

4Q16

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)*

|   | <b>4Q16</b>  | <b>3Q16</b>  | <b>4Q15</b>  | <b>2016</b>  | <b>2015</b>  |
|---|--------------|--------------|--------------|--------------|--------------|
| EPS (NT\$ per common share)                                   | 3.86         | 3.73         | 2.81         | 12.89        | 11.82        |
| (US\$ per ADR unit)   | 0.61         | 0.59         | 0.43         | 2.00         | 1.86         |
| Net Revenue   | 262.23       | 260.41       | 203.52       | 947.94       | 843.50       |
| Gross Profit  | 137.11       | 132.05       | 98.93        | 474.83       | 410.40       |
| <i>Gross Margin</i>   | <i>52.3%</i> | <i>50.7%</i> | <i>48.6%</i> | <i>50.1%</i> | <i>48.7%</i> |
| Operating Expenses  | (27.18)      | (25.84)      | (21.22)      | (96.90)      | (88.47)      |
| Other Operating Income and Expenses                           | (0.02)       | 0.05         | 0.25         | 0.03         | (1.88)       |
| Operating Income  | 109.91       | 106.26       | 77.96        | 377.96       | 320.05       |
| <i>Operating Margin</i>                                       | <i>41.9%</i> | <i>40.8%</i> | <i>38.3%</i> | <i>39.9%</i> | <i>37.9%</i> |
| Non-Operating Items   | 2.14         | 1.99         | 2.68         | 8.00         | 30.38        |
| Net Income Attributable to Shareholders of the Parent Company | 100.20       | 96.76        | 72.84        | 334.25       | 306.57       |
| <i>Net Profit Margin</i>                                      | <i>38.2%</i> | <i>37.2%</i> | <i>35.8%</i> | <i>35.3%</i> | <i>36.3%</i> |
| Wafer Shipment (kpcs 12 inch-equiv.)                          | 2,614        | 2,638        | 2,020        | 9,606        | 8,763        |

*Note: Diluted weighted average outstanding shares were 25,930mn units in 4Q16***Financial Highlights:****Fourth Quarter 2016**

- Net revenue was NT\$262.23 billion, representing a 0.7% increase from NT\$260.41 billion in 3Q16 and a 28.8% increase from NT\$203.52 billion in 4Q15.
- Gross margin was 52.3%, 1.6 percentage points higher than 3Q16 and 3.7 percentage points higher than 4Q15.
- Operating margin was 41.9%, up 1.1 percentage points from 3Q16 and up 3.6 percentage points from 4Q15.
- Non-operating items were a gain of NT\$2.14 billion, compared to a gain of NT\$1.99 billion in 3Q16 and a gain of NT\$2.68 billion in 4Q15.
- Net income attributable to shareholders of the parent company was NT\$100.20 billion, up 3.6% from 3Q16 and up 37.6% from 4Q15. Net profit margin was 38.2% and diluted EPS was NT\$3.86.

**Full Year 2016**

- Net revenue was NT\$947.94 billion, representing a 12.4% increase from 2015. In US dollar terms, net revenue increased 10.6% to US\$29.43 billion in 2016.
- Gross margin was 50.1%, up 1.4 percentage points from 48.7% in 2015. Operating margin was 39.9%, up 2.0 percentage points from 37.9% in 2015.
- Diluted EPS was NT\$12.89, up 9.0% from NT\$11.82 in 2015. Net profit margin was 35.3%, down 1.0 percentage point from 36.3% in 2015. The year-over-year decrease in net profit margin rate mainly reflected the one-off disposal gains of ASML shares in 2015.

## I. Revenue Analysis

| Wafer Revenue by Application | 4Q16 | 3Q16 | 4Q15 |
|------------------------------|------|------|------|
| Computer                     | 8%   | 8%   | 9%   |
| Communication                | 66%  | 60%  | 62%  |
| Consumer                     | 6%   | 11%  | 6%   |
| Industrial/Standard          | 20%  | 21%  | 23%  |

| Wafer Revenue by Technology | 4Q16 | 3Q16 | 4Q15 |
|-----------------------------|------|------|------|
| 16/20nm                     | 33%  | 31%  | 24%  |
| 28nm                        | 24%  | 24%  | 25%  |
| 40/45nm                     | 12%  | 13%  | 14%  |
| 65nm                        | 11%  | 11%  | 11%  |
| 90nm                        | 5%   | 5%   | 7%   |
| 0.11/0.13um                 | 2%   | 3%   | 3%   |
| 0.15/0.18um                 | 10%  | 9%   | 11%  |
| 0.25um and above            | 3%   | 4%   | 5%   |

| Net Revenue by Geography | 4Q16 | 3Q16 | 4Q15 |
|--------------------------|------|------|------|
| North America            | 69%  | 68%  | 69%  |
| Asia Pacific             | 11%  | 15%  | 10%  |
| China                    | 8%   | 6%   | 9%   |
| EMEA                     | 6%   | 6%   | 6%   |
| Japan                    | 6%   | 5%   | 6%   |

| Wafer Revenue by Technology | 2016 | 2015 |
|-----------------------------|------|------|
| 16/20nm                     | 28%  | 20%  |
| 28nm                        | 26%  | 28%  |
| 40/45nm                     | 14%  | 14%  |
| 65nm                        | 11%  | 12%  |
| 90nm                        | 5%   | 7%   |
| 0.11/0.13um                 | 2%   | 2%   |
| 0.15/0.18um                 | 10%  | 12%  |
| 0.25um and above            | 4%   | 5%   |

| Net Revenue by Geography | 2016 | 2015 |
|--------------------------|------|------|
| North America            | 65%  | 68%  |
| Asia Pacific             | 15%  | 12%  |
| China                    | 9%   | 8%   |
| EMEA                     | 6%   | 7%   |
| Japan                    | 5%   | 5%   |

### Revenue Analysis:

In the fourth quarter, revenue increased 0.7% quarter-over-quarter as smartphone market continued to be robust.

By application, Communication and Computer increased 11% and 7%, respectively, while Consumer and Industrial/Standard decreased 43% and 6%, respectively.

By technology, the combined 16/20nm contribution was 33% of total wafer revenue in the fourth quarter. Advanced technologies (28nm and below) accounted for 57% of total wafer revenue, up from 55% in 3Q16.

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 11%, 8%, 6%, and 6% of total net revenue, respectively.

On a full year basis, the combined 16/20nm contribution reached 28% of total wafer revenue in 2016, up from 20% in 2015. Advanced technologies (28nm and below) accounted for 54% of total wafer revenue, up from 48% in 2015.

In 2016, revenue from customers based in North America accounted for 65% of total wafer revenue, while revenue from Asia Pacific, China, EMEA (Europe, Middle East, and Africa) and Japan accounted for 15%, 9%, 6%, and 5% of total net revenue, respectively.

## II. Profit & Expense Analysis

### II - 1. Gross Profit Analysis

| (In NT\$ billions) | 4Q16   | 3Q16   | 4Q15   | 2016   | 2015   |
|--------------------|--------|--------|--------|--------|--------|
| Cost of Revenue    | 125.12 | 128.36 | 104.59 | 473.11 | 433.10 |
| Gross Profit       | 137.11 | 132.05 | 98.93  | 474.83 | 410.40 |
| Gross Margin       | 52.3%  | 50.7%  | 48.6%  | 50.1%  | 48.7%  |

### Gross Profit Analysis:

Gross margin was 52.3% in 4Q16, 1.6 percentage points higher than 3Q16, mainly driven by continued cost improvement.

On a full year basis, gross margin was 50.1% in 2016, up 1.4 percentage points from 2015, mainly reflecting continued cost improvement and a more favorable exchange rate.

## II - 2. Operating Income Analysis

| (In NT\$ billions)                                  | <u>4Q16</u>    | <u>3Q16</u>    | <u>4Q15</u>    | <u>2016</u>    | <u>2015</u>    |
|---|----------------|----------------|----------------|----------------|----------------|
| <b>Total Operating Expenses</b>                     | <b>(27.18)</b> | <b>(25.84)</b> | <b>(21.22)</b> | <b>(96.90)</b> | <b>(88.47)</b> |
| Research & Development                              | (19.96)        | (18.72)        | (15.67)        | (71.21)        | (65.55)        |
| SG&A  | (7.22)         | (7.12)         | (5.55)         | (25.69)        | (22.92)        |
| <b>Other Operating Income and Expenses</b>          | <b>(0.02)</b>  | <b>0.05</b>    | <b>0.25</b>    | <b>0.03</b>    | <b>(1.88)</b>  |
| <b>Operating Income</b>                             | <b>109.91</b>  | <b>106.26</b>  | <b>77.96</b>   | <b>377.96</b>  | <b>320.05</b>  |
| <b>Operating Margin</b>                             | <b>41.9%</b>   | <b>40.8%</b>   | <b>38.3%</b>   | <b>39.9%</b>   | <b>37.9%</b>   |
| <b>Total Operating Expenses as % of Net Revenue</b> | <b>10.4%</b>   | <b>9.9%</b>    | <b>10.4%</b>   | <b>10.2%</b>   | <b>10.5%</b>   |

## Operating Income Analysis:

Total operating expenses represented 10.4% of net revenue in 4Q16 and increased NT\$1.34 billion to NT\$27.18 billion, primarily driven by a higher level of development activities for 7nm and 10nm technologies.

For full year 2016, total operating expenses represented 10.2% of net revenue, compared to 10.5% in 2015.

## II - 3. Non-Operating Items

| (In NT\$ billions)               | <u>4Q16</u>   | <u>3Q16</u>   | <u>4Q15</u>   | <u>2016</u>   | <u>2015</u>   |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>L-T Investments</b>           | <b>0.88</b>   | <b>0.88</b>   | <b>1.26</b>   | <b>3.50</b>   | <b>4.13</b>   |
| SSMC                             | 0.56          | 0.52          | 0.55          | 1.91          | 2.48          |
| Others                           | 0.32          | 0.36          | 0.71          | 1.59          | 1.65          |
| <b>Interest Expenses</b>         | <b>(0.81)</b> | <b>(0.82)</b> | <b>(0.82)</b> | <b>(3.31)</b> | <b>(3.19)</b> |
| <b>Other Gains and Losses</b>    | <b>2.07</b>   | <b>1.93</b>   | <b>2.24</b>   | <b>7.81</b>   | <b>29.44</b>  |
| <b>Total Non-Operating Items</b> | <b>2.14</b>   | <b>1.99</b>   | <b>2.68</b>   | <b>8.00</b>   | <b>30.38</b>  |

## Non-Operating Items:

Total non-operating items were a gain of NT\$2.14 billion in 4Q16, compared to a gain of NT\$1.99 billion in 3Q16.

On a full year basis, total non-operating items decreased by NT\$22.38 billion to a gain of NT\$8.00 billion in 2016, mainly reflecting the disposal gains of NT\$22.07 billion on ASML shares in 2015.

## II - 4. Net Profit and EPS

| (In NT\$ billions)                                   | <u>4Q16</u>    | <u>3Q16</u>    | <u>4Q15</u>   | <u>2016</u>    | <u>2015</u>    |
|--|----------------|----------------|---------------|----------------|----------------|
| <b>Income before Income Tax</b>                      | <b>112.05</b>  | <b>108.25</b>  | <b>80.64</b>  | <b>385.96</b>  | <b>350.43</b>  |
| <b>Income Tax Expenses</b>                           | <b>(11.82)</b> | <b>(11.46)</b> | <b>(7.80)</b> | <b>(51.62)</b> | <b>(43.87)</b> |
| <b>Effective Tax Rate</b>                            | <b>10.6%</b>   | <b>10.7%</b>   | <b>9.9%</b>   | <b>13.5%</b>   | <b>13.5%</b>   |
| <b>Net Income Attributable to the Parent Company</b> | <b>100.20</b>  | <b>96.76</b>   | <b>72.84</b>  | <b>334.25</b>  | <b>306.57</b>  |
| <b>Net Profit Margin</b>                             | <b>38.2%</b>   | <b>37.2%</b>   | <b>35.8%</b>  | <b>35.3%</b>   | <b>36.3%</b>   |
| <b>EPS (NT\$ per common share)</b>                   | <b>3.86</b>    | <b>3.73</b>    | <b>2.81</b>   | <b>12.89</b>   | <b>11.82</b>   |

## Net Profit and EPS:

Net income attributable to shareholders of the parent company was NT\$100.20 billion, up 3.6% from 3Q16 and up 37.6% from 4Q15.

On a full year basis, both net income and EPS increased by 9.0% from 2015. Excluding major one-off items (namely gains from share disposals of NT\$0.84 per share and loss of NT\$0.08 per share on cease of Solar operations in 2015, and negative impact of NT\$0.09 per share from the earthquake in 2016), EPS would have increased 17.4% year-over-year.

### III. Financial Condition Review

| <b>III - 1. Liquidity Analysis</b>              |                    |                    |                    |
|---|--------------------|--------------------|--------------------|
| <b>(Balance Sheet Items)</b>                    |                    |                    |                    |
| (In NT\$ billions)                              | <b><u>4Q16</u></b> | <b><u>3Q16</u></b> | <b><u>4Q15</u></b> |
| Cash & Marketable Securities                    | 632.11             | 516.95             | 586.16             |
| Accounts Receivable                             | 129.31             | 129.29             | 85.57              |
| Inventories                                     | 48.68              | 53.88              | 67.05              |
| Other Current Assets                            | 7.63               | 9.47               | 7.96               |
| <b>Total Current Assets</b>                     | <b>817.73</b>      | <b>709.59</b>      | <b>746.74</b>      |
| Short-term Loans                                | 57.96              | 37.65              | 39.47              |
| Accounts Payable                                | 90.48              | 84.77              | 45.74              |
| Current Portion of Bonds Payable and Bank Loans | 38.11              | 38.11              | 23.52              |
| Accrued Liabilities and Others                  | 131.69             | 97.03              | 103.50             |
| <b>Total Current Liabilities</b>                | <b>318.24</b>      | <b>257.56</b>      | <b>212.23</b>      |
| Current Ratio (x)                               | 2.6                | 2.8                | 3.5                |
| <b>Net Working Capital</b>                      | <b>499.49</b>      | <b>452.03</b>      | <b>534.51</b>      |

#### **Liquidity Analysis:**

At the end of 4Q16, cash and marketable securities increased by NT\$115.16 billion to NT\$632.11 billion, primarily attributable to free cash flow of NT\$72.68 billion generated during the quarter (please refer to page 6) and the increase of NT\$19.13 billion in short-term loans.

Total current liabilities increased by NT\$60.68 billion, mainly reflecting the increase in short-term loans and the increase in accrued liabilities, including the accrual for income tax payable and for employee profit sharing/bonus.

Net working capital was NT\$499.49 billion and current ratio was 2.6x.

| <b>III - 2. Receivable/Inventory Days</b> |                    |                    |                    |
|---|--------------------|--------------------|--------------------|
| (In Number of Days)                       | <b><u>4Q16</u></b> | <b><u>3Q16</u></b> | <b><u>4Q15</u></b> |
| Days of Receivable                        | 45                 | 42                 | 41                 |
| Days of Inventory                         | 41                 | 44                 | 62                 |

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

Days of receivable increased 3 days to 45 days in 4Q16.

Days of inventory decreased 3 days from 44 days in 3Q16 to 41 days in 4Q16, mainly due to reduction in work-in-process as a result of strong 16nm wafer shipments during the quarter.

Days of inventory decreased 21 days from 62 days in 4Q15, reflecting strong shipments of leading edge wafers during the year and improving cycle time.

| <b>III - 3. Debt Service</b> |                    |                    |                    |
|------------------------------|--------------------|--------------------|--------------------|
| (In NT\$ billions)           | <b><u>4Q16</u></b> | <b><u>3Q16</u></b> | <b><u>4Q15</u></b> |
| Cash & Marketable Securities | 632.11             | 516.95             | 586.16             |
| Interest-Bearing Debts       | <b>(249.18)</b>    | <b>(227.92)</b>    | <b>(254.99)</b>    |
| <b>Net Cash Reserves</b>     | <b>382.93</b>      | <b>289.03</b>      | <b>331.17</b>      |

#### **Debt Service:**

Net cash reserves increased NT\$93.90 billion to NT\$382.93 billion in 4Q16, reflecting the increase of NT\$115.16 billion in cash & marketable securities, offset by the increase in short-term loans.

## IV. Cash Flow

| <b>IV - 1. Quarterly Cash Flow Analysis</b> |                 |                 |                 |
|---|-----------------|-----------------|-----------------|
| (In NT\$ billions)                          | <b>4Q16</b>     | <b>3Q16</b>     | <b>4Q15</b>     |
| Income before Income Tax                    | 112.05          | 108.25          | 80.64           |
| Depreciation & Amortization                 | 56.44           | 56.27           | 56.26           |
| Other Operating Sources/(Uses)              | 16.73           | (38.11)         | 7.77            |
| <b>Total Operating Sources/(Uses)</b>       | <b>185.22</b>   | <b>126.41</b>   | <b>144.67</b>   |
| Capital Expenditures                        | (112.54)        | (103.78)        | (84.52)         |
| Marketable Financial Instruments            | (27.74)         | (8.91)          | (15.87)         |
| Other Investing Sources/(Uses)              | 1.78            | 5.80            | (0.79)          |
| <b>Net Investing Sources/(Uses)</b>         | <b>(138.50)</b> | <b>(106.89)</b> | <b>(101.18)</b> |
| Increase (Decrease) in Short-term Loans     | 19.13           | 0.00            | 5.77            |
| Cash Dividends                              | 0.00            | (155.58)        | 0.00            |
| Other Financing Sources/(Uses)              | 5.17            | (13.61)         | (0.45)          |
| <b>Net Financing Sources/(Uses)</b>         | <b>24.30</b>    | <b>(169.19)</b> | <b>5.32</b>     |
| <b>Exchange Rate Changes and Other</b>      | <b>6.26</b>     | <b>(8.72)</b>   | <b>(1.85)</b>   |
| <b>Net Cash Position Changes</b>            | <b>77.28</b>    | <b>(158.39)</b> | <b>46.96</b>    |
| <b>Ending Cash Balance</b>                  | <b>541.25</b>   | <b>463.97</b>   | <b>562.69</b>   |

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

During the fourth quarter, cash generated from operating activities totaled NT\$185.22 billion, including (1) NT\$56.44 billion from depreciation & amortization expenses and (2) NT\$16.73 billion from other operating sources.

Net cash used in investing activities was NT\$138.50 billion in 4Q16, primarily including capital expenditures of NT\$112.54 billion and net purchases of NT\$27.74 billion in fixed income securities.

Cash flow from financing activities was NT\$24.30 billion, mainly reflecting the increase in short-term loans for hedging purposes.

As a result, net cash position increased NT\$77.28 billion to NT\$541.25 billion at the end of 4Q16.

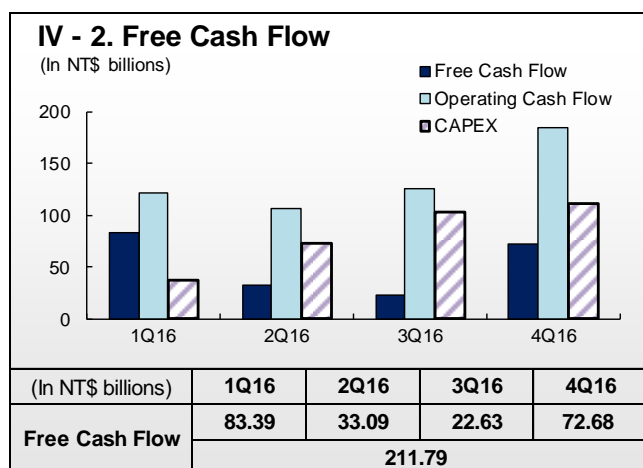
| <b>IV - 1.2. Annual Cash Flow Analysis</b> |                 |                 |                 |
|--|-----------------|-----------------|-----------------|
| (In NT\$ billions)                         | <b>2016</b>     | <b>2015</b>     | <b>Diff.</b>    |
| Income before Income Tax                   | 385.96          | 350.43          | 35.53           |
| Depreciation & Amortization                | 223.83          | 222.51          | 1.32            |
| Other Operating Sources/(Uses)             | (69.95)         | (43.05)         | (26.90)         |
| <b>Total Operating Sources/(Uses)</b>      | <b>539.84</b>   | <b>529.89</b>   | <b>9.95</b>     |
| Capital Expenditure                        | (328.05)        | (257.52)        | (70.53)         |
| Marketable Financial Instruments           | (76.38)         | 32.72           | (109.10)        |
| Other Investing Sources/(Uses)             | 8.99            | 7.54            | 1.45            |
| <b>Net Investing Sources/(Uses)</b>        | <b>(395.44)</b> | <b>(217.26)</b> | <b>(178.18)</b> |
| Short-term Loans                           | 18.97           | 3.14            | 15.83           |
| Cash Dividends                             | (155.58)        | (116.68)        | (38.90)         |
| Other Financing Sources/(Uses)             | (21.19)         | (3.19)          | (18.00)         |
| <b>Net Financing Sources/(Uses)</b>        | <b>(157.80)</b> | <b>(116.73)</b> | <b>(41.07)</b>  |
| <b>Exchange Rate Changes and Other</b>     | <b>(8.04)</b>   | <b>8.34</b>     | <b>(16.38)</b>  |
| <b>Net Cash Position Changes</b>           | <b>(21.44)</b>  | <b>204.24</b>   | <b>(225.68)</b> |
| <b>Ending Cash Balance</b>                 | <b>541.25</b>   | <b>562.69</b>   | <b>(21.44)</b>  |

On a full year basis, cash generated from operating activities totaled NT\$539.84 billion, including (1) NT\$223.83 billion from depreciation & amortization, and (2) NT\$69.95 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\$395.44 billion, primarily including capital expenditures of NT\$328.05 billion and net purchases of NT\$76.38 billion in fixed income securities.

Net cash used in financing activities totaled NT\$157.80 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 2016, cash position reached NT\$541.25 billion.



**Operating and Free Cash Flow:**

Free cash flow was NT\$72.68 billion in 4Q16, an increase of NT\$50.05 billion, reflecting healthy operating cash flow during the quarter.

Total free cash flow generated in 2016 was NT\$211.79 billion, a decrease of NT\$60.58 billion from NT\$272.37 billion in 2015 mainly due to higher capital expenditures.

**V. CapEx**

**V. Capital Expenditures**  
(in US\$ billions)

|                             | <u>4Q16</u> | <u>3Q16</u> | <u>2Q16</u> | <u>1Q16</u> | <u>2016</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| <b>Capital Expenditures</b> | 3.53        | 3.25        | 2.26        | 1.15        | 10.19       |

**Capital Expenditures:**

Capital expenditures for TSMC on a consolidated basis totaled US\$3.53 billion in 4Q16 and US\$10.19 billion for the year.

## VI. Recap of Recent Important Events & Announcements

- TSMC Museum of Innovation Officially Opened to the Public ( 2016/12/05 )
  
- TSMC's Board Approved the Following Personnel Appointments ( 2016/11/08 ) :
  - Vice President of Operations Organization Mr. YP Chin as Senior Vice President of TSMC
  - Vice President of R&D Organization Dr. YJ Mii as Senior Vice President of TSMC
  - Senior Director of R&D Organization's Integrated Interconnect & Packaging Dr. CH Yu as Vice President of TSMC
  - Senior Director of R&D Organization's More-than-Moore Technologies and TSMC Fellow Dr. Alexander Kalnitsky as Vice President of TSMC
  - Dr. Kevin Zhang as Vice President of Design and Technology Platform