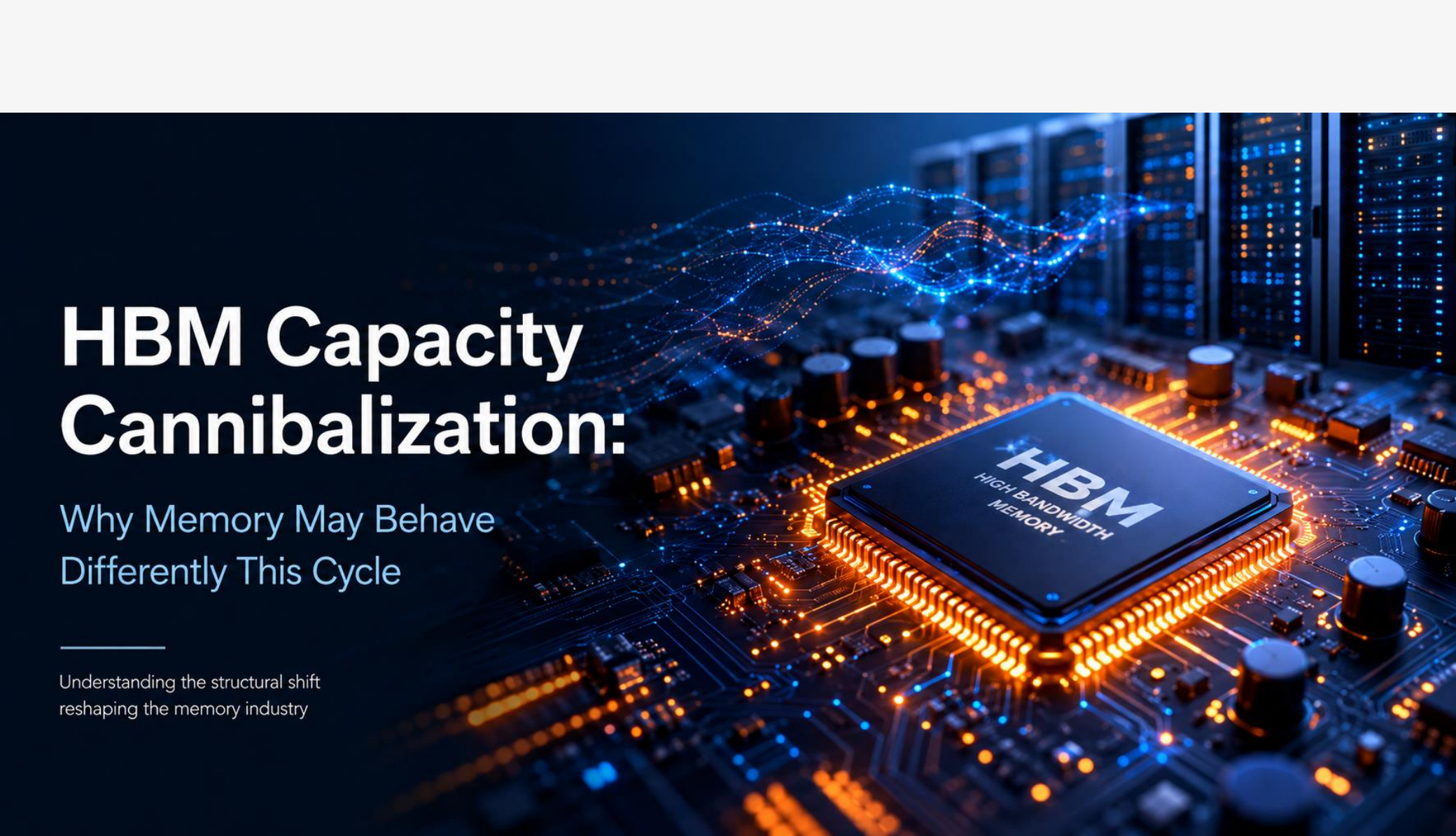




HBM Capacity Cannibalization:

Why Memory May Behave
Differently This Cycle

Understanding the structural shift
reshaping the memory industry

Executive Summary

01

AI Is Creating a New Memory Demand Regime

- AI infrastructure is **shifting memory demand away** from consumer-led cycles toward sustained, compute-intensive growth.
- **HBM** is emerging as a critical performance component in AI systems, making memory capacity increasingly strategic to the broader semiconductor ecosystem.

02

HBM Capacity Is Tightening Conventional Memory Supply

- Leading manufacturers are **reallocating wafer capacity** from commodity DRAM to HBM production.
- This has **tightened supply** for both HBM and conventional DRAM, creating an unusually synchronized memory upcycle.

03

Pricing Is Likely to Stay Elevated Through 2027

- **Meaningful new capacity is unlikely** before 2028 due to long construction timelines and process complexity.
- DRAM pricing is expected to **remain firm** through 2027, while NAND pricing may gradually normalize from mid-2027 as supply improves.

04

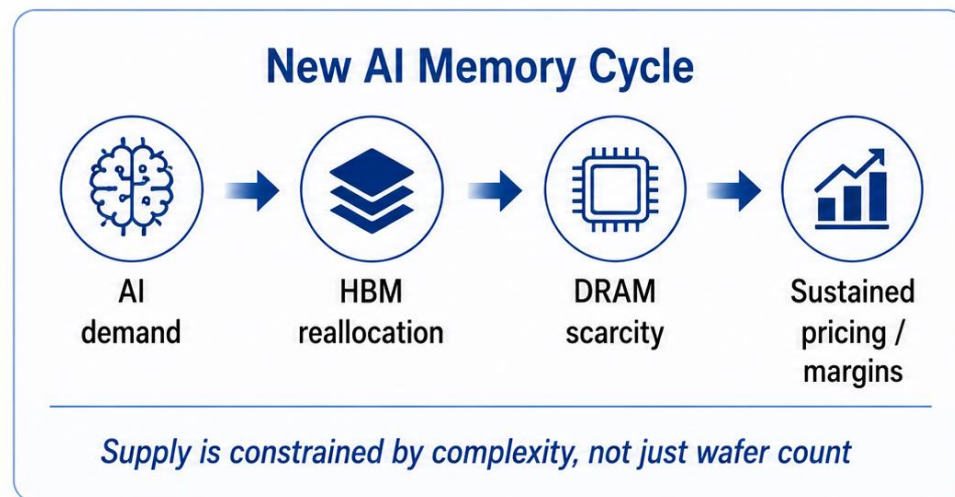
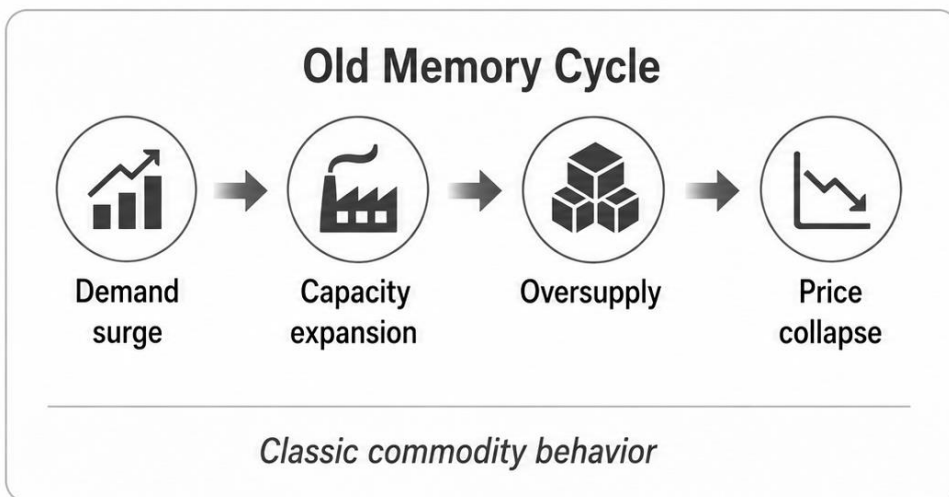
Investment Implications

- Micron, Samsung, and SK Hynix offer the **most attractive risk-adjusted exposure** to the memory upcycle.
- Kioxia and Sandisk are **highly sensitive** to a NAND recovery, but future returns are likely to depend more on earnings delivery following their sharp recent share-price gains.

The Traditional Memory Cycle Is Changing

- The global memory industry is undergoing a structural shift, as AI infrastructure demand changes how memory capacity is allocated.
- Historically, DRAM (Dynamic Random Access Memory) and NAND (Flash Memory) markets were driven primarily by consumer electronics demand. PCs, smartphones, and enterprise servers dictated industry growth, while manufacturers responded with large-scale capacity additions, which led to **oversupply, and pricing eventually collapsed**.
- However, AI infrastructure demand has introduced a new supply dynamic where memory companies are no longer simply increasing generic DRAM production. Instead, they are reallocating existing wafer capacity toward **HBM (High Bandwidth Memory)**, a product category with **significantly higher profitability**, but far **greater manufacturing intensity**.

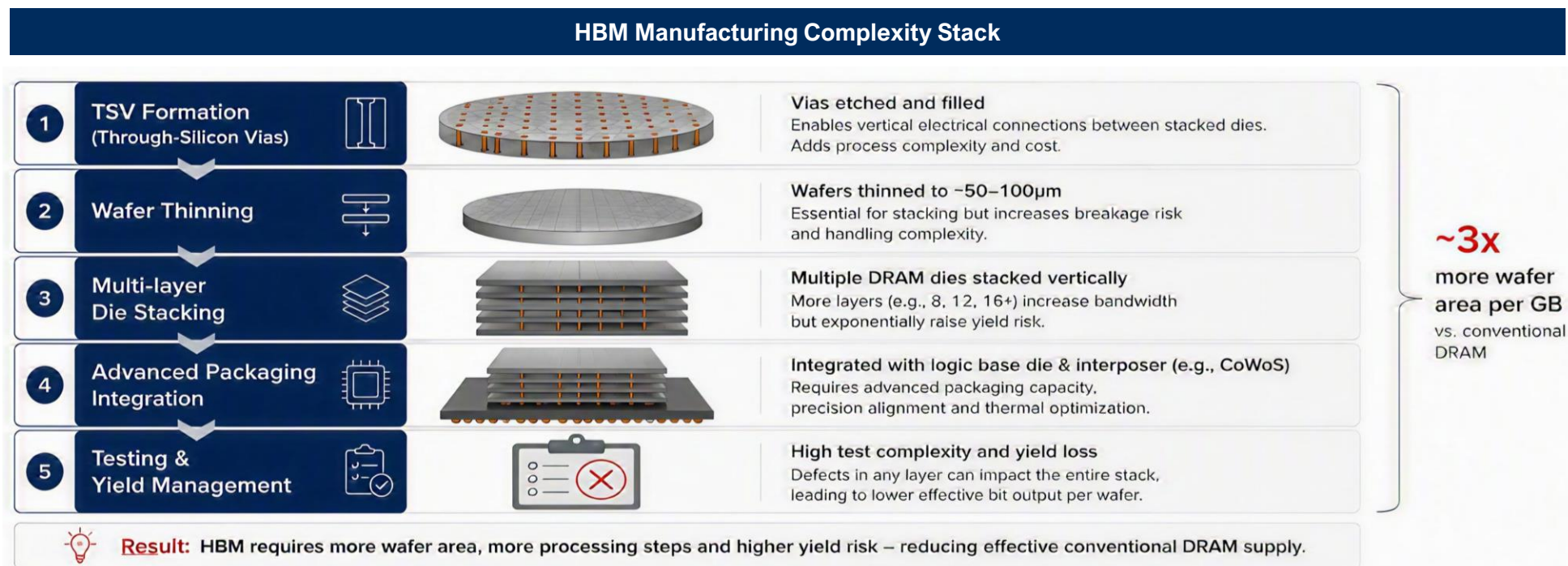
Old Memory Cycle vs New Cycle



Source: Aranca Research

HBM Consumes Disproportionate Capacity

- **HBM is structurally more complex than conventional DRAM:** Traditional DRAM is optimized for scale and density. HBM, by contrast, prioritizes bandwidth and close integration with AI accelerators.
- **Higher manufacturing intensity reduces effective output:** HBM consumes **~3x more wafer area per GB**, while defects in any stacked die can compromise the full package. At the same time, stacked memory architectures create significantly higher yield complexity. In HBM systems, defects in a single die can compromise the entire package, reducing effective output. As the industry transitions toward HBM4 and 16-layer stacks, manufacturing intensity is expected to increase further.

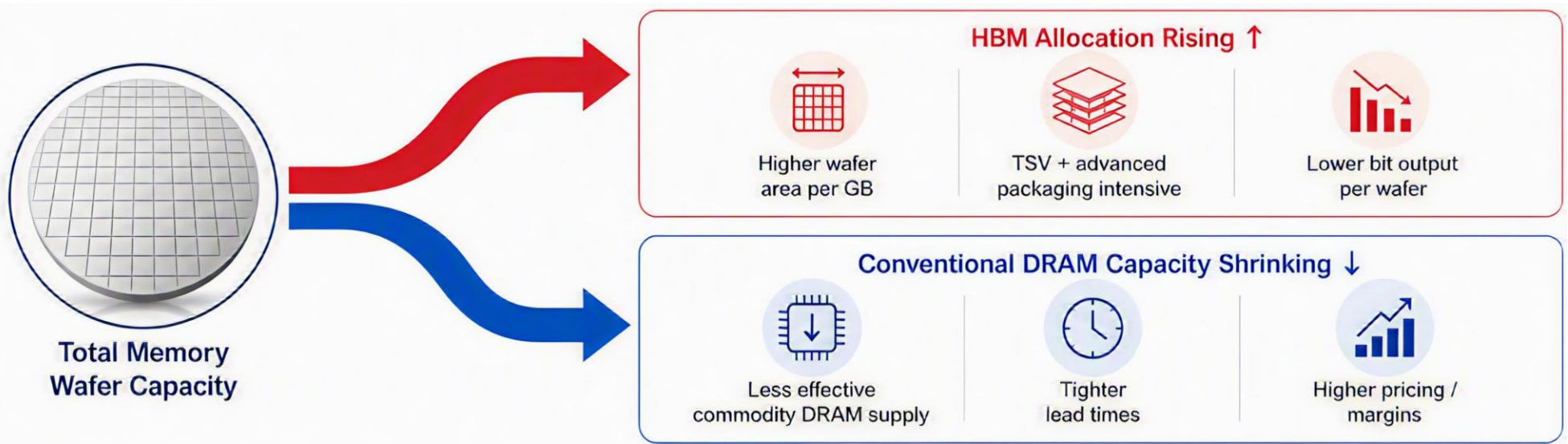


Source: TrendForce, Aranca Research

The Capacity Relocation

- Rapidly increasing demand of HBM chips forcing the manufacturers to redirect scarce wafer capacity from conventional DRAM toward **AI-focused memory products**.
- Every incremental HBM wafer reduces effective commodity DRAM availability, as HBM requires more wafer area, advanced packaging, and lower effective bit output per wafer.
- Thereby creating **simultaneous tightness** across HBM and conventional DRAM, supporting **longer lead times, firmer pricing, and stronger memory margins**.

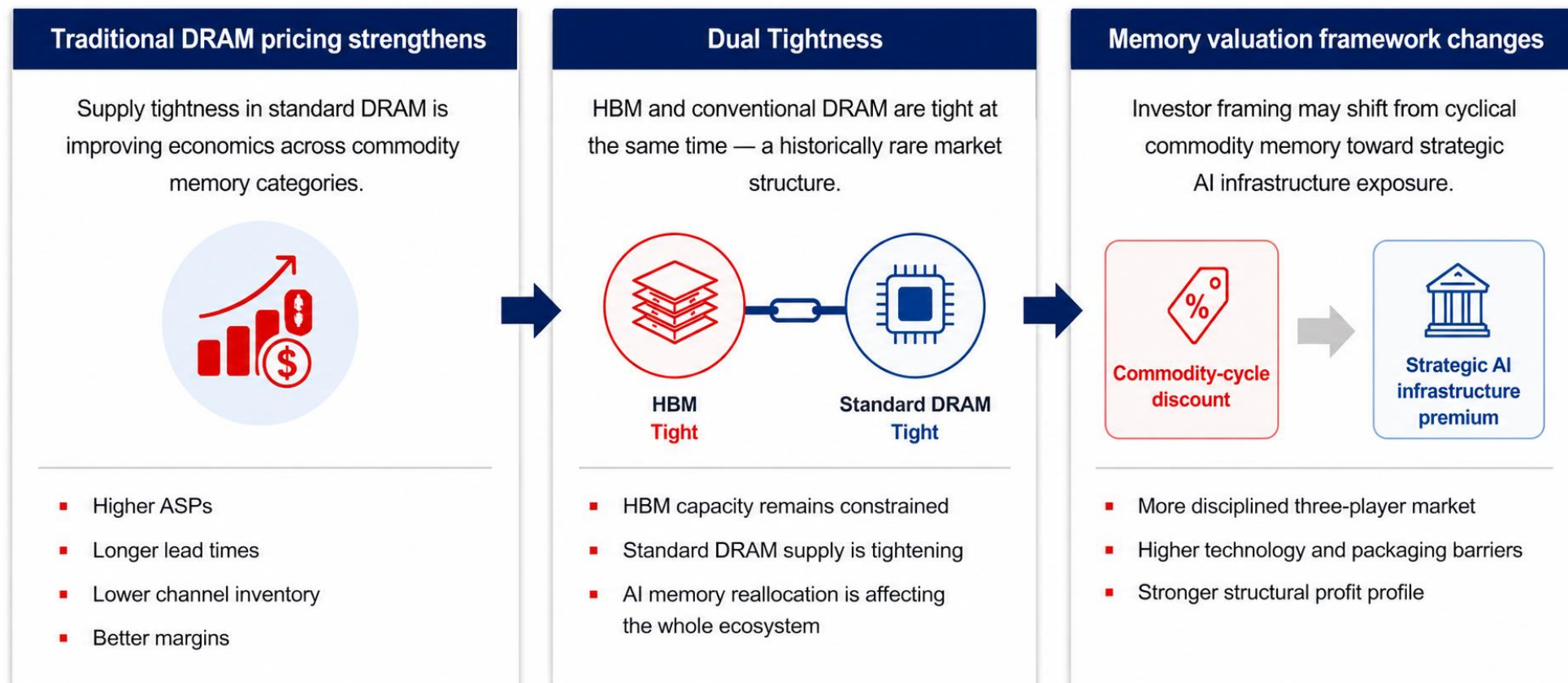
Capacity Relocation



Source: TrendForce, Aranca Research

Tight Supply and Capacity Relocation Reshaping the Memory Market

HBM capacity reallocation is tightening not only AI memory supply but also the broader DRAM market, with **significant implications for pricing, profitability, and valuation**.

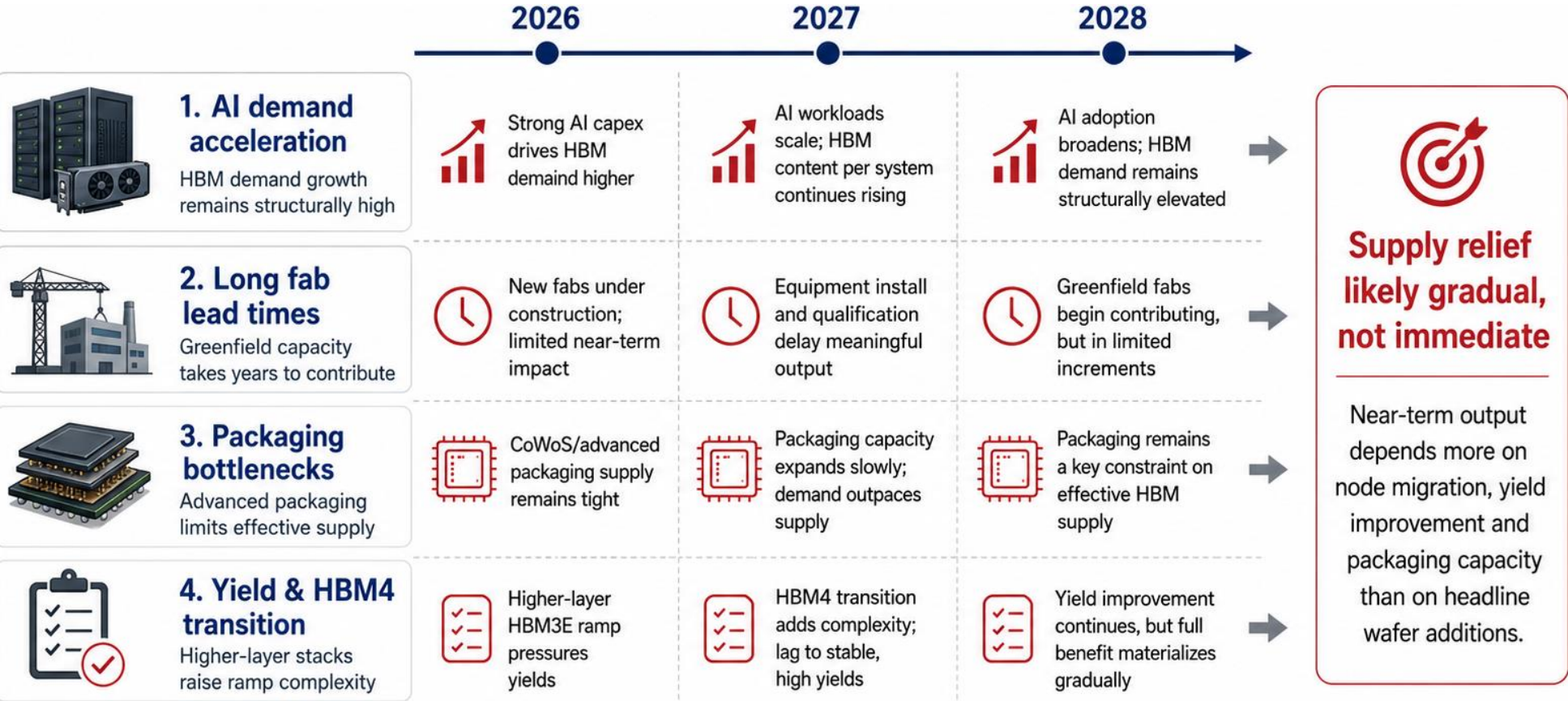


Key takeaway: The industry is not just seeing an HBM boom — it is experiencing a broader profit-pool reset across both AI memory and conventional DRAM.

Source: Aranca Research

Supply Tightness May Persist Through 2028

Major memory manufacturers are expanding capacity, but meaningful new supply is unlikely to come online before 2028. As a result, **memory prices** are expected **to remain elevated through at least 2027**.



Implication: simultaneous tightness in HBM and conventional DRAM could persist through 2027–28.

The Big Three Are Prioritizing HBM Allocation

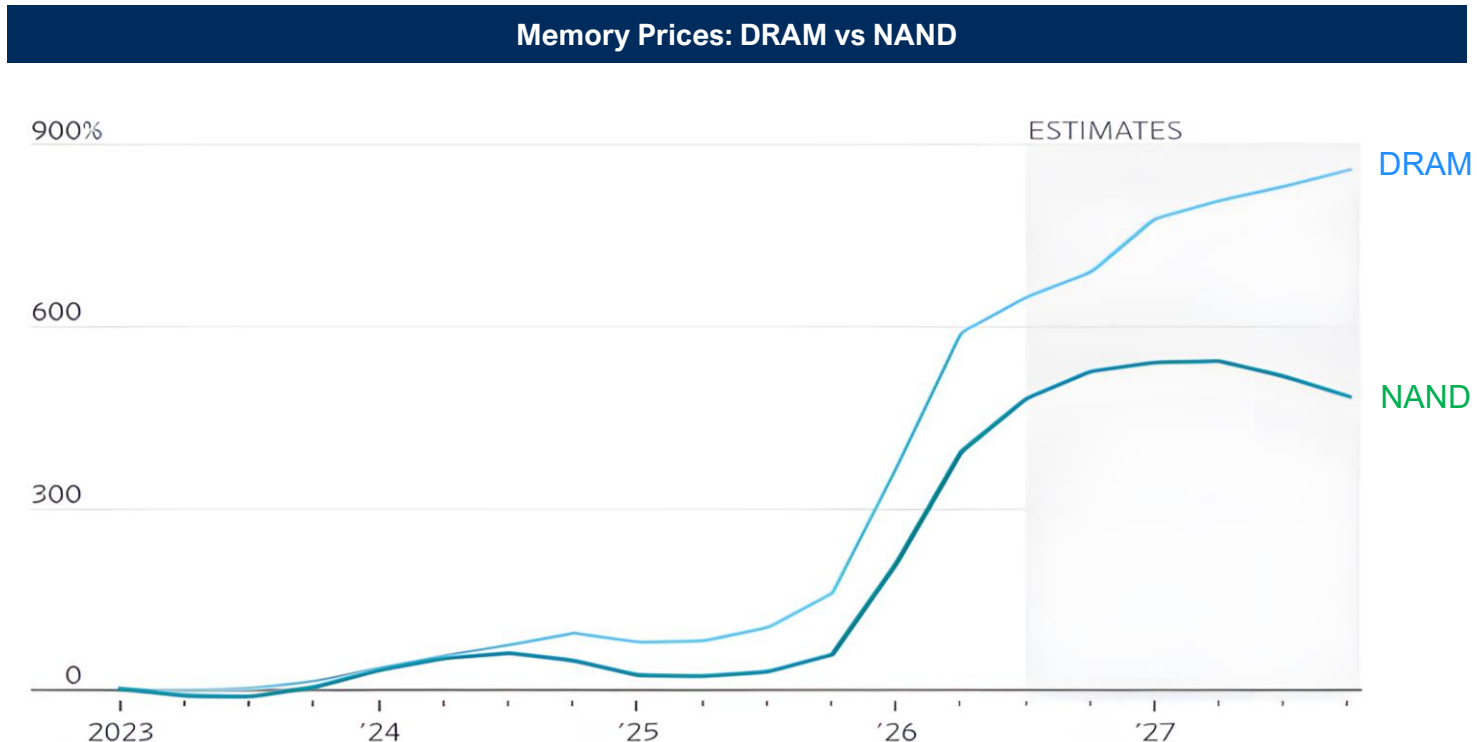
- The global memory industry is now effectively controlled by three dominant players: Samsung, SK Hynix, and Micron, creating a more disciplined market structure. Unlike prior cycles, suppliers are prioritizing HBM allocation, advanced-node migration, and margin optimization rather than aggressive commodity DRAM capacity expansion.
- Each company has a distinct AI-memory advantage: **SK Hynix leads in HBM, Samsung brings scale and integration, while Micron offers a strategic U.S.-based alternative.**

Company	Strategic Role	Key Facts	Strategic Implication
	Clear HBM leader / NVIDIA-aligned supplier	▪ ~60% HBM market share ▪ Much of HBM capacity sold out through 2026 ▪ 2026 revenue growth expected to exceed 100% YoY ▪ Operating margins have expanded sharply ▪ AI-memory revenue is outpacing traditional DRAM growth	 Early HBM3E and HBM4 leadership makes SK hynix one of the strongest direct beneficiaries of AI infrastructure spending.
	Scale player with integrated memory / foundry capabilities	▪ World's largest memory manufacturer ▪ Integrated semiconductor operations ▪ Foundry and packaging capabilities ▪ Large-scale capital deployment capacity ▪ Diversified memory exposure ▪ Expanding advanced fabs in Pyeongtaek and Yongin	 Samsung is accelerating investment in advanced HBM capacity and can leverage scale, integration, and capital to strengthen its position. <i>Earlier HBM3E yield challenges.</i>
	Strategic U.S.-based alternative	▪ Investing in U.S.-based HBM manufacturing ▪ Accelerating advanced-node migration ▪ Advancing HBM4 roadmap ▪ CHIPS Act-supported domestic capacity ▪ Positioned for geographic supply chain diversification	 Micron's U.S. footprint is increasingly valuable as governments and hyperscalers seek more geographically diversified AI-memory supply chains.

Source: Aranca Research

Memory Price Strength May Persist Through 2027

- Memory pricing has surged sharply since 2023, reflecting tighter supply conditions across the industry.
- With meaningful new capacity unlikely before 2028, pricing is expected to remain elevated through 2027, barring a sharp slowdown in AI capex or faster-than-expected supply additions.
- DRAM prices are expected to continue rising through 2027, while NAND pricing may begin to moderate from mid-2027 as supply conditions gradually ease.



Source: TrendForce, Aranca Research

Memory Beneficiaries: Valuation and Performance Snapshot

- Micron, Samsung, and SK Hynix offer the **most balanced forward profiles**, combining continued AI-memory earnings growth with relatively modest forward valuations and further upside from disciplined industry capacity
 - **Micron Technology:** Increasing HBM exposure and recovery in conventional DRAM and NAND prices should support earnings and margin growth. Its U.S. manufacturing footprint also strengthens its strategic relevance as hyperscalers diversify their AI-memory supply chains.
 - **Samsung Electronics:** Broad exposure across DRAM and NAND positions Samsung to capture substantial earnings and cash-flow upside from the memory upcycle, more than offsetting potential smartphone margin pressure.
 - **SK Hynix:** Leadership in high-margin HBM should support a favorable product mix, sustained margin expansion, and stronger free cash flow, further improving its balance-sheet and financial profile.
- For NAND-focused Kioxia and Sandisk, future returns are likely to depend more on earnings delivery than multiple expansion, given their sharp recent share-price gains and greater sensitivity to sustained pricing recovery.

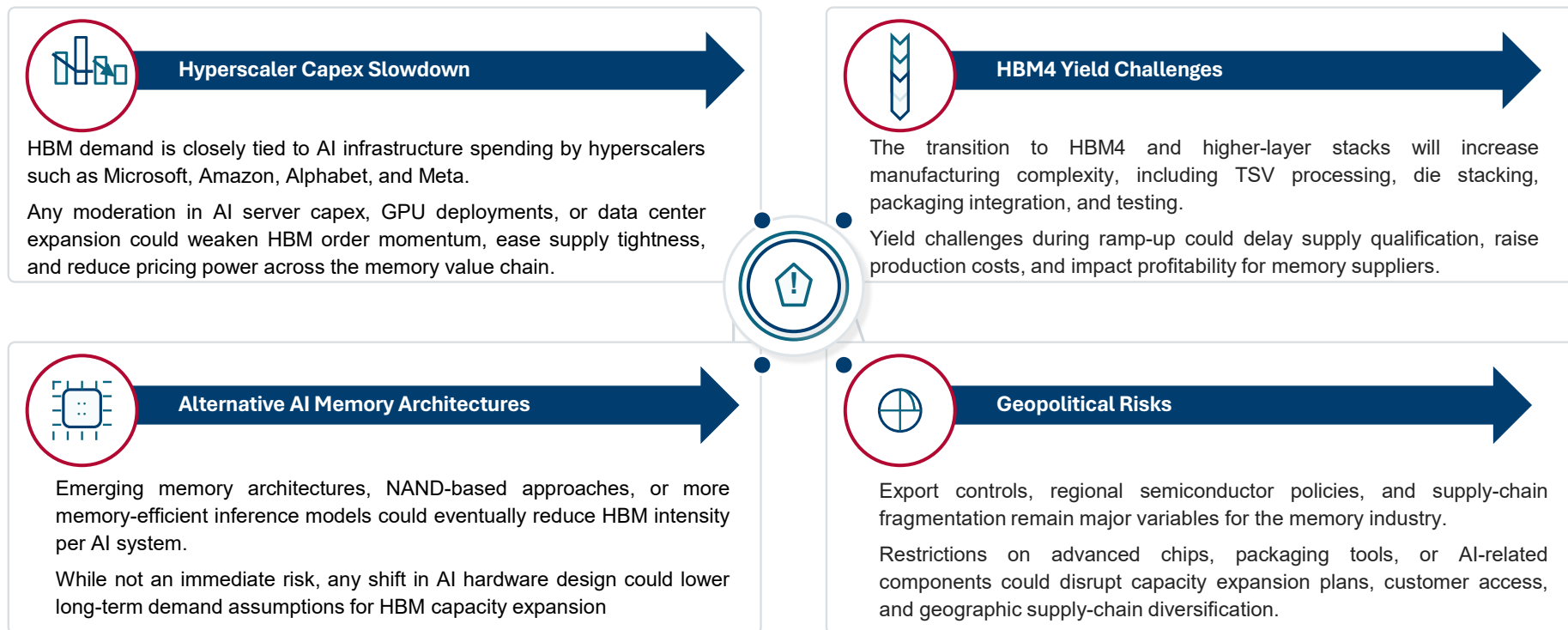
Company	Market Cap* (\$ Bn)	Consensus	Return		Est EPS CAGR (2Y)	P/E		
		% Upside	YTD	1Y		LTM	FY+1	FY+2
Micron Technology	1,072	65%	233%	676%	329%	21.3x	13.0x	6.2x
Samsung Electronics	1,180	82%	128%	354%	189%	21.8x	5.9x	4.1x
SK Hynix	979	62%	229%	663%	165%	19.9x	6.7x	4.6x
Kioxia Holdings Corporation	242	65%	655%	2,773%	228%	76.2x	8.0x	6.5x
Sandisk Corporation	256	23%	628%	3,638%	712%	59.0x	26.3x	8.8x
Median						21.8x	8.0x	6.2x

Source: Bloomberg

* Market Capitalization values are as on 8th July 2026.

Risks To Watch

Despite a favorable structural backdrop, the HBM thesis is exposed to four risk vectors that can reset demand, supply timing, margins, and market access.



Investment implication: Thesis remains attractive, but upside depends on sustained AI capex, clean HBM4 execution and limited policy disruption.



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