26 Jul 2024

CMBI Credit Commentary

HYUELEs: Yield pick-up plays over global peers

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Initiate buy on HYUELEs, prefer 1 ½ 01/19/26 and 2 ⅜ 01/19/31

We initiate buy recommendations on HYUELEs (Baa2/BBB-/BBB) in view of SK Hynix's strong market position globally, improving cash flow and credit profile, as well as the 10-20bps yield pick-up HYUELEs offering over bonds of other global peers. Within the HYUELE complex, we prefer **HYUELE 1 ½ 01/19/26** and **HYUELE 2 ⅜ 01/19/31** most for lower cash prices. At 94.7 and 84.5, HYUELE 1 ½ 01/19/26 and HYUELE 2 ⅜ 01/19/31 are trading at YTM of 5.3% (z-spread of 73bps) and 5.2% (z-spread of 143bps), respectively.

SK Hynix is the second largest global memory chip maker by revenue after Samsung Electronics. It manufactures, distributes and sells semiconductor products. SK Hynix is also the major supplier of HBM3 chips to Nvidia, which has a dominant market share of 98% in data-center GPU shipments in 2023.

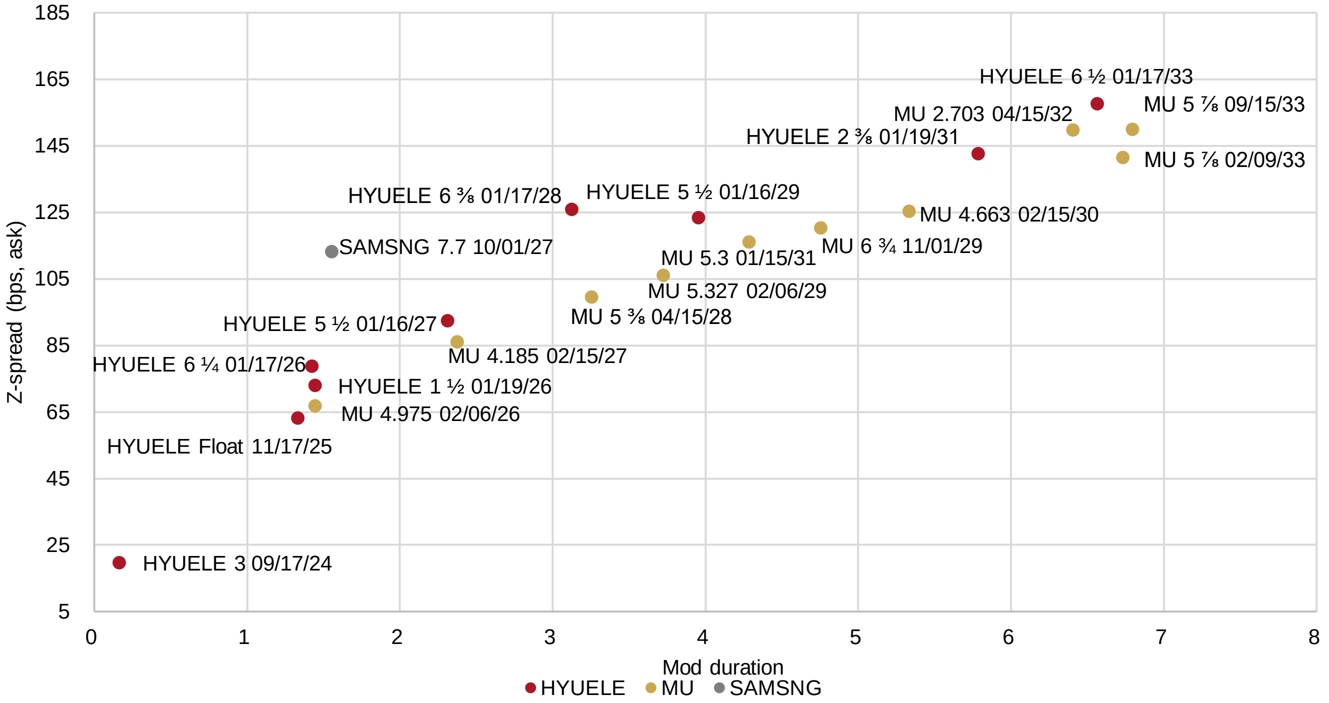
SK Hynix's credit profile and profitability improved notably since 4Q23, driven by the surging demand for AI memory globally. SK Hynix reported a strong set of 2Q24 results with upbeat guidance and higher capex. We expect the management to remain disciplined in expansion, such that the revised capex plan will continue to be funded within its internal resources (i.e cash on hand and operating cash flow). These help protect its credit profile.

Table 1: Bond profiles of HYUELEs

Security Name	O/s amt (USDmn)	Mod Dur	Ask Price	YTM (Ask)	Z-Spread (Ask)	Rating (M/S/F)
HYUELE 3 09/17/24	500	0.2	99.6	5.6	19.6	Baa2/BBB-/BBB
HYUELE 0 11/17/25	300	0.1	101.4	5.9	63.1	Baa2/-/BBB
HYUELE 6 ¼ 01/17/26	750	1.4	101.3	5.3	78.7	Baa2/BBB-/BBB
HYUELE 1 ½ 01/19/26	1000	1.4	94.7	5.3	72.9	Baa2/BBB-/BBB
HYUELE 5 ½ 01/16/27	500	2.3	100.9	5.1	92.4	Baa2/BBB-/BBB
HYUELE 6 ⅜ 01/17/28	1000	3.1	103.5	5.2	126.0	Baa2/BBB-/BBB
HYUELE 5 ½ 01/16/29	1000	3.9	101.7	5.3	123.4	Baa2/BBB-/BBB
HYUELE 2 ⅜ 01/19/31	1000	5.9	84.5	5.2	142.7	Baa2/BBB-/BBB
HYUELE 6 ½ 01/17/33	750	6.6	107.6	5.4	157.7	Baa2/BBB-/BBB

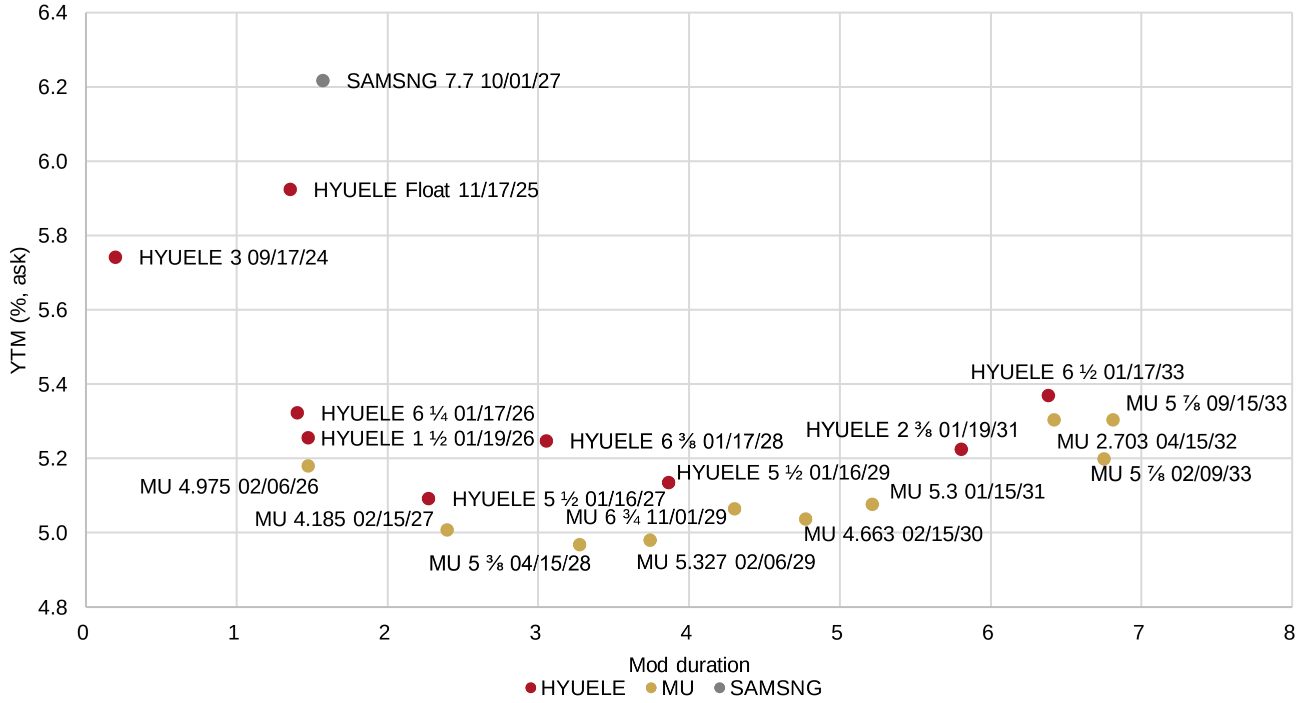
Source: Bloomberg.

Chart 1: Z-spread of SK Hynix and its peers



Source: Bloomberg.

Chart 2: YTM of SK Hynix and its peers



Source: Bloomberg.

The second largest DRAM/NAND supplier globally

SK Hynix is the second largest DRAM and NAND supplier globally, accounting for 31.1% and 22.2% of global market shares in 1Q24 by revenue, respectively. Its DRAM market share kept expanding from 25% in the 1Q23, attributable to the increasing sales of High Bandwidth Memory (HBM) products. SK Hynix, along with Samsung and Micron, contribute 97% of the global DRAM supplies. SK Hynix is the leader in the development and manufacturing of HBM chips. It is also a major provider of HBM3 chips to Nvidia.

In anticipation of growing demand for high performance chips for AI, SK Hynix has converted over 20% of its DRAM production capacity into HBM chips production this year. Samsung has also adopted a similar move. As HBM production occupies a higher proportion of production capacity than conventional DRAM, the higher wafer allocation to HBM will result in a larger reduction in the supply of the conventional DRAM, accelerating the depletion of conventional DRAM inventory across the industry. SK Hynix expects a structural change in the industry offering of DRAM to a low volume of larger variety of product offering from a high volume of limited products.

We expect the revenue contribution from HBM to increase to c30% of SK Hynix's DRAM revenue in FY24 from c15% in FY23, and SK Hynix's global market share (by revenue) of HBM to be stable at c50% in FY24. SK Hynix supplies HBM chips in contracts on an annual basis with fixed volume and ASP. According to SK Hynix, its HBM chips were sold out for 2024 and almost sold out for 2025, and it expects to see the demand for HBM chips to grow at 60% p.a. over the mid to long term.

SK Hynix will also increase the supply volume of HBM3E, of which mass production has started in Mar'24 for the first time in the industry. Meanwhile, SK Hynix has signed MOU with TSMC for the development of HBM4, the next generation of HBM, and scheduled to start the mass production in 2026.

On the other hand, SK Hynix also plans to launch 32GB DDR5 DRAM for servers and MCR DIMM for high-performance computing in the 2H24 to maintain its competitive advantage in the DDR5 area. SK Hynix is the only provider of the highest capacity 256GB products for servers.

Chart 3: SK Hynix is the second largest DRAM supplier in 1Q24

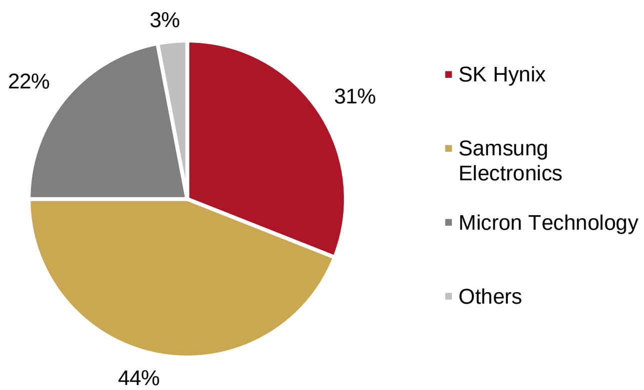
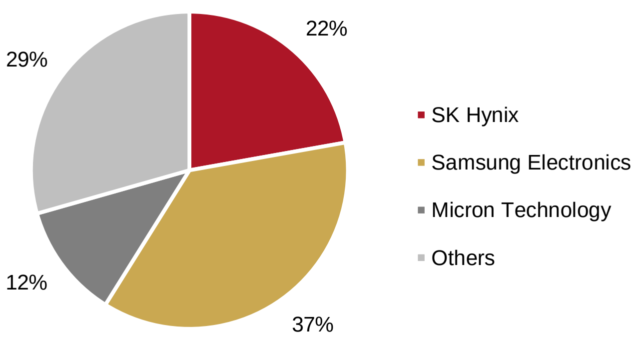


Chart 4: SK Hynix is the second largest NAND supplier in 1Q24



Source: Company filling, TrendForce.

Table 2: Financial highlights of major memory supplies

USDmn	SK Hynix	SK Hynix	Samsung	Micron
	2Q24	**1Q24**	**1Q24**	**3Q24 (Mar-May'24)**
Revenue	11,825	8,949	54,059	6,811
-DRAM	*7,804*	*5,395*		*4,692*
-NAND	*3,666*	*3,173*	*12,596*	*2,065*
-Others	*355*	*381*		*54*
Gross profit	5,397	3,452	19,566	1,832
Gross profit margin	46%	39%	36%	27%
EBITDA	6,186	4,378	12,445	2,895
EDITDA margin	52%	49%	23%	42%
Net profit	2,966	1,380	4,977	332
Net profit margin	25%	15%	9%	5%
	Jun'24	**Mar'24**	**Mar'24**	**May'24**
Cash & equivalents	6,975	7,430	45,991	7,594
ST debt	4,518	6,369	8,233	398
LT debt	13,647	14,876	3,285	13,469
Net debt	11,189	13,815	-34,473	6,273
Market share				
-DRAM		31.1%	43.9%	21.5%
-NAND		22.2%	36.7%	11.7%

Source: Company filling, TrendForce, CMBI Research.

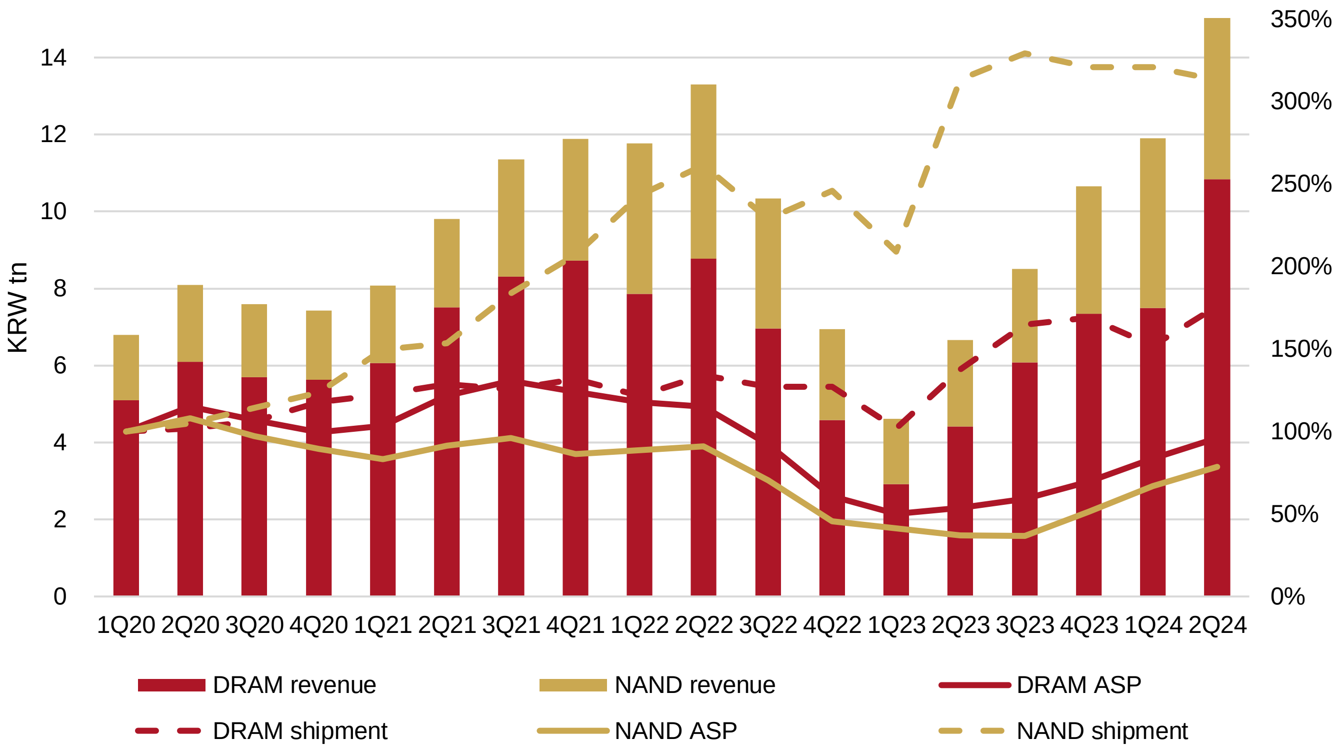
Profitability improvement driven by product mix and higher ASP

During 1H24, the ASP of DRAM and NAND increased by 40% and 50% compared with those of 4Q23, respectively as demand recovered. In 2Q24, HBM sales went up by more than 80% and 250% compared to that of 1Q24 and 2Q23, respectively. For the NAND, the sales of eSSD continued to grow, rose by 50% from 1Q24. As a result, SK Hynix reported revenue of KRW16.4tn in 2Q24, and KRW28.9tn in 1H24, more than doubled of that of 1H23. The net profit in 2Q24 increased 115% to KRW4.1tn (cUSD3.0bn) from KRW1.9tn (cUSD1.4bn) in 1Q24.

The change in product mix will lift the SK Hynix's overall ASP and gross profit margin of DRAM over the next few years compared to that of FY23, given the ASP of HBM chips is much higher than conventional DRAM. SK Hynix guided the 3Q24 bit shipment of DRAM to increase at a low single-digit QoQ, driven by HBM sales. The bit shipment of NAND, on the other hand, will decline at a mid single-digit QoQ. That said, the ASP increases and change in product mix will support revenue growth. SK Hynix expects a favourable pricing environment in 2H24. However, the room for further reversals of inventory valuation losses will be limited.

Over the coming 1-2 years, we expect the shipments of DRAM, in particular HBM3E chips, to increase on the back of strong growth in global demand on high performance chips for AI. The stronger operating cash flow and improved profitability to support its capex plans with controlled debt expansion. See Table 3 for the key financials.

Chart 5: SK Hynix's revenue structure (LHS) and ASP movement of DRAM/NAND (RHS)



Note: 1Q20 is set as the base year. Source: Company filling, CMBI Research.

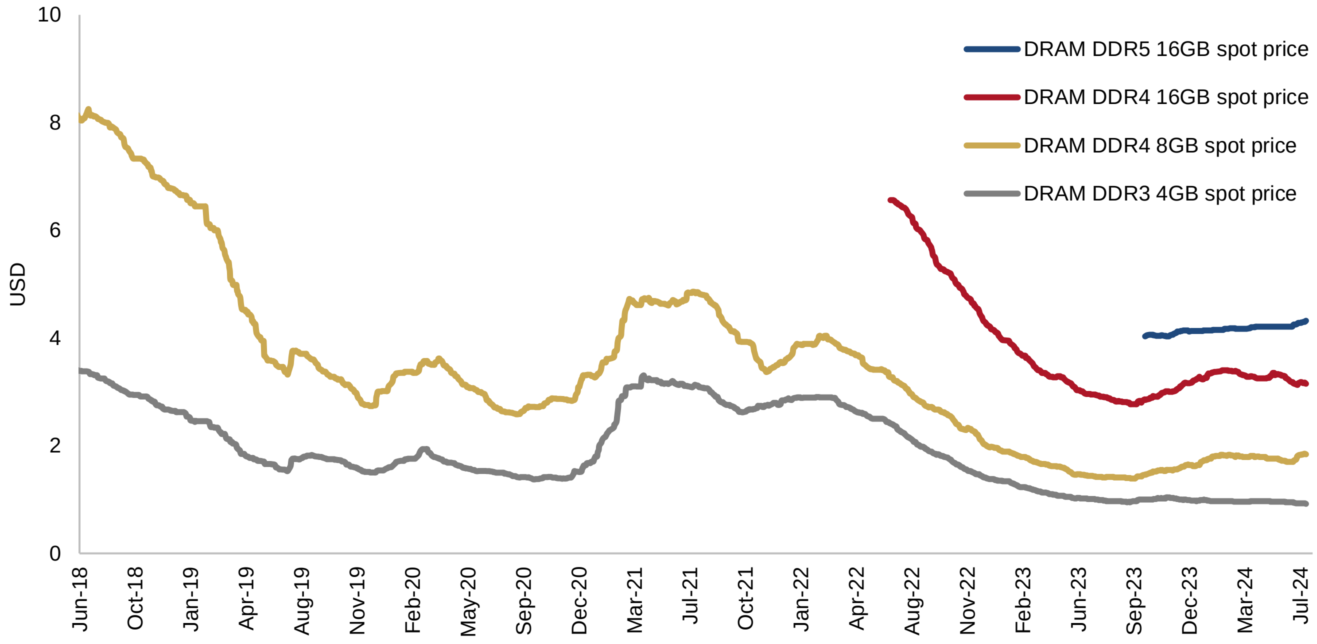
Table 3: SK Hynix's key financials

KRWbn	FY23	1Q24	2Q24
Revenue	32,766	12,430	16,423
-DRAM	*20,769*	*7,493*	*10,839*
-NAND	*9,653*	*4,407*	*5,091*
Gross profit	-533	4,795	7,496
Gross profit margin	2%	39%	46%
EBITDA	5,943	6,073	8,591
EDITDA margin	18%	49%	52%
Net profit	-9,138	1,917	4,120
Net profit margin	-28%	15%	25%
Operating cash flow	4,278	5,385	5,697
CAPEX	8,325	3,103	2,079

KRWbn	Dec'23	Mar'24	Jun'24
Cash and cash equivalent	8,921	10,319	9,688
ST debts	9,858	8,846	8,846
Total debts	29,469	29,506	25,228
Total debts/EBITDA	5.0x	1.2x	0.9x

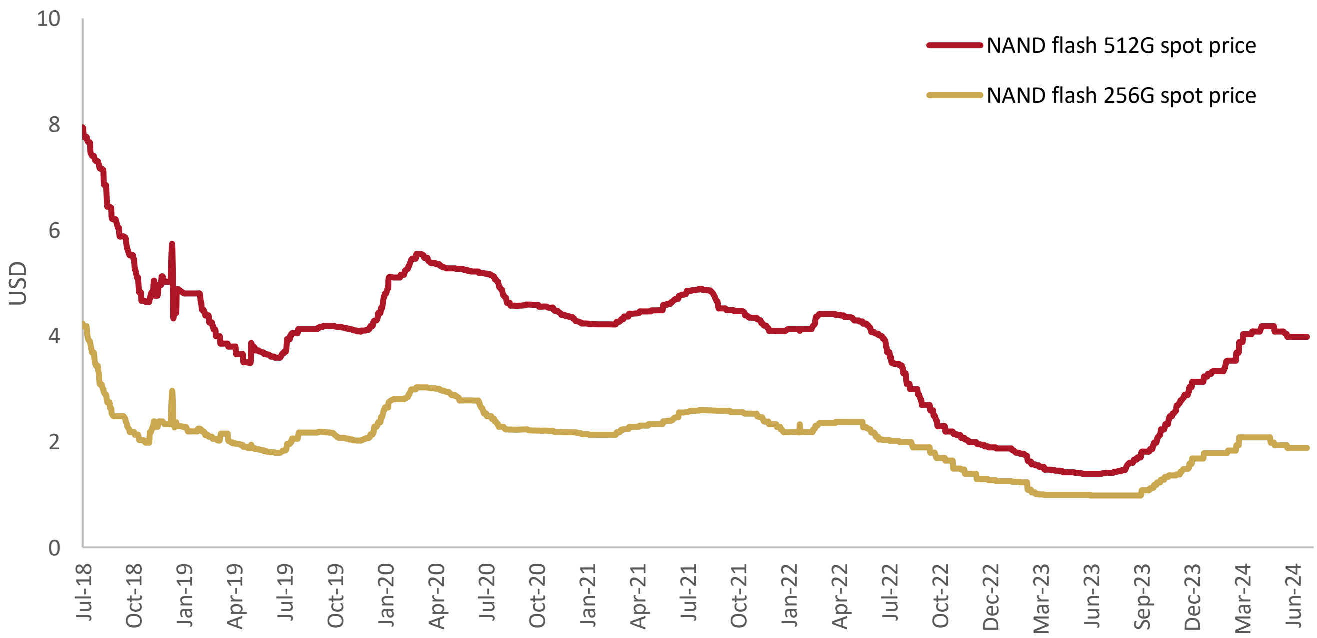
Source: Company filling, CMBI Research.

Chart 6: Spot prices of DRAM



Source: Bloomberg.

Chart 7: Spot prices of NAND



Source: Bloomberg.

Limited near-term refinancing pressure

SK Hynix has access to diverse funding channels, supported by its strong market position and established banking relationship with banks such as Korea Development Bank, MUFG, Woori Bank, City Bank, etc. It also has access to the debt capital markets, with unsecured bonds and convertibles issued in both KRW and USD.

After the repayment of onshore bonds totaled KRW750bn (cUSD659mn) in 1H24, SK Hynix does not have onshore bond maturing in the rest of 2024. It will face the maturity of HYUELE 3 09/17/24 of USD500mn in Sep'24. We expect SK Hynix to be able to refinance the USD bonds at reasonable costs, in view of its strong cash flow generation and good access to funding channels. We also acknowledge that its cash on hand was adequate to cover its ST debts at Jun'24.

Higher capex but to be funded within operating cash flow

On 30 Jun'24, SK Hynix announced the capex plan (incl. R&D expenses) of KRW103tn (cUSD74bn) from 2024 to 2028. 80% of the capex will be allocated to the production capacity expansion of HBM chips. The KRW103tn investment plan includes the investments in Yongin Semiconductor Cluster and Cheongju M15X fab in Korea, as well as advanced packaging facility in Indiana, the US. See Table 4 for details. The new production capacities are expected to be coming on stream from 2025-28. During 2Q

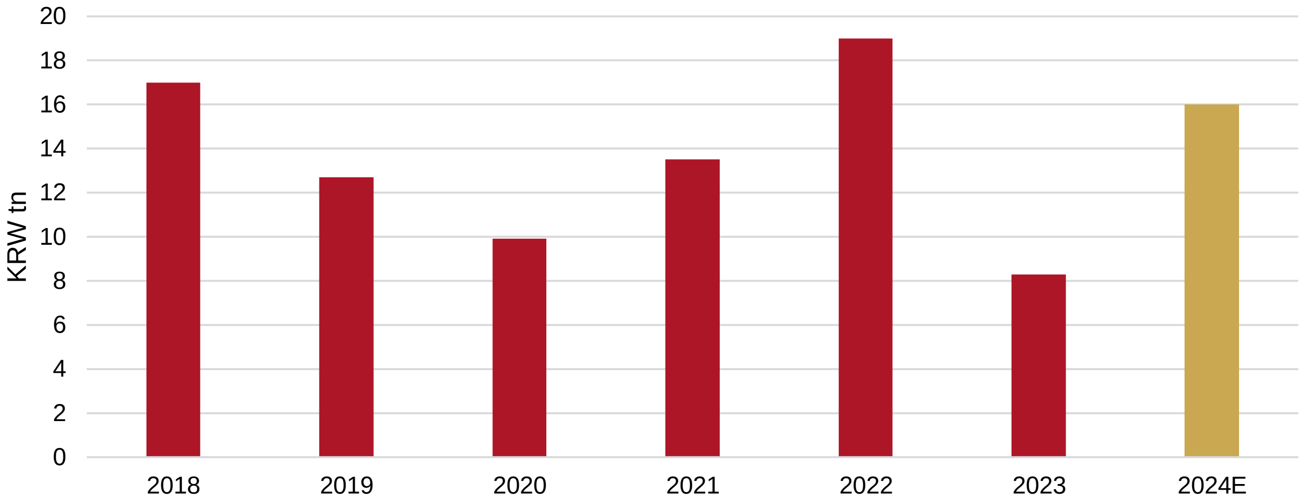
During investors' call on 2Q24 results, SK Hynix mentioned that the capex will be higher than the previous plan given the capacity expansion to meet strong demand for DRAM and HBM. SK Hynix did not disclose how the capex plan will be revised but stressed that the capex will be funded operating cash flow. In 2Q24, SK Hynix generated operating cash flow of KRW5.7tn, compared to KRW1.3tn in 2Q23. We expect the management to be disciplined in expansion such that the impact of revised capex plan will have limited impact on its credit profile.

Table 4: Key projects included in SK Hynix's KRW103tn capex plans

Location	Project	Planned investment	Details
Korea	Cheongju	KRW5.3tn (cUSD3.8bn)	To build the M15X fab for a new DRAM production base, aims to complete the construction in Nov'25 for an early mass production
Korea	Yongin Semiconductor Cluster	KRW120tn (cUSD86.4bn)	To build production facilities with a plan for completion in May'27
U.S.	Advanced chip packaging with Indiana	USD3.9bn	To build an advanced chip packaging facility for next-generation HBM, while collaborating with Purdue University for R&D. Expect to start the mass production in the 2H28

Source: Company filling.

Chart 8: SK Hynix's CAPEX



Source: Company filling. CMBI Research.

Current credit ratings are supported by the strong recovery in profitability

We expect SK Hynix's current credit rating to be supported by sustained improvement in profitability and disciplined capex plan. SK Hynix's total debt/EBITDA improved to 0.9x in 1H24, from 1.2x in 1Q24 and 5.0x in FY23. This is lower than the downgrade trigger set by Moody's (1.5x), S&P (2x) and Fitch (2.5x). SK Hynix reduced the total borrowings by KRW4.3tn (cUSD3.1bn) during 2Q24, we expect the total debt/EBITDA to stay below 1x for FY24.

Moody's currently places a negative rating outlook on SK Hynix. Indeed, we see a good chance of its rating outlook tom be revised to stable in coming 6-12 months given the continued improvement in profitability and leverage level.

Table 5: Summary of rating triggers

	Moody's	S&P	Fitch
Issuer rating	Baa2/Negative	BBB-/Stable	BBB/Stable
Downgrade trigger	If its financial profile weakens because of persistent weak profitability and a failure to reduce debt, such that its adjusted debt/EBITDA remains above 1.5x or its debt/capitalization remains above 30%-33%. The rating could also be downgraded if SK Hynix's market position is significantly eroded, its technological	If profitability and operating cash flow weaken materially, leading the company's adjusted debt-to-EBITDA ratio to stay above 2.0x for a prolonged period. This could stem from intensifying competition in the generative AI-chip markets pushing down average selling prices; a downturn in the memory semiconductor cycles; or more	EBITDA leverage above 2.5x and CFO-capex/total debt below 15% on average through the cycle; or sustained negative FCF on high capex intensity and/or shareholder returns; or significant loss of market share on rising geopolitical risks

	migrations are delayed or its production in China is significantly disrupted.	aggressive capital investments leading to a material increase in debt.	
Upgrade trigger	Outlook will be changed to stable if SK Hynix successfully improves its earnings and demonstrates a firm commitment to preserving a sound capital structure through cuts in investments and working capital. Such improvements could be illustrated by its adjusted debt/EBITDA falling back toward 1.5x and its debt/capitalization falling below 30%-33% on a sustained basis.	If SK Hynix's operating and financial performance through a volatile industry cycle is more stable than factored into our base case. One indicator would be an adjusted debt-to-EBITDA below 1.0x on a sustainable basis. Reducing debt with free cash flow while upholding prudent financial policies without aggressive capex or acquisitions could drive this improvement.	EBITDA leverage below 1.5x and cash flow from operations (CFO)-capex/total debt in excess of 20% on average through the cycle; or improvements in market share in the DRAM and NAND market; or FCF margins in the mid- to high-single digits through the cycle

Source: Moody's, S&P Global Ratings, Fitch Ratings

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