

4Q18

Quarterly Management Report
January 17, 2019**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

Operating Results Review:**Summary:***(Amounts are on consolidated basis and are in NT\$ billions unless otherwise noted)*

	4Q18	3Q18	4Q17	2018	2017
EPS (NT\$ per common share)	3.86	3.44	3.83	13.54	13.23
(US\$ per ADR unit)	0.63	0.56	0.64	2.24	2.17
Net Revenue (US\$ billions)	9.40	8.49	9.21	34.20	32.11
Net Revenue	289.77	260.35	277.57	1,031.47	977.45
Gross Profit	138.12	123.37	138.75	497.87	494.83
Gross Margin	47.7%	47.4%	50.0%	48.3%	50.6%
Operating Expenses	(30.85)	(28.13)	(28.84)	(112.15)	(107.90)
Other Operating Income and Expenses	(0.15)	0.01	(1.01)	(2.10)	(1.37)
Operating Income	107.12	95.25	108.90	383.62	385.56
Operating Margin	37.0%	36.6%	39.2%	37.2%	39.4%
Non-Operating Items	3.96	3.65	2.78	13.89	10.57
Net Income Attributable to Shareholders of the Parent Company	99.98	89.07	99.29	351.13	343.11
Net Profit Margin	34.5%	34.2%	35.8%	34.0%	35.1%
Wafer Shipment (kpcs 12 inch-equiv.)	2,686	2,712	2,699	10,752	10,449

*Note: Diluted weighted average outstanding shares were 25,930mn units in 4Q18***Financial Highlights:****Fourth Quarter 2018**

- Net revenue was NT\$289.77 billion, representing an 11.3% increase from NT\$260.35 billion in 3Q18 and a 4.4% increase from NT\$277.57 billion in 4Q17.
- Gross margin was 47.7%, 0.3 percentage point higher than 3Q18 and 2.3 percentage points lower than 4Q17.
- Operating margin was 37.0%, up 0.4 percentage point from 3Q18 and down 2.2 percentage points from 4Q17.
- Non-operating items were a gain of NT\$3.96 billion, compared to a gain of NT\$3.65 billion in 3Q18 and a gain of NT\$2.78 billion in 4Q17.
- Net income attributable to shareholders of the parent company was NT\$99.98 billion, up 12.3% from 3Q18 and up 0.7% from 4Q17. Net profit margin was 34.5% and diluted EPS was NT\$3.86.

Full Year 2018

- Net revenue was NT\$1,031.47 billion, representing a 5.5% increase from 2017. In US dollar terms, net revenue increased 6.5% to US\$34.20 billion in 2018.
- Gross margin was 48.3%, down 2.3 percentage points from 50.6% in 2017. Operating margin was 37.2%, down 2.2 percentage points from 39.4% in 2017.
- Diluted EPS was NT\$13.54, up 2.3% from NT\$13.23 in 2017. Net profit margin was 34.0%, down 1.1 percentage points from 35.1% in 2017.

I. Revenue Analysis

Wafer Revenue by Technology	4Q18	3Q18	4Q17
7nm	23%	11%	0%
10nm	6%	6%	25%
16/20nm	21%	25%	20%
28nm	17%	19%	18%
40/45nm	10%	12%	10%
65nm	8%	8%	9%
90nm	3%	4%	4%
0.11/0.13um	2%	3%	2%
0.15/0.18um	8%	9%	9%
0.25um and above	2%	3%	3%

Net Revenue by Application	4Q18	3Q18	4Q17
Computer	11%	12%	10%
Communication	64%	56%	62%
Consumer	5%	8%	6%
Industrial/Standard	20%	24%	22%

Net Revenue by Geography	4Q18	3Q18	4Q17
North America	69%	62%	69%
Asia Pacific	7%	10%	6%
China	13%	15%	13%
EMEA	6%	7%	7%
Japan	5%	6%	5%

Wafer Revenue by Technology	2018	2017
7nm	9%	0%
10nm	11%	10%
16/20nm	23%	25%
28nm	20%	23%
40/45nm	11%	12%
65nm	8%	10%
90nm	4%	4%
0.11/0.13um	2%	3%
0.15/0.18um	9%	10%
0.25um and above	3%	3%

Net Revenue by Application	2018	2017
Computer	14%	9%
Communication	56%	59%
Consumer	7%	9%
Industrial/Standard	23%	23%

Net Revenue by Geography	2018	2017
North America	62%	66%
Asia Pacific	9%	10%
China	17%	11%
EMEA	7%	7%
Japan	5%	6%

Revenue Analysis:

In the fourth quarter, revenue increased 11.3% quarter-over-quarter, mainly attributable to customers' new products using 7nm technology and a more favorable foreign exchange rate.

By technology, 7nm process technology contributed 23% of total wafer revenue in 4Q18. 10nm was 6% of total wafer revenue and the combined 16/20nm contribution accounted for 21%. Advanced technologies (28nm and below) accounted for 67% of total wafer revenue.

By application, Communication increased 27%, while Computer, Consumer and Industrial/Standard decreased 2%, 35% and 3% respectively.

From a geographic perspective, revenue from customers based in North America accounted for 69% of total net revenue, while revenue from Asia Pacific, China, EMEA (Europe, Middle East, and Africa) and Japan accounted for 7%, 13%, 6%, and 5% of total net revenue respectively.

On a full year basis, 7nm contribution reached 9% of total wafer revenue in 2018. 10nm was 11%, and the combined 16/20nm contribution was 23% of total wafer revenue. Advanced technologies (28nm and below) accounted for 63% of total wafer revenue, up from 58% in 2017.

By application, Computer, Communication and Industrial/Standard increased 61%, 1% and 3% respectively, while Consumer decreased 17% in 2018.

In 2018, revenue from customers based in North America accounted for 62% of total net revenue, while revenue from Asia Pacific, China, EMEA (Europe, Middle East, and Africa) and Japan accounted for 9%, 17%, 7%, and 5% of total net revenue respectively.

Note: Commencing 4Q18, revenue breakdown by application and by geography is based on net revenue including both wafer and non-wafer revenue, while revenue breakdown by technology is based on wafer revenue, same as before. On a comparable basis, previous classifications have been revised accordingly starting from 1Q17.

II. Profit & Expense Analysis

II - 1. Gross Profit Analysis

(In NT\$ billions)	<u>4Q18</u>	<u>3Q18</u>	<u>4Q17</u>	<u>2018</u>	<u>2017</u>
Cost of Revenue	151.65	136.98	138.82	533.60	482.62
Gross Profit	138.12	123.37	138.75	497.87	494.83
Gross Margin	47.7%	47.4%	50.0%	48.3%	50.6%

Gross Profit Analysis:

Gross margin was 47.7% in 4Q18, 0.3 percentage point higher than 3Q18, reflecting the absence of the August 3 Virus Incident impact, improvement in backend profitability, higher level of capacity utilization and the more favorable foreign exchange rate, partially offset by the unfavorable technology mix.

On a full year basis, gross margin was 48.3% in 2018, down 2.3 percentage points from 2017, mainly reflecting a lower level of capacity utilization, the unfavorable technology mix and an unfavorable exchange rate.

II - 2. Operating Income Analysis

(In NT\$ billions)	<u>4Q18</u>	<u>3Q18</u>	<u>4Q17</u>	<u>2018</u>	<u>2017</u>
Total Operating Expenses	(30.85)	(28.13)	(28.84)	(112.15)	(107.90)
Research & Development	(23.69)	(21.89)	(21.22)	(85.90)	(80.73)
SG&A	(7.16)	(6.24)	(7.62)	(26.25)	(27.17)
Other Operating Income and Expenses	(0.15)	0.01	(1.01)	(2.10)	(1.37)
Operating Income	107.12	95.25	108.90	383.62	385.56
Operating Margin	37.0%	36.6%	39.2%	37.2%	39.4%
Total Operating Expenses as % of Net Revenue	10.6%	10.8%	10.4%	10.9%	11.0%

Operating Income Analysis:

Total operating expenses were 10.6% of net revenue in 4Q18, a decrease of 0.2 percentage point from 10.8% in 3Q18, despite a higher level of development activities for 7nm+ and 5nm technologies. Operating margin improved 0.4 percentage point from 36.6% in 3Q18 to 37.0% in 4Q18.

For full year 2018, total operating expenses represented 10.9% of net revenue, compared to 11.0% in 2017.

II - 3. Non-Operating Items

(In NT\$ billions)	<u>4Q18</u>	<u>3Q18</u>	<u>4Q17</u>	<u>2018</u>	<u>2017</u>
L-T Investments	1.11	1.00	0.95	3.06	2.99
SSMC	0.42	0.39	0.45	1.52	1.72
Others	0.69	0.61	0.50	1.54	1.27
Net Interest Income (Expenses)	3.28	3.08	1.92	11.64	6.13
Other Gains and Losses	(0.43)	(0.43)	(0.09)	(0.81)	1.45
Total Non-Operating Items	3.96	3.65	2.78	13.89	10.57

Non-Operating Items:

Total non-operating items were a gain of NT\$3.96 billion in 4Q18, compared to a gain of NT\$3.65 billion in 3Q18.

On a full year basis, total non-operating items increased by NT\$3.32 billion to a gain of NT\$13.89 billion in 2018, due to higher net interest income.

II - 4. Net Profit and EPS

(In NT\$ billions)	<u>4Q18</u>	<u>3Q18</u>	<u>4Q17</u>	<u>2018</u>	<u>2017</u>
Income before Income Tax	111.08	98.90	111.68	397.51	396.13
Income Tax Expenses	(11.07)	(9.80)	(12.37)	(46.33)	(52.99)
Effective Tax Rate	10.1%	10.0%	11.2%	11.7%	13.5%
Net Income Attributable to the Parent Company	99.98	89.07	99.29	351.13	343.11
Net Profit Margin	34.5%	34.2%	35.8%	34.0%	35.1%
EPS (NT\$ per common share)	3.86	3.44	3.83	13.54	13.23

Net Profit and EPS:

Net income attributable to shareholders of the parent company was NT\$99.98 billion, up 12.3% from 3Q18 and up 0.7% from 4Q17.

On a full year basis, both net income and EPS increased by 2.3% from 2017, due to a lower effective tax rate in 2018.

III. Financial Condition Review

III - 1. Liquidity Analysis			
(Balance Sheet Items)			
(In NT\$ billions)	<u>4Q18</u>	<u>3Q18</u>	<u>4Q17</u>
Cash & Marketable Securities	695.18	604.02	649.36
Accounts Receivable	129.20	129.54	122.32
Inventories	103.23	105.34	73.88
Other Current Assets	24.07	20.32	11.64
Total Current Assets	951.68	859.22	857.20
Short-term Loans	88.76	73.98	63.77
Accounts Payable	77.49	88.89	85.79
Current Portion of Bonds Payable and Bank Loans	34.90	34.90	58.40
Accrued Liabilities and Others	139.39	123.86	150.75
Total Current Liabilities	340.54	321.63	358.71
Current Ratio (x)	2.8	2.7	2.4
Net Working Capital	611.14	537.59	498.49

Liquidity Analysis:

At the end of 4Q18, cash and marketable securities increased by NT\$91.16 billion to NT\$695.18 billion, primarily due to the free cash flow of NT\$75.27 billion generated during the quarter and the increase of NT\$14.30 billion in short-term loans for hedging purposes.

Total current liabilities increased by NT\$18.91 billion. The change primarily reflected the increase in short-term loans, the increase in accrued liabilities, mainly for the accrual for employee profit sharing/bonus, and the decrease in payables to suppliers.

Net working capital was NT\$611.14 billion and current ratio was 2.8x.

III - 2. Receivable/Inventory Days			
(In Number of Days)	<u>4Q18</u>	<u>3Q18</u>	<u>4Q17</u>
Days of Receivable	41	38	40
Days of Inventory	67	73	52

Receivable and Inventory Days:

Quarter-over-quarter, days of receivable was 41 days in 4Q18, while days of inventory decreased 6 days to 67 days due to stronger wafer shipments during the quarter.

Year-over-year, days of receivable slightly increased 1 day in 4Q18 from 40 days in 4Q17. Days of inventory increased 15 days, due to a higher level of work-in-process inventories, driven by 7nm ramping, and an increase in raw wafers.

III - 3. Debt Service			
(In NT\$ billions)	<u>4Q18</u>	<u>3Q18</u>	<u>4Q17</u>
Cash & Marketable Securities	695.18	604.02	649.36
Interest-Bearing Debts	(180.56)	(165.78)	(213.97)
Net Cash Reserves	514.62	438.24	435.39

Debt Service:

Net cash reserves increased NT\$76.38 billion to NT\$514.62 billion in 4Q18, mainly due to the increase in cash and marketable securities, offset by the increase in short-term loans.

IV. Cash Flow

IV - 1. Quarterly Cash Flow Analysis			
(In NT\$ billions)	4Q18	3Q18	4Q17
Income before Income Tax	111.08	98.90	111.68
Depreciation & Amortization	76.03	73.61	70.81
Other Operating Sources/(Uses)	2.26	(78.43)	21.64
Total Operating Sources/(Uses)	189.37	94.08	204.13
Capital Expenditures	(114.10)	(69.95)	(61.18)
Marketable Financial Instruments	(3.42)	0.82	(5.15)
Other Investing Sources/(Uses)	0.26	5.66	3.28
Net Investing Sources/(Uses)	(117.26)	(63.47)	(63.05)
Increase (Decrease) in Short-term Loans	14.30	43.37	10.68
Cash Dividends	0.00	(207.44)	0.00
Other Financing Sources/(Uses)	(0.02)	(8.37)	(1.04)
Net Financing Sources/(Uses)	14.28	(172.44)	9.64
Exchange Rate Changes	2.69	(1.67)	(5.41)
Net Cash Position Changes	89.08	(143.50)	145.31
Ending Cash Balance	577.81	488.73	553.39

IV - 1.2. Annual Cash Flow Analysis			
(In NT\$ billions)	2018	2017	Diff.
Income before Income Tax	397.51	396.13	1.38
Depreciation & Amortization	292.55	260.14	32.41
Other Operating Sources/(Uses)	(116.11)	(70.95)	(45.16)
Total Operating Sources/(Uses)	573.95	585.32	(11.37)
Capital Expenditure	(315.58)	(330.59)	15.01
Marketable Financial Instruments	(9.86)	(15.05)	5.19
Other Investing Sources/(Uses)	11.17	9.47	1.70
Net Investing Sources/(Uses)	(314.27)	(336.17)	21.90
Short-term Loans	23.92	10.39	13.53
Cash Dividends	(207.44)	(181.51)	(25.93)
Other Financing Sources/(Uses)	(61.60)	(44.57)	(17.03)
Net Financing Sources/(Uses)	(245.12)	(215.69)	(29.43)
Exchange Rate Changes	9.86	(21.32)	31.18
Net Cash Position Changes	24.42	12.14	12.28
Ending Cash Balance	577.81	553.39	24.42

Summary of Cash Flow:

During the fourth quarter, cash generated from operating activities totaled NT\$189.37 billion, including (1) NT\$111.08 billion from income before income tax, (2) NT\$76.03 billion from depreciation & amortization expenses, and (3) NT\$2.26 billion from other operating sources.

Net cash used in investing activities was NT\$117.26 billion in 4Q18, primarily including capital expenditures of NT\$114.10 billion.

Net cash generated from financing activities was NT\$14.28 billion, due to the increase in short-term loans.

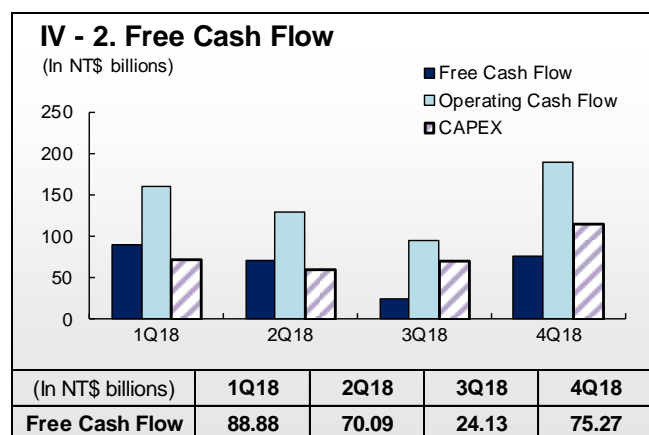
As a result, net cash position increased NT\$89.08 billion to NT\$577.81 billion at the end of 4Q18.

On a full year basis, cash generated from operating activities totaled NT\$573.95 billion, including (1) NT\$397.51 billion from income before income tax, (2) NT\$292.55 billion from depreciation & amortization, and (3) NT\$116.11 billion for other operating uses, which mainly included income tax payment and the changes in working capital.

Net cash used in investing activities were NT\$314.27 billion, primarily including capital expenditures of NT\$315.58 billion.

Net cash used in financing activities totaled NT\$245.12 billion, mainly reflecting the payment of cash dividends and the repayment of corporate bonds, partially offset by the increase in short-term loans.

At the end of 2018, cash position reached NT\$577.81 billion.



Operating and Free Cash Flow:

Free cash flow was NT\$75.27 billion in 4Q18, an increase of NT\$51.14 billion from last quarter, as the increase of operating cash flow outpaced that of capital expenditures.

Total free cash flow generated in 2018 was NT\$258.37 billion, slightly higher than NT\$254.73 billion in 2017.

V. CapEx

V. Capital Expenditures
(in US\$ billions)

	<u>4Q18</u>	<u>3Q18</u>	<u>2Q18</u>	<u>1Q18</u>	<u>2018</u>
Capital Expenditures	3.72	2.28	2.01	2.45	10.46

Capital Expenditures:

Capital expenditures for TSMC on a consolidated basis totaled US\$3.72 billion in 4Q18 and US\$10.46 billion for the year.

VI. Recap of Recent Important Events & Announcements

- TSMC Recognizes Outstanding Suppliers at Supply Chain Management Forum (2018/12/06)
- TSMC approved the appointment of Mr. Moshe N. Gavriellov as a member of the Compensation Committee (2018/11/13)