

# China Technology

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## Implications of TSMC 3Q23: cycle nearing the bottom; Positive on smartphone/PC supply chain

TSMC recorded in-line 3Q23 results and 4Q revenue guidance implies better-than-expected FY23E outlook, driven by stabilised demand of smartphone & PC and inventory restocking. Auto segment may slow down in 2H23E, but it is set to rebound in 2024 driven by the NEV market. Looking ahead, we expect market will react positively to 3Q23 results, demand stabilisation and inventory restocking. Investors will start to focus on PC/smartphone demand recovery in 4Q23/2024E, which is positive to names with high smartphone exposure such as Luxshare (002475 CH), Q-tech (1478 HK) and Sunny Optical (2382 HK), as well as Chinese foundries such as SMIC (981 HK) and Hua Hong (1347 HK).

- **3Q23 results in-line; smartphone/HPC/IoT QoQ recovery.** TSMC's 3Q revenue growth of 13.7% QoQ is in-line with guidance driven by strong 3nm ramp-up and 5nm demand. By segment, smartphone/HPC/IoT posted strong QoQ growth (+33%/6%/24%) while automotive and DCE revenue declined 24%/1% QoQ. 3Q GPM of 54.3% is above high-end of guidance for higher UTR and favourable FX, partially offset by early 3nm ramp-up.
- **4Q guidance reflects better-than-expected FY23E sales.** 4Q revenue is guided at 11.1% QoQ growth at mid-point, implying FY23E sales decline of 6% YoY, better than prior guidance of 10% YoY decline. GPM is guided at 51.5-53.5% and OPM at 39.5-41.5%, above consensus by 0.2ppts/0.4ppts.
- **Stabilized smartphone & PC demand; semi cycle near bottom.** Mgmt. believes inventory destocking will persist into 4Q23E but smartphone/PC demand started to stabilize. Mgmt. guided that semi industry is very near to the cycle bottom. For automotive, demand may slow down in 2H due to inventory adjustment, and it is expected to rebound in 2024 thanks to NEV market. Mgmt. reiterated healthy growth in 2024 thanks to its leading technology leadership and broad customer base. In addition, mgmt. reiterated CoWoS capacity target to double by end 2024.
- **N3/N3E/N2 progress on track; limited impact from the US new export control.** Technology nodes: 1) N3: mid-single% mix in FY23E and much higher % in 2024; 2) N3E: volume production in 4Q; 3) N2: volume production on track in FY25E. Overseas expansion: 1) Arizona fab: N4 volume production in 1H25E; 2) Japan specialty technology fab (12/16/22/28nm): on track for late 2024; 3) Nanjing fab: license extension approved by the US. Mgmt. expected limited near-term impact from the US new export control and is still evaluating the long-term impact.
- **Prefer names with high exposure to smartphone supply chain.** Overall, we expect market will react positively to 3Q23 results, demand stabilisation and inventory restocking. We prefer names with higher exposure to smartphone supply chain, such as Luxshare, Q-tech and Sunny Optical.

### Valuation Table

| Name          | Ticker  | Mkt Cap<br>(US\$ mn) | Price<br>(LC) | P/E (x) |       | P/B (x) |       | ROE  |
|---------------|---------|----------------------|---------------|---------|-------|---------|-------|------|
|               |         |                      |               | FY23E   | FY24E | FY23E   | FY23E |      |
| SMIC          | 981 HK  | 21275                | 30.0          | 22.1    | 21.8  | 1.06    |       | 3.8  |
| Hua Hong Semi | 1347 HK | 4277                 | 19.5          | 12.3    | 13.8  | 0.79    |       | 10.5 |
| TSMC          | 2330 TT | 445537               | 556           | 17.8    | 14.7  | 4.09    |       | 24.8 |
| UMC           | 2303 TT | 18815                | 48.7          | 10.8    | 10.5  | 1.81    |       | 16.6 |

Source: Company data, CMBIGM estimates

### China Technology Sector

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## Key takeaways of TSMC (2330 TT, NR) 3Q23 results:

### 1. 3Q23 Results

- Revenue: TWD 546.73bn (US\$17.28bn), -10.8% YoY/+13.7% QoQ, in-line with previous guidance (US\$16.7-17.5bn) and above consensus by 1.7%, supported by strong ramp-up of 3nm and higher demand for 5nm, partially offset by customers' ongoing inventory adjustment
- GPM: 54.3%, -6.1ppts YoY/+0.2ppts QoQ, above high-end of previous guidance (53.5%), reflecting higher UTR and favourable FX change, partially offset by margin dilution from N3 ramp-up
- OPM: 41.7%, -8.9ppts YoY/-0.3ppts QoQ
- Net profit margin: 38.6%, -7.2ppts YoY/+0.8ppts QoQ, beating consensus (35.4%) by 3.2ppts
- EPS: TWD 8.14, -24.8% YoY/+16.1% QoQ

### 2. 3Q23 sales breakdown

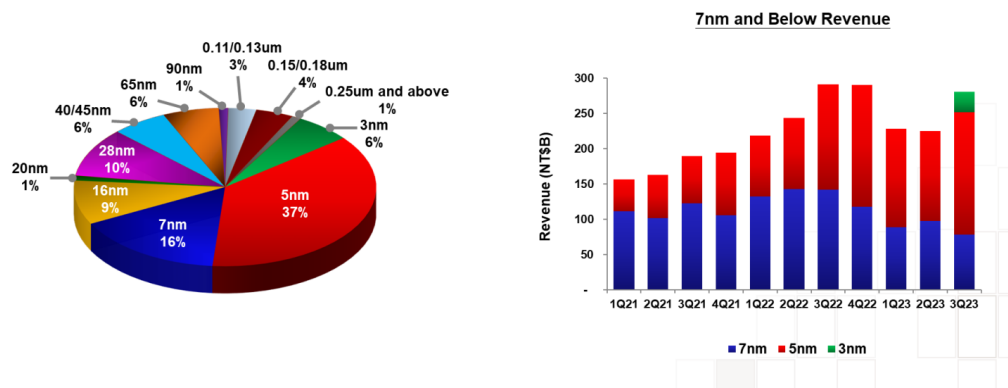
- Breakdown by technology
  - 3nm: 6% of sales
  - 5nm: 37% of sales, vs 30% in 1Q23
  - 7nm: 16% of sales, vs 23% in 1Q23
  - 16nm and above: 41% of sales, vs 47% in 1Q23
- Breakdown by platform
  - Smartphone: 39% of sales, +33% QoQ
  - High-performance computing (HPC): 42% of sales, +6% QoQ
  - Internet of things (IoT): 9% of sales, +24% QoQ
  - Automotive: 5% of sales, -24% QoQ
  - Digital consumer electronics (DCE): 2% of sales, -1% QoQ

### 3. 4Q23 Guidance

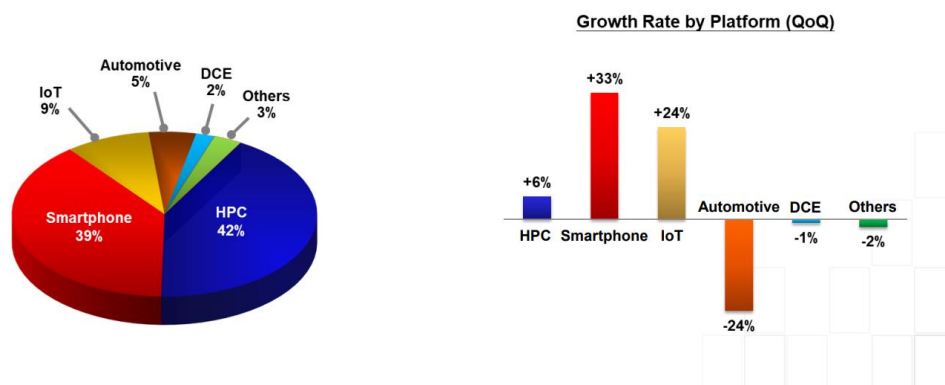
- Revenue: US\$18.8-19.6bn, 11.1% sequential increase at midpoint, above consensus (US\$18.2bn) by 5.2%
- GM: 51.5-53.5%, mid-point above consensus (52.3%) by 0.2ppts
- OPM: 39.5-41.5%, mid-point above consensus (40.1%) by 0.4ppts

### 4. 2023/24 outlook

- LT growth margin of 53% and higher is achievable
- 2023 capex: tightened up and expect US\$32bn, 70% for advanced tech, 20% on specialty tech, 10% on advanced packaging and testing and others; depreciation expense increase by low 20% YoY in 2023 vs. 30% YoY in January
- AI related demand continues to be strong, not enough to offset cyclical; 4Q supported by 3nm strong ramp-up partially offset by customer inventory adjustment
- Fabless inventory continuously reduced in 3Q; weaker macro and slow demand recovery in China; remain cautious on inventory control., digestion to continue to 4Q; early sign of demand stabilization in smartphone and PC market; given current inventory control, semiconductor inventory to further reduce in 4Q to a healthier level

**Figure 1: TSMC: revenue by technology 3Q23**

Source: Company data, CMBIGM estimates

**Figure 2: TSMC: revenue by platform 3Q23**

Source: Company, CMBIGM estimates

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