BERNSTEIN
SOCIETE GENERALE GROUP

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Global Memory

Korea Memory Export Tracker (Sep): SK hynix improved, but Samsung still claimed HBM leadership in 3Q26?



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We track the Korea export data as it is a good early indicator for Samsung's & SK hynix's HBM revenue in the same quarter, and update this tracker with the Sep data. Details of our methodology can be found in our prior note. The dataset can be downloaded at this link.

Overall HBM export remained robust, up 45% MoM, 17% QoQ (vs. Jun) & 131% YoY.

Sep was sub-seasonal for Samsung but Samsung's HBM revenue should still grow notably QoQ. Sep export from S. Chungcheong (where Samsung packages HBM) was down 11% QoQ vs. Jun. Regression based on Jul-Sep data predicts Samsung's 3Q26 HBM revenue at US$8.7B, 10% below our forecast but 33% up QoQ.

SK hynix accelerated in Sep but probably still lag Samsung in 3Q26 HBM revenue. Export from N. Chungcheong & Gyeonggi almost doubled MoM and was up 51% QoQ. Thanks to this, regression now shows SK hynix's HBM revenue to rise by 11% QoQ in 3Q26 to US$7.6B, largely in line with our projection, but still below Samsung's. I.e. if our analysis is right, Samsung overtook SK hynix in HBM revenue in 3Q26.

Data also suggested Samsung leads in HBM4. We track "value per weight" as it is directionally suggestive of HBM price change. Sep "value per weight" was mostly stable MoM for both. That said Samsung's "value per weight" in Sep remained >2x from the prior level, and 4x SK hynix's in the same month & still suggested Samsung is leading in HBM4.

Data showed the price hike from new HBM contracts hasn't fully started. Conventional memory price has surged 5x since 3Q25, but "value per weight" only ~3x for Samsung & flattish for SK hynix over the same period.

SK hynix likely led export to Malaysia in Sep. Export to Malaysia was flat MoM and was 22% of the total HBM export in Sep. Data from Samsung was softer, but the export from SK hynix grew very strongly and became the majority of its total export to Malaysia. Export to Malaysia has been growing meaningfully over the past few quarters. We assume it's for Intel's EMIB but are puzzled why it happened so early.

Overall data shows Samsung is gaining strength in HBM. SK hynix made notable progress in Sep, but overall for 3Q26 data still showed Samsung improved much more, especially with the earlier ramp of HBM4. We think SK hynix HBM4 ramp should eventually happen this year, but maintain the view that Samsung's position in HBM will improve further.

Stay constructive in memory. We see HBM price hike in 2027 & better than expected price increase in conventional memory in 4Q26. We also believe the fear on CXMT and China is likely overdone and don't see changes to the supply shortage (see CXMT initiation). We remain structurally constructive on Samsung, SK hynix & Micron but cautious on KIOXIA on China competition (see our sector update).

See the Disclosure Appendix of this report for required disclosures, analyst certifications and other important information. Alternatively, visit our Global Research Disclosure Website.

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BERNSTEIN TICKER TABLE

			21 Oct 2026		TTM	Reported EPS				Reported P/E (x)	
Ticker	Rating	Cur	Closing Price	Price Target	Rel. Perf.	Cur	2025A	2026E	2027E	2025A	2026E	2027E
005930.KS (SEC- Samsung)	O	KRW	223,500	440,000	116.9%	KRW	6,611.53	45,072	74,602	33.8	5.0	3.0
005935.KS (SEC-Pref - Samsung)	O	KRW	172,200	374,000	110.3%	KRW	6,611.53	45,072	74,602	26.0	3.8	2.3
SMSN.LI (Samsung)	O	USD	4,040.00	7,857.00	139.7%	USD	116.15	781.29	1,332.17	34.8	5.2	3.0
000660.KS (SK hynix)	O	KRW	1,294,000	2,700,000	154.9%	KRW	60,341	353,627	554,848	21.4	3.7	2.3
MU (Micron)	O	USD	896.07	1,300.00	328.5%	USD	8.29	73.78	173.33	108.1	12.1	5.2
285A.JP (KIOXIA)	U	JPY	13,510	49,000	464.3%	JPY	1,014.00	10,485	14,140	13.3	1.3	1.0
688825.CH (CXMT)	O	CNY	40.97	70.00	NA	CNY	0.03	4.04	6.82	N/M	10.1	6.0
ASIAX			1,807.32									
EM			1,698.51									
SPX			7,712.57									

O - Outperform, M - Market-Perform, U - Underperform, NR - Not Rated, CS - Coverage Suspended

MU estimate is Adjusted EPS; MU valuation is Adjusted P/E (x);

Source: Bloomberg, Bernstein estimates and analysis.

INVESTMENT IMPLICATIONS

Samsung Electronics: We rate Samsung Electronics Outperform with price target of KRW 440,000.

SK hynix : We rate SK hynix Outperform with price target of KRW 2,700,000.

Micron: We rate Micron Outperform with price target of US$1,300.00.

KIOXIA: We rate KIOXIA Underperform with price target of JPY 49,000.

CXMT: We rate CXMT Outperform with price target of CNY 70.00.

DETAILS

*Korea Customs Service has released export data for Sep. As **our previous note** found, the export data for certain memory products bears close correlation with HBM revenues of Samsung and SK hynix. We hence track the monthly data to provide investors a preview on HBM revenues from the two companies in the same quarter. Details of our methodology can be found in **the previous note**. You may also download the export data at this **link**.*

After strong Jul & Aug, Samsung's was softer than seasonality. On the other hand, SK hynix delivered a very strong Sep to save 3Q26 from QoQ decline. Overall Samsung still grew more QoQ and has caught up with SK hynix in HBM share.

- Sep Korea total multichip memory export to Taiwan and Malaysia was up a massive 45% MoM. QoQ growth (vs. Jun) was solid at 17% and YoY growth expanded to 131% YoY (Exhibit 1). As we analyzed before, multichip memory export to Taiwan and Malaysia tracked closely with HBM revenues of Samsung and SK hynix and therefore the Sep data indicated continued strong HBM momentum.

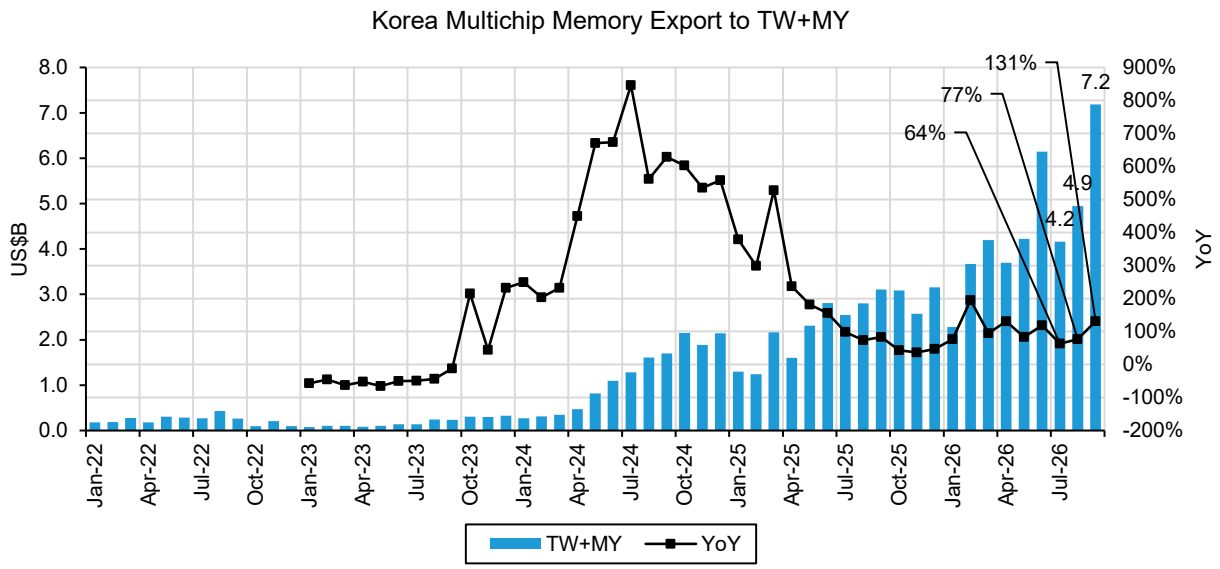
- If we focus on the export from S. Chungcheong Province, where Samsung's back-end fabs are located and likely where its HBM is packaged, Sep export was up by 7% MoM to US$3B (Exhibit 2). QoQ growth vs. Jun was however down 11%, though the 3Q26 overall export QoQ growth was still solid at 31% (Exhibit 3). According to the regression using historical data, the Jul-Sep data suggested ~US$8.7B in HBM revenue for Samsung in 3Q26, which is ~10% behind our model of US$9.6B, but still represented 33% QoQ growth (Exhibit 4). We get roughly the same results if we run the regression using only data points from 1Q25 (Exhibit 5). The reason why 3Q26 exports came a bit short vs. our model is mainly the change in monthly seasonality. Sep export came lighter than we expected, making up only 38% of the 3Q26 quarterly total, contrasting with the much more backend loaded monthly seasonality since 1Q25 (Exhibit 6). Despite this, overall Samsung's HBM export has been very solid, and does align with Samsung's guidance of the rapid ramp of HBM4 sales in 2H26. We hence remain positive on Samsung's HBM share gain this year (see Samsung 2Q26 earnings **takeaway**).

- For SK hynix, we have identified that its HBM export should come nearly all from N. Chungcheong Province and Icheon City, where its wafer fabs are. However since Sep 1, Korea Customs has ceased to disclose by trade data down to 10 digit HS code at city level, and hence we can no longer obtain multichip memory export data from Icheon City. However we've found that multichip memory export to Taiwan & Malaysia from Gyeonggi Province, where Icheon city is located, historically was very similar to the export from Icheon City, implying other fabs located in Gyeonggi Province, mainly Samsung's Hwaseong and Pyeongtaek ones, did not directly export HBM to Taiwan and Malaysia. Given this finding, we believe we can switch to the data from Gyeonggi and our analysis should remain valid. We will closely monitor this going forward to see if there is any change to this assumption.

- In contrast to Samsung, export from N. Chungcheong & Gyeonggi, our proxy for SK hynix, was strong in Sep, with export data surging by 97% MoM and 51% QoQ (vs. Jun) (Exhibit 7). The strong Sep rescued the overall 3Q26 export to achieve 4% QoQ growth (Exhibit 8). Regression finds US$7.6B HBM revenue by SK hynix in 3Q26, in line with our forecast and 11% above 2Q26's (Exhibit 9). Also in contrast with the past seasonality, SK hynix 3Q26 export was very backend loaded, with Sep contributing to 50% of the quarterly total (Exhibit 10). The weakness in Jul & Aug was perhaps related to the delayed HBM4 shipment which SK hynix also alluded to in its earnings (see **takeaway**).

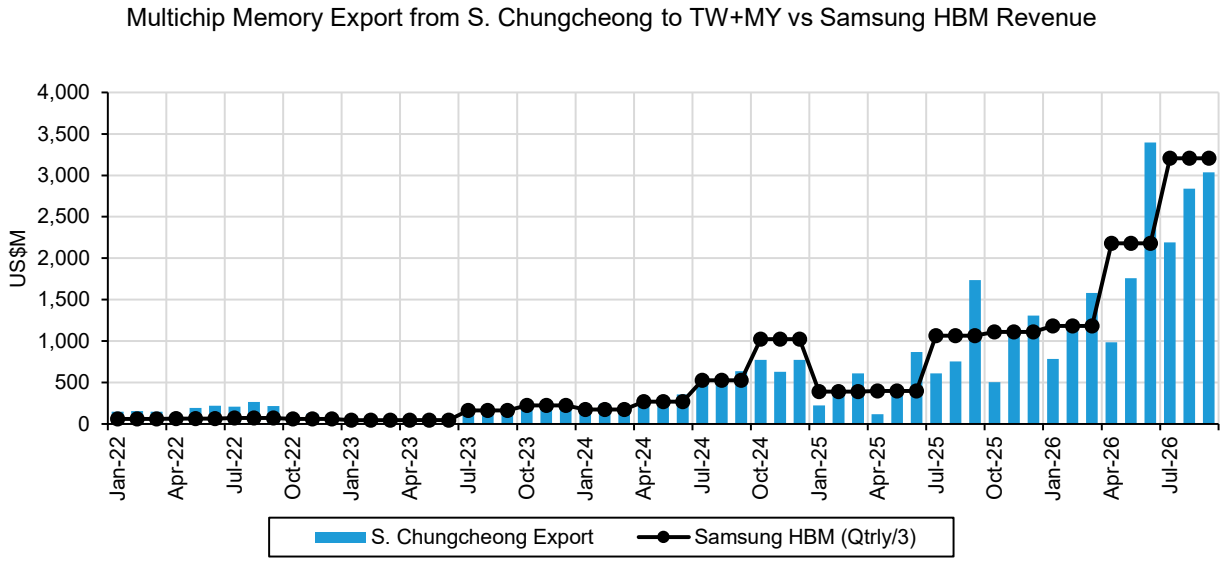
- Generally the HBM export growth momentum of SK hynix has been notably weaker than that of Samsung, and regression suggested that in 3Q26 Samsung surpassed SK hynix in the overall HBM revenue by ~15% (US$8.7B vs. US$7.6B). Going forward we continue to be more positive on Samsung's HBM growth.

EXHIBIT 1: **Being a close proxy for HBM shipment, Korea multichip memory export to Taiwan and Malaysia surged by 45% MoM and was also up 45%MoM, 17% QoQ & 131% YoY.**



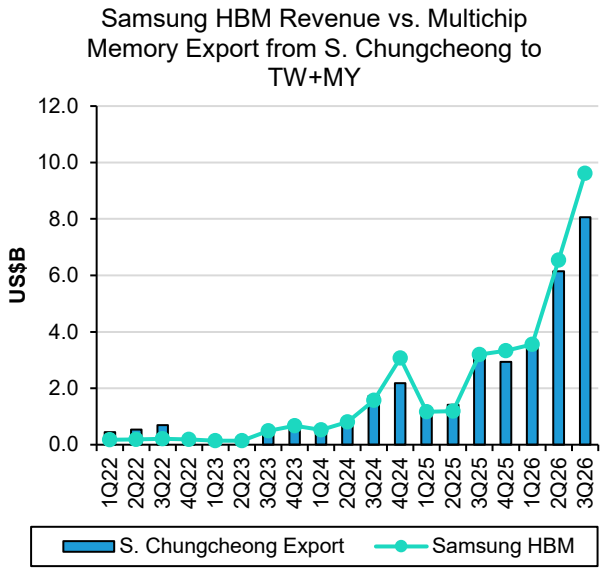
Source: Korea Custom Service, KITA, company reports, Bernstein estimates and analysis

EXHIBIT 2: **Export from S. Chungcheong dropped 11% QoQ in Sep.**



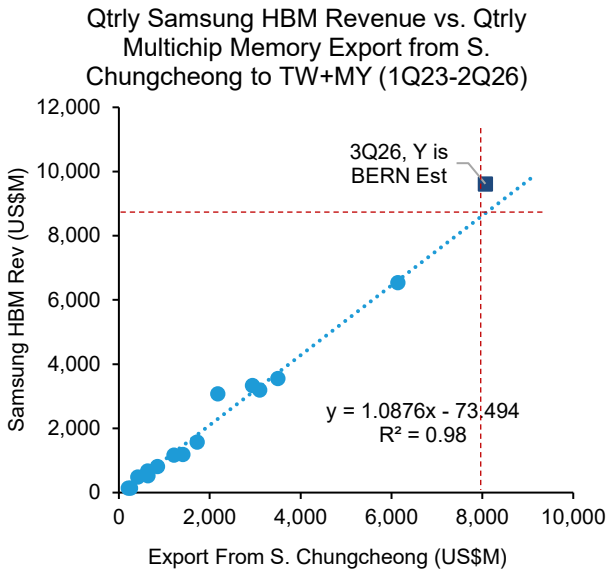
Samsung HBM revenue in 3Q26 is Bernstein estimate
Source: Korea Custom Service, KITA, company reports, Bernstein estimates and analysis

EXHIBIT 3: **Despite slightly weak Sep, 3Q26 export from S. Chungcheong still grew 31% QoQ.**



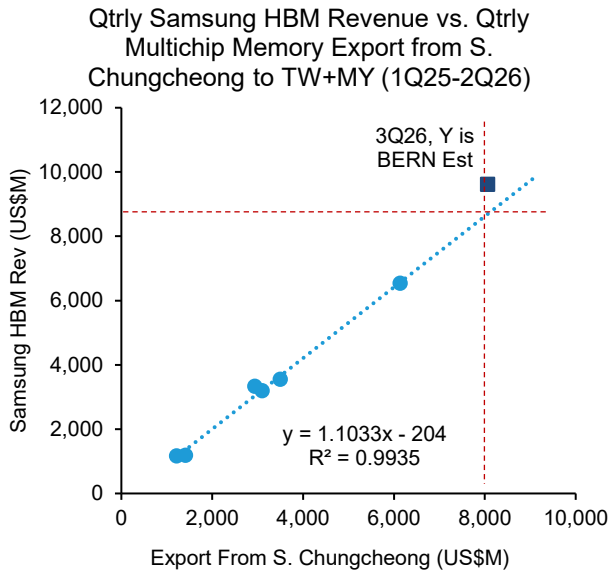
Samsung HBM in 3Q26 is Bernstein estimate
Source: Korea Custom Service, KITA, company reports, Bernstein estimates and analysis

EXHIBIT 4: **Based on the export data, regression predicts ~US$8.7B in HBM revenue for Samsung in 3Q26, ~10% below our model.**



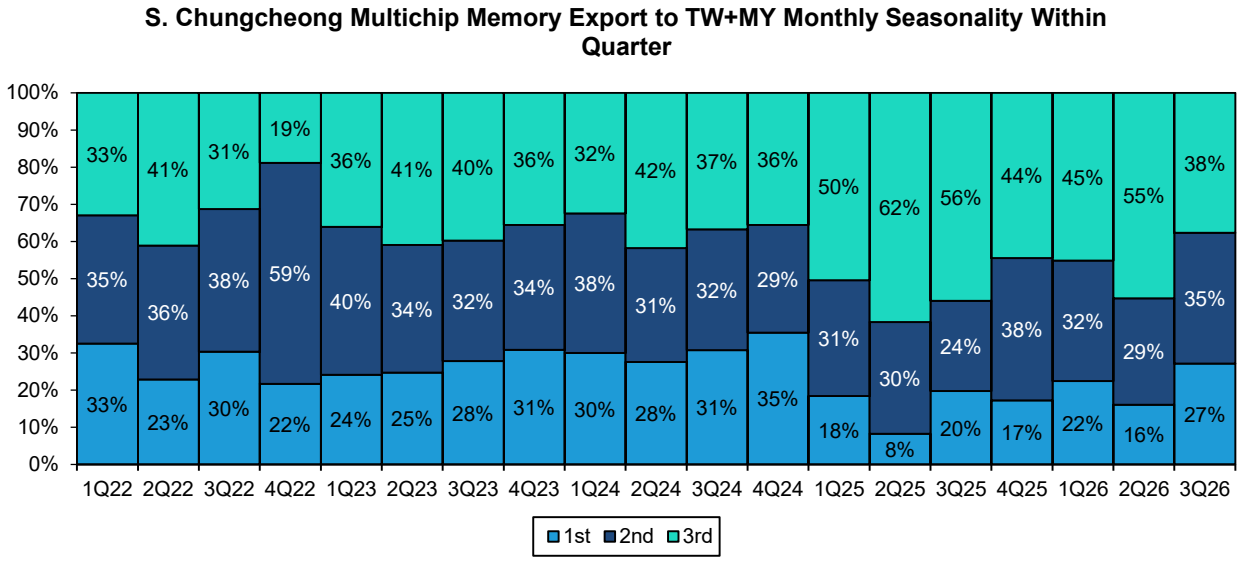
Source: Korea Custom Service, KITA, company reports and Bernstein analysis

EXHIBIT 5: **Regression based on data from 1Q25 onwards yields similar forecast.**



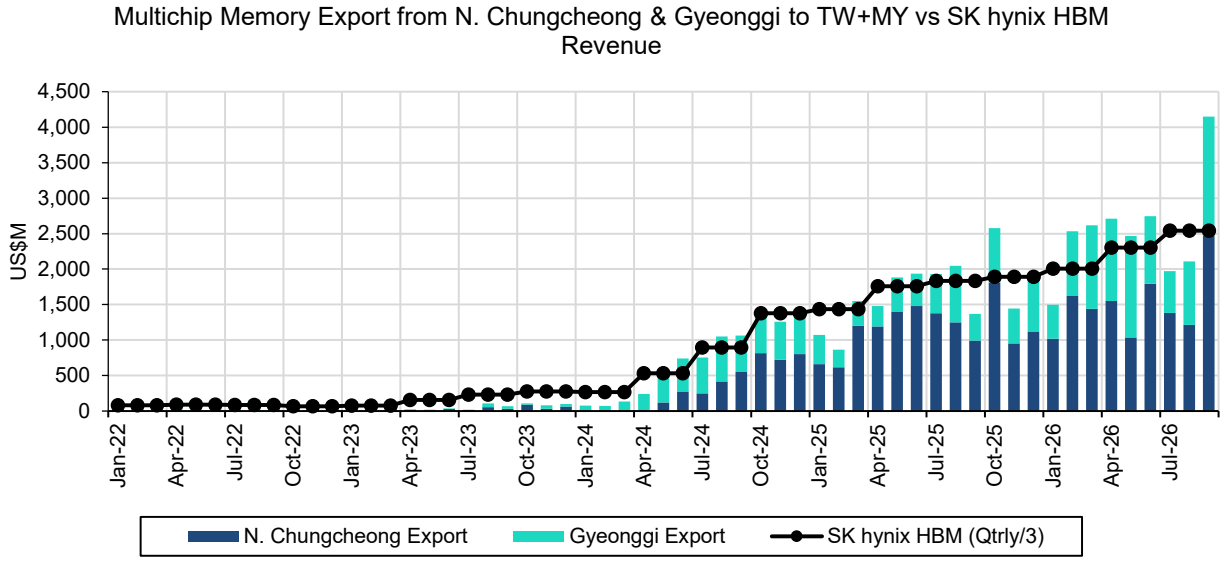
Source: Korea Custom Service, KITA, company reports and Bernstein analysis

EXHIBIT 6: **Monthly seasonality of export from S. Chungcheong has been very back-end loaded, but 3Q26 seasonality was distinctively more front end loaded compared to this history.**



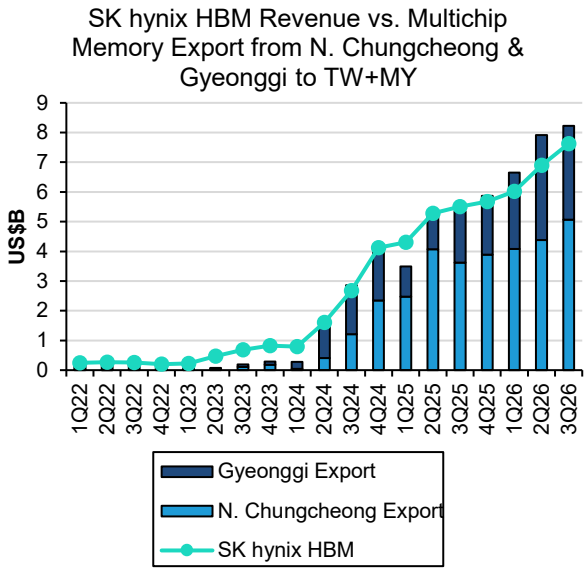
Source: Korea Custom Service, KITA and Bernstein analysis

EXHIBIT 7: **Export from N. Chungcheong and Gyeonggi nearly doubled MoM in Sep.**



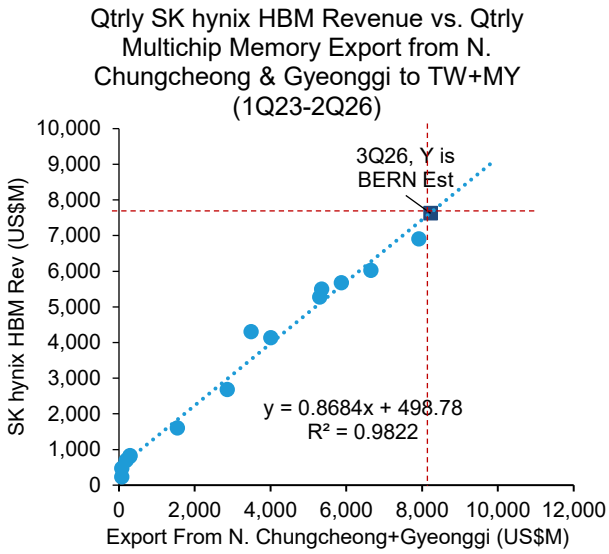
SK hynix HBM revenue in 3Q26 is Bernstein estimate
Source: Korea Custom Service, KITA, company reports, Bernstein estimates and analysis

EXHIBIT 8: **Thanks to strong Sep, export from N Chungcheong & Gyeonggi managed to grow 4% QoQ in 3Q26.**



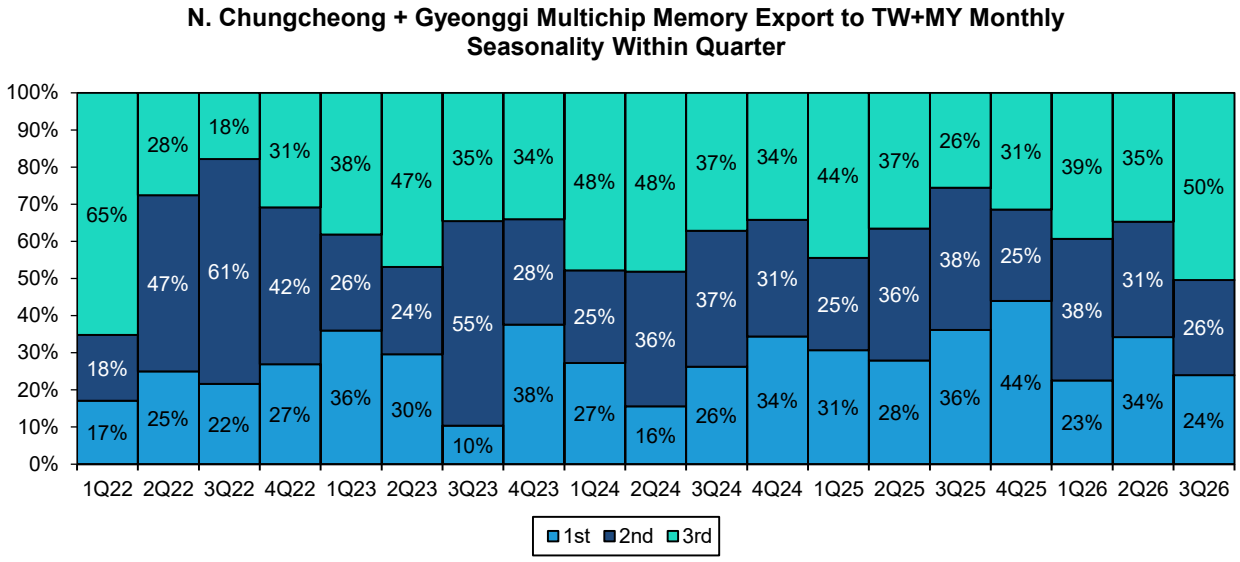
SK hynix HBM revenue in 3Q26 is Bernstein estimate
Source: Korea Custom Service, KITA, company reports and Bernstein analysis

EXHIBIT 9: **Regression predicts US$7.6B HBM revenue for SK hynix in 3Q26.**



Source: Korea Custom Service, KITA, company reports and Bernstein analysis

EXHIBIT 10: **Monthly seasonality for N. Chungcheong + Gyeonggi historically has been front-end loaded, but 3Q26 seasonality was noticeably more weighted towards Sep.**



Source: Korea Custom Service, KITA and Bernstein analysis

As suggested by export value per weight, Samsung likely has significantly higher blended HBM ASP than SK hynix, which likely finds its transition from HBM3E to 4 slower than Samsung's.

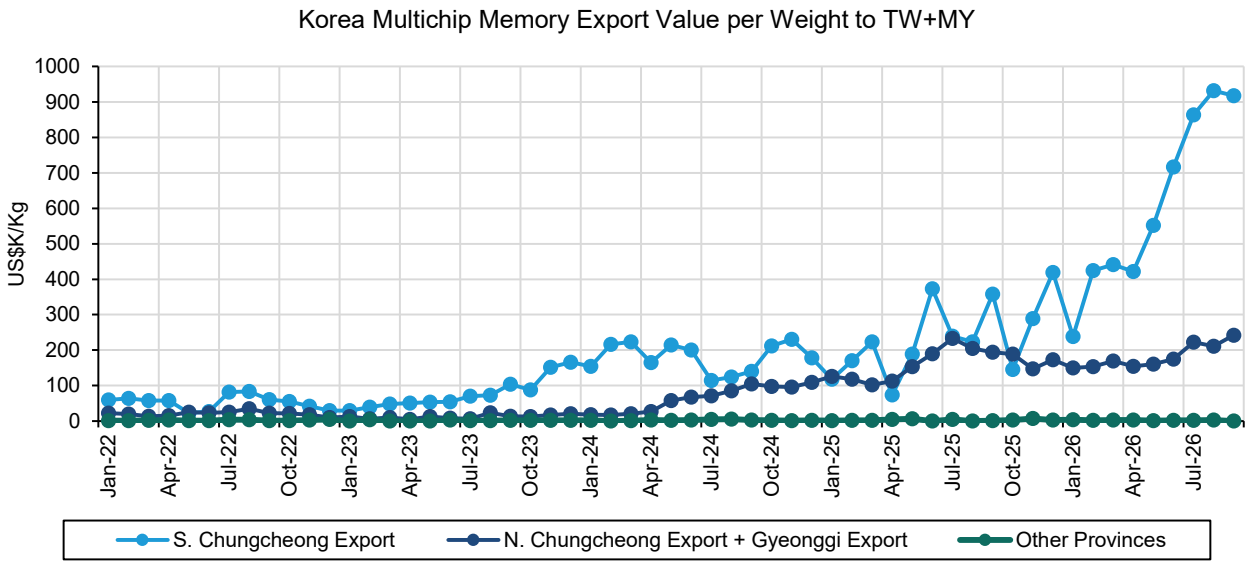
- Export value per weight for Korea multichip memory loosely correlates with HBM ASP, though it likely is only directionally indicative and not significant enough to make precise projections. For Sep, export value per weight was up slightly MoM for N. Chungcheong+Gyeonggi (proxy for SK hynix), and the data for S. Chungcheong (proxy for Samsung) also dropped by a tiny amount after a remarkable rally since Apr (Exhibit 11). Nonetheless, Samsung's value per weight in Sep remained 2.2x higher

vs. in Apr, and we attribute that to the rising shipment of HBM4, which commands higher value per weight over HBM3E. Samsung guided its HBM4 sales to >3x QoQ in 3Q26 and to account for well over 60% of its total HBM sales in 2H26, and the export data has been well supporting the guidance.

- For SK hynix, while Sep export data was exceptionally strong, the value per weight data remained largely in a range similar to previous levels. The signal on HBM4 is still notably weaker than what we observe on Samsung. As of Sep, the value per weight from Samsung was ~4x that from SK hynix, while the gap was 2.7x in Apr, and largely nil 1 year ago. There indeed has been more chatter about delayed HBM4 shipment at SK hynix due to technical issues and that is supported by the export data.

- Another important observation is while the price of conventional memory has increased ~5x since 3Q25, the data suggested that of HBM has been much steadier. Export value per weight from S. Chungcheong has about tripled over the past 12 months, & some of that was thanks to Samsung's earlier HBM4 shipment & hence a mix improvement, rather than a like-for-like HBM price hike. The blended average of ASP increase likely was much smaller when we consider SK hynix's larger scale in HBM and the relatively more flattish value per weight trend for the company. That said, we believe that with new contracts the HBM prices will be adjusted higher into 2027, though the size of the adjustment is likely still not enough to make HBM as profitable as conventional DRAM in 2027.

EXHIBIT 11: **Value per weight from S.Chungcheong, proxy for Samsung continued to indicate meaningful HBM4 shipment while data still suggests no meaningful HBM4 shipment from hynix.**



Source: Korea Custom Service, KITA and Bernstein analysis

Export to Malaysia was flat MoM & SK hynix likely overtook Samsung to become the majority contributor. The export to Malaysia is likely for Intel EMIB, but we wonder why the increase happened so early.

- Korea's total multichip memory export to all countries was US$15B in Sep, up by another 23% MoM and also up 18% QoQ, thanks to both growth in HBM and also the surging prices of conventional memory. Taiwan and Malaysia accounted for 48% of the total export, and the ratio was flat QoQ vs. Jun (Exhibit 12). Taiwan and Malaysia continued to lead other destinations by a wide margin on export value per weight, and hence we continued to include only Taiwan and Malaysia as the primary destination of HBM export from Korea (Exhibit 13). For other regions, export value per weight to Hong Kong and China Mainland have risen considerably since 3Q25, and we observe a similar trend for other regions such as the US, Japan and India. However, their values per weight remained much lower than Taiwan and Malaysia, and we hence still assume the increases in these regions were mostly due to rising conventional memory prices, instead of HBM shipment, as Samsung and SK hynix likely exported considerable amounts of mobile memory packages to these regions & memory packages are categorized as multichip memory too (Exhibit 14). And it also supports conventional memory enjoys rapidly rising prices and commands better revenue and profit per wafer than HBM now.

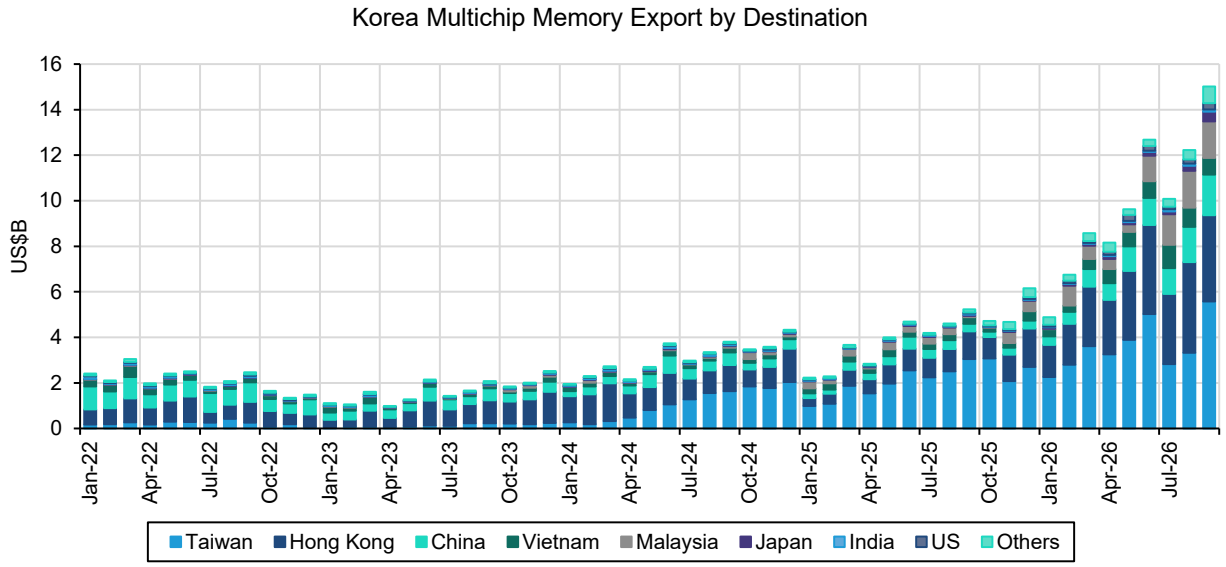
- Export to Malaysia was flattish MoM at ~US$1.6B in Sep. Average run rate in the last 6 months was to US$1B, compared to US$4B for exports to Taiwan. We understand that Malaysia is home to Intel's high-end packaging facilities, where some high-end server CPUs equipped with HBM are packaged with EMIB. Separately we picked up a growing customer interest in EMIB, and we note Intel is set to bring online a new advanced packaging fab into production this year as well (link). However, even if customers decide to adopt, we believe any volume production should be in late 2027 at the earliest, and wonder why HBM export to Malaysia took place so early. All in all the export to Malaysia is worth continued monitoring.

- Unlike previous months, N. Chungcheong and Gyeonggi (proxy for SK hynix) overtook N. Chungcheong (proxy for Samsung) by a slight margin to become the majority contributor of the export to Malaysia in Sep. Export from Samsung corrected, partially explaining Samsung's soft Sep, while the export from SK hynix spiked (Exhibit 15-Exhibit 16). Broadly in the past 6 months Samsung has maintained a much bigger presence in Malaysia and has benefited more from the Malaysia demand, with ~30% of its export going to Malaysia, compared to 14% for SK hynix.

- For the origin of export, Sep data showed that S. Chungcheong, N. Chungcheong and Gyeonggi continued to account for almost all of multichip memory export to Taiwan & Malaysia (Exhibit 17). So it does not appear either Samsung or SK hynix has started packaging HBM in other locations within Korea.

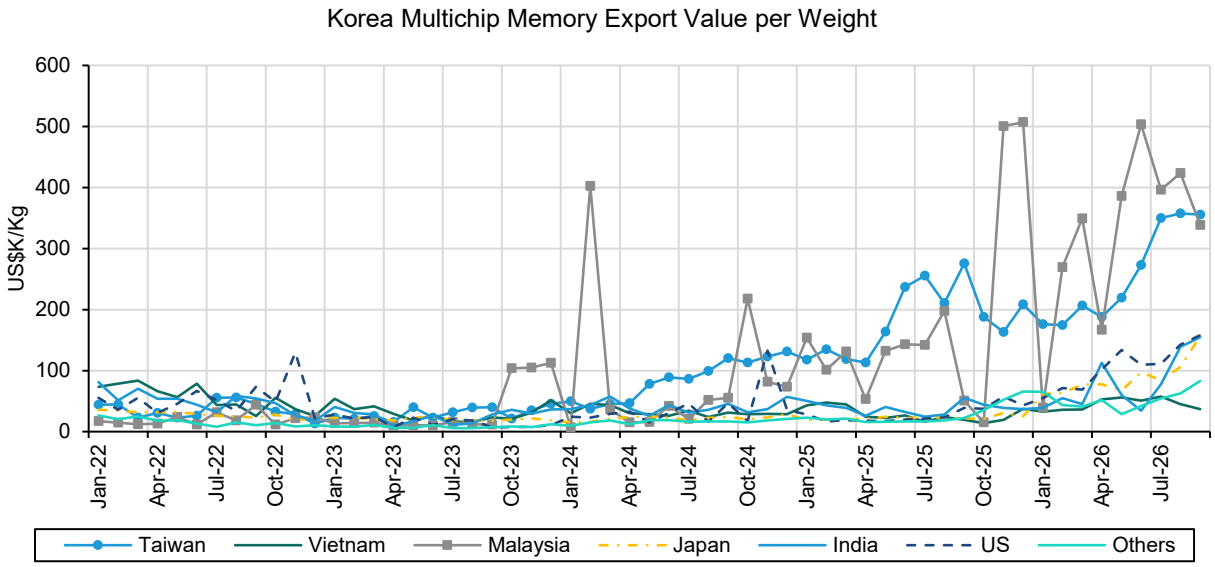
- Overall, all the data above suggested that HBM export continued to concentrate in mostly Taiwan and to a lesser degree Malaysia. However, we'd like to point out the limitations to our methodology. One is if either of them moves any HBM packaging outside of Korea, it will not be picked up by this export data. We however don't think this is happening soon. Secondly, if any of their HBM shipment is consumed (i.e. packaged into another product) within Korea, it will also not be reflected in our analysis either. We think this second limitation may become more relevant as Amkor (AMKR US, not covered) has small volume of CoWoS-like production in Korea already and may increasingly do more in the future.

EXHIBIT 12: **Multichip memory includes mobile DRAM & NAND packages too, and most of the export went to Hong Kong/China & Vietnam prior to 2024 as most of smartphone production is in those regions. Since 2024 the export to Taiwan has been rising very quickly due to a surge in HBM export to Taiwan for CoWoS packaging there. And in recent quarters we also saw an increase in the export to Malaysia.**



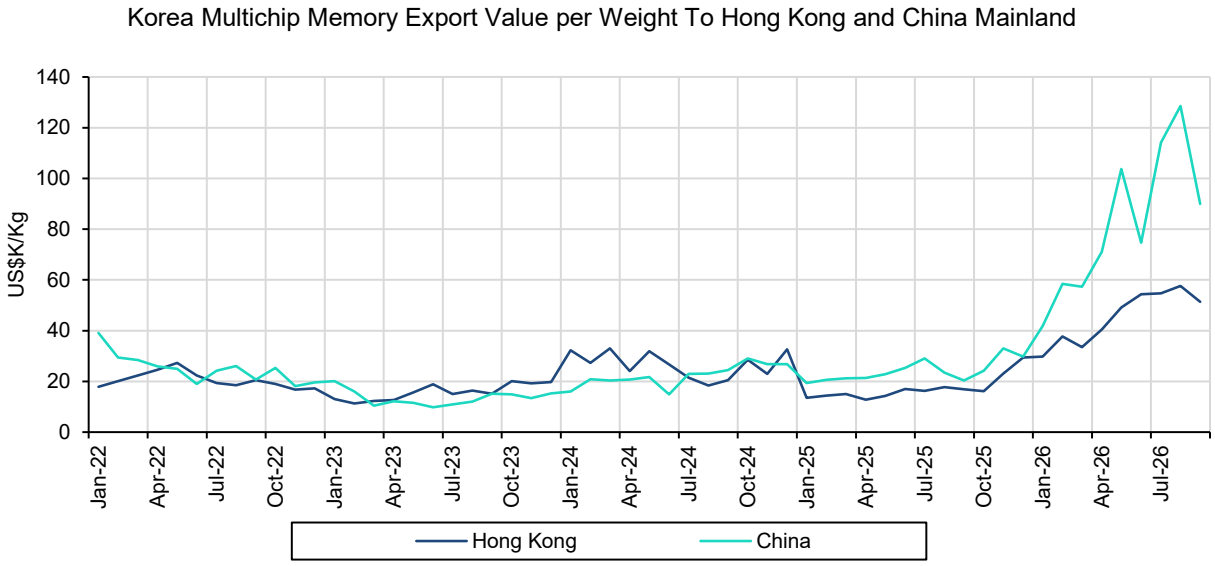
Source: Korea Custom Service, KITA and Bernstein analysis

EXHIBIT 13: **Value per weight continued to indicate that HBM was likely primarily exported to Taiwan and Malaysia in Aug.**



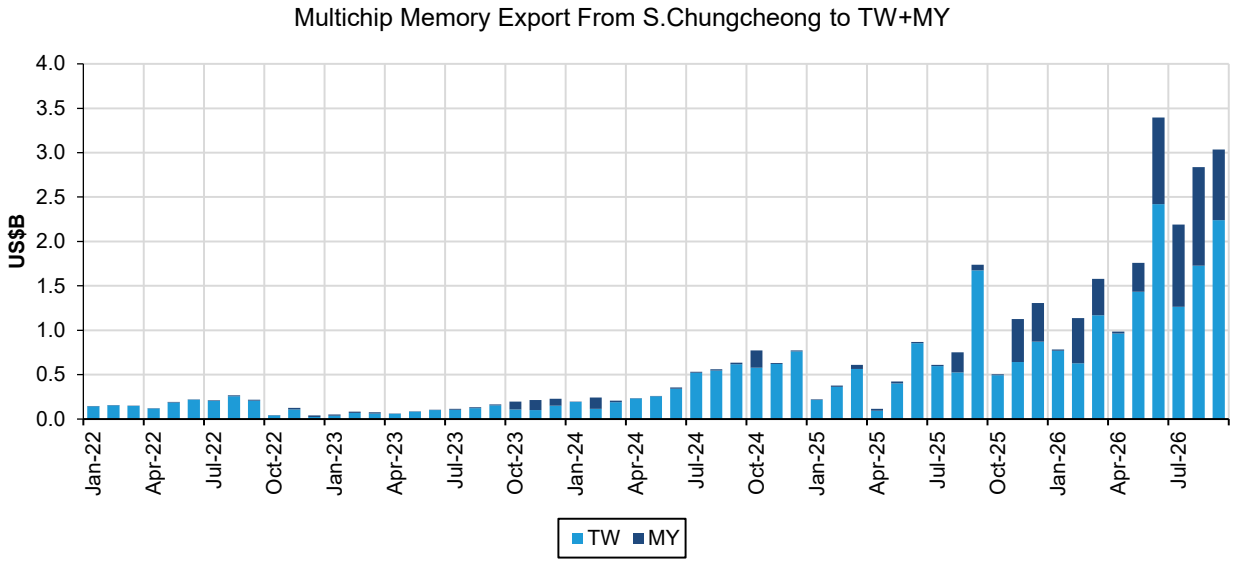
Source: Korea Custom Service, KITA and Bernstein analysis

EXHIBIT 14: **Value per weight generally has been growing for Hong Kong and China. We assume the changes were due to conventional memory increase instead of HBM shipment.**



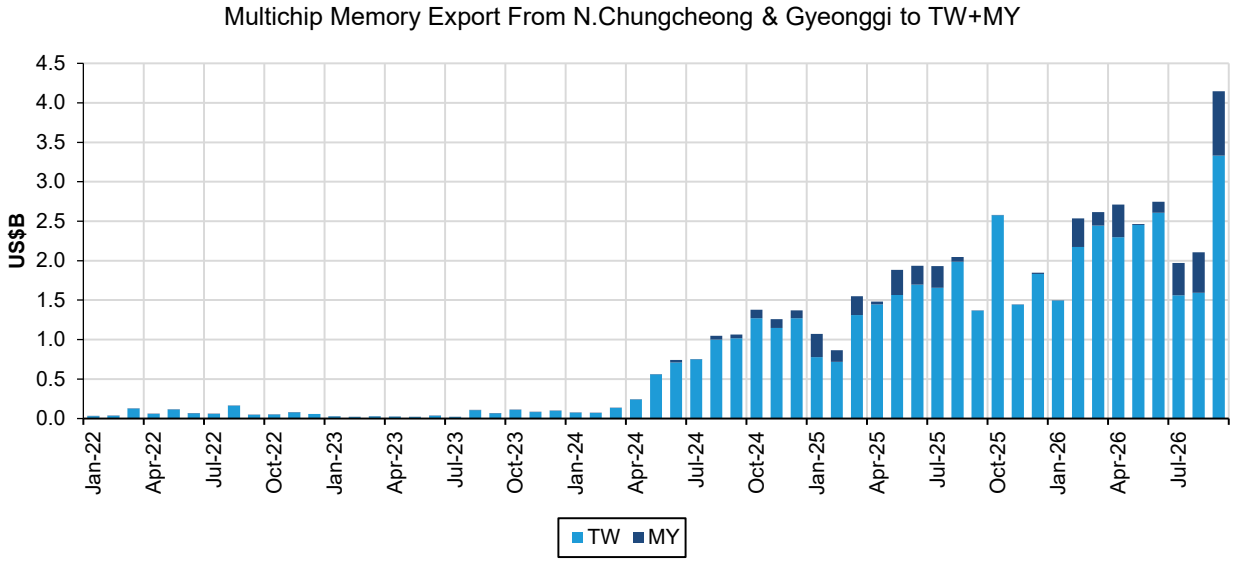
Source: Korea Custom Service, KITA and Bernstein analysis

EXHIBIT 15: **HBM export to Malaysia from Samsung dropped slightly MoM in Sep.**



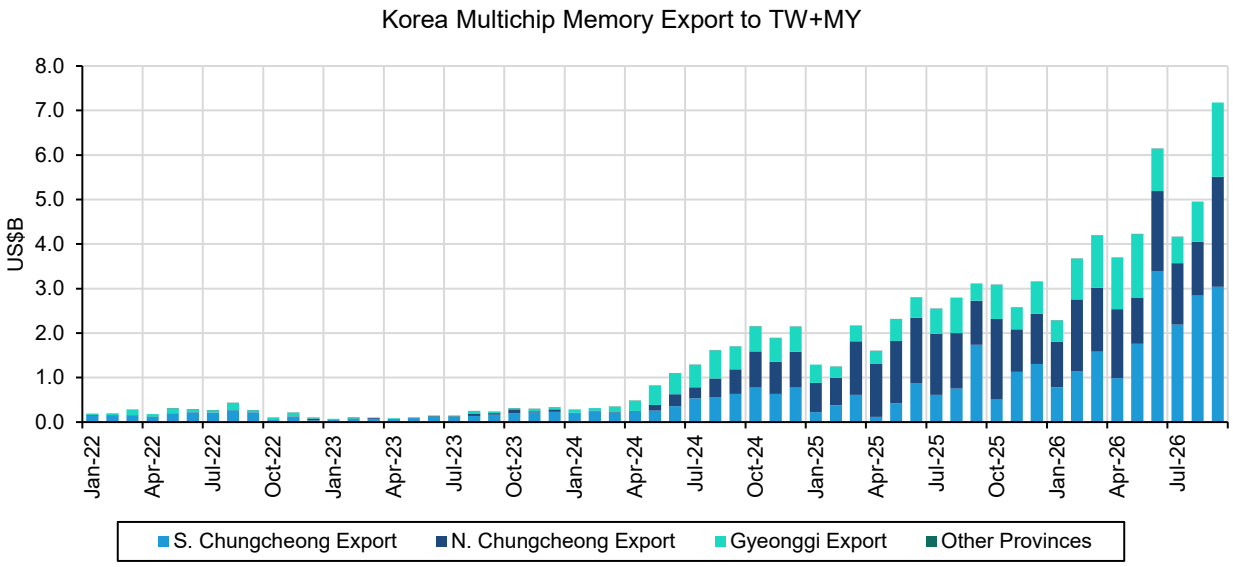
Source: Korea Custom Service, KITA and Bernstein analysis

EXHIBIT 16: **On the other hand, shipment to Malaysia from hynix likely surged notably in Sep, and surpassed that of Samsung.**



Source: Korea Custom Service, KITA and Bernstein analysis

EXHIBIT 17: **S. Chungcheong, N. Chungcheong and Icheon continued to account for almost all of multichip memory export to Taiwan & Malaysia.**



Source: Korea Custom Service, KITA and Bernstein analysis

Overall Sep export was strong for hynix while a bit soft for Samsung. But Samsung still delivered better growth for overall 3Q26 and led in HBM4 as well.

- In summary, 3Q26 monthly seasonality was atypical for both Samsung and hynix, being relatively more frontend loaded for Samsung and backend loaded for SK hynix, compared to their historical patterns. The result is a relatively soft Sep for Samsung but a very robust one for SK hynix. However, regression still suggests much better HBM revenue growth of 33% at Samsung in 3Q26, vs 11% at SK hynix. Samsung's HBM revenue may surpass SK hynix's in 3Q26 if our analysis is right. Additionally, we note that export value per weight remained high at Samsung, signifying significantly faster transition to HBM4 than SK hynix. Hence despite the surprise in Sep data, we continue to see better momentum in HBM at Samsung vs. SK hynix. Prediction based on export data can be flawed and inaccurate, but given good historical correlation, we find the results still worth noting to investors.

- For the stocks, memory stocks have been quite challenged this month due to concerns on interest rate hikes. China competition is also a concern, following CXMT's announcement on $4F^2$ breakthrough. We see better memory price increase in 4Q26 than our model, and industry remaining supply bound into 2027 and likely 2028 as well. $4F^2$ has been the focus of CXMT's R&D primarily to circumvent EUV export control, and does not automatically put CXMT ahead of the incumbents in technology, or change the supply demand balance in the foreseeable future, in our view (See China Next Winners: CXMT - Redrawing the Memory Map - Initiating with Outperform). We hence remain constructive on memory names. For KIOXIA, while near-term shortage is similarly acute, we are structurally more cautious due to lower technology barrier for NAND and more vulnerability to competition from China (See our sector view Global Memory: Cycle is still elevated, but beware of the long-term threat from China).

I. REQUIRED DISCLOSURES

References to "Bernstein" or the “Firm” in these disclosures relate to the following entities: Bernstein Institutional Services LLC (April 1, 2024 onwards), Sanford C. Bernstein & Co., LLC (pre April 1, 2024), Bernstein Autonomous LLP, BSG France S.A. (April 1, 2024 onwards), Sanford C. Bernstein (Hong Kong) Limited 盛博香港有限公司, Sanford C. Bernstein (Canada) Limited, Sanford C. Bernstein (India) Private Limited (SEBI registration no. INH000006378), Sanford C. Bernstein (Singapore) Private Limited, Sanford C. Bernstein Japan KK（サンフォード・C・バーンスタイン株式会社）and analysts employed by Société Générale Africa Technologies & Services to produce Bernstein research under a Global Services Agreement in place between Bernstein and Société Générale.

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VALUATION METHODOLOGY

Samsung Electronics Co Ltd

We value Samsung Electronics with 6.5x of forward 5Q-8Q EPS of KRW67,692 and arrive at price target of KRW 440,000 for its common shares, KRW 374,000 for preferred shares, and US$7,857 for GDR.

SK Hynix Inc

We value SK hynix with 5.1x of forward 5Q-8Q EPS of KRW529,411 and arrive at price target of KRW 2,700,000.

Micron Technology Inc

We value Micron with 7.6x of forward 5Q-8Q EPS of US$171.1 and arrive at price target of US$1,300.

KIOXIA Holdings Corp

We value KIOXIA with 3.7x of 1-year forward EPS of ¥13,243 and arrive at price target of ¥49,000.

CXMT Corp

We value CXMT at 10x blended 2-year forward EPS (forward 5Q-8Q) of CNY7.16 and arrive at our price target of CNY 70.

RISKS

Samsung Electronics Co Ltd

The biggest downside risk to our target price is an earlier end of favorable pricing environment, which can be a result of weaker demand or higher supply. Investor sentiment and hence the valuation rewarded by investors is also a risk. China's progress in memory, especially in NAND, is a downside risk too.

SK Hynix Inc

The biggest downside risk to our target price is an earlier end of favorable pricing environment, which can be a result of weaker demand or higher supply. Investor sentiment and hence the valuation rewarded by investors is also a risk. China's progress in memory, especially in NAND, is a downside risk too.

Micron Technology Inc

The biggest downside risk to our target price is an earlier end of favorable pricing environment, which can be a result of weaker demand or higher supply. Investor sentiment and hence the valuation rewarded by investors is also a risk. China's progress in memory, especially in NAND, is a downside risk too.

KIOXIA Holdings Corp

Upside risks to our target price include 1) stronger than expected NAND demand growth, which likely would lead to better NAND pricing and hence company earnings, 2) favorable policy support from Japanese government such as capex subsidies, and 3) better than expected cost reduction

CXMT Corp

The downside risk to our target price includes 1) increased challenges in acquiring semiconductor equipment needed for capacity expansion, 2) faster-than-expected expansion in global DRAM supply 3) significant slowdown in AI-related DRAM demand causing shortage to revert into oversupply and DRAM prices to decrease

RATINGS DEFINITIONS, BENCHMARKS AND DISTRIBUTION

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- Neutral (N): Stock will perform in line with the market index to within +/-10 pp



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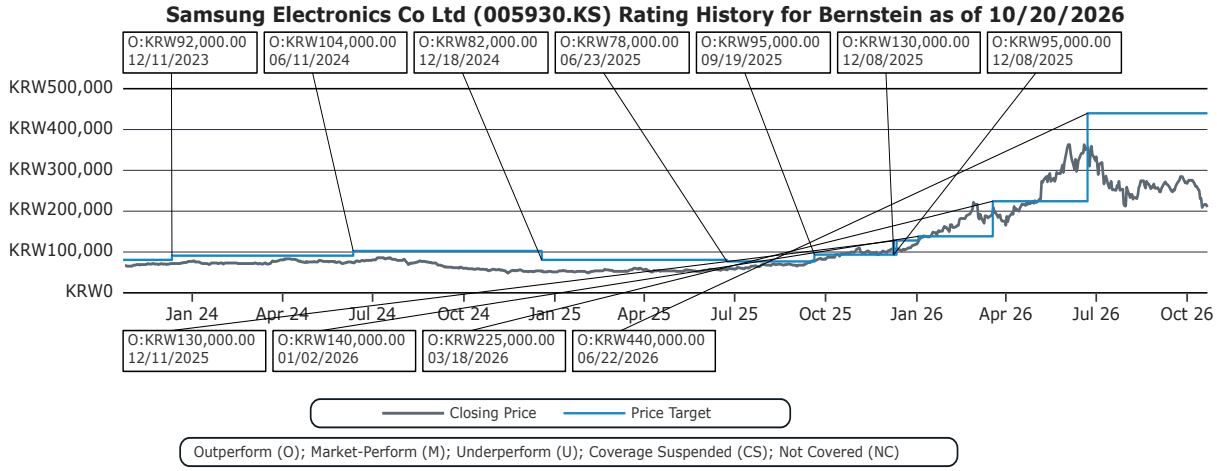
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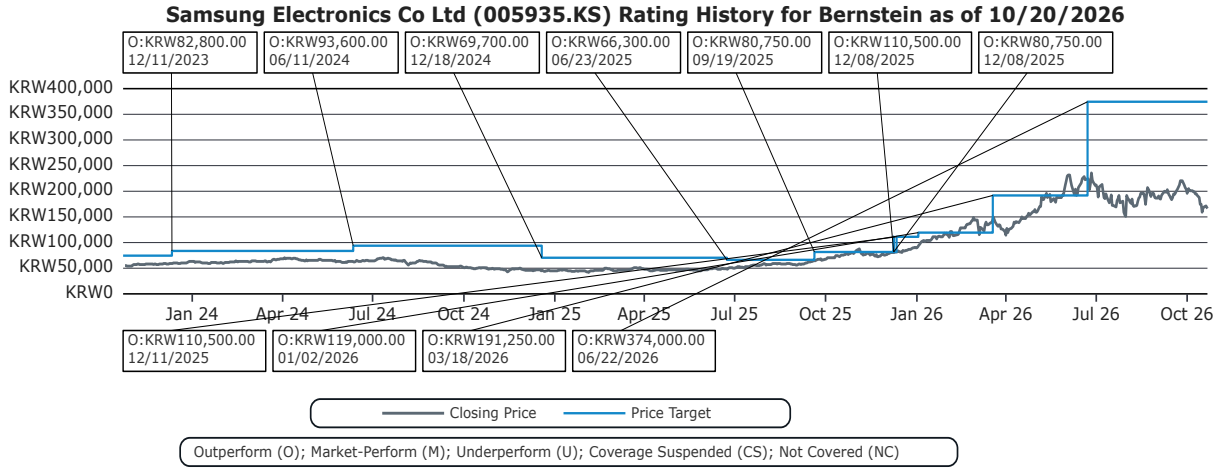
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Outperform	BUY	52.3%	14.2%
Market-Perform (Bernstein Brand) Neutral (Autonomous Brand)	HOLD	35.6%	16.1%
Underperform	SELL	12.1%	13.6%

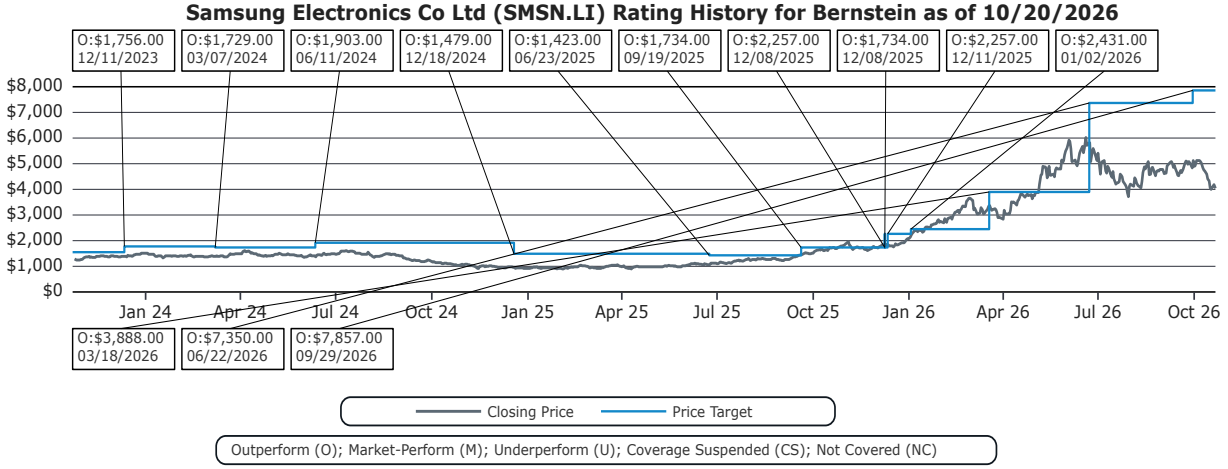
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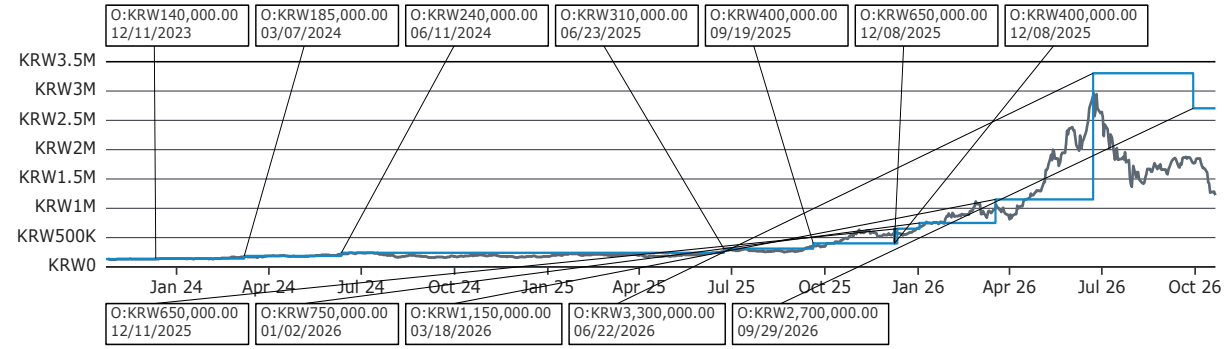


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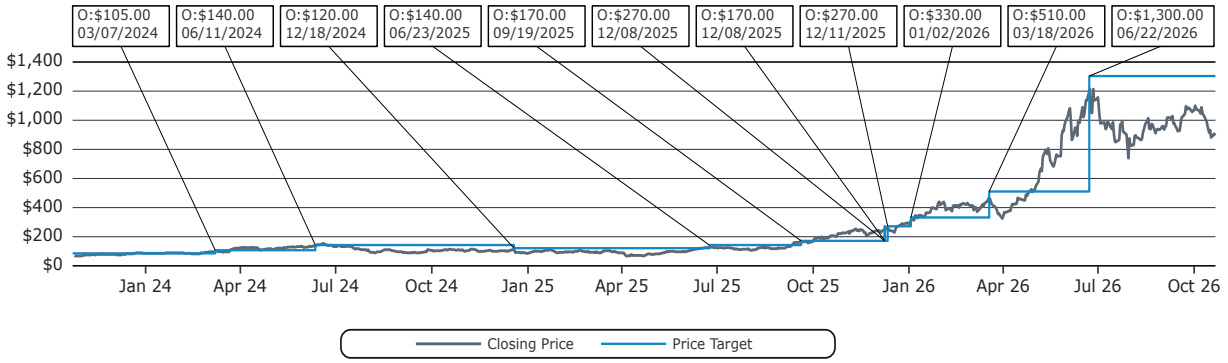
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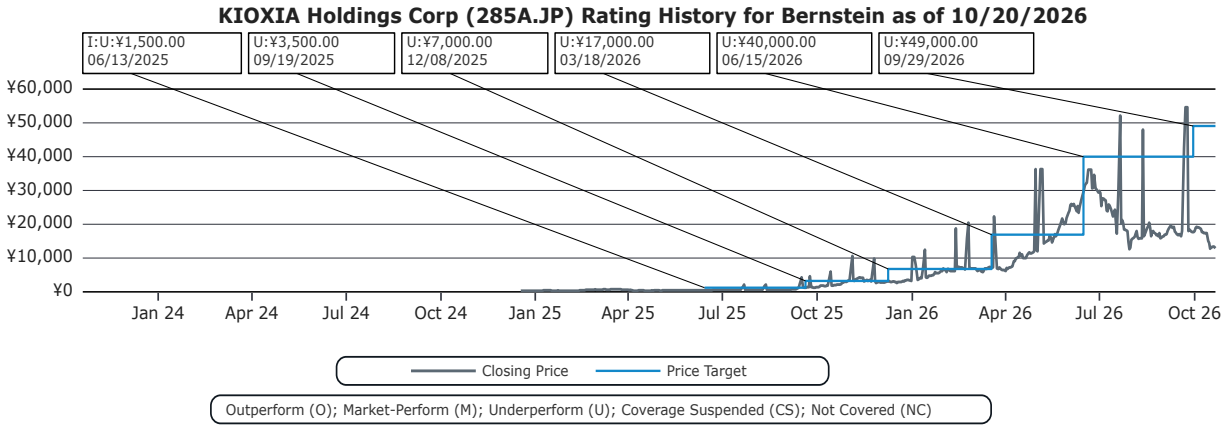


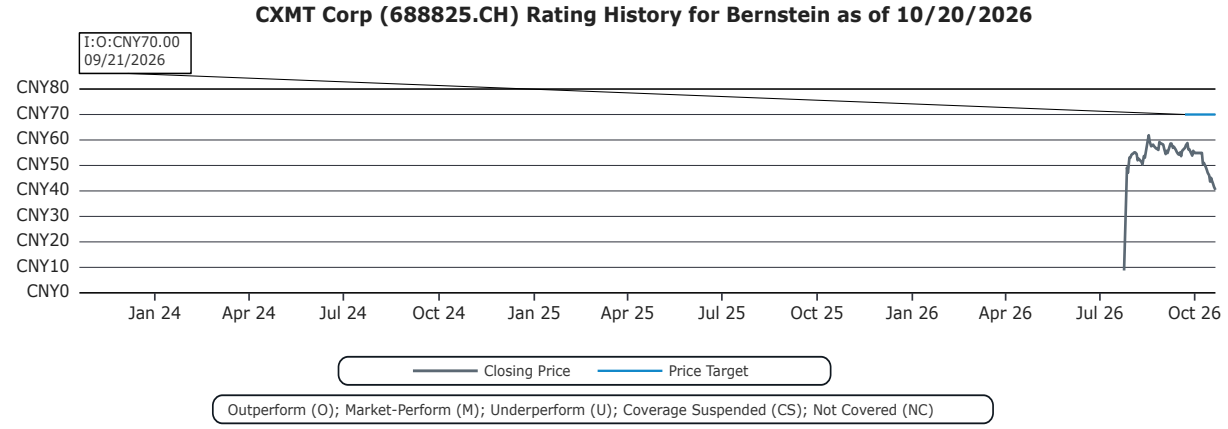
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