

1Q19

Quarterly Management Report  
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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)*

	1Q19	4Q18	1Q18	QoQ	YoY
EPS (NT\$ per common share)	2.37	3.86	3.46	-38.6%	-31.6%
(US\$ per ADR unit)	0.38	0.63	0.59	-38.6%	-31.6%
Net Revenue (US\$ billions)	7.10	9.40	8.46	-24.5%	-16.1%
Net Revenue	218.70	289.77	248.08	-24.5%	-11.8%
Gross Profit	90.36	138.12	124.86	-34.6%	-27.6%
<i>Gross Margin</i>	<i>41.3%</i>	<i>47.7%</i>	<i>50.3%</i>		
Operating Expenses	(26.02)	(30.85)	(26.73)	-15.7%	-2.7%
Other Operating Income and Expenses	(0.07)	(0.15)	(1.30)		
Operating Income	64.27	107.12	96.83	-40.0%	-33.6%
<i>Operating Margin</i>	<i>29.4%</i>	<i>37.0%</i>	<i>39.0%</i>		
Non-Operating Items	3.91	3.96	3.11		
Net Income Attributable to Shareholders of the Parent Company	61.39	99.98	89.79	-38.6%	-31.6%
<i>Net Profit Margin</i>	<i>28.1%</i>	<i>34.5%</i>	<i>36.2%</i>		
Wafer Shipment (kpcs 12 inch-equiv.)	2,205	2,686	2,680	-17.9%	-17.7%

*Note: Diluted weighted average outstanding shares were 25,930mn units in 1Q19***Financial Highlights:****First Quarter 2019**

- Net revenue was NT\$218.70 billion, representing a 24.5% decrease from NT\$289.77 billion in 4Q18 and an 11.8% decrease from NT\$248.08 billion in 1Q18.
- Gross margin was 41.3%, 6.4 percentage points lower than 4Q18 and 9.0 percentage points lower than 1Q18.
- Operating margin was 29.4%, down 7.6 percentage points from 4Q18 and down 9.6 percentage points from 1Q18.
- Non-operating items were a gain of NT\$3.91 billion, compared to a gain of NT\$3.96 billion in 4Q18 and a gain of NT\$3.11 billion in 1Q18.
- Net income attributable to shareholders of the parent company was NT\$61.39 billion, down 38.6% from 4Q18 and down 31.6% from 1Q18. Net profit margin was 28.1% and diluted EPS was NT\$2.37.

## I. Revenue Analysis

Wafer Revenue by Technology	1Q19	4Q18	1Q18
7nm	22%	23%	0%
10nm	4%	6%	19%
16nm	16%	20%	18%
20nm	1%	1%	4%
28nm	20%	17%	20%
40/45nm	12%	10%	11%
65nm	8%	8%	9%
90nm	3%	3%	5%
0.11/0.13um	3%	2%	2%
0.15/0.18um	8%	8%	9%
0.25um and above	3%	2%	3%

Net Revenue by Application	1Q19	4Q18	1Q18
Computer	10%	11%	14%
Communication	62%	64%	56%
Consumer	5%	5%	7%
Industrial/Standard	23%	20%	23%

Net Revenue by Platform	1Q19	4Q18	1Q18
Smartphone	47%	53%	46%
High Performance Computing	29%	29%	32%
Internet of Things	7%	6%	6%
Automotive	5%	4%	5%
Digital Consumer Electronics	7%	4%	6%
Others	5%	4%	5%

Net Revenue by Geography	1Q19	4Q18	1Q18
North America	60%	69%	60%
Asia Pacific	9%	7%	9%
China	18%	13%	18%
EMEA	7%	6%	7%
Japan	6%	5%	6%

### Revenue Analysis:

In the first quarter, revenue decreased 24.5% quarter-over-quarter, mainly attributable to the overall global economic condition which dampened the end market demand, customers' inventory correction, lower seasonality of high-end smartphones and the photoresist defect material incident.

By technology, 7nm process technology contributed 22% of total wafer revenue in 1Q19. 10nm process technology contributed 4% while 16nm accounted for 16%. Advanced technologies (16nm and below) accounted for 42% of total wafer revenue.

By application, Computer, Communication, Consumer and Industrial/Standard decreased 31%, 27%, 10% and 16% respectively.

Starting 1Q19, the Company will report its net revenue breakdown by platform, instead of by application. The Company believes this change will better represent the Company's results.

In general, within Computer application, almost all revenue is from HPC. Within Communication, about two-thirds is from Smartphone; HPC is about one-fifth; and other platforms are single-digit each. Consumer is mainly distributed between HPC and DCE, whereas Industrial/Standard spreads across all platforms, with Smartphone and HPC each representing about 30%.

By platform, revenue from Smartphone, HPC, IoT, and Automotive decreased 33%, 26%, 1% and 12% respectively, while DCE and Others increased 20% and 2% respectively.

From a geographic perspective, revenue from customers based in North America accounted for 60% of total net revenue, while revenue from Asia Pacific, China, EMEA (Europe, Middle East, and Africa) and Japan accounted for 9%, 18%, 7%, and 6% of total net revenue respectively.

## II. Profit & Expense Analysis

### II - 1. Gross Profit Analysis

(In NT\$ billions)	1Q19	4Q18	1Q18
<b>Cost of Revenue</b>	<b>128.34</b>	<b>151.65</b>	<b>123.22</b>
<b>Gross Profit</b>	<b>90.36</b>	<b>138.12</b>	<b>124.86</b>
<b>Gross Margin</b>	<b>41.3%</b>	<b>47.7%</b>	<b>50.3%</b>

### Gross Profit Analysis:

Gross margin was 41.3% in 1Q19, 6.4 percentage points lower than 4Q18, mainly reflecting the lower level of capacity utilization and the negative impact from the photoresist defect material incident.

## II - 2. Operating Income Analysis

(In NT\$ billions)	<u>1Q19</u>	<u>4Q18</u>	<u>1Q18</u>
<b>Total Operating Expenses</b>	<b>(26.02)</b>	<b>(30.85)</b>	<b>(26.73)</b>
Research & Development	(20.42)	(23.69)	(20.43)
SG&A	(5.60)	(7.16)	(6.30)
<b>Other Operating Income and Expenses</b>	<b>(0.07)</b>	<b>(0.15)</b>	<b>(1.30)</b>
<b>Operating Income</b>	<b>64.27</b>	<b>107.12</b>	<b>96.83</b>
<b>Operating Margin</b>	<b>29.4%</b>	<b>37.0%</b>	<b>39.0%</b>
<b>Total Operating Expenses as % of Net Revenue</b>	<b>11.9%</b>	<b>10.6%</b>	<b>10.8%</b>

### **Operating Income Analysis:**

Total operating expenses decreased NT\$4.83 billion and represented 11.9% of net revenue in 1Q19. R&D expenses were 9.3% of net revenue in the first quarter, up from 8.2% in the prior quarter.

## II - 3. Non-Operating Items

(In NT\$ billions)	<u>1Q19</u>	<u>4Q18</u>	<u>1Q18</u>
<b>L-T Investments</b>	<b>0.43</b>	<b>1.11</b>	<b>0.68</b>
SSMC	0.12	0.42	0.35
Others	0.31	0.69	0.33
<b>Net Interest Income (Expenses)</b>	<b>3.51</b>	<b>3.28</b>	<b>2.34</b>
<b>Other Gains and Losses</b>	<b>(0.03)</b>	<b>(0.43)</b>	<b>0.09</b>
<b>Total Non-Operating Items</b>	<b>3.91</b>	<b>3.96</b>	<b>3.11</b>

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

Total non-operating items were a gain of NT\$3.91 billion in 1Q19, compared to a gain of NT\$3.96 billion in 4Q18.

## II - 4. Net Profit and EPS

(In NT\$ billions)	<u>1Q19</u>	<u>4Q18</u>	<u>1Q18</u>
<b>Income before Income Tax</b>	<b>68.18</b>	<b>111.08</b>	<b>99.94</b>
<b>Income Tax Expenses</b>	<b>(6.79)</b>	<b>(11.07)</b>	<b>(10.15)</b>
<b>Effective Tax Rate</b>	<b>10.0%</b>	<b>10.1%</b>	<b>10.2%</b>
<b>Net Income Attributable to the Parent Company</b>	<b>61.39</b>	<b>99.98</b>	<b>89.79</b>
<b>Net Profit Margin</b>	<b>28.1%</b>	<b>34.5%</b>	<b>36.2%</b>
<b>EPS (NT\$ per common share)</b>	<b>2.37</b>	<b>3.86</b>	<b>3.46</b>

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

Net income attributable to shareholders of the parent company was NT\$61.39 billion, down 38.6% from 4Q18 and down 31.6% from 1Q18.

### III. Financial Condition Review

<b>III - 1. Liquidity Analysis (Balance Sheet Items)</b>			
(In NT\$ billions)	<b>1Q19</b>	<b>4Q18</b>	<b>1Q18</b>
Cash & Marketable Securities	760.25	695.18	684.38
Accounts Receivable	106.74	129.20	107.78
Inventories	108.68	103.23	85.22
Other Current Assets	15.66	24.07	51.74
<b>Total Current Assets</b>	<b>991.33</b>	<b>951.68</b>	<b>929.12</b>
Short-term Loans	76.59	88.76	56.73
Accounts Payable	104.64	77.49	76.87
Current Portion of Bonds Payable and Bank Loans	48.10	34.90	49.36
Accrued Liabilities and Others	148.94	139.39	159.28
<b>Total Current Liabilities</b>	<b>378.27</b>	<b>340.54</b>	<b>342.24</b>
Current Ratio (x)	2.6	2.8	2.7
<b>Net Working Capital</b>	<b>613.06</b>	<b>611.14</b>	<b>586.88</b>

#### **Liquidity Analysis:**

At the end of 1Q19, cash and marketable securities increased by NT\$65.07 billion to NT\$760.25 billion, reflecting an increase of NT\$67.86 billion in cash and a decrease of NT\$2.79 billion in marketable securities.

Total current liabilities increased by NT\$37.73 billion, mainly reflecting the increases in accounts payable and in accrued liabilities.

Net working capital was NT\$613.06 billion and current ratio was 2.6x.

<b>III - 2. Receivable/Inventory Days</b>			
(In Number of Days)	<b>1Q19</b>	<b>4Q18</b>	<b>1Q18</b>
Days of Receivable	49	41	42
Days of Inventory	79	67	63

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

Quarter-over-quarter, days of receivable increased 8 days to 49 days in 1Q19, as sales decreased faster than average accounts receivable in the quarter.

Days of inventory increased 12 days from 67 days in 4Q18 to 79 days in 1Q19, reflecting 7nm wafer pre-build and an increase in raw wafers.

<b>III - 3. Debt Service</b>			
(In NT\$ billions)	<b>1Q19</b>	<b>4Q18</b>	<b>1Q18</b>
Cash & Marketable Securities	760.25	695.18	684.38
Interest-Bearing Debts	(159.99)	(180.56)	(189.49)
<b>Net Cash Reserves</b>	<b>600.26</b>	<b>514.62</b>	<b>494.89</b>

#### **Debt Service:**

Net cash reserves increased NT\$85.64 billion to NT\$600.26 billion in 1Q19, mainly due to (1) the increase in cash and marketable securities, (2) the decrease in short-term loans and (3) the repayment of corporate bonds.

## IV. Cash Flow

<b>IV - 1. Quarterly Cash Flow Analysis</b>			
(In NT\$ billions)	<b>1Q19</b>	<b>4Q18</b>	<b>1Q18</b>
Income before Income Tax	68.18	111.08	99.94
Depreciation & Amortization	77.55	76.03	71.50
Other Operating Sources/(Uses)	6.94	2.26	(10.71)
<b>Net Operating Sources/(Uses)</b>	<b>152.67</b>	<b>189.37</b>	<b>160.73</b>
Capital Expenditures	(75.94)	(114.10)	(71.85)
Marketable Financial Instruments	7.16	(3.42)	(3.89)
Other Investing Sources/(Uses)	4.59	0.26	2.28
<b>Net Investing Sources/(Uses)</b>	<b>(64.19)</b>	<b>(117.26)</b>	<b>(73.46)</b>
Increase (Decrease) in Short-term Loans	(12.26)	14.30	(5.78)
Other Financing Sources/(Uses)	(10.15)	(0.02)	(51.85)
<b>Net Financing Sources/(Uses)</b>	<b>(22.41)</b>	<b>14.28</b>	<b>(57.63)</b>
<b>Exchange Rate Changes</b>	<b>1.79</b>	<b>2.69</b>	<b>(5.25)</b>
<b>Cash Position Net Changes</b>	<b>67.86</b>	<b>89.08</b>	<b>24.39</b>
<b>Ending Cash Balance</b>	<b>645.67</b>	<b>577.81</b>	<b>577.78</b>

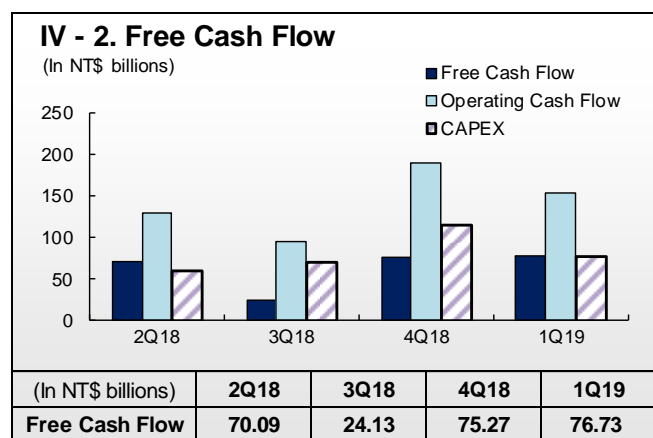
### Summary of Cash Flow:

During the first quarter, cash generated from operating activities totaled NT\$152.67 billion, including (1) NT\$68.18 billion from income before income tax, (2) NT\$77.55 billion from depreciation & amortization expenses, and (3) NT\$6.94 billion from other operating sources.

Net cash used in investing activities was NT\$64.19 billion in 1Q19, reflecting the capital expenditures of NT\$75.94 billion and the net proceeds from fixed income securities.

Net cash used in financing activities was NT\$22.41 billion, due to the decrease in short-term loans and the repayment of corporate bonds.

As a result, cash position increased NT\$67.86 billion to NT\$645.67 billion at the end of 1Q19.



### Operating and Free Cash Flow:

Free cash flow was NT\$76.73 billion in 1Q19, a slight increase of NT\$1.46 billion from 4Q18.

## V. CapEx

<b>V. Capital Expenditures</b>		
(in US\$ billions)	<b>1Q19</b>	<b>4Q18</b>
<b>Capital Expenditures</b>	<b>2.46</b>	<b>3.72</b>

### Capital Expenditures:

Capital expenditures for TSMC on a consolidated basis totaled US\$2.46 billion in 1Q19.

## VI. Recap of Recent Important Events & Announcements

- TSMC Unveils 6-Nanometer Process ( 2019/04/16 )
- TSMC and OIP Ecosystem Partners Deliver Industry's First Complete Design Infrastructure for 5nm Process Technology ( 2019/04/03 )
- TSMC Board of Directors Proposes NT\$8 Cash Dividend per Share for Full Year 2018 and Will Propose NT\$2 Cash Dividend per Share for First Quarter 2019, and Approves the Convening of the 2019 Annual Shareholders' Meeting on June 5, 2019, at Which Shareholders Will Hold a By-election for One Independent Director ( 2019/02/19 )
- The Board of Directors Approved the Nomination of Moshe N. Gavrielov as a Candidate for Independent Director ( 2019/02/19 )
- TSMC Details Impact of Fab 14B Photoresist Material Incident, Updates 1Q'19 Guidance ( 2019/02/15 )