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South Korea Technology: Key takeaways from Hynix and SEMCO investor meetings

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We hosted SK Hynix (Hynix) and Samsung Electro-Mechanics (SEMCO) for virtual group meetings with investors on June 12 and 11, respectively.

The key takeaways for Hynix included: 1) 8-Hi/12-Hi HBM3E plan going smoothly, 2) 'severe' shortage of conventional DRAM is a plausible scenario, 3) long-term and binding HBM contracts will lead to lower earnings volatility, and 4) HBM base die customization will enhance AI chiplet competitiveness and strengthen AI ecosystem. Reiterate our Buy rating (also on GS APAC Conviction List) on Hynix.

The key takeaways for SEMCO included: 1) MLCC for AI server could have 3+x dollar content vs. conventional server, 2) mid-twenties% of this year MLCC revenue to come from autos, 3) near zero exposure to AI server in substrates side; however, sizable revenue from 4Q24, and 4) glass core substrates pilot line set up in May/June 2025. Reiterate our Buy rating on SEMCO.

Key Takeaways

SK Hynix

- **8-Hi/12-Hi HBM3E plan going smoothly:** Hynix said its plan on HBM3E is going smoothly, as planned. It expects substantial growth in HBM shipment in 2Q (GSe: Hynix HBM revenue to grow 313% yoy/102% qoq to W2.4tn in 2Q) thanks to start of 8-Hi HBM3E production, and HBM3E production ramp-up to continue throughout this year with stronger growth in 2H. On 12-Hi HBM3E, the company reiterated its comment made in the May press conference that it is on track to start shipping 12-Hi HBM3E from late 3Q; however, meaningful volume production to start from 2025 as 8-Hi will likely be the mainstream HBM3E for 2024.
- **'Severe' shortage of conventional DRAM a plausible scenario:** Hynix said that as DRAM makers are focusing on HBM, capacity allocation mix for conventional DRAM is decreasing. We would highlight Hynix's earlier comment made in our recent TechNet session that at least mid-to-high teens% of industry DRAM capacity would need to be allocated for HBM for this year. Hynix said even though it increased this year's capex plan significantly (GSe: 2024 Hynix capex

+83% yoy) and is allocating some portion for conventional DRAM upgrade and capacity addition, 'severe' shortage of conventional DRAM is likely if demand growth of conventional DRAM turns out to be higher than expected.

- **Long-term and binding HBM contract will lead to lower earnings volatility:** Hynix said key characteristics of HBM contracts are **1)** annual-term contracts, and **2)** binding contracts covering both pricing and volume, and as such will lead to higher demand visibility. Hynix expects higher contribution of HBM will contribute to more stable profitability, not seen during past memory cycles, and the company added this could act as a positive catalyst for higher industry valuation.
- **HBM base die customization will enhance AI chiplet competitiveness and strengthen the AI ecosystem:** Hynix said by delegating manufacturing of HBM base die to TSMC starting from HBM4, customers will be able to migrate some functions of its processor to base die by applying TSMC's superior foundry technology. Hynix commented this change will **1)** enhance performance of AI chiplet, **2)** increase spatial efficiency of the AI chiplet, and **3)** shorten development time and strengthen partnership between Hynix, TSMC, and end-customer, as the end-customer has to engage from the early stage of product development.

Samsung Electro-Mechanics

- **MLCC for AI server could have 3+x dollar content vs. conventional server:** SEMCO said a single conventional server requires average 5,000 MLCC units, while an AI server requires 2-3x more units compared to a conventional server. As some high-end AI servers require high-capacitance/high-temperature/high-voltage MLCC, SEMCO said MLCC for AI servers could have 3+x dollar content vs. conventional servers. The company said server mix within MLCC would be single-digit% this year; however, it expects the mix to increase as we see higher contribution from AI servers.
- **Mid-twenties% of this year MLCC revenue to come from auto:** SEMCO said auto MLCC portion of total MLCC revenue to reach mid-twenties% this year from 20% in last year, and also said their goal is to reach over 30% in the mid-to-long term. The company expects higher mix of high-ASP auto MLCC to contribute to MLCC margin improvement.
- **Near zero exposure to AI servers on substrates side, however sizable revenue from 4Q24:** The company said substrates revenue coming from AI servers is near zero currently; however, sizable revenue to start to be generated from 4Q24.
- **Glass core substrates pilot line set up in May/June 2025:** SEMCO said they plan to finish setting up the pilot line of glass core substrates by May or June 2025 and gave rough mass production timing of 2026/2027. SEMCO enumerated merits of glass core substrates vs. existing plastic-based substrates as: 1) enabling design with finer circuit line, 2) smoother surface, and 3) higher resistance to warpage. The company mentioned glass core substrates will likely be adopted first for high-end products such as AI and high-end server CPUs.

SK Hynix (Hynix) is the second-largest DRAM supplier and one of the leading NAND suppliers globally. We expect the stronger-than-expected supply-side measures by suppliers including Hynix to lead to a recovery in industry fundamentals in the medium-term, and considering the company is well-positioned in the high-end DRAM segment including DDR5 and HBM thus being one of the key beneficiaries of the growth in AI servers, we are Buy rated on the stock. Key risks include a major deterioration in memory supply/demand and delays in technology migration.

Price Target Risks and Methodology - SK Hynix Inc.

Valuation methodology: Our 12-month target price of W255,000 is derived using a target P/B of 2.2X applied to average 2024E-2025E BVPS. Our target P/B multiple which reflects the HBM premium of around 15% to the peak multiple of 1.9X during the previous upcycle.

Key risks: 1) A major deterioration in memory supply/demand and 2) delays in technology migration.

Samsung Electro-Mechanics (SEMCO) is a leading global electronic component supplier with the second-largest market share in MLCC. As we expect the company to continue to see a solid yoy profit growth momentum led by MLCC, and with all divisions seeing product mix improvements towards auto/servers/AI which should drive a stable growth for the company in the mid-to-long term, we reiterate Buy on the name. Key risks include a stronger-than-expected industry MLCC supply increase and weaker-than-expected demand for smartphones.

Price Target Risks and Methodology - Samsung Electro-Mechanics

Valuation: We are Buy rated on Samsung Electro-Mechanics with a SOTP-based 12-month TP of W180,000.

Key risks: A stronger-than-expected industry MLCC supply increase and weaker-than-expected demand for smartphones.

Disclosure Appendix

Reg AC

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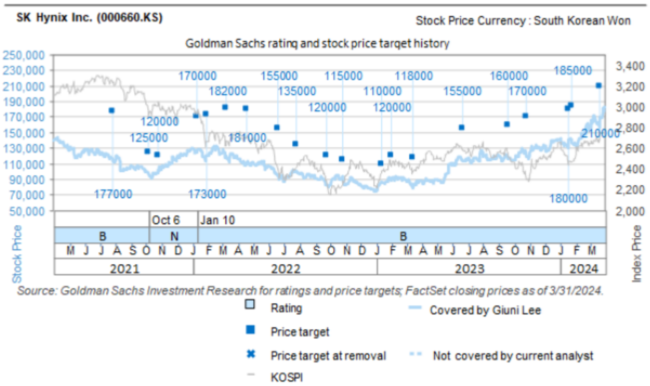

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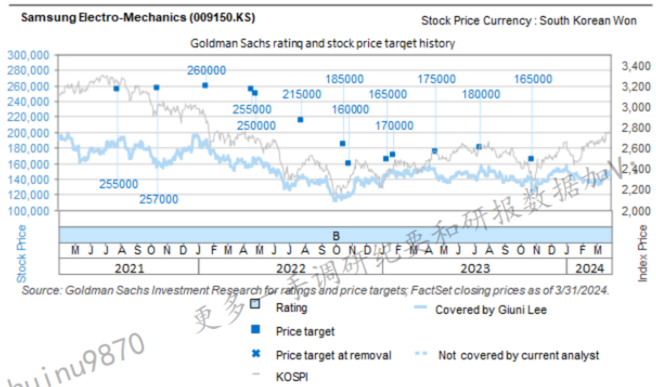

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Target price history table(s)

Samsung Electro-Mechanics (009150.KS)

Date of report	Target price (W)
29-Apr-24	180,000
26-Oct-23	165,000
16-Jul-23	180,000
18-Apr-23	175,000
25-Jan-23	170,000
13-Jan-23	165,000
30-Oct-22	160,000
18-Oct-22	185,000
27-Jul-22	215,000

SK Hynix Inc. (000660.KS)

Date of report	Target price (W)
27-May-24	255,000
25-Apr-24	225,000
21-Mar-24	210,000
25-Jan-24	185,000
17-Jan-24	180,000
26-Oct-23	170,000
20-Sep-23	160,000
21-Jun-23	155,000
15-Mar-23	118,000
01-Feb-23	120,000
12-Jan-23	110,000
26-Oct-22	115,000
25-Sep-22	120,000
27-Jul-22	135,000
21-Jun-22	155,000

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