

IS THE MEMORY MARKET IN A DRY SPOT?

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Everything you need to know about the semiconductor memory industry, from legacy technologies to latest innovations.

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Is the Memory Market in a Dry Spot?

"There's a horrible uncertainty about this year which we really don't know the answers to," said Malcolm Penn, CEO of Future Horizons, at IFS [earlier this month](#). The industry's growth this year has been driven by a strong memory recovery, particularly for HBM. However, unit shipments are below the trendline, and demand is still soft.

Although fab capacity has increased again to about 80-90% according to Future Horizons, the weak demand doesn't warrant building up new fabs to the extent announced a couple of years back.

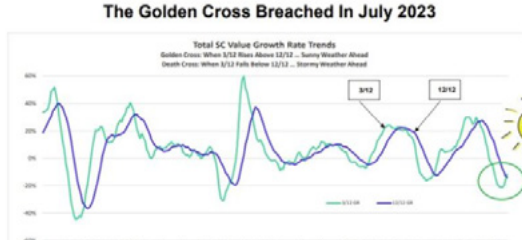
After all, the subsidized construction of chip fabs in the U.S. and Europe to strengthen supply chain security is not as easy as initially assumed, as technology expert Tim Culpant aptly [outlined](#). Once wafers come out of a fab, they are sent to testing, slicing and packaging, which today is most likely happening in Taiwan and then it's sent on for assembly.

So, before a product even leaves the factory, that one chip tours three or four countries and is handled by half a dozen suppliers. Thus, it's more important than ever to build and maintain trusted, global relationships that are needed for successful global commerce.

Still, forecasters agree that the semiconductor market is recovering, and NAND prices are increasing – with DRAM the situation is more complicated.

Read on to find out more and reach out if you have questions on the memory market or are looking for a quote.

The Golden Cross Breached in July 2023



Annual Revenue Review and Outlook for the DRAM Industry (2017-2025)



The Semiconductor Market: Rocky, but Upward-Sloping

At the end of 2023 forecasters suggested double-digit growth for 2024. Unfortunately, after the new year, the semiconductor industry crashed, going from a +8.4% growth rate in Q4 2023 to a -5.7% growth rate in Q1 2024 sending the forecasters back to the magic 8-ball for revised predictions. Q2 2024 came back with a vengeance with a +6.5% growth rate giving forecasters a whiplash.

According to Future Horizons, unit shipments are critical but depend on inventory which is still liquidating. Another important factor is fab capacity. Utilization is back at 80-90% and will remain on that level for 2024 and 2025. Future Horizons updated their forecast for 2024 to 15% growth for the semiconductor industry and 8% growth in 2025

Read more [here](#).

Will DRAM prices increase or decline in 2025?

Morgan Stanley projects that global HBM supply will reach an oversupply of 66.7% in 2024, driven by Samsung Electronics' aggressive expansion into the HBM market. TrendForce, however, is not that pessimistic. Mainly as the HBM market is driven by customized, client-approved products, making oversupply less likely.

Morgan Stanley also predicts that general DRAM will peak in Q4 2024 and begin a multi-year decline through 2026, citing weak demand for semiconductor-reliant IT products.

Conceding that DRAM prices have shown signs of weakness over the past two quarters, TrendForce expects the overall average selling price to rise by 2025. As HBM takes up more conventional DRAM production capacity, the increasing penetration of HBM should stabilize the market and brighten next year's outlook.

Read the full story [here](#).

2023 DEMAND BY END USE

End-Use Category	Communication	Computer	Automotive	Consumer	Industrial	Government
Annual Growth	-1.8	-7.1	15.0	-31.9	-13.3	-45.0
Total Value (\$B)	169.2	140.0	90.1	54.8	72.1	5.0

Growing demand for semiconductors in automotive

Sales were slow in the first half of 2023 but grew consistently in the second half of the year, according to SIA's State of the U.S. Semiconductor Industry Report 2024.

The rebound in sales in the second half of 2023 was fueled by increased sales to the automotive and industrial sectors and the growing demand for a range of chips that are critical to AI systems.

Most prominently, the automotive sector experienced the largest growth in share of chip sales to become the third-largest end market in 2023. Innovation in these industries ensures demand continues to grow and global sales remain on course to potentially reach \$1 trillion by 2030.

Read more in the full SIA Report [here](#).

NAND Priced Continue to Rise

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TrendForce Corporation reports that NAND Flash prices continued to rise in 2Q24 as server inventory adjustments neared completion and AI spurred demand for high-capacity storage products. The average sales price increased by 15% and drove total revenue to US\$16.796 billion, a 14.2% growth compared to the previous quarter.

TrendForce forecasts that in Q3, the average selling price of all NAND Flash products will increase by 5% to 10% compared to the previous quarter, while bit shipments are expected to decline by at least 5% due to a lackluster peak season. Overall industry revenue is expected to remain largely flat compared to the previous quarter.

Read more [here](#) and reach out if you require NAND memory for your designs.

Samsung QLC VNAND

Samsung QLC VNAND in Mass Production

Samsung Semiconductor has started mass production of its 1 Tb 9th generation quad-level vertical NAND just a couple of months after the mass production of its 9th gen. triple-level V-NAND.

Samsung's QLC 9th-generation V-NAND has doubled write performance and improved data input/output speed by 60% with the help of its Predictive Program technology which anticipates and controls cell state changes to minimize unnecessary actions.

Its V9 QLC flash takes advantage of Channel Hole Etching technology to achieve the highest layer counts in the industry, featuring a double-stack design. Using lessons learned from its 9th-gen TLC variant, V9 QLC is approximately 86% denser than the previous generation of QLC V-NAND flash.

Read more [here](#).

SK hynix Develops Industry's First 1c DDR5

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Compared with the previous generation, the new 16Gb DDR5 improves cost competitiveness by adopting a new material in a certain process of extreme ultraviolet, or EUV, while optimizing the overall EUV application process. SK hynix also enhanced productivity by more than 30% through technological innovation in design.

With power efficiency also improved by more than 9%, SK hynix expects the adoption of 1c DRAM to help data centers reduce the electricity costs by as much as 30% at a time when the advancement of the AI era is leading to an increase in power consumption

The 6th generation 10nm process DDR5 will be ready for mass production within the year with volume shipment planned for 2025.

Read more [here](#).

Foresee XP2300

Foresee XP2300 PCIe SSD

Featuring 236-layer 3D TLC NAND Flash and a next-gen PCIe 4.0 SSD controller, the FORESEE XP2300 PCIe M.2 2280 SSD is designed to answer the call of artificial intelligence (AI) computing. Available in capacities from 256GB to 4TB, the XP2300 PCIe SSD provides sequential read / write speeds up to 7,400MB/s / 6,700MB/s and random read / write speeds up to 1,070K / 1,130K IOPS.

The XP2300 SSD uses a 12nm process PCIe 4.0 4-channel DRAM-less main control chip to reduce the number of read-write channels by half, while lowering power consumption and heat generation. Combined with an active power consumption as low as 5W, and idle consumption below 20mW, the XP2300 also extends the battery life of smart terminals.

Read the full press release [here](#).



Are you prepared for DDR3 Discontinuations?

Samsung and SK hynix will stop supplying DDR3 memory by the end of this year. Is a last-time-buy the best option? Or should you look at other sources? DDR3 is still used today in a variety of applications and according to TrendForce, edge computing devices will continue to adopt DDR3. With demand remaining strong and supply decreasing, DDR3 prices are expected to continue their upward trend. So don't hold off any longer.

Check your stock levels and reach out!

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