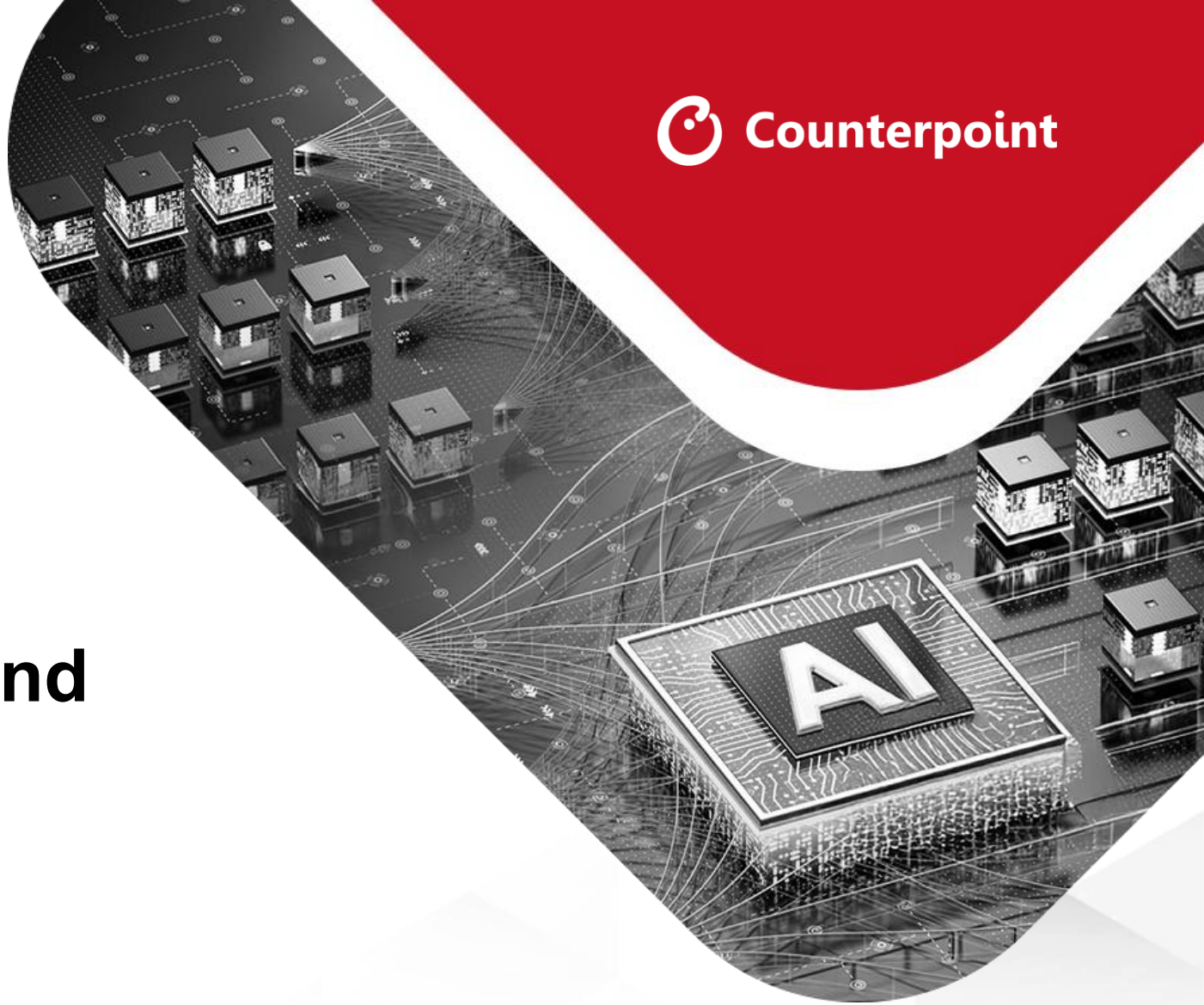
Hello Everyone!

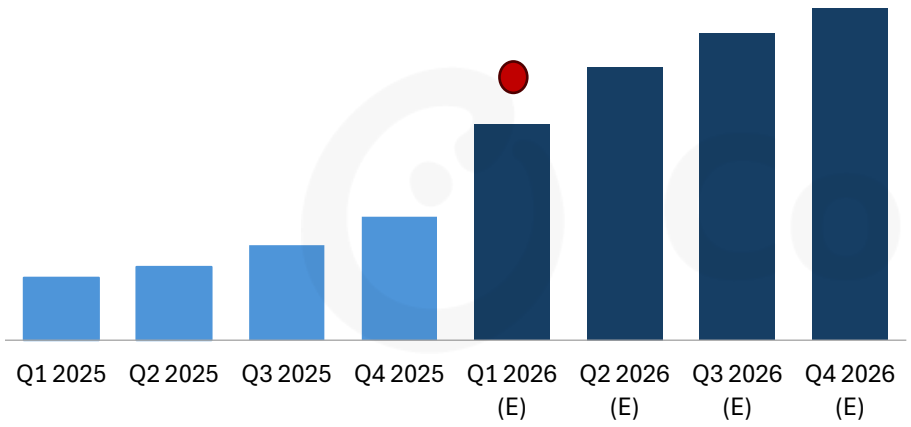
Welcome to Counterpoint Research
Memory Market Outlook and Strategic Responses



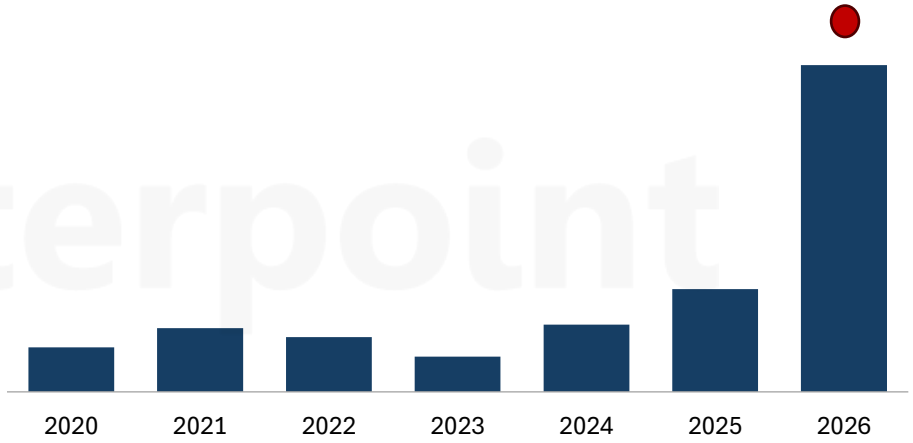
May 2026

In the Middle of Drama

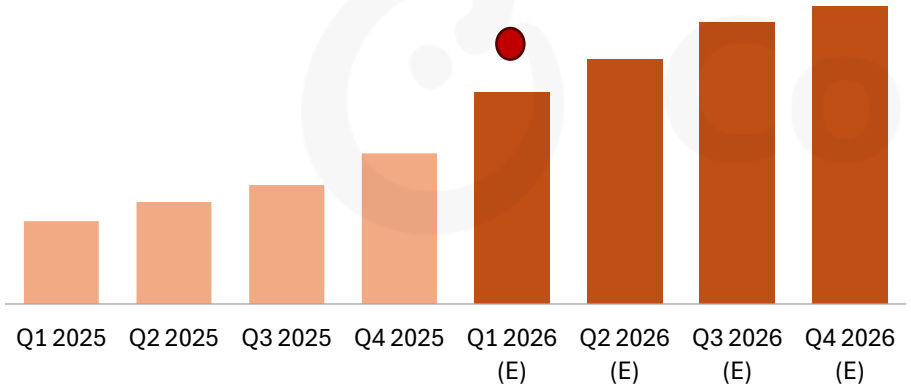
DRAM Revenue by Quarter



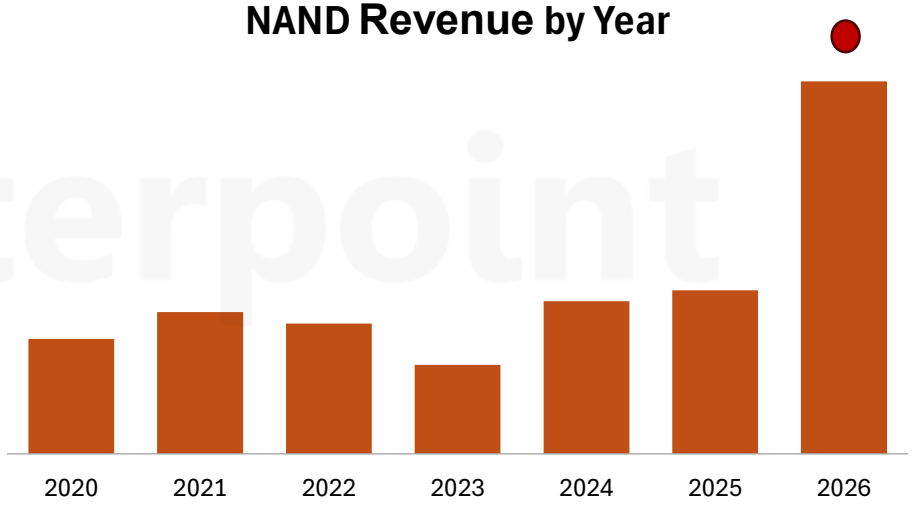
DRAM Revenue by Year



NAND Revenue by Quarter



NAND Revenue by Year



Source: Counterpoint Research Memory Tracker

Memory Pricing Moving in Tandem

Memory Price Change by Application (QoQ, %)

QoQ	Application	Model	Q4 2025	Q1 2026	Q2 2026 (E)	Q3 2026 (E)
DRAM	Mobile	LPDDR5	+ 45%-50%	+ 50%-55%	**+ 80%-85%**	+ 5%
		LPDDR4	+ 50%-55%	+ 50%-55%	**+ 80%-85%**	+ 5%
	PC	LPDDR	+ 50%-70%	+ 90%-100%	**+ 30%-40%**	+ 5%
		SoDIMM DDR5	+ 30%-40%	+ 110%-120%	**+ 30%-40%**	+ 5%
	Server	DDR5	+ 65%-80%	+ 100%-110%	**+ 40%-45%**	+ 10%
	Consumer	DDR4	+ 65%-70%	+ 15%-20%	**+ 30%**	Flat
NAND	Mobile	UFS	+ 25%-30%	+ 90%	**+ 80%-90%**	+ 5%
	PC	NVMe	+ 20%-25%	+ 130%-150%	**+ 40%-50%**	+ 10%
	Server	NVMe	+ 40%-60%	+ 110%	**+ 50%-60%**	+ 20%

Notes: Price represents the contract price of the quarter.

Memory Pricing Moving in Tandem

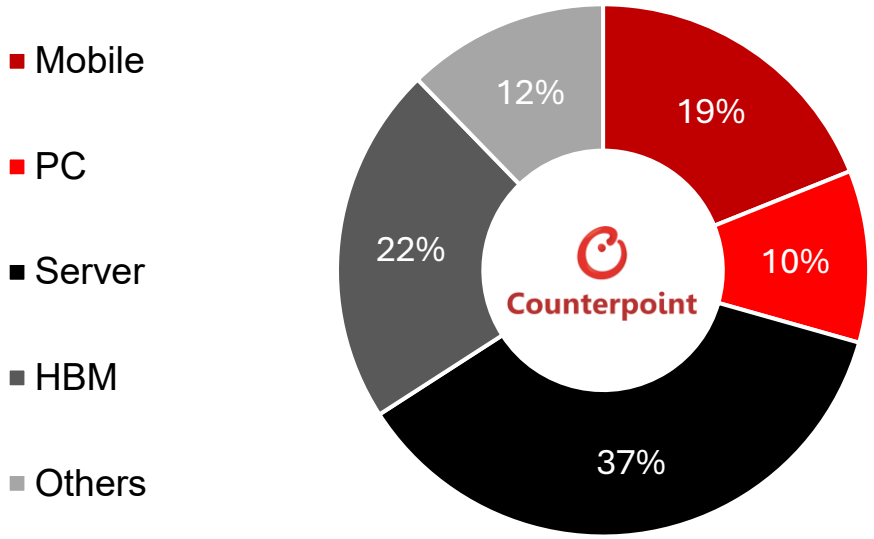
Memory Prices by Application ($)

US $	Application	Model	Q4 2025	Q1 2026	Q2 2026 (E)	Q3 2026 (E)
DRAM	Mobile	12GB LPDDR5x	48	74	135	142
		16GB LPDDR5x	64	99	181	190
		4GB LPDDR4x	16	25	45	47
		6GB LPDDR4x	24	37	68	72
		8GB LPDDR4x	32	50	91	95
	PC	4GB LPDDR5x	19	36	48	50
		8GB LPDDR5x	35	71	96	101
		2GB DDR4	9	18	24	25
		2GB DDR5	8	18	24	25
		8GB SoDIMM DDR4	34	71	96	101
		16GB SoDIMM DDR5	68	142	192	202
		32GB SoDIMM DDR5	127	282	384	403
	Server	64GB RDIMM DDR5	450	927	1,350	1,485
		96GB RDIMM DDR5	723	1,536	1,950	2,145
		128GB RDIMM DDR5	1,175	2,310	3,270	3,597
	Consumer	1GB DDR4	10	11	15	15
NAND	Mobile	256GB UFS 4.0	19	35	66	70
		512GB UFS 4.1	37	70	130	135
	PC	256GB NVMe DRAM-less cSSD	38	82	143	150
		512GB NVMe DRAM-less cSSD	45	110	160	176
		1TB NVMe DRAM-less cSSD	77	174	250	275
	Server	3.84TB NVMe eSSD	600	1,260	1,922	2,306
		7.68TB NVMe eSSD	880	1,840	2,851	3,421

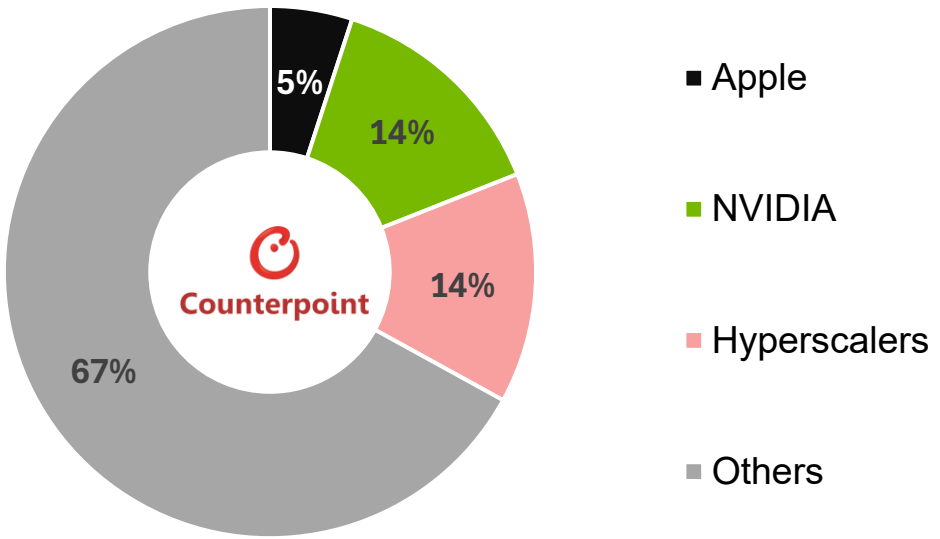
Notes: For more detailed information by model and month, please refer to the Memory Price Tracker and Forecast 05_2026.xlsx.

Memory Revenue Share of Major Big-Tech

DRAM Revenue Share by Application in 2025

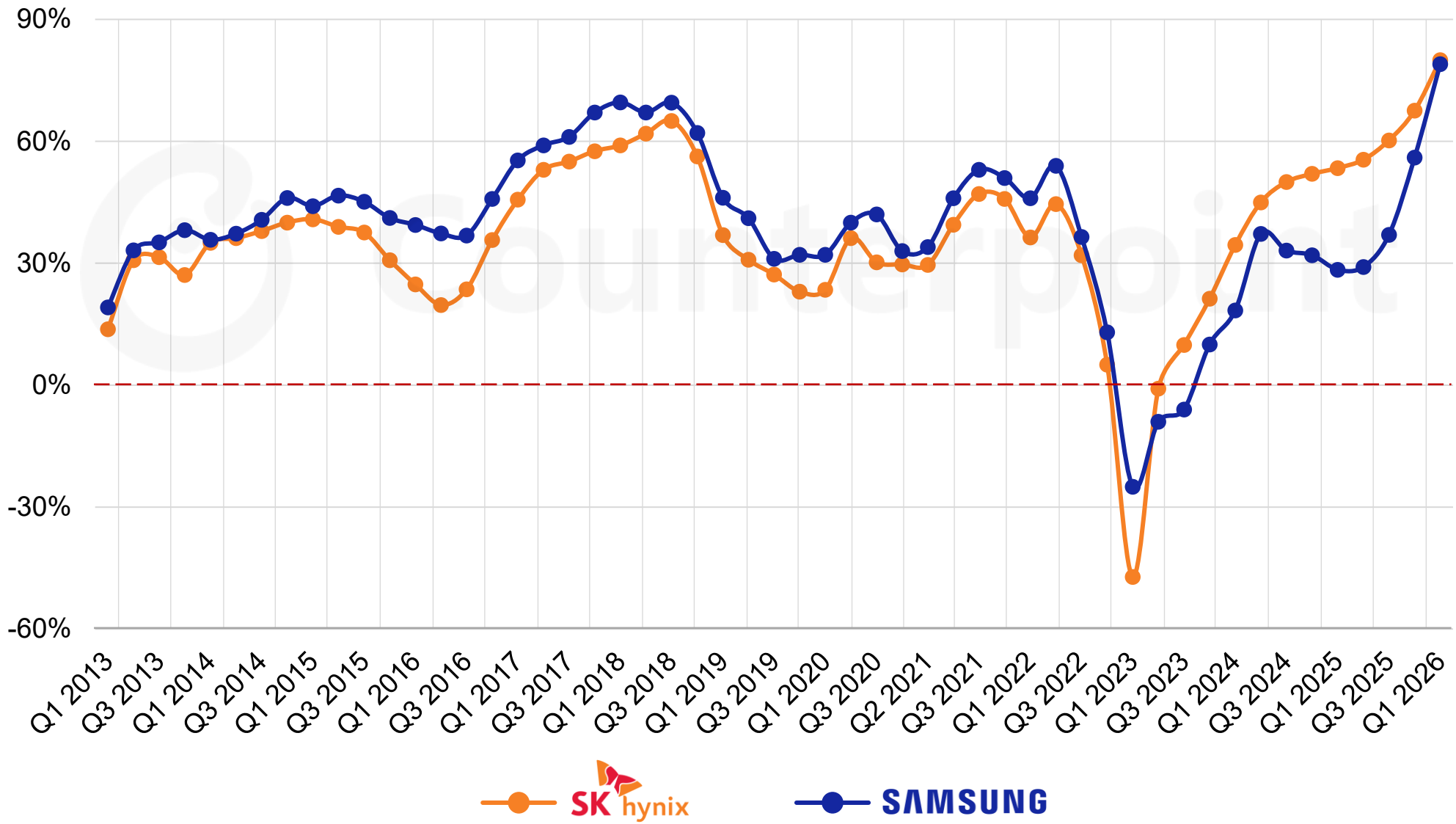


DRAM Revenue Share of Big Tech at Major Suppliers in 2025



Source: Counterpoint Research Memory Tracker

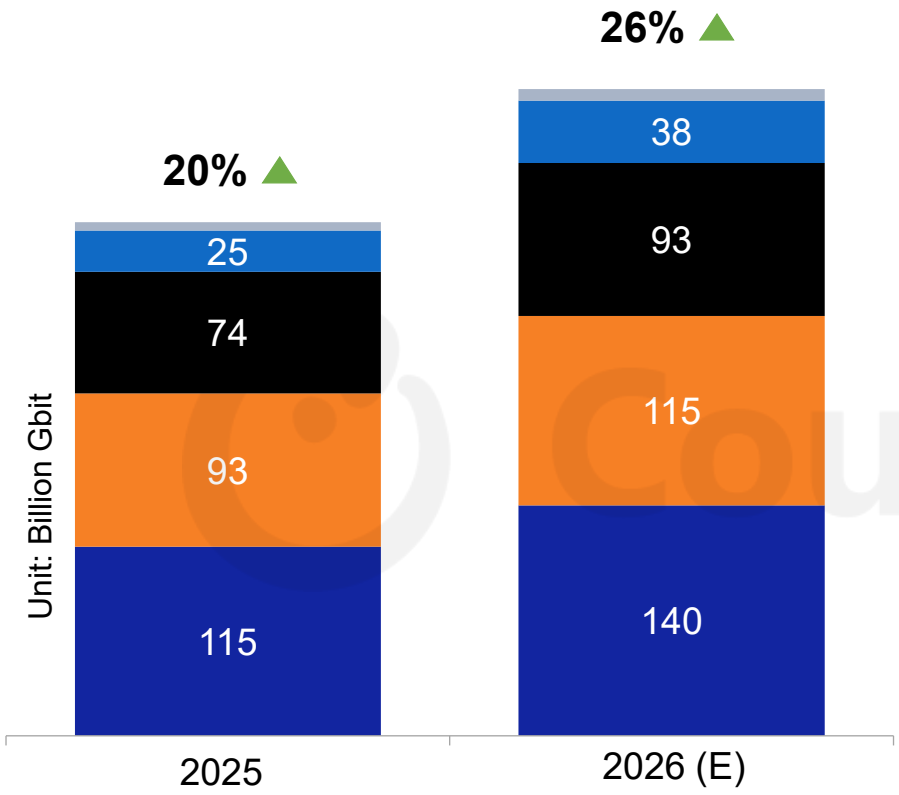
DRAM Operating Margin: 2013 ~



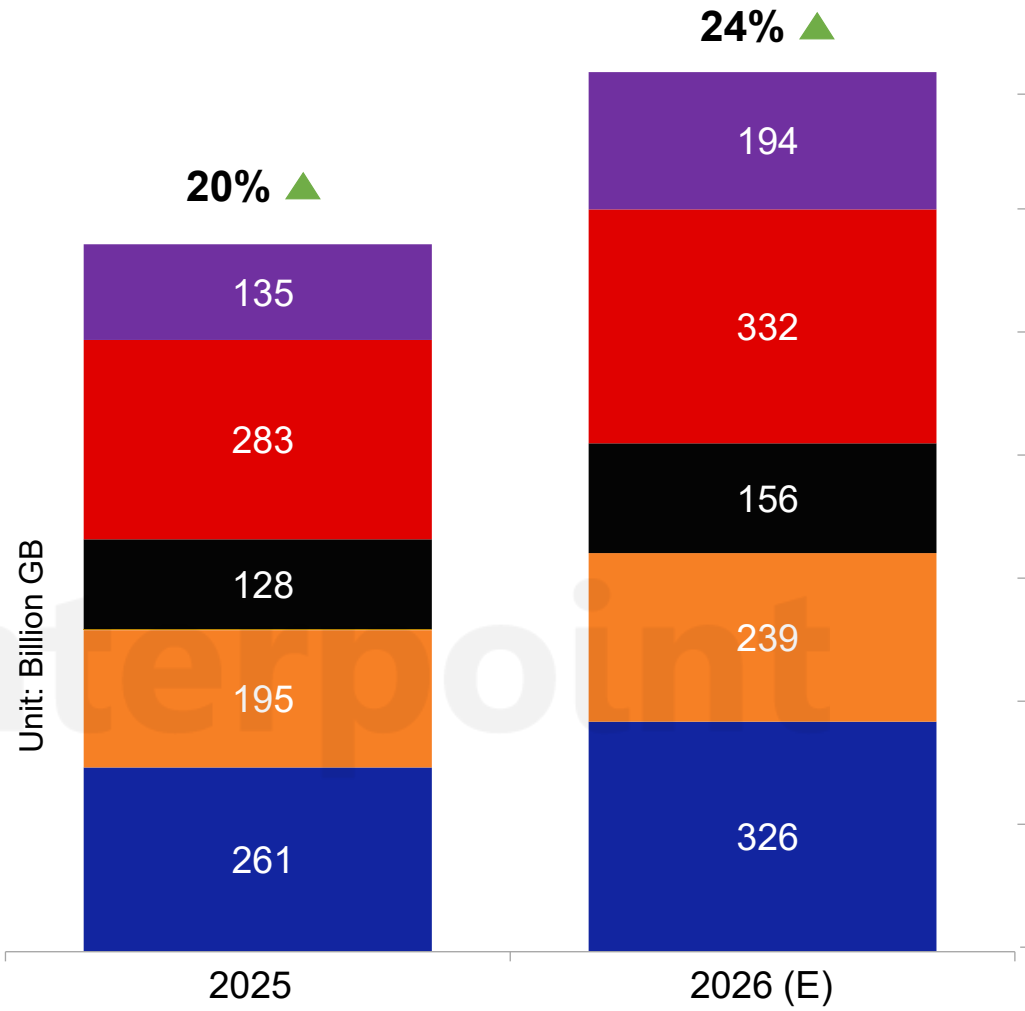
Source: Counterpoint Research

DRAM Production is Trying to Catch Up with Demand

DRAM Production Bit Growth



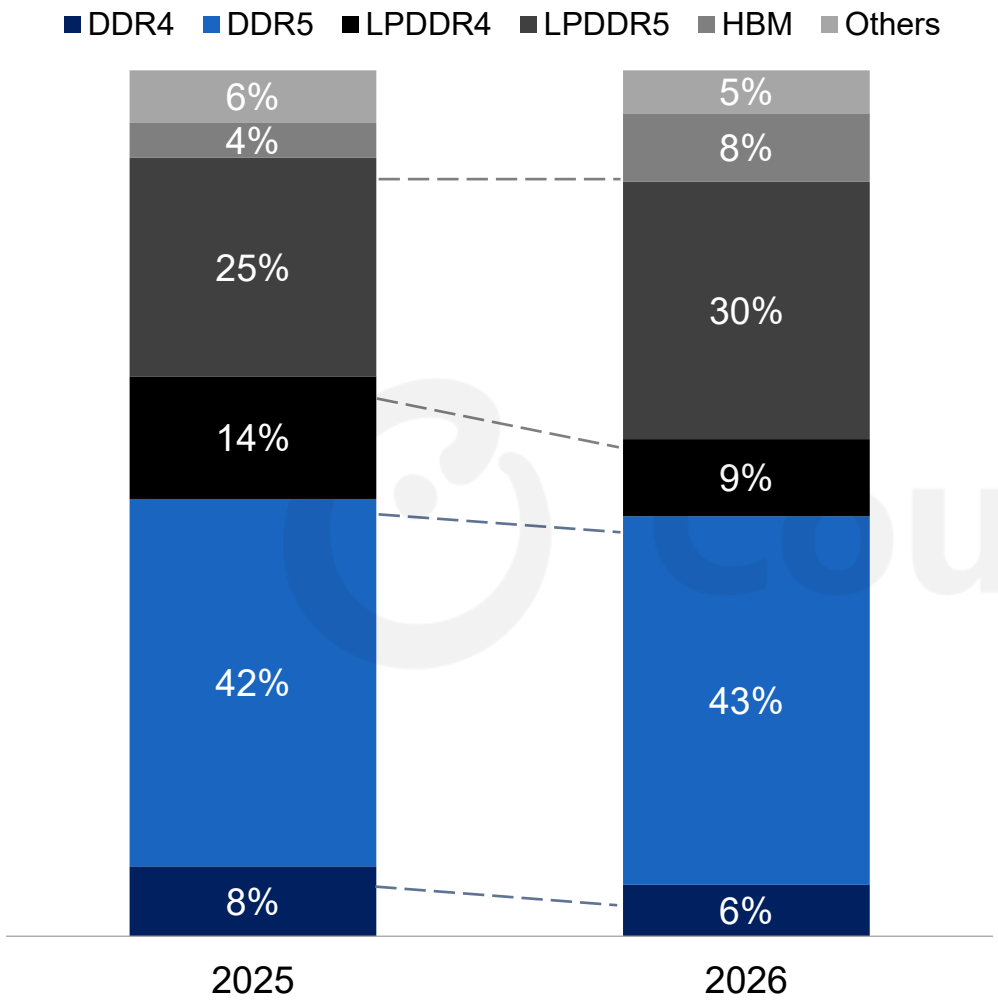
NAND Production Bit Growth



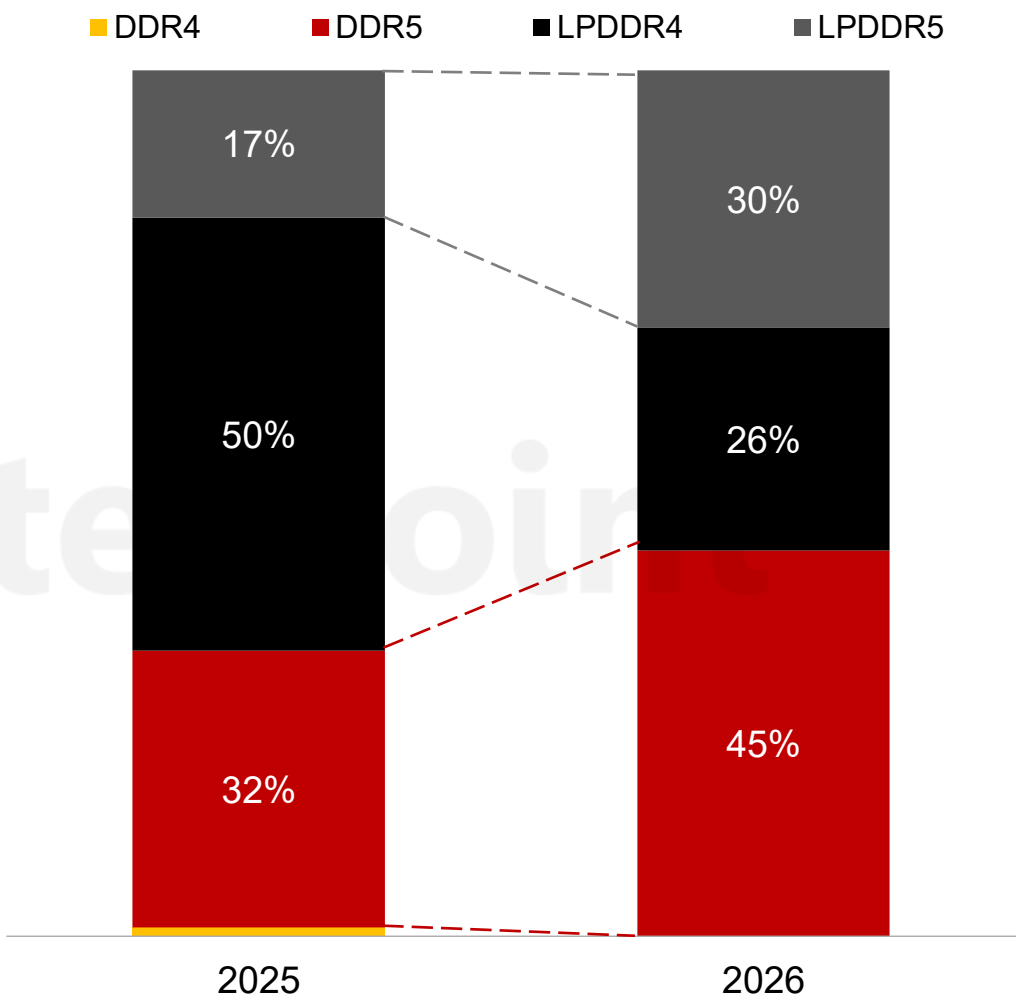
Source: Counterpoint Research Memory Tracker

Product Mix Change Becomes More Critical

Bit Shipment Mix in Samsung

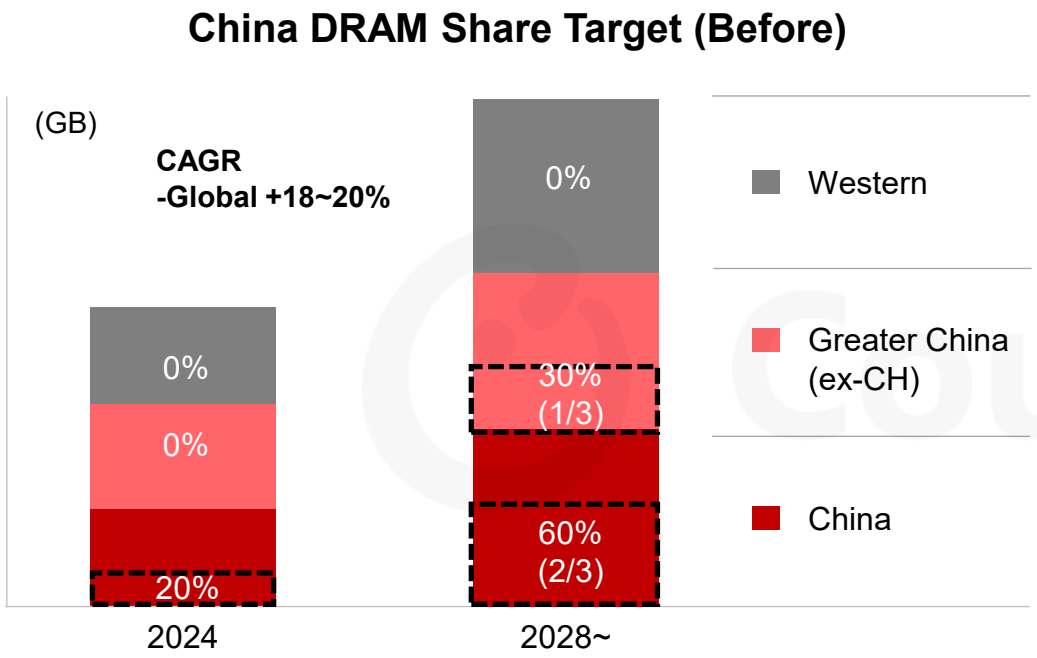


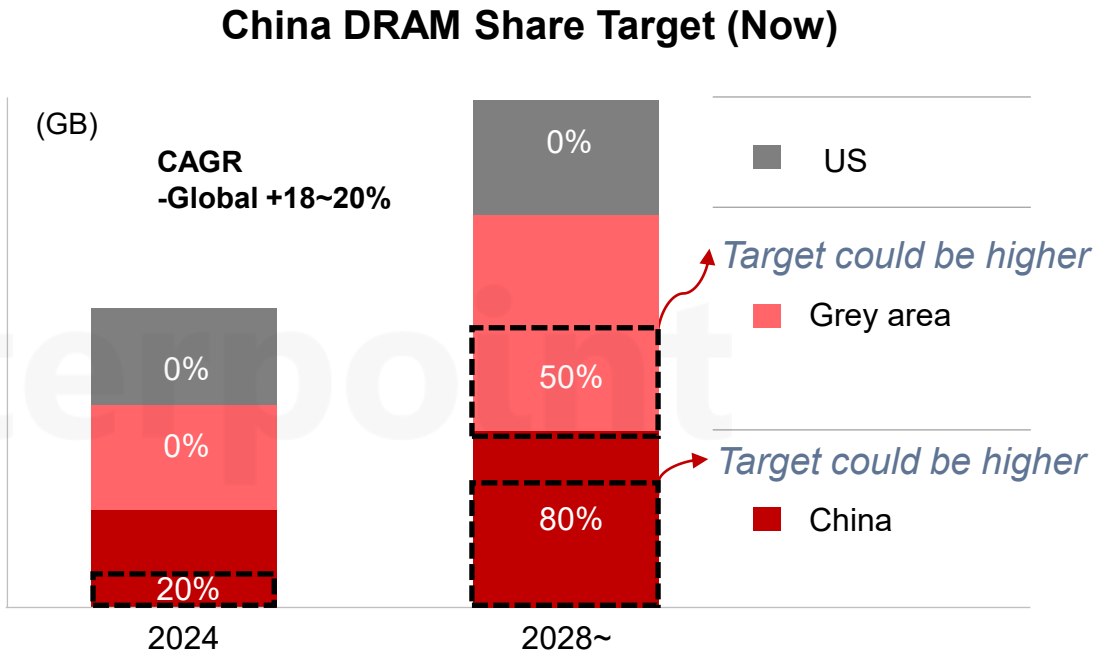
Bit Shipment Mix in CXMT



Source: Counterpoint Research Memory Tracker

Expanding the TAM





Expanding TAM for China memory

- Broadening export reach from Q2 2025 for multiple global OEMs. Procurement “B” expected in July~Aug (from May) from May.
- CXMT and YMTC targets supply to Samsung galaxy.
- China government starts to allow the duplicate development between CXMT and YMTC, especially VCT.
- Slow performance can be offset with more volume (West coast data centers with less people and more powers)
- Multi patterning to reach up to 5.5nm (with limited capacity and low yield)

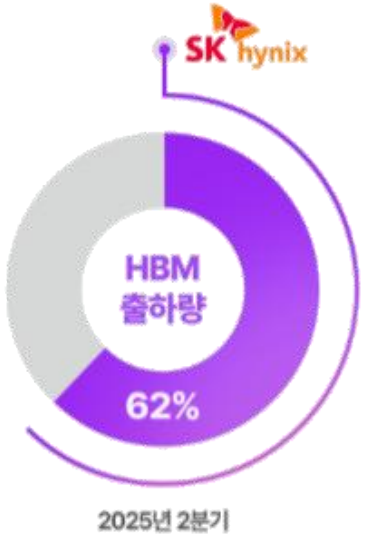
China’s vertically integrated local supply chain

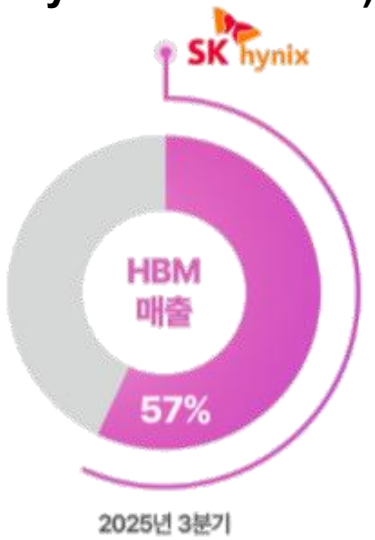
- China is driving a fully integrated AI chip ecosystem, covering CPU/GPU/Memory/Software.

HBM Remains a Key Variable in Gen AI Memory Solutions

HBM Market Share (SK hynix Newsroom)

Volume





Revenue

자료: 카운터포인트리서치

DRAM Capacity Allocation by Type

Yr-end	2024	2025	2026
Total DRAM Capacity (000/m)	**1,731**	**1,974**	**2,163**
Samsung	645	725	790
SK Hynix	487	544	610
Micron	310	340	375
Total HBM Capacity (000/m)	**290**	**415**	**560**
Samsung	130	160	195
SK Hynix	130	170	210
Micron	25	55	85
HBM capqacity (% of total)	**17%**	**21%**	**26%**
Samsung	20%	22%	25%
SK Hynix	27%	31%	34%
Micron	8%	16%	23%

DRAM Capacity Consumption by Node & Type

		Die(Gb)	Net die/wf	Yield	Gb	GB	$/Gb	$/wafer
NAND	128L	512	982	90%	452,506	56,563	0.25	14,141
	176L	512	1334	90%	614,707	76,838	0.25	19,210
	238L	512	1800	90%	829,440	103,680	0.25	25,920
		Die(Gb)	Net die/wf	Yield	Gb	GB	$/Gb	$/wafer
DRAM	1x	8	1500	90%	10,800	1,350		
	1y	8	1900	90%	13,680	1,710		
	1z	16	950	90%	13,680	1,710		
	1a	16	1310	90%	18,864	2,358	1.3	24,523
	1b	16	1680	90%	24,192	3,024	1.3	31,450
	1c	16	2180	80%	27,904	3,488	1.3	36,275
	HBM3e	24	580	75%	10,440	1,305	1.3	13,572
	HBM4	24	500	60%	7,200	900	2.0	14,400

Rising BOM Costs

Rising smartphone BOM costs are forcing manufacturers to increase prices or decrease the volume.

LTAs for CSP: Bottom for downstream? CSPs are locking in 3-5 year deal to secure volume. Volume requirement is exceeding the supply capability and suppliers consider to allocate 50-70% to CSPs(i.e. 2030). Tier-1 smartphone players (Apple, Samsung, Huawei and Motorola) will expand market share, while we start to see the June order push out to July from China with resistance for price.

Smartphone BOM Cost by Segment

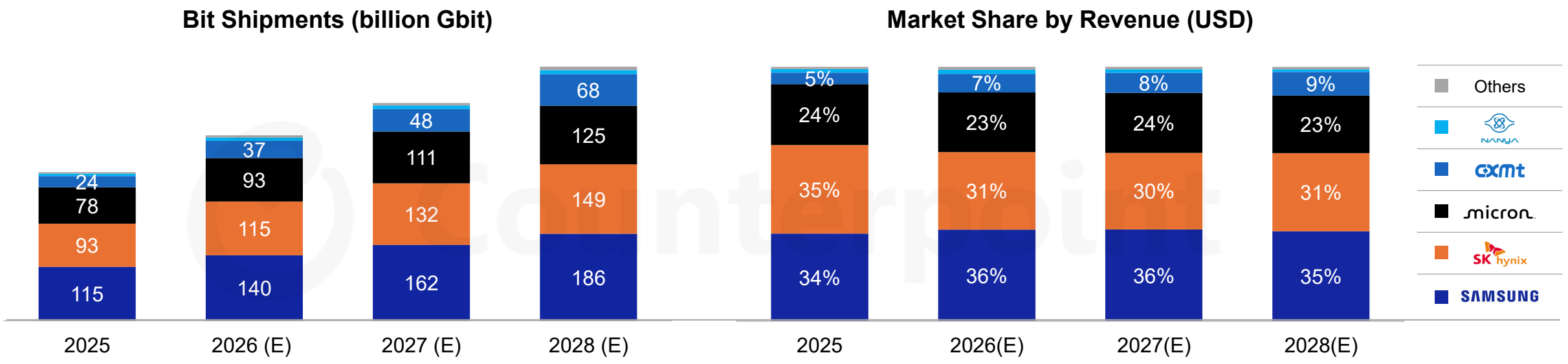
	Low-end						Mid-end						Premium (Flagship level)					
	<$200						$400~$600						>$800					
DRAM Spec	6GB LPDDR4X						8GB LPDDR5X						16GB LPDDR5X HKMG					
NAND Spec	128GB eMMC						256GB UFS4.0						512GB UFS4.0/4.1					
	2025 Q1	Share	2026 Jan	Share	2026 Q2 (E)	Share	2025 Q1	Share	2026 Jan	Share	2026 Q2 (E)	Share	2025 Q1	Share	2026 Jan	Share	2026 Q2 (E)	Share
DRAM Cost	$11.5	12%	$24.3	21%	$45.8	31%	$17.5	6%	$32.6	10%	$61.5	17%	$35.0	7%	$63.5	12%	$122.0	19%
NAND Cost	$7.2	7%	$9.3	8%	$21.0	14%	$14.1	5%	$18.5	6%	$42.0	12%	$27.7	6%	$37.0	7%	$84.0	13%
Others Cost	$80.0	81%	$80.0	70%	$80.0	54%	$260.0	89%	$260.0	84%	$260.0	72%	$410.0	87%	$410.0	80%	$430.0	68%

Source: Counterpoint Teardown and BOM Analysis Service

Low-cost Vendors Struggling to Secure Sufficient Memory Supply

- Vendor A has shifted from 128-256GB storage options to 64GB eMMC in new models to reduce costs.
- Vendor B is transitioning from 6GB LPDDR4 to 8GB and 12GB LPDDR5X, supported by MediaTek's D8000 AP expected in late Q2 or early Q3.

Long Term Outlook: DRAM



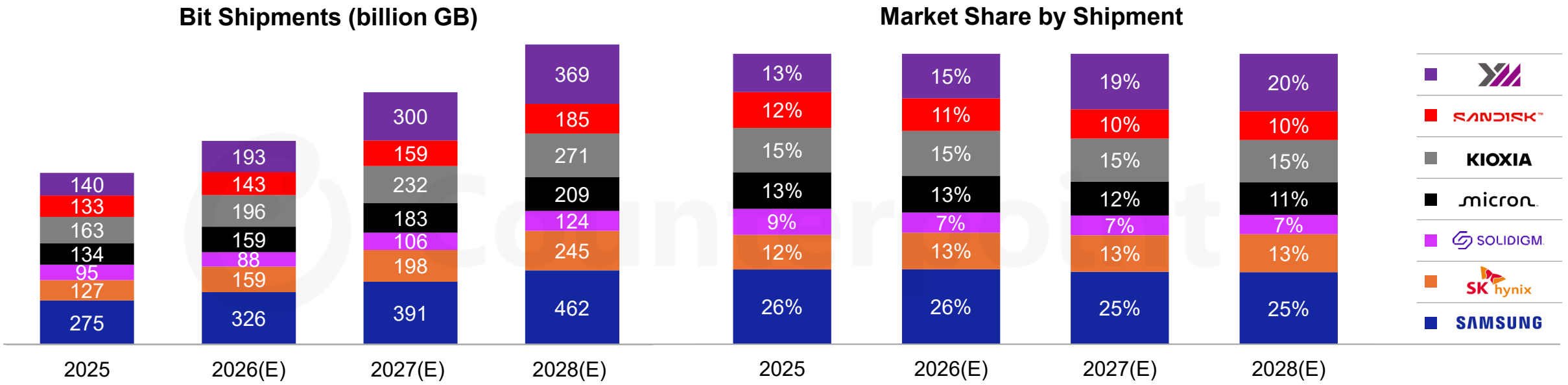
Leadership Race Accelerating

- **Samsung:** With the successful HBM4 deliveries, Samsung is gearing to innovation through logic capability such as FinFET and 3D. Samsung is expected to generate the biggest profit in 2026-2027.
- **SK hynix:** It is targeting to be the largest DRAM manufacturers in volume, post the leadership from HBM.
- **Micron:** It is showing a robust execution in yield and performance of HBM4 based on 1b node core die, and successful early adoption of PCIe Gen 6.
- **China**: China benefits the most from chip supply shortage, catching up and target faster transition from R&D to MP.

Operating Margin (OPM) Milestones

- With commodity price expected to stabilize from 2H26 and remain stable for 2027, suppliers are considering to raise the price of HBM4e significantly (at least +70%).

Long Term Outlook: NAND



Capacity Growth Remains Limited, with Technological Advancements Driving NAND Market

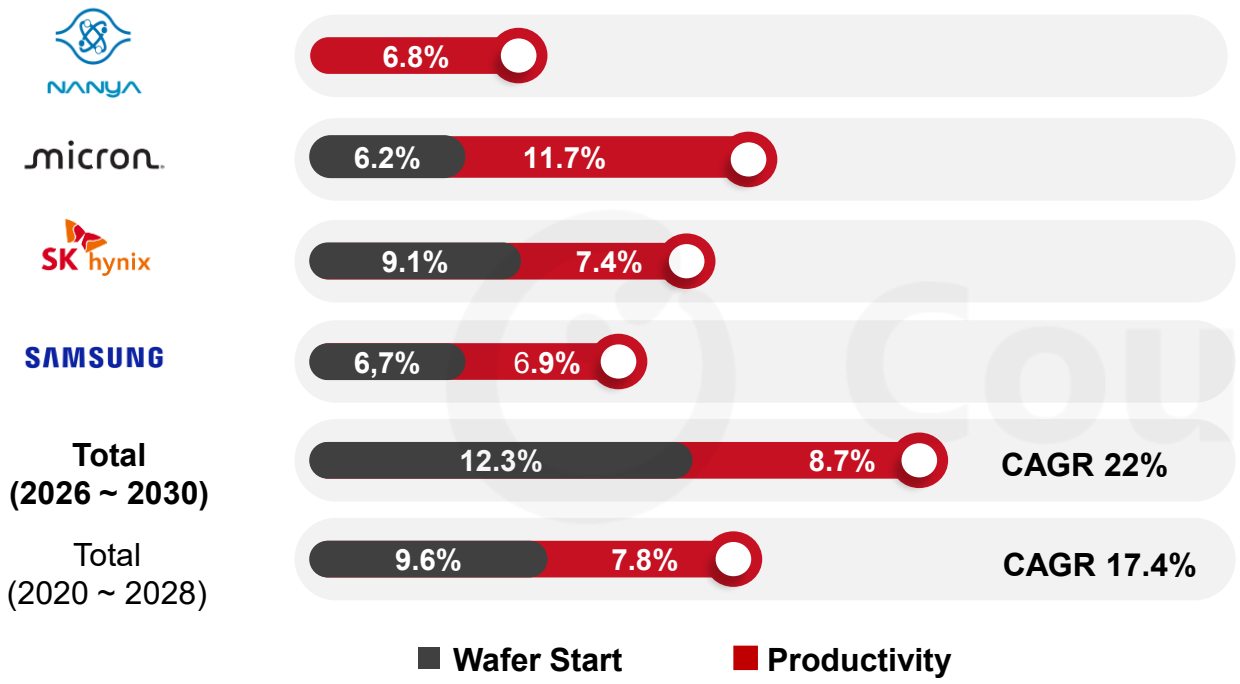
- NAND bit shipments are expected to rise through advanced process migration, such as QLC and potentially PLC.
- Enterprise SSDs continue to lead market demand.

High-Bandwidth Flash and Increasingly Growing High-Capacity Requirement

- Inference and KV cache trigger the adoption of high-bandwidth and low latency flash
- As high-layer stacking increasingly requires hybrid bonding, cost burdens and resistance issues are rising, diverging strategic approaches across the industry.

How Long Does Contracted Supply Last?

DRAM Bit Shipments (YoY) by Capacity and Productivity



Giga Fab Projects

Supplier	2026	2027	2028
SAMSUNG	Pyeongtaek 4		Pyeongtaek 5 & 6
SK hynix	M15X, Dalian 2	Yongin Fab1	Yongin Fab 2
micron		Singapore, Idaho	PSMC Fab 5 Hiroshima 2
CXMT	R&D	Shanghai	Fab 3
YMTC		Fab 3	~ Fab 8 in Wuhan
KIOXIA	Kitakami 2		And more

Source: Counterpoint Research Memory Tracker

Future Expansion: Samsung is Back

Samsung - P4 in Q1 2026, P5 in Q3 (July) 2028, P6 in 2028~2029 (output, 6 months from P5), trying to catch up SK's Y1 and Y2 relative to P5 and P6.

P4: Two-story structure, divided by west and east
- West is finished. East zone under construction.
- Cleanroom around 50K pyung (165,000m^2 , pyung=3.31m^2)
- Roughly 30K 1c wafer starts per 10K pyung
- Construction restarted in Q4 2025
- Wafer in: Q4 2025

P5 FAB1 (P5) : of three-story structure, 5 phase
- Cleanroom around 63K pyung (206,000m^2)

P5 FAB2 (P6) : Three-story structure,
- Cleanroom similar as P5
- Construction complete: Q4 2028 (or earlier)

HBM mix
- Recent issue can be solved soon.
- Needs to supply +23bn Gb to be #1 in 2027.

Source : Web

Future Expansion: SK hynix Yongin Project

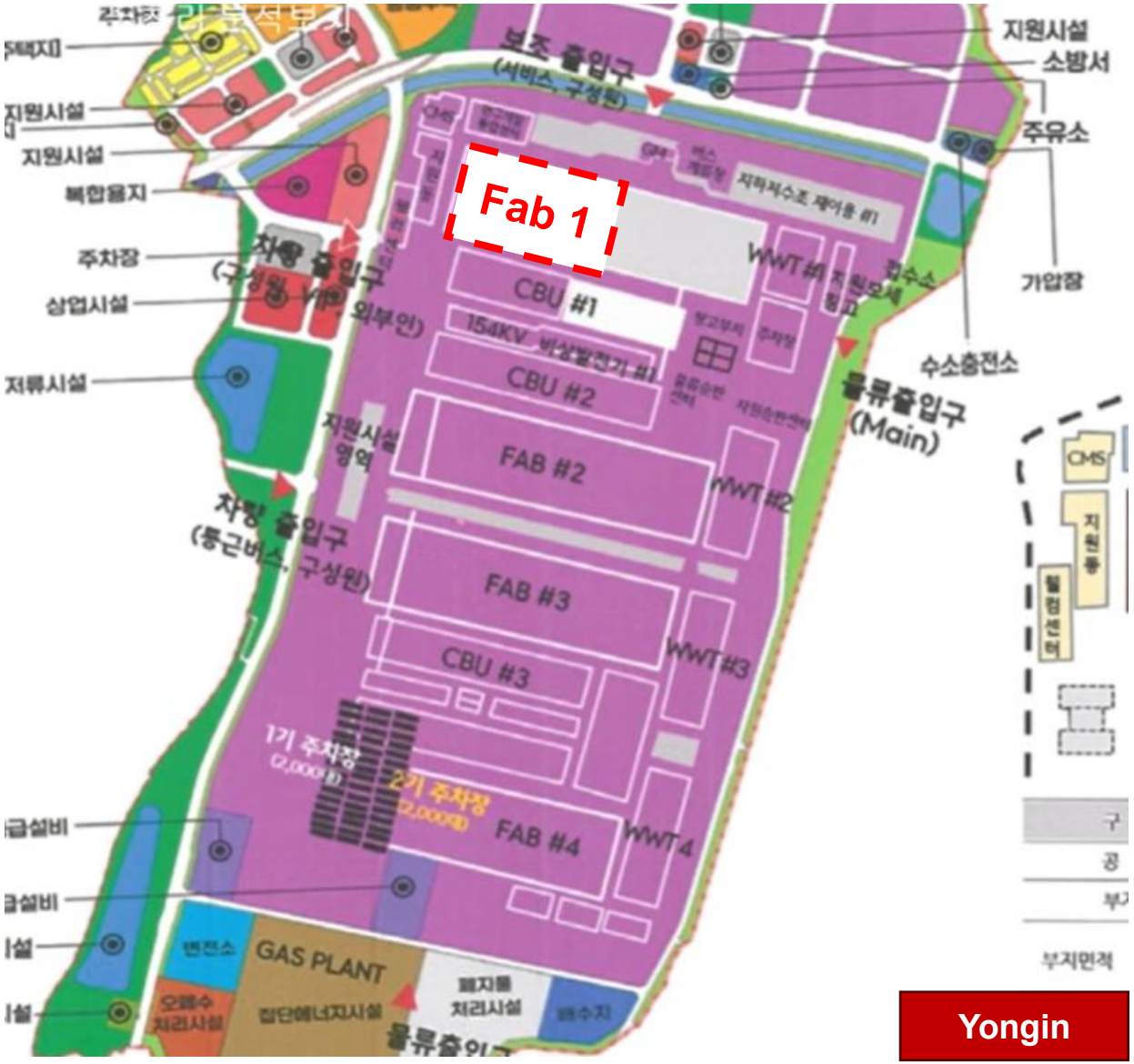
SK hynix – M15X starts in Q1 2026, Yongin Fab1 in Q3 2027, Y2 in 2028~2029 (output): Trying to be #1 volume in 2029

Yongin Fab1 (Y1): Three-story structure (Ph1 ~ 6)
- Cleanroom is around 62K pyung
- Yongin has planned 4 fabs in all

HBM mix: 18.7 to 16bn Gb in 2026 (HBM 4 from 7 to 3.5)
- Increasing allocation to SOCAMM

Challenge in technology: Logic collaboration. VCT at 0b

Source : Web



Future Expansion: Micron, Kioxia and Cleanroom Acquisition

Micron – Leveraging Partnerships for Immediate Ramp-Up

- Micron acquired P5 from PSMC (Powerchip Semiconductor Manufacturing Corporation), with wafer-out expected in 2028.
- The facilities are single-story buildings, each offering approximately 33,000 m² of floor space and capable of producing around 45K wafers per month (wpm).
- Micron can also utilize PSMC's P3 through technology transfer and a DRAM foundry partnership, with wafer-out expected in 2027. Micron may additionally leverage P1 and P2.
- The new fab in Idaho, US, is under construction and is scheduled to ramp up in 2027, potentially reaching up to 100K wpm.

Kioxia – Balanced Approach

- Kitakami Fab 2 began operations in Q1 2026, although plans for subsequent fabs have not yet been disclosed.
- Kioxia is shifting its strategy from balancing capacity (expansion with productivity improvements to enhance its ROIC) to expansion for the first time in last 4-5 years.

Source: Google map

Future Expansion: CXMT's Game Changer Plan

CXMT aims to triple the capacity by 2035. IPO in 2026.

Hefei Fab1 and Fab2 are one-story building

- They each produce 100k wpm each in existing campus (1.33km^2)
- A new R&D line will expand the capacity by 50~100k wpm, by allocating the R&D space in existing fabs to a new R&D fab.
- 1a 50~80K by end 2026 (max 80K due to limited litho)
- V1(1 peri+1 cell, WoW, CS at end 26), V2 (1 peri+2 cell), 3D from 16L (2028~2029 Development target)

Fab3 and Fab4 are planned to be constructed until 2028-2029

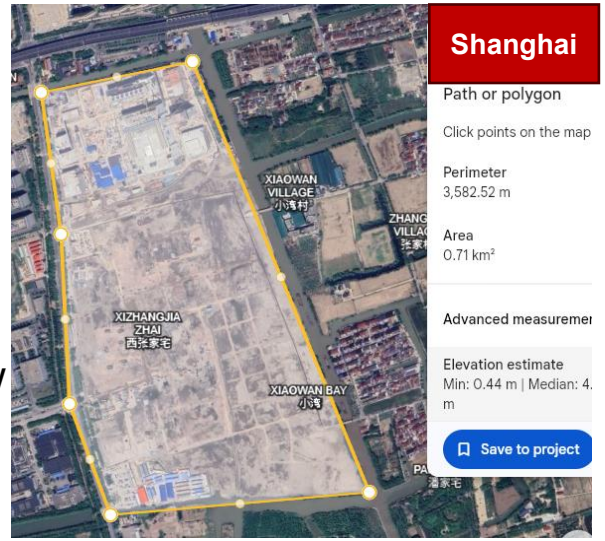
- The new campus is close to the current Hefei campus, above Fab1, and covers more than three times the current campus.

Beijing Plant

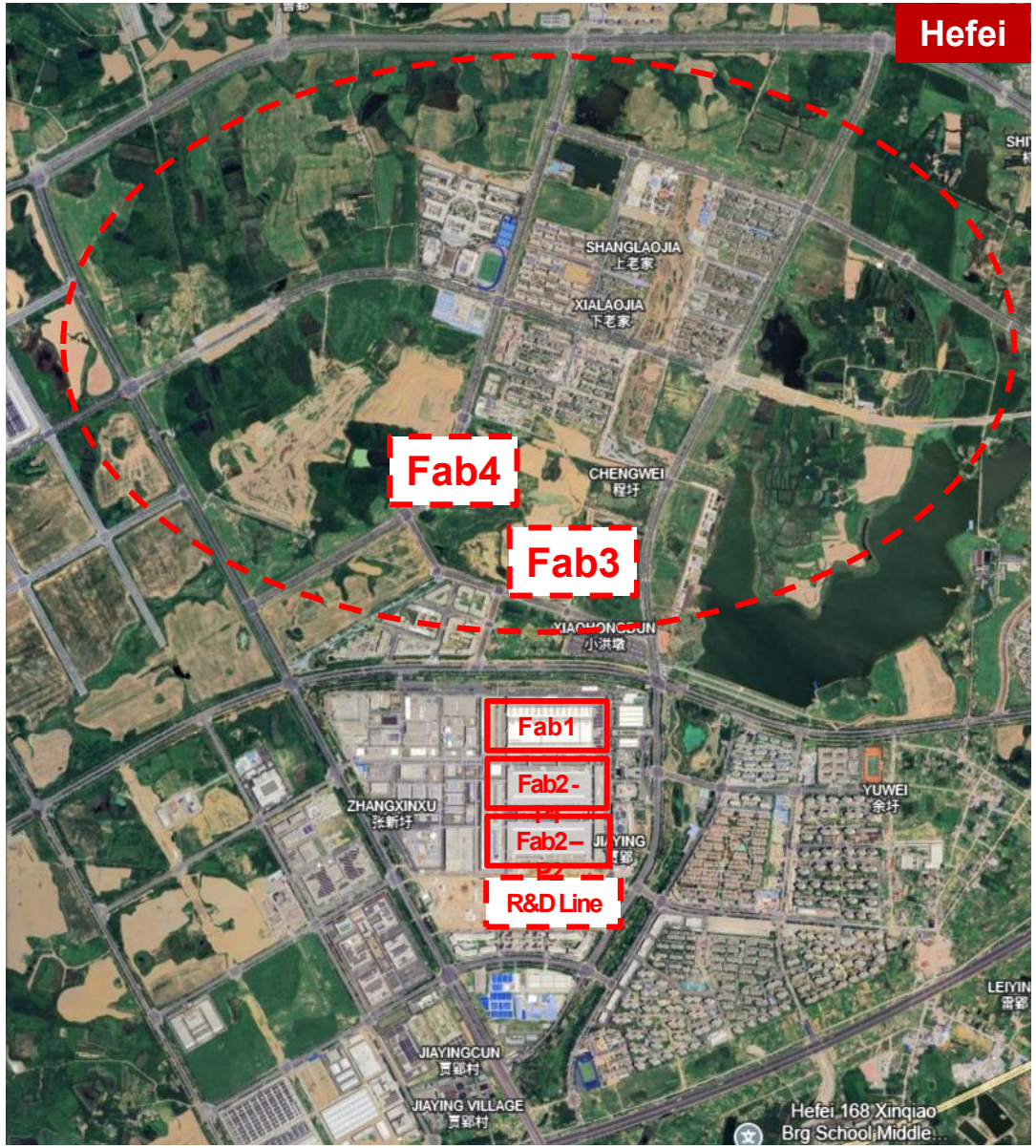
- 100k wpm (New plant 100k)
- Timing is likely 2028-2029
- NAND for eSSD at 32L (~50K)

Shanghai Fab for AI

- 100k wpm, Equip moving in now
- CoWoS and HBM core die
- DDR5 is also a Plan B
- Targets 9.2Gbps (at least 6.4G)



Source : Google Earth



Future Expansion: YMTC Wants to Kill Two Birds with New Fab

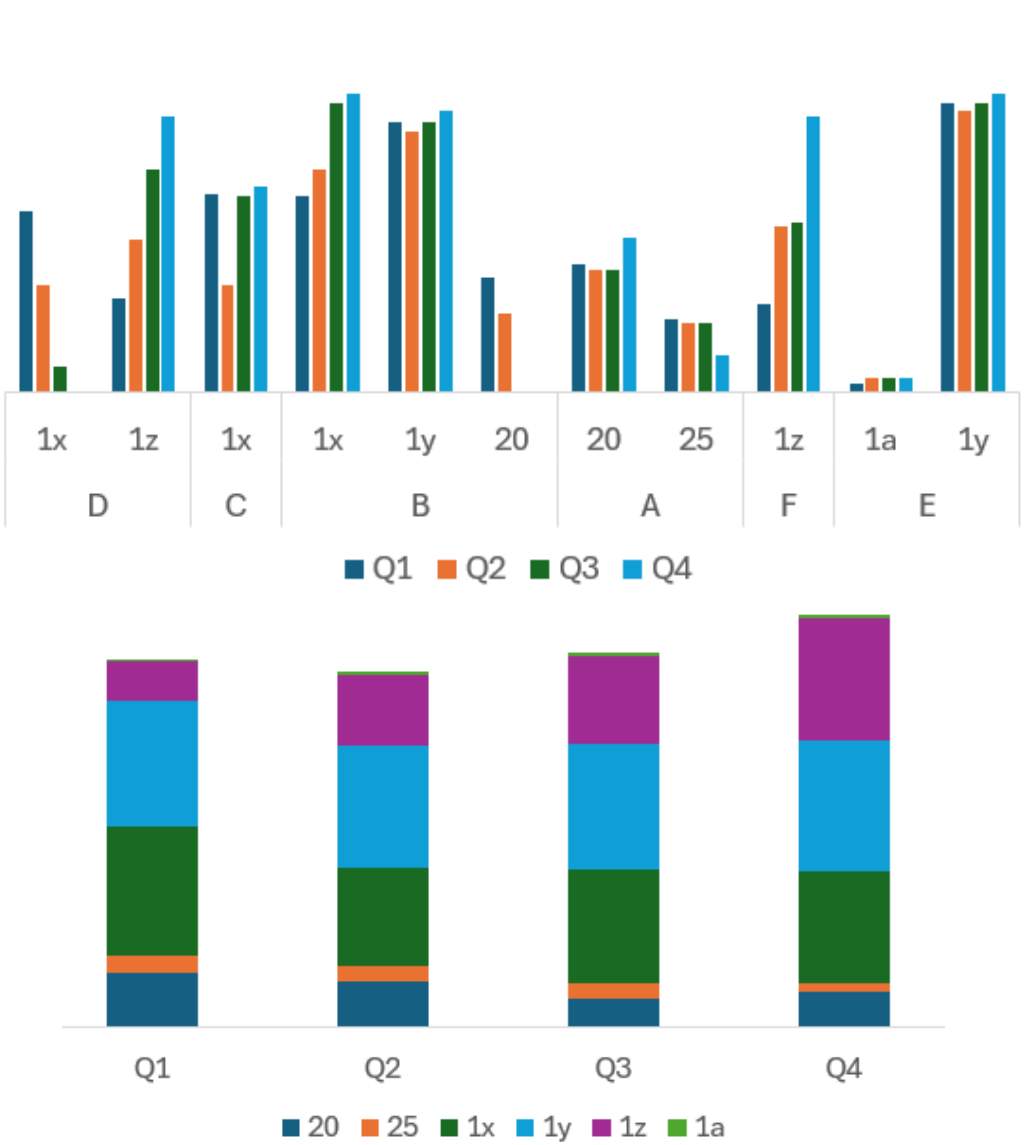
YMTC – Fab3 tools moving in Oct 2026 and ramp starts in Q1 2027

- Wuhan Fab1 and Fab2 are one-story building. They produce 100k wpm each.
- Fab3 targets wafer-out in early 2027. It aims to produce both NAND and DRAM.
- New fab plans include Fab3 to Fab8 in Wuhan. No IPO in 2026. DRAM progress remains slow.

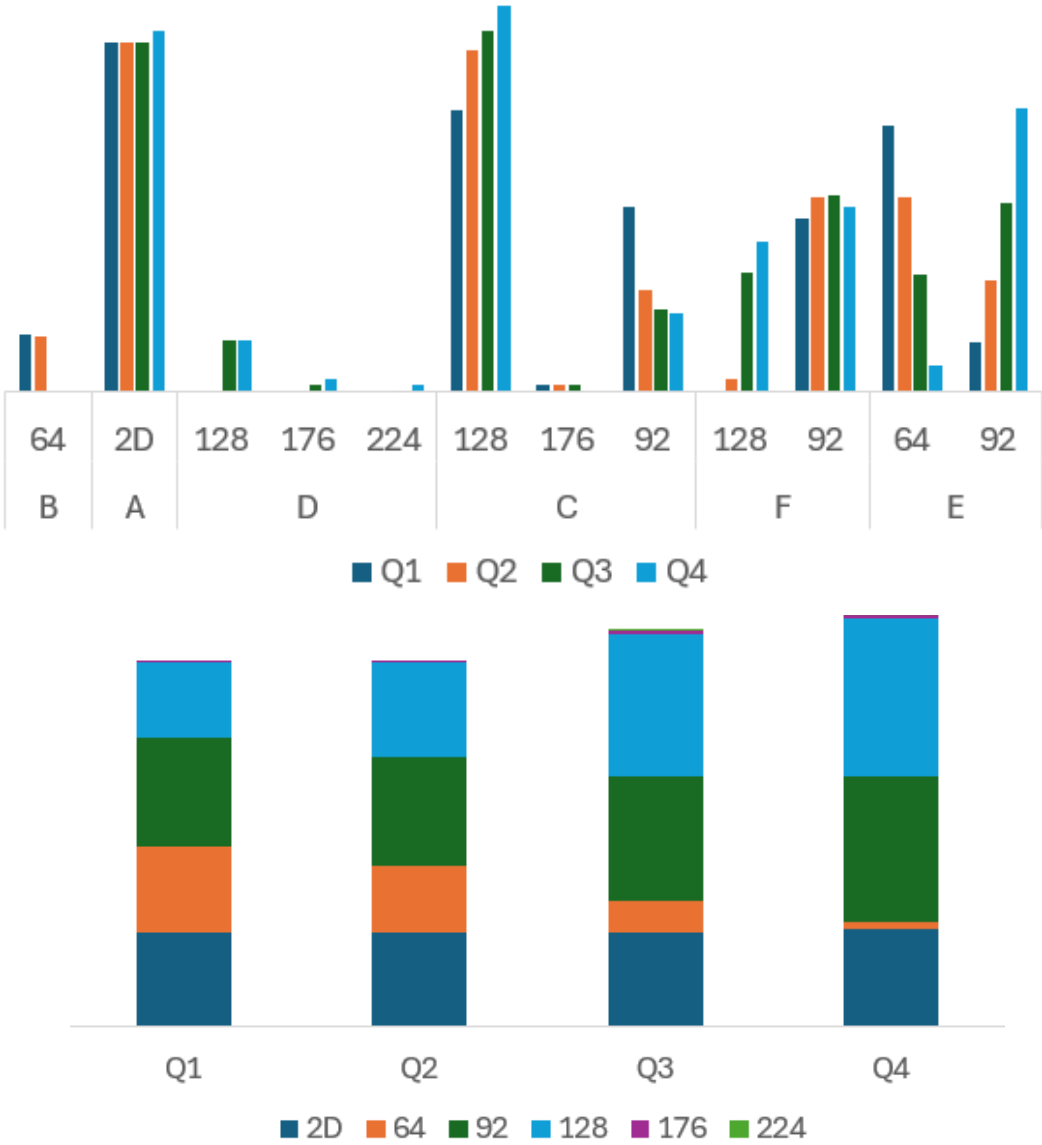
Source : Google Earth

Initial Fab Yield Becomes More Critical in Memory Contrary to Foundry

DRAM Production by Fab (Example)

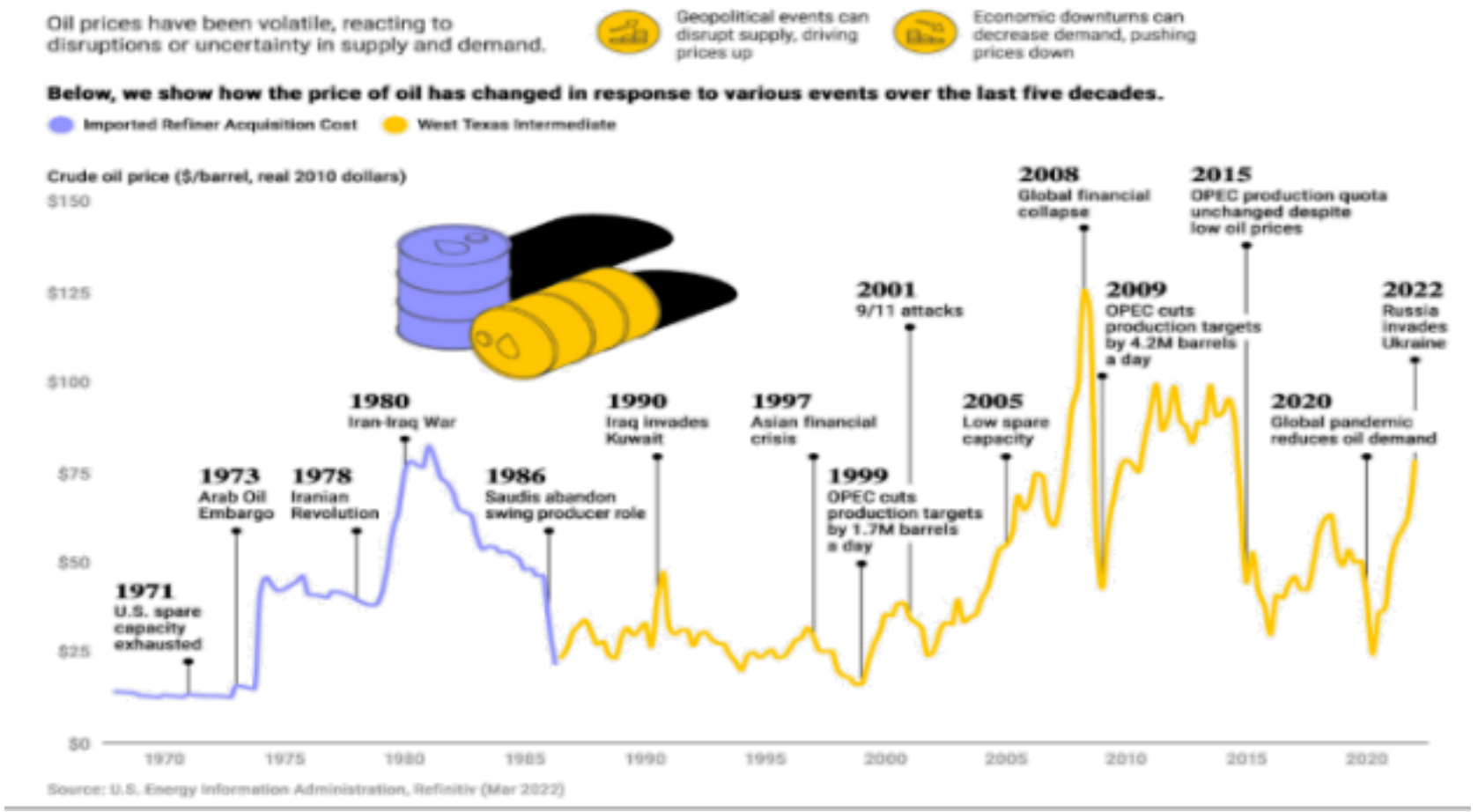


NAND Production by Fab (Example)



The Prevailing Narrative: This Time is Different

Oil Price since 1970

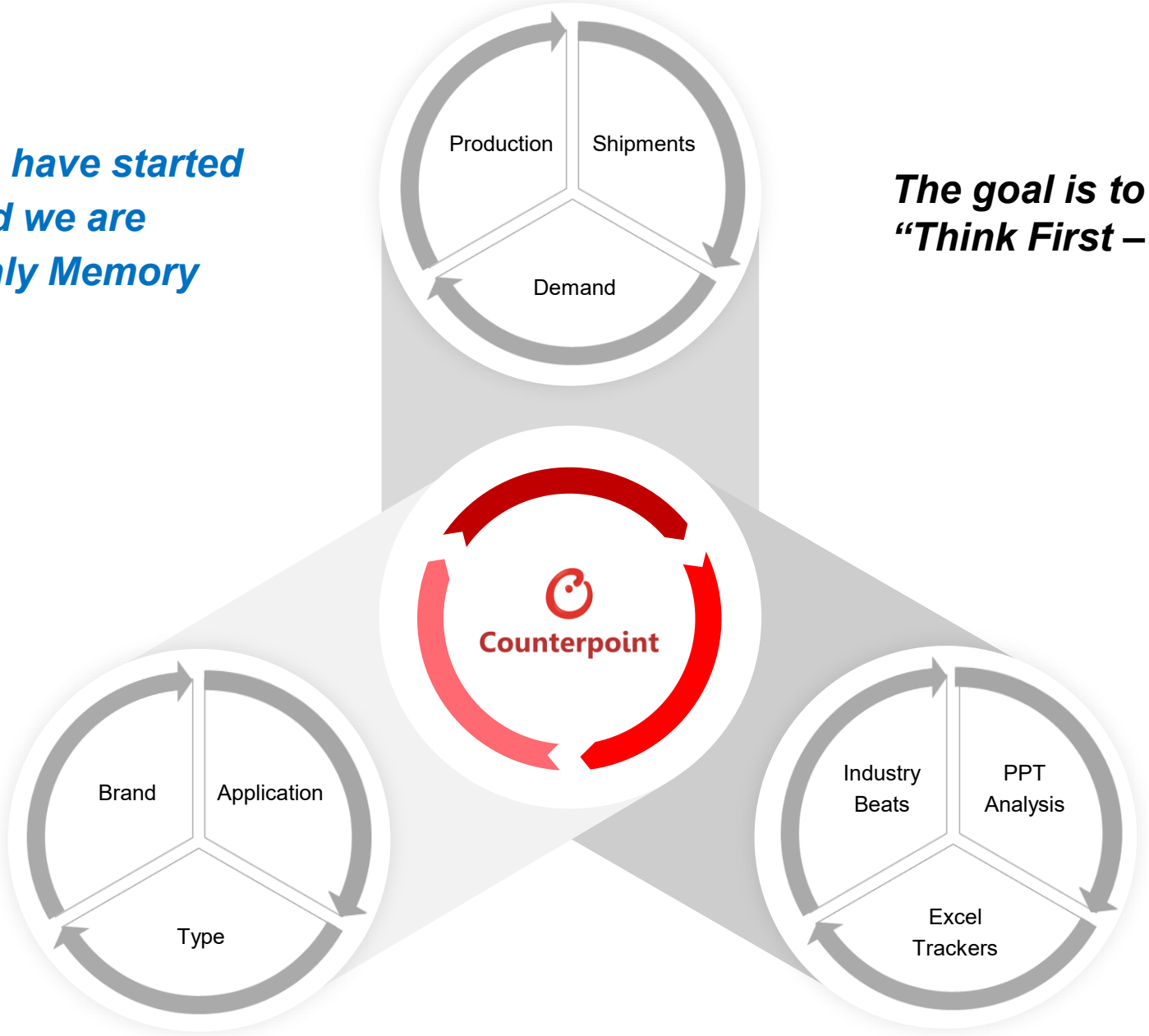


Cognitive biases persist – often favouring positive scenario: Looking for Signal to subside the current cycle

- Escalating tensions (and lack of mutual trust between US and China) are still a “black swan” risk. Labor strike in Korea may play a key role in technology leakage post the boom period (China offers +3x). Lack of supply is disrupting the demand.
- China’s chip supply is expanding beyond earlier estimated and is expected to impact overseas market.

Research Scope and Coverage

Since June 2025, we have started Memory Tracker, and we are launching the Monthly Memory Pricing Tracker.



The goal is to help our clients "Think First – Act First – Move First"

- **DRAM & NAND**
- **Brand–Application–Type (Bits and Revenue)**

- **PPT Analysis:** Quarterly
- **Excel Trackers:** Quarterly
- **Word Industry Beats:** Bi-weekly
- **Pricing Tracker:** Monthly

Monthly Memory Pricing Tracker

Memory Pricing Tracker

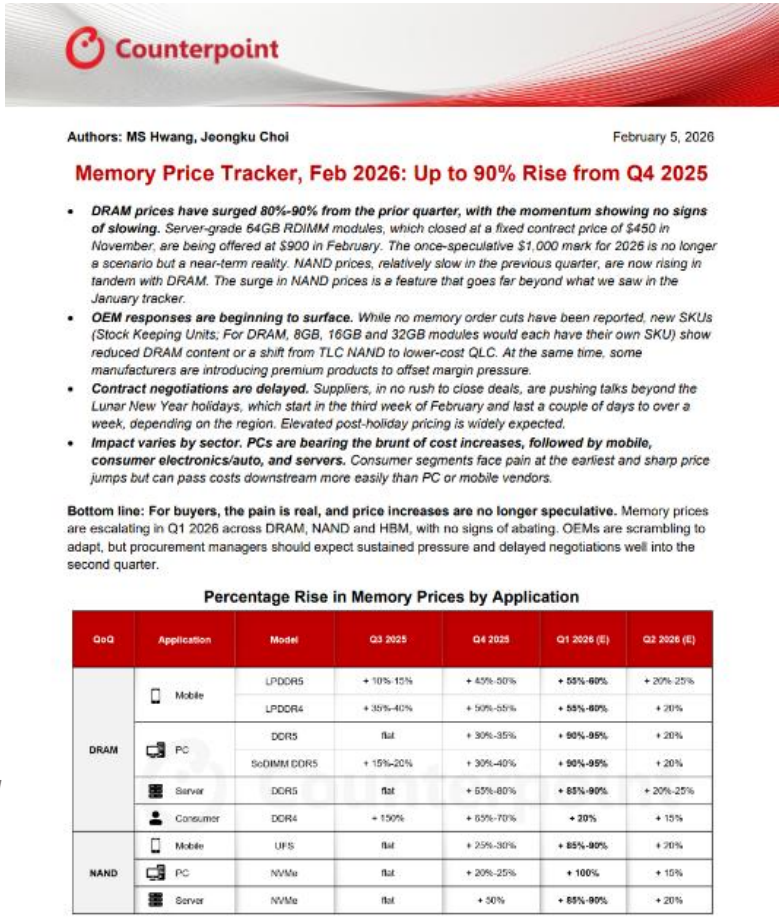
#1 Memory Tracker Q3 2025 and Initial Monthly Memory Pricing Tracker

#2 2026 Memory Price Alert: Shattering 2018 Peaks and Redefining Industry BOM

#3 Memory Price Tracker, Feb 2026: Up to 90% Rise from Q4 2025

New series will come out in the 1st week of every month

We are trying to avoid the biased view, Reflecting the details of suppliers, including Wafer capacity, product mix, pricing strategy, and Competitive environment.



Counterpoint

Authors: MS Hwang, Jeongku Choi February 5, 2026

Memory Price Tracker, Feb 2026: Up to 90% Rise from Q4 2025

- ***DRAM prices have surged 80%-90% from the prior quarter, with the momentum showing no signs of slowing.*** *Server-grade 64GB RDIMM modules, which closed at a fixed contract price of $450 in November, are being offered at $900 in February. The once-speculative $1,000 mark for 2026 is no longer a scenario but a near-term reality. NAND prices, relatively slow in the previous quarter, are now rising in tandem with DRAM. The surge in NAND prices is a feature that goes far beyond what we saw in the January tracker.*
- ***OEM responses are beginning to surface.*** *While no memory order cuts have been reported, new SKUs (Stock Keeping Units; For DRAM, 8GB, 16GB and 32GB modules would each have their own SKU) show reduced DRAM content or a shift from TLC NAND to lower-cost QLC. At the same time, some manufacturers are introducing premium products to offset margin pressure.*
- ***Contract negotiations are delayed.*** *Suppliers, in no rush to close deals, are pushing talks beyond the Lunar New Year holidays, which start in the third week of February and last a couple of days to over a week, depending on the region. Elevated post-holiday pricing is widely expected.*
- ***Impact varies by sector. PCs are bearing the brunt of cost increases, followed by mobile, consumer electronics/auto, and servers.*** *Consumer segments face pain at the earliest and sharp price jumps but can pass costs downstream more easily than PC or mobile vendors.*

Bottom line: For buyers, the pain is real, and price increases are no longer speculative. Memory prices are escalating in Q1 2026 across DRAM, NAND and HBM, with no signs of abating. OEMs are scrambling to adapt, but procurement managers should expect sustained pressure and delayed negotiations well into the second quarter.

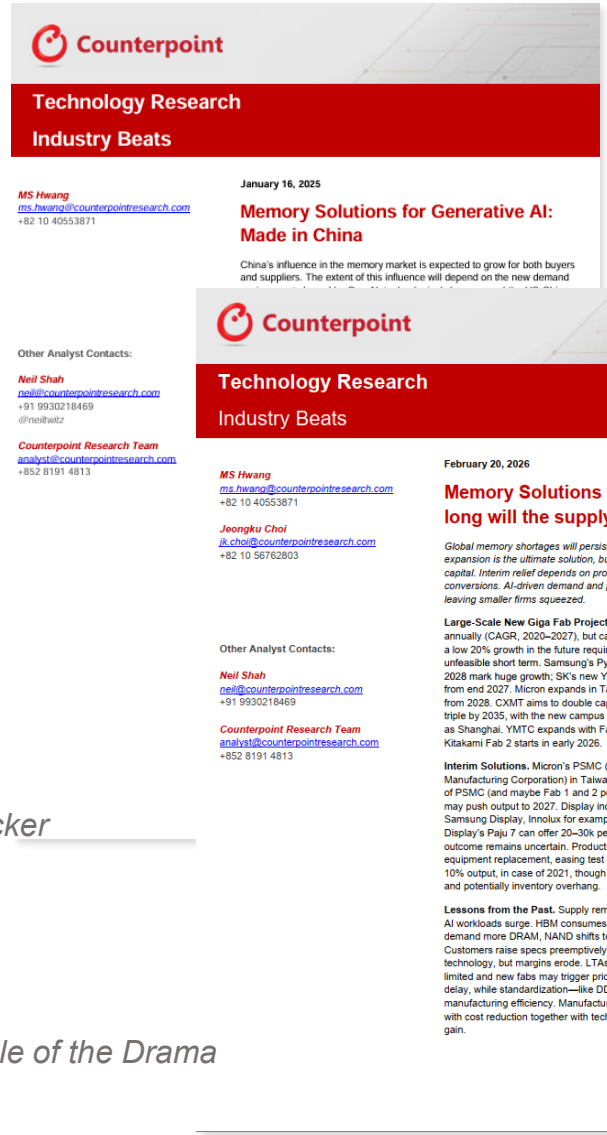
Percentage Rise in Memory Prices by Application

QoQ	Application	Model	Q3 2025	Q4 2025	Q1 2026 (E)	Q2 2026 (E)
DRAM	Mobile	LPDDR5	+ 10%-15%	+ 45%-50%	**+ 55%-60%**	+ 20%-25%
		LPDDR4	+ 35%-40%	+ 50%-55%	**+ 55%-60%**	+ 20%
	PC	DDR5	flat	+ 30%-35%	**+ 90%-95%**	+ 20%
		SoDIMM DDR5	+ 15%-20%	+ 30%-40%	**+ 90%-95%**	+ 20%
	Server	DDR5	flat	+ 65%-80%	**+ 85%-90%**	+ 20%-25%
	Consumer	DDR4	+ 150%	+ 65%-70%	**+ 20%**	+ 15%
NAND	Mobile	UFS	flat	+ 25%-30%	**+ 85%-90%**	+ 20%
	PC	NVMe	flat	+ 20%-25%	**+ 100%**	+ 15%
	Server	NVMe	flat	+ 50%	**+ 85%-90%**	+ 20%

Bi-weekly Industry Beats

(Memory Solutions for Gen AI)

#1 Changing Capabilities
#2 Competitive Dynamics in HBM
#3 Made in China
#4 Smartphone
#5 DeepSeek Moment in Chips
#6 Edge Computing
#7 Mapping the Solutions
#8 Custom HBM
#9 Ghibli and CXL
#10 A Turbulent World
#11 Made in China (Part 2)
#12 Launching Memory Tracker and Forecasts
#13 Rising Memory Pricing and Strategic Meetings
#14 Advanced Packaging
#15 HBM, China, and AI Investment Paradox
#16 Advanced Packaging (Part 2)
#17 The Return of Legacy and Uncertainty of HBM
#18 Memory Tracker and Forecasts, Q2 2025
#19 Smartphone Memory Capacity Trend
#20 Made in China (Part 3)
#21 Memory Market Faces Mounting Strains
#22 Memory Tracker and Forecasts, Q3 2025 & Pricing tracker
#23 LPDDR4 Debacle
#24 Memory Shortages Rewrite the Smartphone Playbook
#25 Extra Hot and Spicy - Memory on Fire
#26 How long will the supply shortage last?
#27 Memory Tracker and Forecasts, Q4 2025 – In the Middle of the Drama
#28 Point of no return
#29 The signal and the noise
#30 Pressing issues in supply crunch
#31 KV cache



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Technology Research

Industry Beats

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January 16, 2025

Memory Solutions for Generative AI: Made in China

China's influence in the memory market is expected to grow for both buyers and suppliers. The extent of this influence will depend on the new demand

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February 20, 2026

Memory Solutions for Gen AI: How long will the supply shortage last?

Global memory shortages will persist until at least 2026. Capacity expansion is the ultimate solution, but new fabs take years and vast capital. Interim relief depends on productivity gains and cleanroom conversions. AI-driven demand and panic buying intensify the gap, leaving smaller firms squeezed.

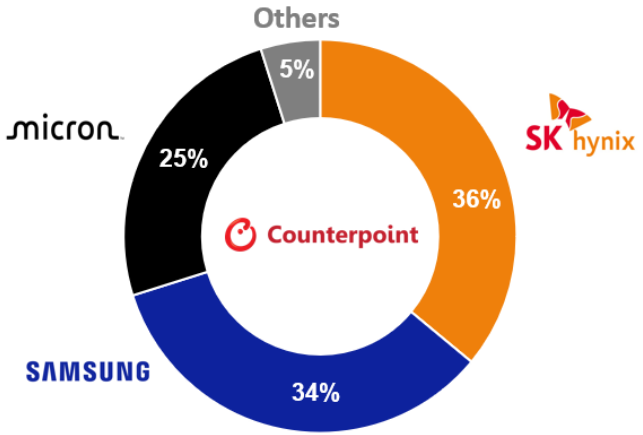
Large-Scale New Giga Fab Projects. DRAM bit shipment grows 17% annually (CAGR, 2020–2027), but capacity rises only 7.5%. Sustaining a low 20% growth in the future requires 12.3% expansion of capacity, unfeasible short term. Samsung's Pyeongtaek P4 in 2026 and P5 in 2028 mark huge growth; SK's new Yongin campus adds multiple fabs from end 2027. Micron expands in Taiwan, Hiroshima, and New York from 2028. CXMT aims to double capacity to rival peers by 2030 and triple by 2035, with the new campus in Hefei and adds in Beijing as well as Shanghai. YMTC expands with Fab 3 from end 2026; Kioxia's Kitakami Fab 2 starts in early 2026.

Interim Solutions. Micron's PSMC (Powerchip Semiconductor Manufacturing Corporation) in Taiwan tie-up will secure existing Fab 3 of PSMC (and maybe Fab 1 and 2 potentially), but technology licensing may push output to 2027. Display industry cleanrooms (LG Display, Samsung Display, Innolux for example) are reportedly repurposed; LG Display's Paju 7 can offer 20–30k per month wafers space, while the outcome remains uncertain. Productivity gains—higher utilization, yield, equipment replacement, easing test conditions for example—can add a 10% output, in case of 2021, though risks include product quality issues and potentially inventory overhang.

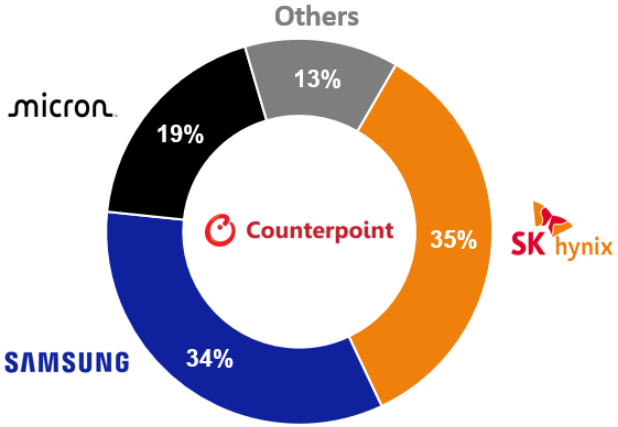
Lessons from the Past. Supply remains tight, fueling panic buying as AI workloads surge. HBM consumes capacity; GPUs and CPUs demand more DRAM, NAND shifts to high-bandwidth and more IOs. Customers raise specs preemptively, due to the rapid advance in AI technology, but margins erode. LTAs (Long Term Agreement) remain limited and new fabs may trigger price swings. Custom projects risk delay, while standardization—like DDR in the 1990s—could again drive manufacturing efficiency. Manufacturers must prepare for downturns with cost reduction together with technology innovation for performance gain.

You Have Probably Seen This

1Q25 SK Becomes #1 DRAM Supplier



2Q25 SK Becomes #1 Memory Supplier



中国半導体メモリー、世界シェア10%超え　分断が招いた技術追い上げ

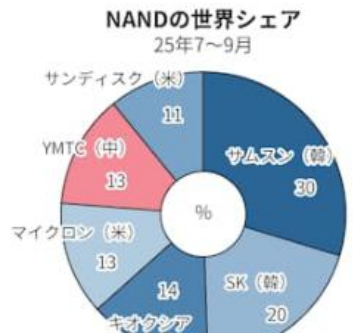
2025年11月22日 17:00 [会員限定記事]

YMTCは26年までにシェア15%を目指す（湖北省武漢市）

データ保存に使うメモリー分野で中国の存在感が増している。長期記憶に使うNAND大手の長江存儲科技（YMTC）は販売数量シェアが初めて10%を
使うよう促す中国政府の優遇策で技術力を急速に高めた。現在は中国国内が中心だが、キオクシアホールディングスなど日米韓各社の経営への影

「技術力がここまで上がるとは」。YMTCが今年2月までに量産を始めた新型メモリーについて、競合企業の技術者は驚きを隠さない。積層数は韓国
ーカーと同等の技術が実装されていたためだ。加えて他社がまだ採用していない、製造コストを抑える製法もいち早く取り入れていた。

調査会社の香港カウンターポイントによると、世界のNAND出荷数量に占めるYMTCのシェアは25年1～3月に初めて10%に達した。25年7～9月は前年
米マイクロン・テクノロジーに迫る。中国ブランドのノートパソコンやスマートフォンを中心に搭載が増えており、通年でのシェア1割超えが視野に入る。



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Semiconductors Tech

South China Morning Post

Mainland memory firms eye Hong Kong for funds to fuel 'global ambitions'

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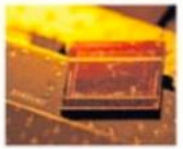
EXCHANGE

KEYWORDS | CHRISTOPHER MIMS

The Global Memory-Chip Shortage Will Cost Us

AI companies' need for a once affordable microchip could drive up electronics prices

A Samsung Electronics semiconductor plant in South Korea, above. A Samsung specialized memory chip, right.



If you'd put all your savings into a few pallets of computer memory chips a year ago, you'd have at least doubled your money by now. And prices are projected to continue their meteoric rise.

Behind the value of one of the world's fastest-appreciating assets is the voracious appetite of AI companies. These same chips—mainly what's known as RAM, but also the storage chips often called flash or solid-state memory—are required for almost every digital device on the planet. And just three companies make more than 90% of them: **SK Hynix, Samsung** and **Micron.**

Prices for memory shot up 50% in the last quarter of 2025, and are projected to increase another 40% to 50% by the end of the first quarter of 2026, according to Counterpoint Research, fueled mainly by builders of data centers, who are willing to pay huge premiums.

Because AI firms are crowding out other buyers of memory, unexpected consequences are likely to reverberate across countless industries. Effects could include delayed data centers, higher prices for laptops, TVs and other consumer electronics, and possible chip shortages for automakers that would delay vehicle production, in a potential repeat of the pandemic car crisis.

"I have tracked the memory sector for almost 20 years, and this time really is different," says Avril Wu, senior research vice president at Taipei, Taiwan-based TrendForce, which tracks the global semiconductor industry. "It really is the craziest time ever."

Analysts last year said limited electrical power was the primary speed bump for new AI supercomputer construction in 2026 and beyond. A memory crunch was barely on their radar.

Samsung slowed construction of a massive new factory to produce memory just two years ago because of a global lull in demand. The company fast-tracked its completion in late 2025, and it's now expanding capacity in existing fabs.

Market leader SK Hynix said in late October that it had already sold out its entire inventory for all of 2026, but it announced massive investments in new manufacturing capacity, expected to be funded by the record revenues.

Several months ago, Boise, Idaho-based Micron saw "a pretty significant surge in demand" from its data-center customers for 2026 and 2027, says Sumit Sadana, the company's chief business officer. On top of that, there has been a less sharp—but steady—increase in demand for all other applications, as device makers cram in ever more memory. Micron just announced it will stop producing its popular brand of PC memory to focus on supplying high-end memory for AI.

On Friday, Micron broke ground on what the company says will eventually be a $100 billion "mega-fab" in Onondaga County, N.Y.

Consisting of multiple factories to be built over the next 20 years, the entire development will be devoted to producing memory chips.

Unfortunately, almost none of that new capacity will come online until 2027, and won't make a meaningful difference in supply until 2028, says Wu. For now, manufacturers are running at full tilt with factories that predate the AI boom. "Whatever wafer production is in place right now is coming from investment from three or four years ago," she adds.

"We foresee a challenging situation in terms of being able to meet customer demand for the foreseeable future," says Micron's Sadana.

As AI startups and tech companies alike continue to try to outdo each other with AI supercomputers—Elon Musk's xAI recently announced it would invest more than $20 billion in a gargantuan data center complex in Mississippi—analysts are predicting memory prices won't stabilize for a year or two.

This doesn't mean that memory will run out for Apple, Google, Nvidia, Amazon or other tech titans. Many prepurchase memory far in advance, allowing them to lock in prices and guarantee supply. But ambitious new AI data center construction projects might have to be built with less memory at first and then upgraded later, says Wu.

In consumer electronics, margins are already razor-thin. Smaller manufacturers will likely have no choice but to raise prices, potentially denting demand. The situation has intensified so rapidly in the past two months that tech research firm IDC issued an update to its year-ahead forecast for smartphones and PCs because the expected price hikes are expected to reduce consumer demand. In the new worst-case scenario, smartphone sales in 2026 could dip 5%, and PC sales by nearly 9%, as a result of significantly higher prices for the gadgets.

Makers of automobile electronics, telecom equipment and other components face a separate but related issue: They often require older types of memory that manufacturers are moving away from making. If you run one of these component makers, "you gotta buy a plane ticket and get that allocation from manufacturers right now," says MS Hwang, a research director at Counterpoint Research who has been in the memory industry for more than 30 years.

The situation is so dire that some firms are considering buying memory from Chinese manufacturer CXMT, even though U.S. lawmakers have signaled their unease with such deals. Other gadget makers are seeking used memory chips.

What we're seeing is a "permanent reallocation" of supplier capacity toward AI companies—and away from other devices, write the IDC analysts.

Data centers, both conventional and for AI, will consume more than 70% of the high-end memory chips all manufacturers will produce in 2026, and would take even more if they could, according to TrendForce.

Memory chips tend to keep a low profile in the semiconductor industry, compared with the CPUs and GPUs they serve. Even so, they require much of the same cutting-edge technology now enriching Nvidia, which is helmed by Chief Executive Jensen Huang, and its manufacturing partner TSMC.

Every square centimeter HBM takes is one less that can be used to make memory for other devices.

AI is also more demanding: Nvidia's latest systems support up to 288 gigabytes of HBM for every one logic chip, compared with the typical 8GB for smartphones and 16GB for laptops. Since HBM is a more lucrative business, consumer-electronics makers have to fight one another for the leftovers.

While rapid price appreciation will continue for now, it's hard to gauge memory-chip pricing beyond mid-2027, says Hwang. He predicts they will soon be considered one of the pricier components in a device, rising from under 10% to as high as 30% of the total cost of phones and other gadgets.

And as AI companies lay claim to ever more manufacturing capacity, the question is, how much will other manufacturers have to pay for memory? "There is no limit," Hwang says.

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How AI Created an Unprecedented Memory Chip Crisis

A surprising new bottleneck has emerged in the global AI infrastructure build-out: memory chips. Major manufacturer have effectively run out of capacity, sparking a scramble among customers to secure supply. Contract prices for certa alone, with another 50% jump forecast by March. This price shock is creating a squeeze — especially for makers of sr

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