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GLOBAL INSIGHT

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Global Technology

Chipflation – Navigating A Memory Crisis

Surging memory prices and supply scarcity are becoming a cross-sector risk as AI reprices a critical input across the digital economy. What began as an AI infrastructure bottleneck is now spreading into hardware margins, device affordability, cloud costs, inflation and policy.

AI is turning memory into a structural bottleneck. AI demand is rising across HBM, DRAM and enterprise SSDs, pushing memory prices up six-fold in the past year. New supply takes years to build, qualify and ramp. That makes this cycle look less like a normal semiconductor upturn and more like a durable supply-demand reset.

Allocation is replacing commodity-market pricing. Hyperscalers and AI buyers are increasingly using long-term agreements (LTAs), prepayments and strategic commitments to secure capacity. That leaves a smaller, tighter and more volatile supply pool for traditional buyers.

HBM is crowding out conventional memory. HBM is essential for AI accelerators but consumes disproportionate advanced DRAM capacity. As suppliers prioritize HBM, server DRAM and enterprise SSDs, less supply remains for smartphones, PCs, autos, networking & industrial markets. Even as total DRAM wafer capacity expands ~30% by 2027, we see memory supply for smartphones/PCs falling 12-15% short.

Chipflation is spreading beyond Big Tech … Large cloud buyers can secure supply and capitalize higher costs, while non-AI buyers face higher COGS and weaker allocation, price increases, spec cuts and delayed launches.

… and creates a clear divide between suppliers and OEMs. Memory producers benefit from stronger pricing, margins and visibility. Downstream hardware companies must absorb costs, pass them through, redesign products or risk demand destruction, especially in price-sensitive consumer markets.

The macro impact is bigger than CPI alone. Headline CPI effects may be modest given small basket weights, but pressure is visible in PPI, corporate margins, cloud bills, capex budgets and delayed technology deployment.

Policy could ease pressure, but would take years. Even if the US and China deploy tools such as subsidies, tax credits or permitting reform, supply responses will take years and near-term China capacity growth is insufficient. We assume US policy stays restrictive and is unlikely to ease pressures in the near or long term.

Stock implications. Pricing power sits with DRAM suppliers (Samsung, SK hynix, Micron), NAND (SanDisk, KIOXIA), HDD (Seagate, Western Digital) infrastructure (ASML, AMAT, KLA). OEMs over-indexed to the consumer, with less pricing power and elevated memory cost exposure face the sharpest margin headwinds.

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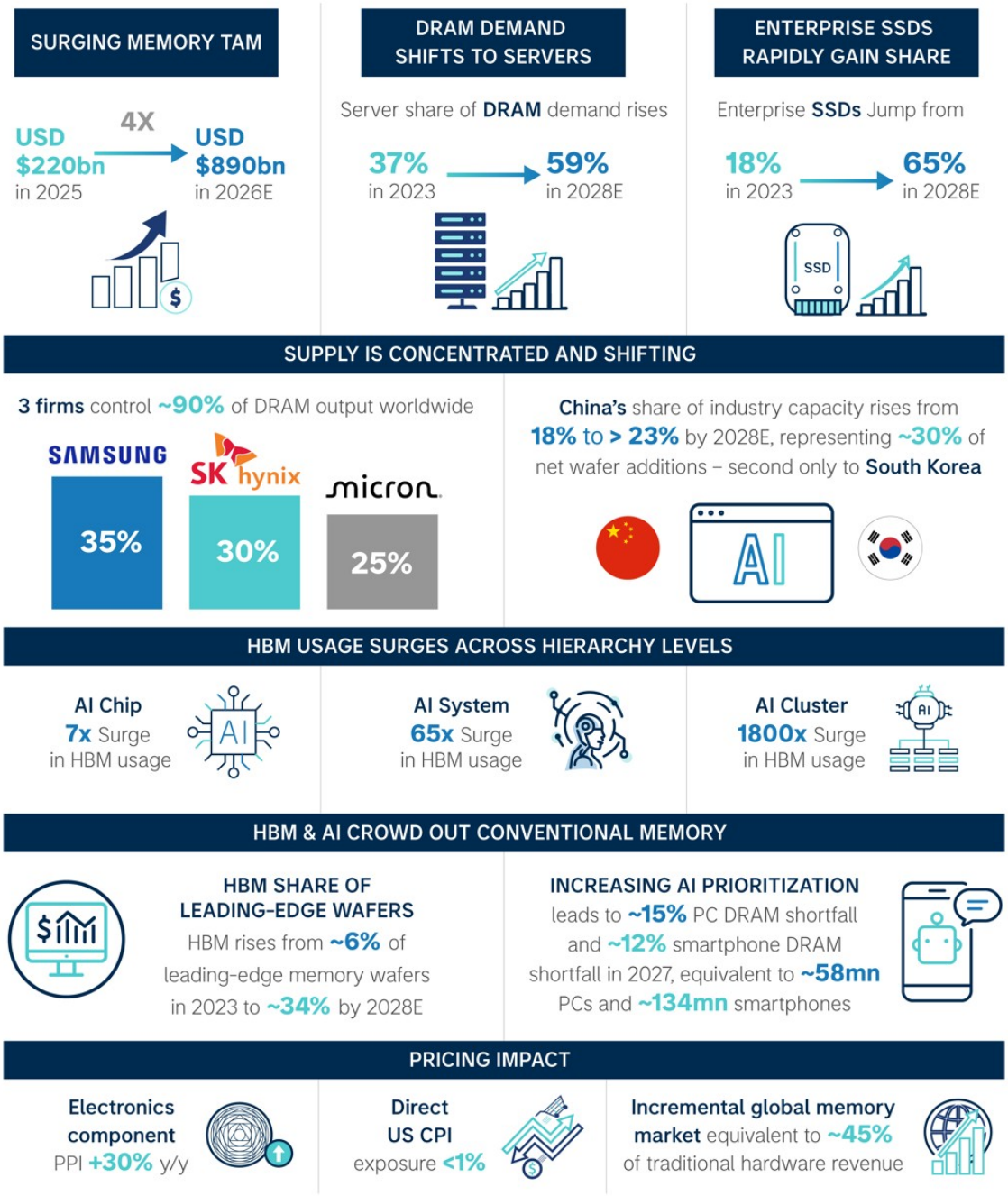
Chipflation – The Story in Numbers



What is "Chipflation"?

The shift from historical, deflationary pricing for commoditized microelectronics toward sustained, structural price increases poses a continuous upside risk to overall consumer goods pricing. For memory, inflation is no longer just a component-price issue.

AI infrastructure is absorbing a growing share of memory (DRAM, HBM and enterprise SSD) supply, while suppliers prioritize higher-margin AI/server products over mainstream consumer and industrial demand. The potential impacts of higher memory prices include:

- constrained supply and increases in consumer hardware prices
- a squeeze in corporate profit margins
- a division in the hardware industry between the 'have' and 'have not'
- persistent upside risks to core inflation

Chipflation is demand-driven by the rapid rollout of AI infrastructure and datacenters, where tighter memory availability is feeding into higher device ASPs, higher cloud and enterprise IT costs, lower product specifications, delayed refresh cycles and margin pressure.

Memory shortages have become a macroeconomic concern. The direct CPI impact may be limited, but the effects are increasingly showing up in corporate COGS, cloud bills, capex budgets and delayed technology deployment – making this cycle broader than a traditional semiconductor upcycle. Insufficient chip supply can delay data center projects, slow cloud development and increase costs for businesses, ultimately affecting productivity growth.

Differentiated datasets

several new datasets.

- **Two-tier DRAM supply waterfall (Exhibit 7).** Our framework decomposes total DRAM supply down to the residual pool available to non-AI buyers. We estimate PCs could face a 15% memory shortfall (~58mn units) and smartphones a 12% gap (~134mn units) as AI crowds out non-server allocation.
- **Demand elasticity by hardware product (Exhibit 8).** We rank which end markets are most exposed to demand destruction from higher memory prices, from traditional servers (least elastic) to low-end PCs (most elastic).
- **CPI impact of higher memory costs (Exhibit 11).** Higher memory costs carry a measurable CPI pass-through: PCs and smartphones add 0.08pp to headline CPI, with total consumer electronics impact reaching 0.10pp.