (2) NT\$532.19 billion from depreciation & amortization, and (3) NT\$269.39 billion for other operating uses, which mainly included income tax payment and net changes in working capital and others.

Net cash used in investing activities was NT\$906.12 billion, primarily including capital expenditures of NT\$949.82 billion.

Net cash used in financing activities totaled NT\$204.89 billion, mainly reflecting the payment of cash dividends, partially offset by the net increase in bonds payable of NT\$67.6 billion and the bank loans of NT\$ 27.9 billion under hedging financial liabilities.

At the end of 2023, cash position was NT\$1,465.43 billion.



**Operating and Free Cash Flow:**

Free cash flow increased NT\$156.64 billion to an inflow of NT\$224.67 billion in 4Q23, mainly due to the increase in operating cash flow and the decrease in capital expenditures during the quarter.

Total free cash flow generated in 2023 was NT\$292.15 billion, a decrease from NT\$527.93 billion in 2022, mainly as the decrease in operating cash flow outpaced the decrease in capital expenditures in 2023.

**V. CapEx**

**V. Capital Expenditures**

(in US\$ billions)

	<u>4Q23</u>	<u>3Q23</u>	<u>2Q23</u>	<u>1Q23</u>	<u>2023</u>
<b>Capital Expenditures</b>	<b>5.24</b>	<b>7.10</b>	<b>8.17</b>	<b>9.94</b>	<b>30.45</b>

**Capital Expenditures:**

Capital expenditures for TSMC on a consolidated basis totaled US\$5.24 billion in 4Q23 and US\$30.45 billion for the year.

## VI. Recap of Recent Important Events & Announcements

- TSMC Announces Dr. Mark Liu Not to Participate in Next Board of Directors Election (2023/12/19)
- WaferTech Celebrates its Name Change to TSMC Washington (2023/12/15)
- TSMC 2023 Supply Chain Management Forum Presents Awards to Outstanding Suppliers (2023/12/07)
- TSMC Board of Directors Approved NT\$3.50 Cash Dividend for the Third Quarter of 2023 and Set March 18 as Ex-Dividend Date, March 24 as the Record Date and April 11, 2024 as the Distribution Date (2023/11/14)