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UPDATE

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Greater China Technology Semiconductors | Asia Pacific

MCU: High-end industrial robust, consumer demand soft

Key update:

- **Slight decline of spot pricing in Oct:** STMicro's 32-bit MCU spot price fell 9% MoM to Rmb15.0 in October and GigaDevice's (GD) 32-bit MCU spot price was flat MoM at Rmb8.5.
- **Strong high-end industrial demand, while weak consumer:** High-performance industrial MCU demand remains strong, with 40-52 week lead times. End applications include motor control, industrial automation, and drones. By contrast, consumer demand in October is lukewarm, weaker than normal seasonality.
- **Cost pressure persists**: MCU design houses anticipate foundry partners will hike prices again in 4Q. We expect MCU design houses' margin will come under pressure again if they cannot pass through the cost increase.
- **Stock implication:** We prefer large MCU players such as GigaDevice (603986.SS) and WiFi MCU vendors such as Espressif (688018.SS) for their long-term edge AI opportunities. We remain UW on Nuvoton (4919.TW) and await GM recovery before turning more constructive.

Exhibit 1: STMicro - 32F103VET6 spot market price trend

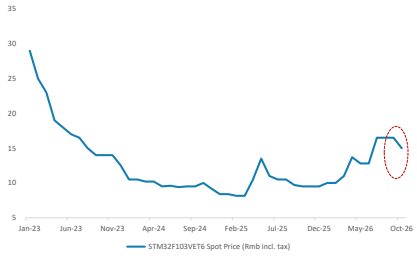
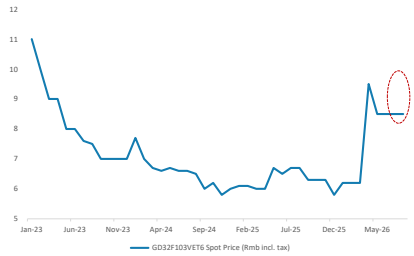


Exhibit 2: GigaDevice - 32F103VET6 spot market price trend



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GREATER CHINA TECHNOLOGY SEMICONDUCTORS
Asia Pacific
Industry View **Attractive**

investors should be aware that the firm may have a conflict of

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Valuation Methodology and Risks

Nuvoton Technology Corporation (4919.TW)

Base case, residual income model. We assume a 9.2% cost of equity (beta 1.2, risk-free rate 2.0% and risk premium 6.0%), a payout ratio of 55%, a medium-term growth rate of 7.0%, and a terminal growth rate of 3.5%.

Risks to Upside

- MCU up-cycle is more sustained than expected.
- China's MCU localization is faster than expected.
- Traction from auto and BMC business is greater.
- Margin improvement is more significant.

Risks to Downside

- MCU up-cycle ends earlier with severe pricing erosion.
- China's MCU localization is slower than expected.
- Traction from auto and BMC business is less.
- Margins contract amid more intensified competition.

GigaDevice Semiconductor Beijing Inc (603986.SS)

Our price target is our base-case value, derived from our residual income model. Key assumptions: cost of equity of 9.4% (beta 1.1, risk-free rate 2% and risk premium 6.5%), a payout ratio of 40%, medium-term growth rate of 11.3% and a terminal growth rate of 2.5%.

Risks to Upside

- NOR up-cycle driven by stronger demand
- Superior chip design, leading to increasing exposure to low-density NOR
- Faster-than-expected DRAM development

Risks to Downside

- NOR down-cycle driven by weaker demand
- Inferior chip design, leading to increasing exposure to mid-/high-density NOR
- Slower-than-expected DRAM development

Espressif Systems (688018.SS)

Base case, residual income model. We assume an 8.9% cost of equity (beta 1.1, risk-free rate 2.0% and risk premium 6.0%), a payout ratio of 40%, a medium-term growth rate of 18.5%, and a terminal growth rate of 4.5%.

Risks to Upside

- China's MCU localization goes faster than expected.
- Gains traction from new customers.
- Margin expansion is more significant.

Risks to Downside

- China's MCU localization pace is slower than expected.
- Traction from new customers is less than expected.
- Margins erode amid more intense competition.

