Memory Market Update

Read-through from MU's 4QFY26 results; Order discussions until 2031 with tightness continuing into '28

Technology - Semiconductors

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- **Memory S/D outlook: tightness confirmed through CY28, no line of sight to balance.** MU guided memory S/D to be tighter in CY27/28 more so than in CY26, an extension of the cycle horizon and in-line with JPMe. Management guided industry DRAM/NAND bit shipments at low-20%/mid-20% through CY27/28, with the industry remaining supply constrained. For DRAM, management elaborated on the limited line of sight of when the S-D will return to balance as the demand growth far outpaces that of supply growth amidst significant cleanroom shortages. On HBM, management guided HBM bit shipments to grow faster than conventional DRAM through CY28, in-line with JPMe (HBM bit demand growth : +63% vs. non-HBM server : +37%).
- **SCA coverage extended to 2031.** MU disclosed that 26 SCAs were signed covering : 1) >35% of revenue through 2030 (conservative pricing assumption, as per management); 2) both DRAM and NAND (management guided DRAM mix slightly lower than NAND); 3) across all customers including AI hyperscalers, mobile, PC, auto; 4) pre-payment at US$32bn (up from US$22bn in the May-Q) and RPO at US$150bn; and 5) 75% of the estimated revenue having a defined pricing framework, with the remaining 25% negotiated based on market prices. Taking into account the SCA horizon extension, growing RPO/prepayment mix, and 75% bit output locked-in by contracts for 27E, we see little doubt about the robust memory demand profile. On the other hand, we believe MU's >35% SCA revenue coverage through 2030 is conservative compared to Asian memory makers with LTA coverage accounting for well above 50%+ of memory capacity. We believe the divergence may arise from strategic decisions (diverging priorities across contract duration, profitabiltiy (i.e. pricing), prepayment mix, contingent terms, etc.). Overall, we walk away with a more constructive impression of the memory fundamental view.

Table 1: LTA details announced across major memory QTD

As of 2QCY26	MU	SEC	SKH	US NAND maker	Kioxia
Number of Agreements	- 26 SCAs signed to date (vs. 2Q: 16 SCA) - Visibility extended to 2031 for two agreements	- Finalized with top 5 global DC customers; - Final stages with 5 additional major accounts	- ~10 agreements (with key customers)	- 8 NBMs	- ~10 LTAs concluded
Volume coverage	n.a. (2Q: ~20% of DRAM volume / ~1/3 of NAND)	- 60%-70% of total plant capacity	n.a.	- >50% of bits in FY2027; - ~2/3 of bits in FY2028	- Targeting 50% LTA volume coverage for CY2028
Revenue Coverage (when complete)	- ~35% of revenue by 2030 - Ultimate ambition still ~50% of revneue through 2030	n.a.	- Maintain an appropriate level based on market conditions - (not quantified)	- Minimum US$93.9bn total NBM revenue at floor pricing (actual expected above minimum)	n.a.
Term Length	- SCAs signed into 2031 (vs. 2Q 5 years (DC/Consumer), 3 years (Auto))	- 5-year term, subject to annual negotiations - (rolling basis, can add additional year)	- 5 years on average - (specific conditions vary by customer/product)	Up to 5 years; Weighted average duration 4+ years	n.a.
Agreement Structure	- Take-or-pay, binding volume commitments	- Mutually binding contractual conditions; - Committed demand assurance; rolling contract-based	- Strategic partnerships beyond volume supply; - long-term volume commitments + deposits	- S-D commitments defined by year and by quarter; - Financial guarantees release toward end of each agreement	- Multiyear supply agreements; - Mutually binding contractual conditions
Price Band - Ceiling	- n.a. (2Q: Current CQ2 2026 market price)	- Differentiated pricing models by customer and product	- Pricing structure will also not be uniform	Variable portion subject to ceilings (fixed + variable pricing blend)	n.a.
Price Band - Floor	- n.a. (2Q: Guarantees GM above any prior cycle peak)	- Minimum price floors established for mainstream products (sufficient to mitigate future investment risk)	- Range of pricing mechanisms to respond to price volatility	- Variable portion subject to floors; - Attractive (~80%) margins even at floor pricing	n.a.
Cash Deposits & Commitments	- US$32bn (increased from US$22bn in 2Q)	- Substantial advance payments over multiyear period;	- Deposits incorporated to support contract fulfillment	- US$16.5bn financial guarantees (cash deposits + financial instruments); - mostly held by/through third-party institutions	- Financial mechanisms (e.g. deposits) incorporated
RPO/Prepayment	- US$150bn reflecting contract value only for SCA	- Already received significant portion; - ~One-fourth of total received; balance expected to grow	n.a.	- US$59.8bn at quarter-end; - US$91.1bn incl. deals signed after quarter-end	n.a.
End Markets	- Data Center, Consumer, Automotive	- DRAM & NAND (AI/server-focused)	- Server DRAM, HBM, enterprise SSD (AI-focused)	- Datacenter and Edge (hyperscale/AI infrastructure)	- Data center/enterprise & hyperscale customers

Source: Company data.; Note: MU as of 3QCY26 and others until 2QCY26

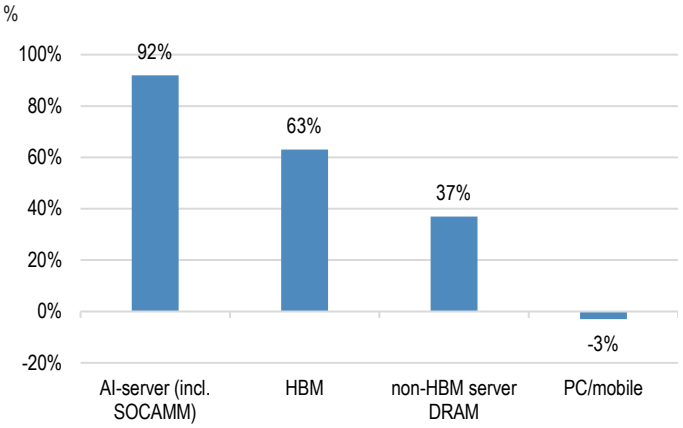
- **HBM: CY27 bit supply sold out at significant price increases; margin gap to conventional DRAM narrowing.** MU guided that the vast majority of its CY27 HBM bit supply is sold out with significant y-y price increase (JPMe: HBM blended ASP +54% y-y), explicitly narrowing the gross margin gap versus conventional DRAM. Management echoed our view of HBM bit shipment outgrowing than the conventional DRAM through CY28 (JPMe: +63% vs. non-HBM server DRAM: +37%) with HBM as a % of the TAM growing sequentially (JPME: HBM capacity mix reaching 31% in 28E vs. 19%

See page 6 for analyst certification and important disclosures, including non-US analyst disclosures.

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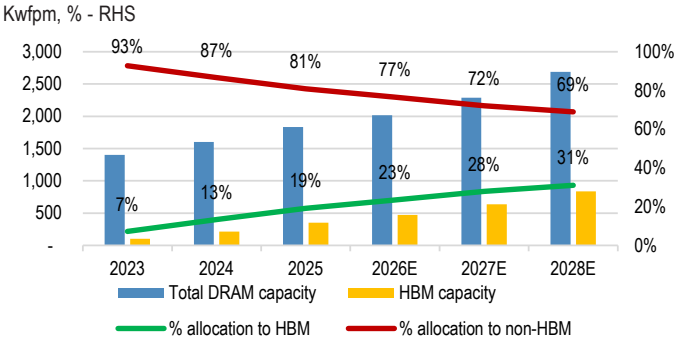
in 25A). The new pricing will be reflected from the beginning of CY27 calendar year, as per mangaement. For NVHBM, MU noted that its HBM4E will utilize foundry base die (i.e. TSMC) instead of the in-house base die used on HBM4 (in-line with our view that all memory makers are involved in the HBM4E project with the base die manfuacturing being exclusive at TSMC for NVHBM project - report).

Figure 1: Bit demand growth CAGR by application (2026E-28E)



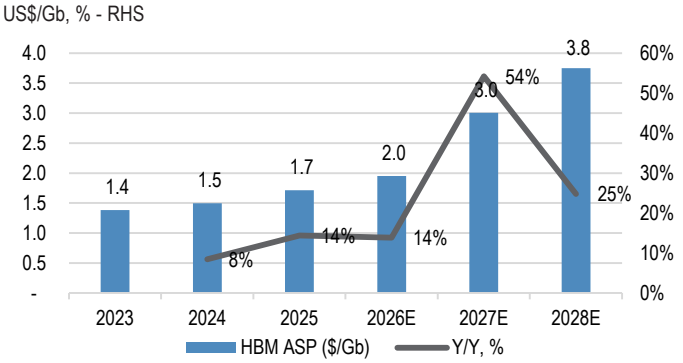
Source: J.P. Morgan estimates.

Figure 2: HBM % capacity mix in DRAM



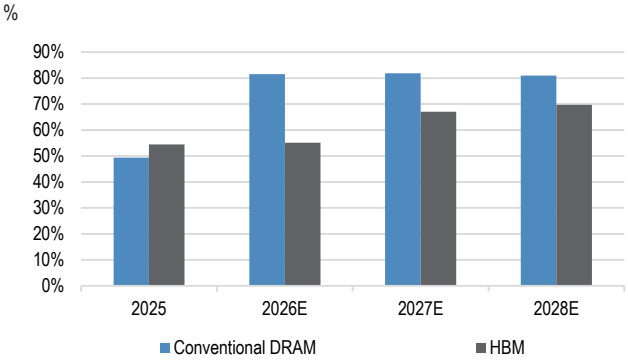
Source: Company data, J.P. Morgan estimates.

Figure 3: HBM ASP and Y/Y% trend



Source: Company data, J.P. Morgan estimates.

Figure 4: HBM vs. DRAM OPM



Source: Company data, J.P. Morgan estimates. Note: Blended margin from SEC/SKH

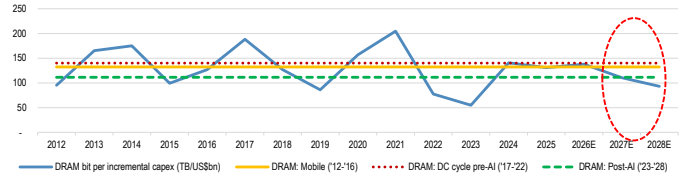
- **Multiple greenfield fabs in the pipeline with FY27E capex revised up.** MU announced to raise FY27 capex vs. previous plan, driven predominately by an increase in construction capex to accelerate cleanroom availability in late-CY28 (see figure 12), in addition to some pull-forward of WFE to optimize output from existing cleanrooms. While capex has been revised up, we highlight MU's multiple greenfield fab projects are already baked-in to our GMM supply equations and see limited changes to our tight S/D outlook until 28E (JPMe: +25% CAGR in CY27-28E). Management retained the disciplined capex tone, citing historical low capital intensity vs. historical mid-30% framework being outdated (JPMe: DRAM capital intensity <mid-10% and NAND at <10% through FY26-28E). On technology migration, managmeent indicated 1-gamma and G9 DRAM nodes (278L NAND) accounts for the highest mix with the next-gen node beginning volume productions in the 2HCY27, a two generation node ahead of Chinese competitors (in-line with our view - report). We believe MU's capex and supply commentaries were in-line with our industry view given limited bit output per incremental capex growth. In light of this trend, we believe the capex hike has limited impact on easing the current market tightness, and we remain constructive on extended

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SCA order visibility (as far as 2031) being the justification of capex hike.

Figure 5: DRAM bit per incremental capex trend

TB/US$bn



Source: Company data, WSTS, J.P. Morgan estimates.

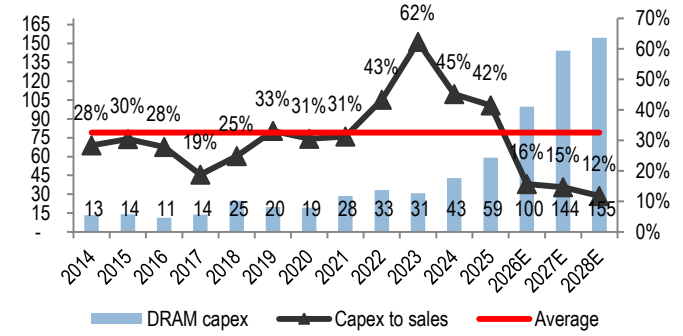
Figure 6: MU - greenfield fab and output timeline

Fab	Initial Output	Notes
Singapore HBM advanced Pkg	Early - CY27	Cleanroom preperation ahead of plan
Idaho 1 (ID1)	Mid - CY27	On track
Tongluo (Taiwan)	Mid - CY27	On track
Idaho 2 (ID2)	Late - CY28	On track
Japan Hiroshima - DRAM	Late - CY28	Groundbreaking in 4QFY26
Singapore fab - NAND	2HCY28	Construction on Track
New York	CY2030	n.a.

Source: Company data.

Figure 7: DRAM capital intensity

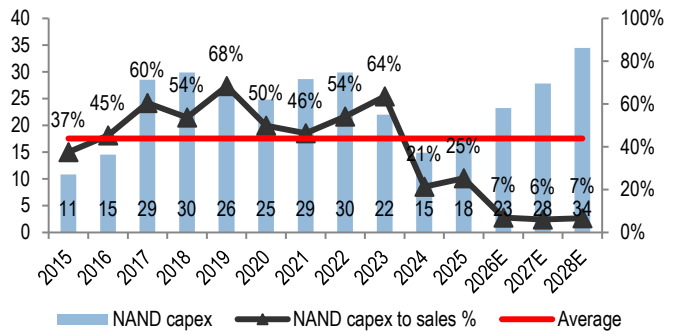
US$bn, %



Source: Company data, J.P. Morgan estimates.

Figure 8: NAND capital intensity

US$bn, %

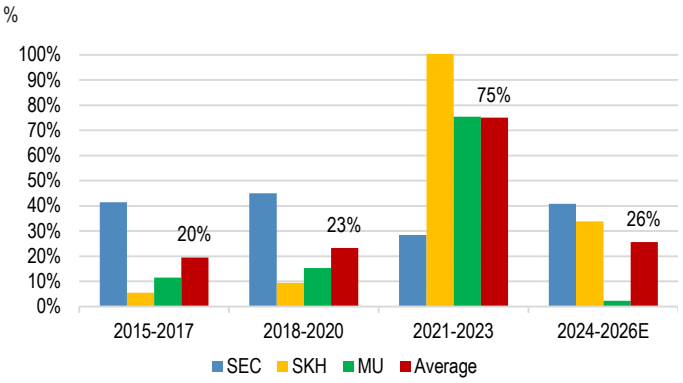


Source: Company data, J.P. Morgan estimates.

- **Shareholder returns update.** Similar to Asian memory makers, shareholder return policy update was another key FAQ from investors towards MU, in our view. MU has reiterated its intent to return excess cash to investors via share buybacks, especially after 9 December 2026 (the second anniversary of CHIPS agreement). Management clarifeid that it will likely reach its target cash level by end-1QFY27, hinting that the incremental free cash flow generated through 2QFY27-4QFY27 could be returned to shareholders after lifting the current authorization of share repurchases which stand at US$2.2bn. As we have discussed in the memory bull-bear market debate report, we believe proactive shareholder returns are a pre-requisite for memory stocks to re-rate and is an indirect evidence of a higher for longer memory upcycle. We expect Asian memory makers to provide updates on their shareholder returns at their Oct-end earnings conferences (i.e. SEC hinting stronger shareholder returns via. lifting the FCF pool or SKH disclosing an additional share buyback following the W40trn in August - report).

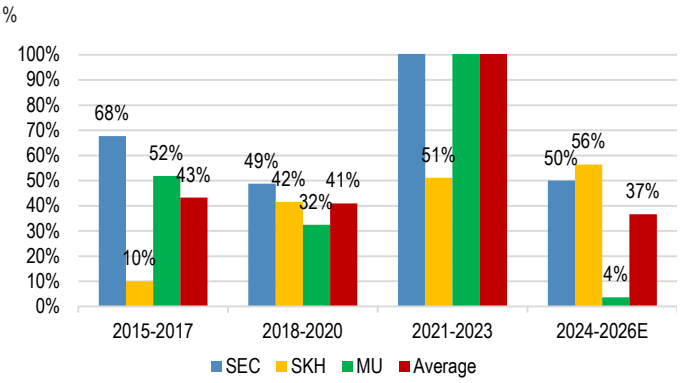
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Figure 9: Big 3 NI payout ratio segmented in three years



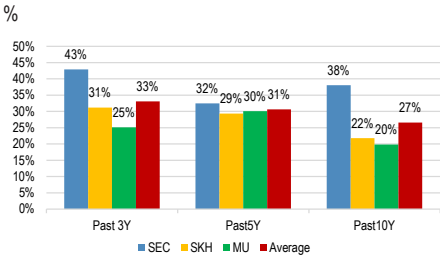
Source: Company data, J.P. Morgan estimates.

Figure 10: Big 3 FCF payout ratio segmented in three years



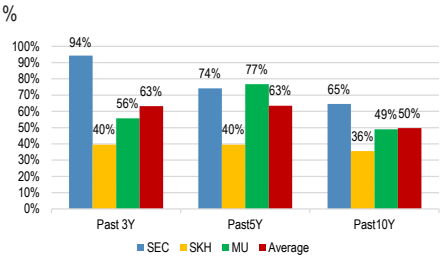
Source: Company data, J.P. Morgan estimates.

Figure 11: Big 3 NI payout ratio in the past 3Y/5Y/10Y



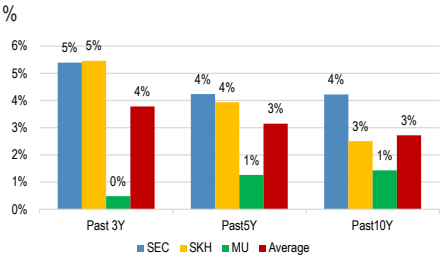
Source: Company data, J.P. Morgan estimates. Note: Past 3Y = 2023-25, Past 5Y = 2021-2025, Past 10Y = 2016-25

Figure 12: Big 3 FCF payout ratio in the past 3Y/5Y/10Y



Source: Company data, J.P. Morgan estimates. Note: Past 3Y = 2023-25, Past 5Y = 2021-2025, Past 10Y = 2016-25

Figure 13: Big 3 TSR yield ratio in the past 3Y/5Y/10Y



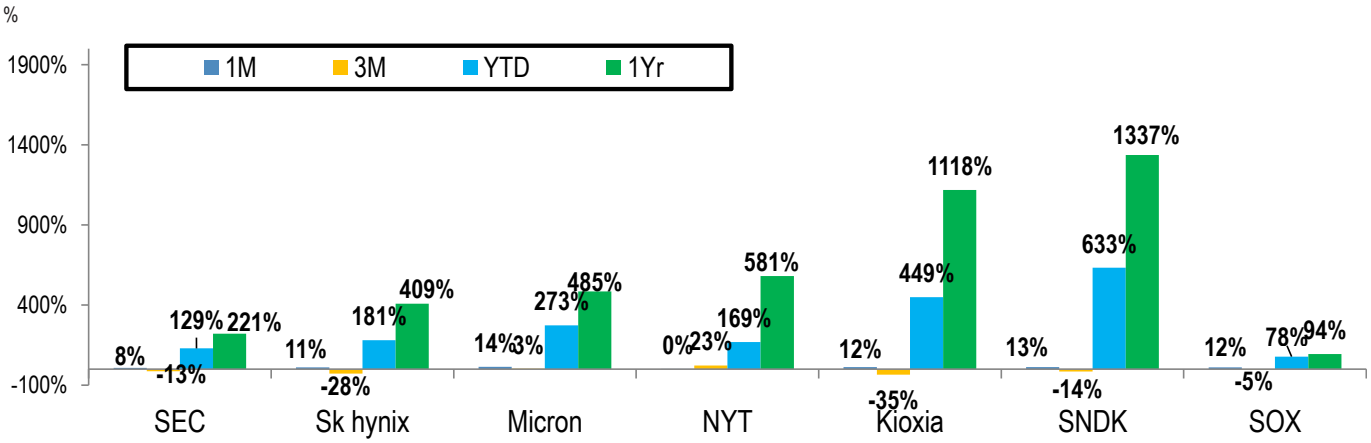
Source: Company data, Bloomberg Finance L.P., J.P. Morgan estimates. Note: (1) Past 3Y = 2023-25, Past 5Y = 2021-2025, Past 10Y = 2016-25; (2) Average of TSR in respective years

- **Micron's 4QFY26 results flash and 1QFY27 outlook.** MU (OW, covered by JPM's Harlan Sur) reported a strong Aug-Q print: sales of US$54.2bn (consensus: $51.5bn) and EPS of US$33 (consensus: US$32) - report from Harlan. DRAM bit shipment rose MSD % Q/Q broadly in-line with Asian memory makers (JPMe: SEC/SKH +5%/+10%) and DRAM ASP rose high-teens% Q/Q (broadly in-line with SEC/SKH of +17%/+20%). NAND bit shipments rose ~10% and ASP rose +30% Q/Q tracking higher than Asian memory makers (SEC/SKH 3Q26E B/G at +8%/+3% and ASP +12%/+12%). MU's Nov-Q guidance was stronger at ~US$61.5bn, GPM of 86.25% and EPS of US$38.2 (vs. consensus of US$56bn/87%/US$36).
- **Share price outlook.** Memory share prices have gradually recovered in the past 1M (+10% vs. SOX: +12%) and reacted positively after MU's strong earnings print (SEC/SKH/Kioxia/NYT: +3%/+3%/+6%/flat), in our view. As Asian makers head into 3Q26 earnings seasons, we believe MU's solid fundamental outlook (i.e. memory S/D tightening in 27/28, order discussions extended into 2031, 75% of the 27E bit output locked-in by contracts) should be largely echoed by memory makers with shareholder return update being the key monitoring point. We are positive on all Asia memory maker names and in the short term prefer SKH over SEC upon superior shareholder return policy and higher TSR yield.

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Figure 14: Global memory makers' share price performance, including SOX (Philadelphia Semiconductor index)



Source: Bloomberg Finance L.P. Note: Past performance is not an indicator of future results.