

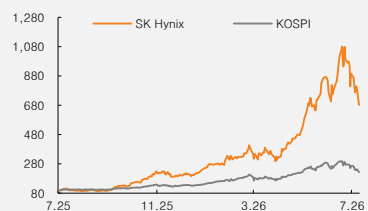
(Maintain)	Buy
Target price	W4,200,000
Current price (7/13/26)	W1,845,000
Upside	127.6%

OP (26F, Wbn)	266,817
Consensus OP (26F, Wbn)	275,793

EPS growth (26F, %)	400.4
Market EPS growth (26F, %)	261.0
P/E (26F, x)	6.3
Market P/E (26F, x)	7.6
KOSPI	6,806.93

Market cap (Wbn)	1,314,936
Shares (mn)	730
Free float (%)	74.3
Foreign ownership (%)	49.8
Beta (12M)	1.75
52-week low (W)	245,000
52-week high (W)	2,919,000

(%)	1M	6M	12M
Absolute	-14.2	150.0	526.5
Relative	2.4	72.3	192.3



Mirae Asset Securities Co., Ltd.

Young-gun Kim

younggun.kim.a@miraeasset.com

000660 KS • Semiconductors

SK Hynix

Take a broader view

Maintain TP of W4,200,000; industry fundamentals remain solid

We maintain our target price for SK Hynix at W4,200,000 and believe the recent pullback presents an attractive opportunity to increase exposure to the stock. The current weakness appears to reflect an unusually sharp unwinding of optimism surrounding 2Q26 earnings and the ADR listing. Although we revised down our earnings forecasts by roughly 12%, we believe the recent sharp decline has already priced in much of the revision.

The industry backdrop remains favorable. TSMC exceeded its 2Q26 revenue guidance, with June revenue (NT\$443bn; +68% YoY) setting new records for both monthly revenue and YoY growth. While the trajectory of hyperscaler capex bears watching, the recent sharp increase in backlogs makes higher capex spending all but inevitable.

Moreover, the likelihood of a meaningful slowdown in backlog growth appears low. In 1Q26, Google's order backlog increased 93% QoQ, while Amazon's rose 49% QoQ. As of 1Q26, the combined order backlog of five major big tech and neocloud providers reached US\$2.1tr (+24% QoQ). And notably, the portion expected to translate into revenue within two years grew even more rapidly, reaching US\$656bn (+38% QoQ).

Despite the sharp correction in SK Hynix's share price, memory spot prices have continued to strengthen. Spot prices for both 16Gb DDR5 and DDR4 have risen for more than 40 consecutive trading days and are nearing their previous highs. The fact that spot prices remain resilient despite the prospect of CXMT's listing (which could weigh on sentiment toward the legacy memory spot market) further reinforces our view that industry supply/demand conditions remain exceptionally tight.

2Q26 estimates lowered, but 2027 growth trajectory remains intact

We revised down our 2Q26 operating profit forecast by 12% to W62.3tr (from W70.7tr), reflecting 8%p and 5%p reductions in our DRAM and NAND ASP growth assumptions, respectively. We estimate that long-term agreements cover roughly 50% of SK Hynix's revenue. This not only provides greater earnings stability but also reduces the firm's exposure to speculative demand driven by concerns over supply availability.

We expect profit growth to continue in 2027, with operating profit of W389tr (+46% YoY). While conventional memory prices should remain broadly stable, HBM is likely to drive overall pricing higher. Higher HBM pricing should, in turn, encourage suppliers to allocate more capacity to HBM. As a result, after accounting for capacity committed under long-term agreements and dedicated to HBM production, the remaining capacity available for conventional memory should become increasingly constrained.

(Dec.)	2024	2025	2026F	2027F	2028F
Revenue (Wbn)	66,193	97,147	347,518	507,945	544,121
OP (Wbn)	23,467	47,206	266,817	388,855	400,069
OP margin (%)	35.5	48.6	76.8	76.6	73.5
NP (Wbn)	19,789	42,919	210,755	296,115	315,380
EPS (W)	27,182	58,955	295,026	415,482	442,513
ROE (%)	31.1	44.2	92.8	61.6	40.3
P/E (x)	6.4	11.0	6.3	4.4	4.2
P/B (x)	1.7	3.9	3.9	2.1	1.4
Dividend yield (%)	1.3	0.5	0.2	0.4	0.4

Notes: Under consolidated K-IFRS; NP is attributable to owners of the parent

Source: Company data, Mirae Asset Securities Research estimates

Table 1. Earnings forecast revisions

(Wtr, %, %p)

	2Q26F			2026F			2027F		
	Revised	Previous	Chg.	Revised	Previous	Chg.	Revised	Previous	Chg.
USD/KRW	1,502	1,500	0.1	1,518	1,491	1.8	1,524	1,470	3.7
Revenue	80.8	88.6	-8.8	347.5	375.8	-7.5	507.9	559.6	-9.2
DRAM	60.7	66.1	-8.1	261.7	280.8	-6.8	380.3	414.4	-8.2
NAND	19.8	21.9	-9.9	84.6	92.8	-8.9	126.3	142.8	-11.6
OP	62.3	70.7	-11.8	266.8	299.1	-10.8	388.9	449.3	-13.4
DRAM	49.2	55.2	-10.8	210.5	233.4	-9.8	300.4	341.5	-12.0
NAND	13.1	15.7	-16.6	55.8	66.4	-16.0	88.4	108.6	-18.6
OP margin	77.1	79.8	-2.7	76.8	79.6	-2.8	76.6	80.3	-3.7
DRAM	81.0	83.5	-2.5	80.4	83.1	-2.7	79.0	82.4	-3.4
NAND	66.1	71.4	-5.3	66.0	71.6	-5.6	70.0	76.0	-6.0
EBITDA	66.3	75.0	-11.6	283.7	317.3	-10.6	412.5	474.6	-13.1
DRAM	50.4	56.4	-10.8	215.2	238.4	-9.7	306.2	347.7	-11.9
NAND	13.1	15.7	-16.5	56.0	66.6	-16.0	88.6	108.8	-18.6
Capex	17.1	14.2	20.0	56.9	56.9	0.0	79.7	79.7	0.0
FCF	49.2	60.8	-19.1	226.8	260.3	-12.9	332.8	394.9	-15.7
[Memory est.]									
DRAM									
Bit growth	8.7	8.7	0.0	23.9	24.0	-0.0	21.5	21.5	0.0
ASP chg.	32.9	40.6	-7.7	161.4	187.7	-26.3	19.9	23.0	-3.1
NAND									
Bit growth	14.0	15.0	-1.0	21.4	25.5	-4.1	20.6	20.9	-0.2
ASP chg.	50.0	55.0	-5.0	222.2	250.4	-28.2	24.2	28.2	-4.0

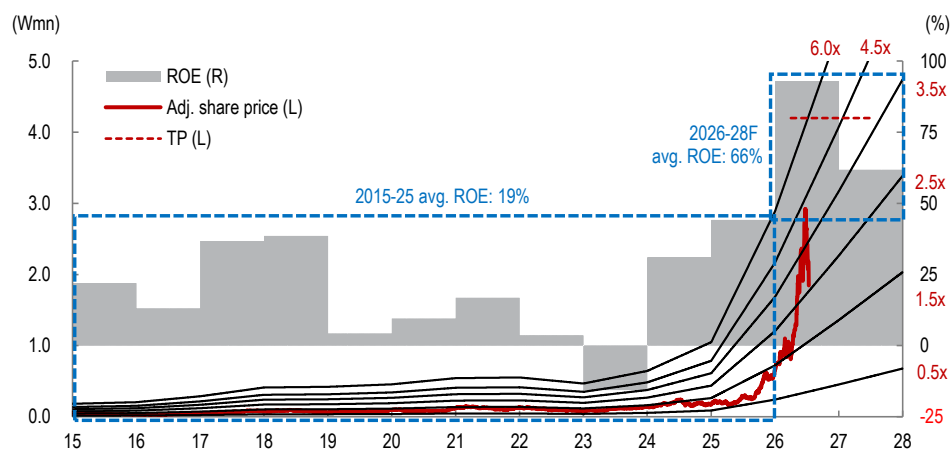
Source: Mirae Asset Securities Research

Table 2. Valuation table

	Value	
12MF BPS (₩)	583,213	
Target P/B (x)	6.5	10% discount to avg. P/B of pure-play memory peers (Micron/Kioxia)
Fair value/share (₩)	3,768,078	
Target price (adj., ₩)	4,200,000	
Current price (₩)	1,845,000	
Upside (%)	127.6	Buy

Source: Company data, Mirae Asset Securities Research

Figure 1. SK Hynix: 12-month forward P/B vs. ROE



Source: Company data, Mirae Asset Securities Research

Table 3. Quarterly and annual earnings

(Wtr, %)

	1Q26	2Q26F	3Q26F	4Q26F	1Q27F	2Q27F	3Q27F	4Q27F	2024	2025	2026F	2027F
USD/KRW	1,464	1,502	1,553	1,555	1,524	1,524	1,524	1,524	1,363	1,422	1,518	1,524
QoQ/YoY	1.0	2.6	3.4	0.2	-2.0	0.0	0.0	0.0	4.4	4.3	6.7	0.4
Revenue	52.6	80.8	100.2	113.9	120.0	128.1	129.9	129.9	66.2	97.1	347.5	507.9
DRAM	41.0	60.7	74.7	85.3	90.6	96.8	97.0	96.0	45.2	75.2	261.7	380.3
NAND	11.3	19.8	25.2	28.3	29.2	30.9	32.6	33.6	19.0	20.1	84.6	126.3
Other	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.0	1.8	1.2	1.3
QoQ/YoY	60.2	53.7	24.0	13.7	5.4	6.7	1.4	0.0	102.0	46.8	257.7	46.2
DRAM	64.4	48.1	23.0	14.1	6.2	6.9	0.2	-1.0	116.1	66.6	247.8	45.3
NAND	53.0	75.4	27.4	12.5	2.9	6.1	5.3	3.0	98.4	5.9	320.2	49.3
Other	-42.1	5.0	3.0	3.0	-5.0	5.0	3.0	3.0	-11.9	-11.6	-29.7	5.8
OP	37.6	62.3	78.1	88.8	93.1	98.8	99.1	98.0	23.5	47.2	266.8	388.9
DRAM	31.6	49.2	60.7	69.1	72.5	76.9	76.2	74.8	21.0	45.3	210.5	300.4
NAND	5.6	13.1	17.3	19.7	20.5	21.8	22.9	23.1	2.6	2.4	55.8	88.4
QoQ/YoY	96.2	65.7	25.2	13.8	4.8	6.1	0.3	-1.2	TTB	101.2	465.2	45.7
DRAM	83.4	55.9	23.3	13.8	5.0	6.1	-1.0	-1.7	2,777.6	115.3	364.7	42.7
NAND	146.7	131.9	32.7	13.9	4.0	6.2	5.1	0.8	TTB	-8.9	2,237.3	58.4
OP margin	71.5	77.1	77.9	78.0	77.5	77.1	76.3	75.4	35.5	48.6	76.8	76.6
DRAM	77.0	81.0	81.3	81.0	80.0	79.4	78.5	78.0	46.6	60.2	80.4	79.0
NAND	50.0	66.1	68.9	69.7	70.4	70.5	70.3	68.8	13.8	11.9	66.0	70.0
EBITDA	41.3	66.3	82.4	93.6	98.2	104.4	105.3	104.6	36.0	61.1	283.7	412.5
DRAM	32.7	50.4	61.9	70.3	73.8	78.3	77.7	76.5	25.3	49.9	215.2	306.2
NAND	5.7	13.1	17.4	19.8	20.6	21.9	23.0	23.2	2.8	2.6	56.0	88.6
Capex	7.3	17.1	17.1	15.4	19.9	19.9	19.9	19.9	23.9	33.5	56.9	79.7
FCF (EBITDA - capex)	34.0	49.2	65.4	78.2	78.3	84.5	85.3	84.6	12.1	27.6	226.8	332.8

Source: Company data, Mirae Asset Securities Research

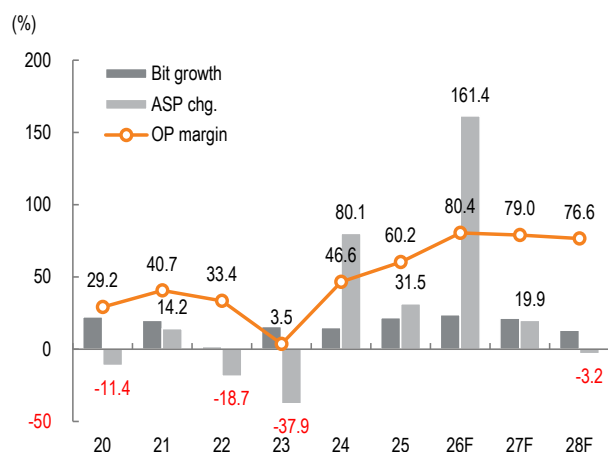
Table 4. Assumptions by product

(%)

	1Q26	2Q26F	3Q26F	4Q26F	1Q27F	2Q27F	3Q27F	4Q27F	2024	2025	2026F	2027F
USD/KRW	1,464	1,502	1,553	1,555	1,524	1,524	1,524	1,524	1,363	1,422	1,518	1,524
QoQ/YoY	1.0	2.6	3.4	0.2	-2.0	0.0	0.0	0.0	4.4	4.3	6.7	0.4
DRAM												
Revenue (US\$bn)	28.0	40.5	48.1	54.8	59.4	63.5	63.6	63.0	33.0	52.9	171.4	249.6
QoQ/YoY	62.7	44.4	18.9	14.0	8.4	6.9	0.2	-1.0	107.0	60.2	224.0	45.6
Bit shipments (bn Gb)	26.6	28.9	30.9	32.8	34.3	36.0	37.2	37.3	79.0	96.2	119.2	144.8
QoQ/YoY	0.9	8.7	7.1	6.2	4.4	4.9	3.5	0.1	14.9	21.8	23.9	21.5
ASP (US\$/Gb)	1.05	1.40	1.56	1.67	1.73	1.77	1.71	1.69	0.42	0.55	1.44	1.72
QoQ/YoY	61.3	32.9	11.0	7.3	3.9	1.9	-3.3	-1.1	80.1	31.5	161.4	19.9
NAND												
Revenue (US\$bn)	7.7	13.2	16.2	18.2	19.1	20.3	21.4	22.0	13.9	14.1	55.3	82.9
QoQ/YoY	51.4	71.0	23.2	12.4	5.0	6.1	5.3	3.0	90.5	1.5	291.1	49.8
Bit shipments (bn GB)	50.6	57.7	63.4	66.6	67.9	70.0	73.7	75.9	179.6	196.3	238.3	287.5
QoQ/YoY	-12.0	14.0	10.0	5.0	2.0	3.0	5.3	3.0	2.1	9.3	21.4	20.6
ASP (US\$/GB)	0.15	0.23	0.26	0.27	0.28	0.29	0.29	0.29	0.08	0.07	0.23	0.29
QoQ/YoY	72.1	50.0	12.0	7.0	3.0	3.0	0.0	0.0	86.5	-7.2	222.2	24.2

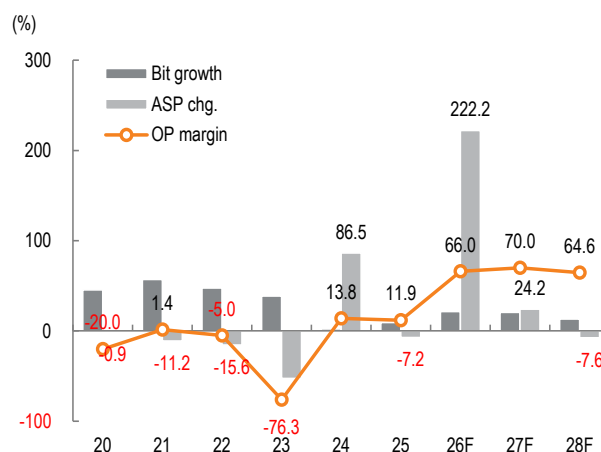
Source: Company data, Mirae Asset Securities Research

Figure 2. SK Hynix: DRAM bit growth and ASP outlook



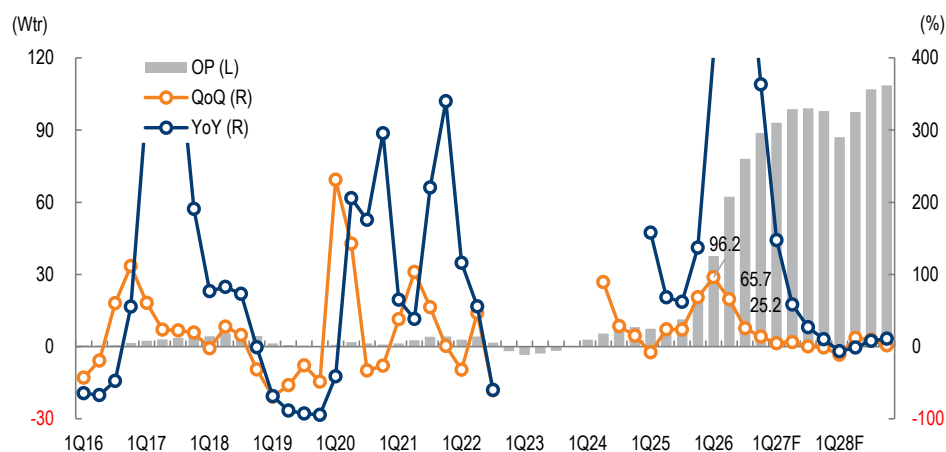
Source: Company data, Mirae Asset Securities Research

Figure 3. SK Hynix: NAND bit growth and ASP outlook

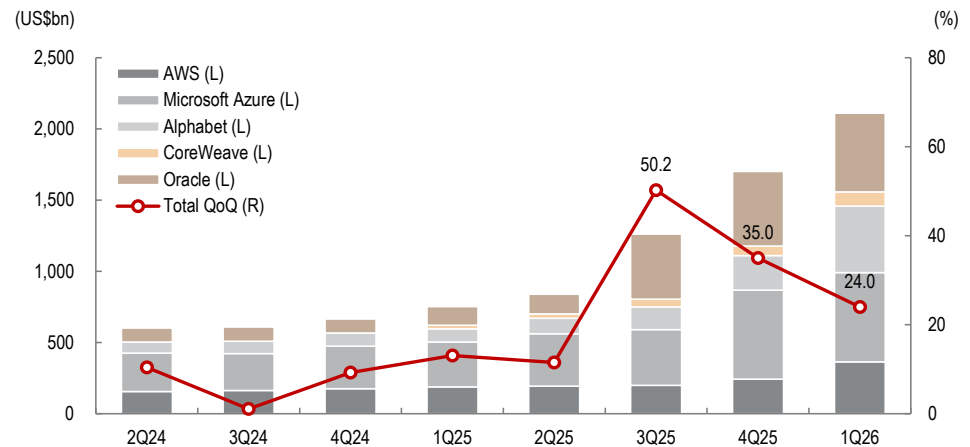


Source: Company data, Mirae Asset Securities Research

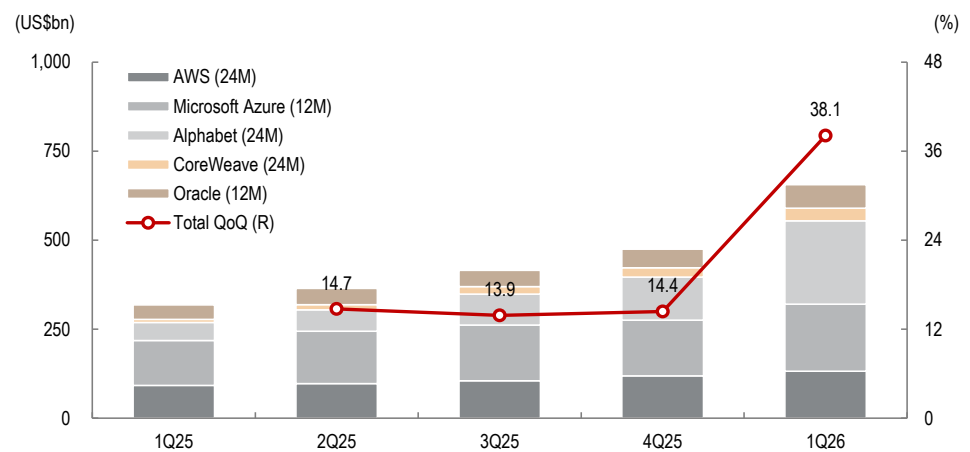
Figure 4. SK Hynix: Quarterly OP trend and outlook



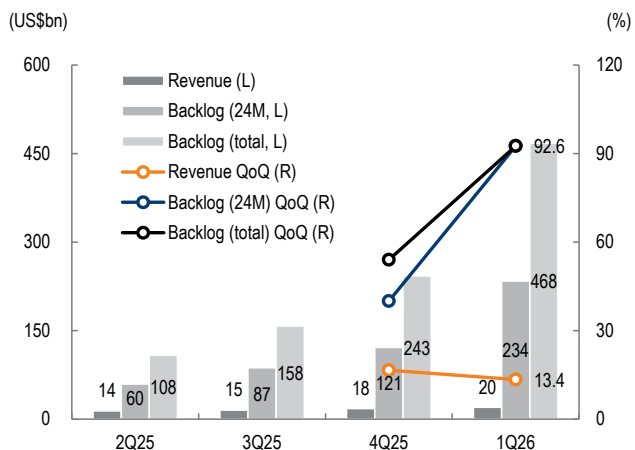
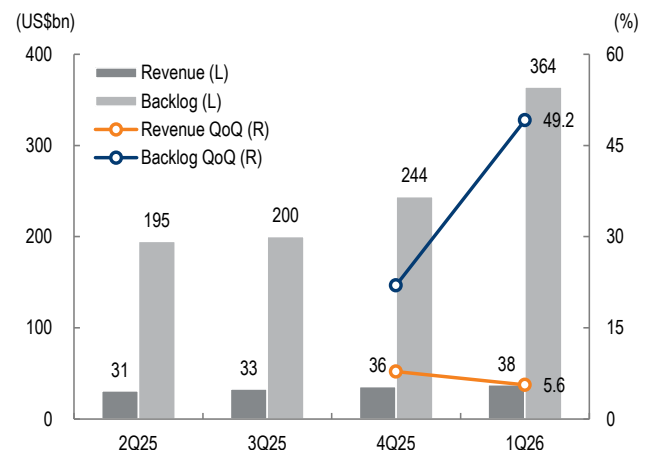
Source: Company data, Mirae Asset Securities Research

Figure 5. Global big tech companies' cloud backlogs

Source: Company data, Mirae Asset Securities Research

Figure 6. Global big tech companies' cloud backlogs (12/24M recognition periods)

Source: Company data, Mirae Asset Securities Research

Figure 7. Google Cloud's backlog**Figure 8. Amazon Web Services' backlog**

Source: Company data, Mirae Asset Securities Research

SK Hynix (000660 KS)

Income statement (summarized)

(Wbn)	2025	2026F	2027F	2028F
Revenue	97,147	347,518	507,945	544,121
Cost of revenue	38,456	51,504	77,294	99,409
GP	58,691	296,014	430,651	444,712
SG&A expenses	11,484	29,197	41,797	44,643
OP (adj.)	47,206	266,817	388,855	400,069
OP	47,206	266,817	388,855	400,069
Non-operating profit	3,260	12,195	6,233	20,729
Net financial income	-429	1,597	10,697	25,212
Net income from associates	-565	-555	-653	-672
Pretax profit	50,466	279,012	395,088	420,798
Income tax	7,518	68,120	98,772	105,200
Profit from continuing operations	42,948	210,892	296,316	315,599
Profit from discontinued operations	0	0	0	0
NP	42,948	210,892	296,316	315,599
Attributable to owners	42,919	210,755	296,115	315,380
Attributable to minority interests	29	137	201	218
Total comprehensive income	43,017	211,916	296,316	315,599
Attributable to owners	42,984	211,836	296,204	315,479
Attributable to minority interests	33	81	113	120
EBITDA	61,136	284,680	414,030	433,406
FCF	25,854	149,754	250,954	267,971
EBITDA margin (%)	62.9	81.9	81.5	79.7
OP margin (%)	48.6	76.8	76.6	73.5
Net margin (%)	44.2	60.6	58.3	58.0

Balance sheet (summarized)

(Wbn)	2025	2026F	2027F	2028F
Current assets	69,458	314,162	579,253	861,328
Cash & equivalents	14,924	128,487	369,609	625,005
AR & other receivables	18,289	63,470	72,381	82,299
Inventory	14,289	49,591	56,553	64,302
Other current assets	21,956	72,614	80,710	89,722
Non-current assets	106,650	149,663	192,994	238,270
Investments in associates	1,321	4,584	5,228	5,944
PP&E	77,503	109,873	151,967	195,862
Intangible assets	4,049	4,019	3,977	3,934
Total assets	176,108	463,825	772,247	1,099,598
Current liabilities	37,379	107,289	121,524	137,369
AP & other payables	9,283	32,215	36,738	41,772
Short-term financial liabilities	13,623	24,844	27,505	30,466
Other current liabilities	14,473	50,230	57,281	65,131
Non-current liabilities	18,062	22,394	23,374	24,464
Long-term financial liabilities	16,051	15,416	15,416	15,416
Other non-current liabilities	2,011	6,978	7,958	9,048
Total liabilities	55,441	129,683	144,898	161,832
Equity attributable to owners	120,516	333,932	626,938	937,135
Capital stock	3,658	3,658	3,658	3,658
Capital surplus	8,954	8,510	8,510	8,510
Retained earnings	106,577	318,387	611,393	921,591
Minority interests	151	210	411	630
Shareholders' equity	120,667	334,142	627,349	937,765

Cash flow statement (summarized)

(Wbn)	2025	2026F	2027F	2028F
Operating cash flow	53,373	198,735	317,380	344,361
NP	42,948	210,892	296,316	315,599
Non-cash income/expenses	18,838	59,349	97,438	97,514
Depreciation	13,099	17,022	24,332	32,495
Amortization	831	842	842	842
Other	4,908	41,485	72,264	64,177
Chg. in working capital	-2,881	-28,540	-4,110	-4,575
Chg. in AR & other receivables	-5,584	-42,529	-8,867	-9,869
Chg. in inventory	-1,059	-35,052	-6,962	-7,749
Chg. in AP & other payables	980	5,480	1,388	1,545
Income tax	-5,891	-60,137	-98,772	-105,200
Cash flow from investing activities	-48,054	-95,537	-75,166	-86,028
Chg. in PP&E	-27,374	-48,967	-66,426	-76,390
Chg. in intangible assets	-1,058	-808	-800	-800
Chg. in financial assets	-13,315	-40,260	-7,940	-8,837
Other	-6,307	-5,502	0	-1
Cash flow from financing activities	-1,445	13,093	-448	-2,220
Chg. in financial liabilities	2,475	10,586	2,661	2,962
Chg. in equity	4,467	-443	0	0
Dividends	-1,681	-784	-3,109	-5,182
Other	-6,706	3,734	0	0
Chg. in cash	3,719	113,563	241,122	255,397
Beginning balance	11,205	14,924	128,487	369,609
Ending balance	14,924	128,487	369,609	625,005

Source: Company data, Mirae Asset Securities Research estimates

Key valuation metrics/ratios

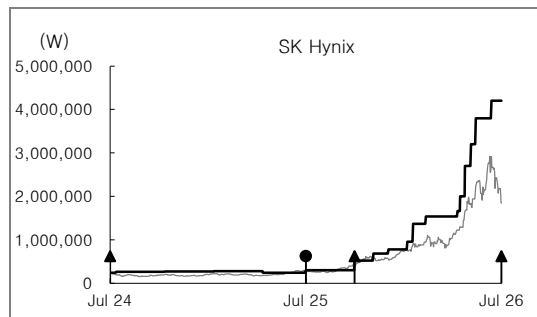
	2025	2026F	2027F	2028F
P/E (x)	11.0	6.3	4.4	4.2
P/CF (x)	7.7	4.9	3.3	3.2
P/B (x)	3.9	3.9	2.1	1.4
EV/EBITDA (x)	7.8	4.1	2.2	1.5
EPS (W)	58,955	295,026	415,482	442,513
CFPS (W)	84,870	378,298	552,481	579,642
BPS (W)	167,604	468,895	880,015	1,315,257
DPS (W)	3,000	4,500	7,500	7,500
Dividend payout ratio (%)	4.9	1.5	1.7	1.6
Dividend yield (%)	0.5	0.2	0.4	0.4
Revenue growth (%)	46.8	257.7	46.2	7.1
EBITDA growth (%)	69.6	365.6	45.4	4.7
OP growth (%)	101.2	465.2	45.7	2.9
EPS growth (%)	116.9	400.4	40.8	6.5
AR turnover (x)	6.2	8.5	7.5	7.1
Inventory turnover (x)	7.0	10.9	9.6	9.0
AP turnover (x)	15.0	8.1	7.3	8.3
ROA (%)	29.0	65.9	47.9	33.7
ROE (%)	44.2	92.8	61.6	40.3
ROIC (%)	45.7	162.3	163.2	132.1
Debt-to-equity ratio (%)	45.9	38.8	23.1	17.3
Current ratio (x)	185.8	292.8	476.7	627.0
Net debt-to-equity ratio (%)	-0.2	-46.4	-63.9	-70.5
Interest coverage ratio (x)	51.1	342.1	488.2	501.0

Appendix 1

Important disclosures and disclaimers

Two-year rating and TP history

Company	Date	Rating	TP (₩)
SK Hynix (000660)	06/25/26	Buy	4,200,000
	05/27/26	Buy	3,800,000
	05/18/26	Buy	3,200,000
	05/07/26	Buy	2,700,000
	04/28/26	Buy	2,000,000
	04/23/26	Buy	1,660,000
	02/23/26	Buy	1,540,000
	01/30/26	Buy	1,370,000
	01/19/26	Buy	956,000
	12/15/25	Buy	782,000
	11/17/25	Buy	680,000
	10/29/25	Buy	520,000
	10/29/25	Buy	520,000
	10/13/25	Buy	520,000
	07/14/25	Hold	300,000
	04/25/25	Buy	244,000
	01/24/25	Buy	277,000
	10/24/24	Buy	270,000
	07/25/24	Buy	260,000
	05/16/24	Buy	240,000



Stock ratings

Buy	Expected 12-month return: +20% or greater
Hold	Expected 12-month return: Greater than -10% and less than +10%
Sell	Expected 12-month return: -10% or less

Sector ratings

Overweight	Expected to outperform the market over 12 months
Neutral	Expected to perform in line with the market over 12 months
Underweight	Expected to underperform the market over 12 months

As of May 12, 2025, the Trading Buy rating category has been removed from our investment rating system.

Stocks expected to deliver a 12-month return between +10% and less than +20% may be rated either Buy or Hold at the discretion of the research analyst.

Rating and TP history: Share price (—), TP (—), Not Rated (■), Buy (▲), Trading Buy (■), Hold (●), Sell (◆)

* Our investment rating is a guide to the expected return of the stock over the next 12 months.

* Outside of the official ratings of Mirae Asset Securities Co., Ltd., analysts may call trading opportunities should technical or short-term material developments arise.

* The TP was determined by the research analyst through valuation methods discussed in this report, in part based on estimates of future earnings.

* TP achievement may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.

Ratings distribution and investment banking services

	Buy	Trading Buy	Hold	Sell
Ratings distribution	83.02%	0%	16.35%	0.63%
Investment banking services	86.67%	0%	13.33%	0%

* Based on recommendations in the last 12-months (as of June 30, 2026)

Disclosures

As of the publication date, Mirae Asset Securities Co., Ltd. has acted as a liquidity provider for equity-linked warrants backed by shares of SK Hynix as an underlying asset; other than this, Mirae Asset Securities has no other special interests in the covered companies.

Analyst certification

The research analysts who prepared this report (the "Analysts") are registered with the Korea Financial Investment Association and are subject to Korean securities regulations. They are neither registered as research analysts in any other jurisdiction nor subject to the laws or regulations thereof. Each Analyst responsible for the preparation of this report certifies that (i) all views expressed in this report accurately reflect the personal views of the Analyst about any and all of the issuers and securities named in this report and (ii) no part of the compensation of the Analyst was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report. Mirae Asset Securities Co., Ltd. ("Mirae Asset Securities") policy prohibits its Analysts and members of their households from owning securities of any company in the Analyst's area of coverage, and the Analysts do not serve as an officer, director, or advisory board member of the subject companies. Except as otherwise specified herein, the Analysts have not received any compensation or any other benefits from the subject companies in the past 12 months and have not been promised the same in connection with this report. Like all employees of Mirae Asset Securities, the Analysts receive compensation that is determined by overall firm profitability, which includes revenues from, among other business units, the institutional equities, investment banking, proprietary trading, and private client divisions. At the time of publication of this report, the Analysts do not know or have reason to know of any actual, material conflict of interest of the Analyst or Mirae Asset Securities except as otherwise stated herein.

Disclaimers

This report was prepared by Mirae Asset Securities, a broker-dealer registered in the Republic of Korea and a member of the Korea Exchange. Information

and opinions contained herein have been compiled in good faith and from sources believed to be reliable, but such information has not been independently verified and Mirae Asset Securities makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness, or correctness of the information and opinions contained herein or of any translation into English from the Korean language. In case of an English translation of a report prepared in the Korean language, the original Korean language report may have been made available to investors in advance of this report.

The intended recipients of this report are sophisticated institutional investors who have substantial knowledge of the local business environment, its common practices, laws, and accounting principles, and no person whose receipt or use of this report would violate any laws or regulations or subject Mirae Asset Securities or any of its affiliates to registration or licensing requirements in any jurisdiction shall receive or make any use hereof.

This report is for general information purposes only and is not and shall not be construed as an offer or a solicitation of an offer to effect transactions in any securities or other financial instruments. The report does not constitute investment advice to any person, and such person shall not be treated as a client of Mirae Asset Securities by virtue of receiving this report. This report does not take into account the particular investment objectives, financial situations, or needs of individual clients. The report is not to be relied upon in substitution for the exercise of independent judgment. Information and opinions contained herein are as of the date hereof and are subject to change without notice. The price and value of the investments referred to in this report and the income from them may depreciate or appreciate, and investors may incur losses on investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. Mirae Asset Securities, its affiliates, and their directors, officers, employees, and agents do not accept any liability for any loss arising out of the use hereof.

Mirae Asset Securities may have issued other reports that are inconsistent with, and reach different conclusions from, the opinions presented in this report. The reports may reflect different assumptions, views, and analytical methods of the analysts who prepared them. Mirae Asset Securities may make investment decisions that are inconsistent with the opinions and views expressed in this research report. Mirae Asset Securities, its affiliates, and their directors, officers, employees, and agents may have long or short positions in any of the subject securities at any time and may make a purchase or sale, or offer to make a purchase or sale, of any such securities or other financial instruments from time to time in the open market or otherwise, in each case either as principals or agents. Mirae Asset Securities and its affiliates may have had, or may be expecting to enter into, business relationships with the subject companies to provide investment banking, market-making, or other financial services as are permitted under applicable laws and regulations.

No part of this document may be copied or reproduced in any manner or form or redistributed or published, in whole or in part, without the prior written consent of Mirae Asset Securities. For further information regarding company-specific information as it pertains to the representations and disclosures in this Appendix 1, please contact compliance@miraeasset.us.com or +1 (212) 407-1000.

Distribution

United Kingdom: This report is being distributed by Mirae Asset Securities (UK) Ltd. in the United Kingdom only to (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), and (ii) high net worth companies and other persons to whom it may lawfully be communicated, falling within Article 49(2)(A) to (E) of the Order (all such persons together being referred to as "Relevant Persons"). This report is directed only at Relevant Persons. Any person who is not a Relevant Person should not act or rely on this report or any of its contents.

United States: Mirae Asset Securities is not a registered broker-dealer in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This report is distributed in the U.S. by Mirae Asset Securities (USA) Inc., a member of FINRA/SIPC, to "major U.S. institutional investors" in reliance on the exemption from registration provided by Rule 15a-6(b)(4) under the U.S. Securities Exchange Act of 1934, as amended. All U.S. persons that receive this document by their acceptance hereof represent and warrant that they are a major U.S. institutional investor and have not received this report under any express or implied understanding that they will direct commission income to Mirae Asset Securities or its affiliates. Any U.S. recipient of this document wishing to effect a transaction in any securities discussed herein should contact and place orders with Mirae Asset Securities (USA) Inc. Mirae Asset Securities (USA) Inc. accepts responsibility for the contents of this report in the U.S., subject to the terms hereof, to the extent that it is delivered to a U.S. person other than a major U.S. institutional investor. Under no circumstances should any recipient of this research report effect any transaction to buy or sell securities or related financial instruments through Mirae Asset Securities. The securities described in this report may not have been registered under the U.S. Securities Act of 1933, as amended, and, in such case, may not be offered or sold in the U.S. or to U.S. persons absent registration or an applicable exemption from the registration requirements.

Hong Kong SAR: This report is distributed in Hong Kong SAR by Mirae Asset Securities (HK) Limited, which is regulated by the Hong Kong Securities and Futures Commission. The contents of this report have not been reviewed by any regulatory authority in Hong Kong SAR. This report is for distribution only to professional investors within the meaning of Part I of Schedule 1 to the Securities and Futures Ordinance of Hong Kong SAR (Cap. 571, Laws of Hong Kong SAR) and any rules made thereunder and may not be redistributed in whole or in part in Hong Kong SAR to any person.

India: This report is being distributed by Mirae Asset Capital Markets (India) Private Limited ("MACM") in India to the customers based in India and is personal information only for those authorised recipient(s). MACM is inter alia a Securities and Exchange Board of India ("SEBI") registered Research Analyst in India and is not registered outside India. MACM and Mirae Asset, Korea are group entities. MACM makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein. The user assumes the entire risk of any use made of this information. This report has been provided for assistance only and is not intended to be and must not alone be taken as the basis for an investment decision. Recipient must read the entire Appendix 1 to the report carefully for Important Disclosures & Disclaimers.

All other jurisdictions: Customers in all other countries who wish to effect a transaction in any securities referenced in this report should contact Mirae Asset Securities or its affiliates only if distribution to or use by such customer of this report would not violate applicable laws and regulations and not subject Mirae Asset Securities and its affiliates to any registration or licensing requirement within such jurisdiction.

Mirae Asset Securities International Network

Mirae Asset Securities Co., Ltd. (Seoul) One-Asia Equity Sales Team Mirae Asset Center 1 Building 26 Eulji-ro 5-gil, Jung-gu, Seoul 04539 Korea Tel: 82-2-3774-2124	Mirae Asset Securities (HK) Ltd. Units 8501, 8507-8508, 85/F International Commerce Centre 1 Austin Road West Kowloon Hong Kong SAR Tel: 852-2845-6332	Mirae Asset Securities (UK) Ltd. 41st Floor, Tower 42 25 Old Broad Street, London EC2N 1HQ United Kingdom Tel: 44-20-7982-8000
Mirae Asset Securities (USA) Inc. 810 Seventh Avenue, 37th Floor New York, NY 10019 USA Tel: 1-212-407-1000	Mirae Asset Wealth Management (Brazil) CCTVM Rua Funchal, 418, 18th Floor, E-Tower Building Vila Olimpia Sao Paulo - SP 04551-060 Brazil Tel: 55-11-2789-2100	PT. Mirae Asset Sekuritas Indonesia District 8, Treasury Tower Building Lt. 50 Sudirman Central Business District Jl. Jend. Sudirman, Kav. 52-54 Jakarta Selatan 12190 Indonesia Tel: 62-21-5088-7000
Mirae Asset Securities (Singapore) Pte. Ltd. 6 Battery Road, #11-01 Singapore 049909 Republic of Singapore Tel: 65-6671-9845	Mirae Asset Securities (Vietnam) LLC 7F, Saigon Royal Building 91 Pasteur St. District 1, Ben Nghe Ward, Ho Chi Minh City Vietnam Tel: 84-8-3911-0633 (ext.110)	Mirae Asset Securities Mongolia UTsK LLC #406, Blue Sky Tower, Peace Avenue 17 1 Khoroo, Sukhbaatar District Ulaanbaatar 14240 Mongolia Tel: 976-7011-0806
Mirae Asset Investment Advisory (Beijing) Co., Ltd 2401B, 24th Floor, East Tower, Twin Towers B12 Jianguomenwai Avenue, Chaoyang District Beijing 100022 China Tel: 86-10-6567-9699	Beijing Representative Office 2401A, 24th Floor, East Tower, Twin Towers B12 Jianguomenwai Avenue, Chaoyang District Beijing 100022 China Tel: 86-10-6567-9699 (ext. 3300)	Shanghai Representative Office 38T31, 38F, Shanghai World Financial Center 100 Century Avenue, Pudong New Area Shanghai 200120 China Tel: 86-21-5013-6392
Ho Chi Minh Representative Office 7F, Saigon Royal Building 91 Pasteur St. District 1, Ben Nghe Ward, Ho Chi Minh City Vietnam Tel: 84-8-3910-7715	Mirae Asset Capital Markets (India) Pvt Ltd 1st Floor, Tower 4, Equinox Business Park, LBS Marg, Off BKC, Kurla (West), Mumbai - 400 070 India Tel: 91-22-62661300 / 48821300	