

## Global Memory Tech

## TrendForce's bullish call takeaways

## Industry Overview

**TrendForce is now bullish on memory**

We hosted a conference call with Avril Wu, TrendForce's senior vice president for memory research, on 10 January. Overall, Avril's price and HBM assumptions were very bullish. We present the top-10 Q&As.

Q1: Why do DRAM & NAND ASP rise QoQ for five consecutive quarters (4Q23 – 4Q24)?

A1: Chipmakers' production cut impact (1H24), followed by demand/mix improving (2H)

A2: How about 2024-average ASP trend?

A2: DRAM up near 40% YoY, NAND even higher at 45-50%

Q3: Any chance to see a price correction in 2Q24 after the 4Q23-1Q24 rally?

A3: No, price hike continues, but of only 3-8% (DRAM, NAND) vs 13-20% in 1Q

Q4: How about the impact of memory fab utilization increase?

A4: Low impact, full utilization only in 4Q24; excess supply may happen in 1H25

Q5: Why do you think the HBM market will grow by 250%+ in 2024?

A5: Due to HBM3e (40%+ of total HBM) along with more advanced NVIDIA's GPUs

Q6: What is your outlook for the 2024 HBM market share?

A6: SK Hynix continuously No.1 (50%+ market share sustainable) vs Samsung (40%+)

Q7: Your thoughts on the 2024 capex and wafer capacity?

A7: Broadly disciplined for capex increase and wafer capacity expansion

Q8: And for the China memory chipmakers, CXMT and YMTC?

A8: CXMT's 2024 DRAM capacity should double vs limited YMTC's NAND (US control)

Q9: New DRAM node migration

A9: 1a and 1b ramp-up on track among big-3 but EUV mainly use for Samsung and Hynix

Q10: Bit growth comparison - production vs demand

A10: DRAM – 18% v 15% (excess production to be used for 2025 sales); NAND – 12% vs 15% (tight supply continues)

**What we agreed vs disagreed**

We also believe DRAM and NAND ASPs can go up QoQ in all the four quarters of 2024, but a max likely of 10% or high-single-digit% vs TrendForce's 10-20%. Even our recently updated 2024 DRAM/NAND ASPs for Samsung Electronics show 30%/29% increase, despite DDR5/HBM-led mix improvement (TrendForce's industry average: +40-50%). We also expect solid growth in the HBM market but TrendForce's 250%+ rise in 2024 sales looks to be much higher than our current forecast (US\$8.5bn +110%). Separately, we fully agree on Hynix's No. 1 position in HBM (50%+ market share sustainable). Unlike Samsung, we do not expect Hynix's 4Q OP miss due to HBM and NAND spot-price rally.

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**ASP:** Average selling price

**DRAM:** Dynamic random-access memory

**DDR5:** 5<sup>th</sup> gen of double-data rate DRAM

**HBM:** High bandwidth memory

**HBM3e:** 5<sup>th</sup> gen HBM

**NAND:** Not-AND memory

**GPU:** Graphics processing unit

**EUV:** Extreme ultraviolet lithography

**YMTC:** Yangtze Memory Technologies Co.

**CXMT:** ChangXin Memory Technologies

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