02 Sep 2026 04:03:02 ET | 15 pages

SK Hynix (000660.KS)

Hynix's Co-packaged Optics Roadmaps Featured in Nature Electronics

CITI'S TAKE

SK Hynix highlighted a CPO technology roadmap, featured in Nature Electronics, aimed at addressing data-movement bottlenecks at the rack and pod levels and supporting continued AI system scaling. We expect chip-to-chip CPO, if it becomes sufficiently cost-effective, to have a meaningful impact on AI inference by making large-scale memory pooling more practical, potentially strengthening memory-centric computing.

AI Bottleneck Broadening from Chips to Systems — Hynix highlighted its technology roadmap for co-packaged optics (CPO) in a paper featured in Nature Electronics in August 2026, to support next-generation AI systems (See Hynix's newsroom post, Aug 20, 2026). HBM has emerged as a key component within AI accelerator packages to address memory bottlenecks. However, as AI systems scale to larger numbers of GPUs and HBM, interconnect bandwidth is emerging as the next system-level bottleneck. The paper notes that compute throughput has tripled every two years, while interconnect bandwidth has advanced only ~1.4x over the same period, highlighting the bandwidth wall as a key constraint in large-scale AI.

CPO Brings Optics Closer to Compute — While conventional copper interconnects remain cost-effective over short distances, their power consumption and signal loss increase significantly as transmission speeds rise and communication distances grow across rack and pod levels. By integrating optical engines closer to compute, CPO enables higher bandwidth density, better energy efficiency, and stronger signal integrity with greater immunity to electromagnetic interference.

Long-term Roadmap: Connecting XPUs to Memory Pools — The paper's long-term roadmap presents a photonic interposer linking memory and processors through high bandwidth optical connectivity. This architecture would allow multiple AI accelerators to access a large memory pool, enabling more flexible system-level memory allocation and reducing data-movement bottlenecks as models and memory requirements continue to grow.

Implications — We expect CPO technology to have a significant effect on AI inference once chip to chip CPO becomes sufficiently cost-effective. As agentic AI drives increasing inference memory demands, CPO could make larger memory pools more practical, reinforcing memory-centric computing architectures.

Buy

Price (01 Sep 26 15:45)	W1,693,000
Target price	W3,000,000
Expected share price return	77.2%
Expected dividend yield	0.8%
Expected total return	78.0%
Market Cap	W1,236,723,574M
	US$900,427M

Price Performance
(RIC: 000660.KS, BB: 000660 KS)



Peter Lee [AC]

Jayden Oh

Earnings Summary

Year to 31 Dec	Net Profit (WB)	Diluted EPS (W)	EPS growth (%)	P/E (x)	P/B (x)	ROE (%)	Yield (%)
2024A	19,789	27,182	314.9	62.3	16.9	31.3	0.1
2025A	42,919	58,955	116.9	28.7	10.8	45.7	0.2
2026E	253,948	348,829	491.7	4.9	3.4	105.6	0.8
2027E	268,688	369,076	5.8	4.6	2.0	54.2	0.9
2028E	304,979	418,925	13.5	4.0	1.3	39.5	0.9

Source: Powered by dataCentral

000660.KS: Fiscal year end 31-Dec

Price: W1,693,000; TP: W3,000,000; Market Cap: W1,236,723,574m; Recomm: Buy

Profit & Loss (Wb)	2024	2025	2026E	2027E	2028E
Sales revenue	66,193	97,147	330,176	463,018	554,438
Cost of sales	-34,365	-38,456	-53,598	-80,966	-120,457
Gross profit	31,828	58,691	276,578	382,052	433,982
Gross Margin (%)	48.1	60.4	83.8	82.5	78.3
EBITDA (Adj)	**36,601**	**61,774**	**270,487**	**372,949**	**422,427**
EBITDA Margin (Adj) (%)	55.3	63.6	81.9	80.5	76.2
Depreciation	-12,582	-14,015	-15,710	-17,281	-19,009
Amortisation	-553	-553	-553	-553	-553
EBIT (Adj)	**23,467**	**47,206**	**254,224**	**355,115**	**402,866**
EBIT Margin (Adj) (%)	35.5	48.6	77.0	76.7	72.7
Net interest	-1,000	-429	-578	-1,000	-1,000
Associates	-38	-565	-10	22	22
Non-Op/Except/Other Adj	1,457	4,253	76,271	-600	-600
Pre-tax profit	**23,885**	**50,466**	**329,907**	**353,537**	**401,288**
Tax	-4,088	-7,518	-75,840	-84,849	-96,309
Extraord./Min.Int./Pref.div.	-8	-29	-119	0	0
Reported net profit	**19,789**	**42,919**	**253,948**	**268,688**	**304,979**
Net Margin (%)	29.9	44.2	76.9	58.0	55.0
Core NPAT	19,789	42,919	253,948	268,688	304,979

Per share data	2024	2025	2026E	2027E	2028E
Reported EPS (W)	27,182	58,955	348,829	369,076	418,925
Core EPS (W)	27,182	58,955	348,829	369,076	418,925
DPS (W)	2,070	2,999	13,564	14,771	15,309
CFPS (W)	39,314	73,824	314,893	368,956	435,199
FCFPS (W)	17,411	36,023	247,448	271,429	282,178
BVPS (W)	100,367	157,362	503,347	859,265	1,263,861
Wtd avg ord shares (m)	728	728	728	728	728
Wtd avg diluted shares (m)	728	728	728	728	728

Growth rates	2024	2025	2026E	2027E	2028E
Sales revenue (%)	105.9	46.8	239.9	40.2	19.7
EBIT (Adj) (%)	399.9	101.2	438.5	39.7	13.4
Core NPAT (%)	314.9	116.9	491.7	5.8	13.5
Core EPS (%)	314.9	116.9	491.7	5.8	13.5

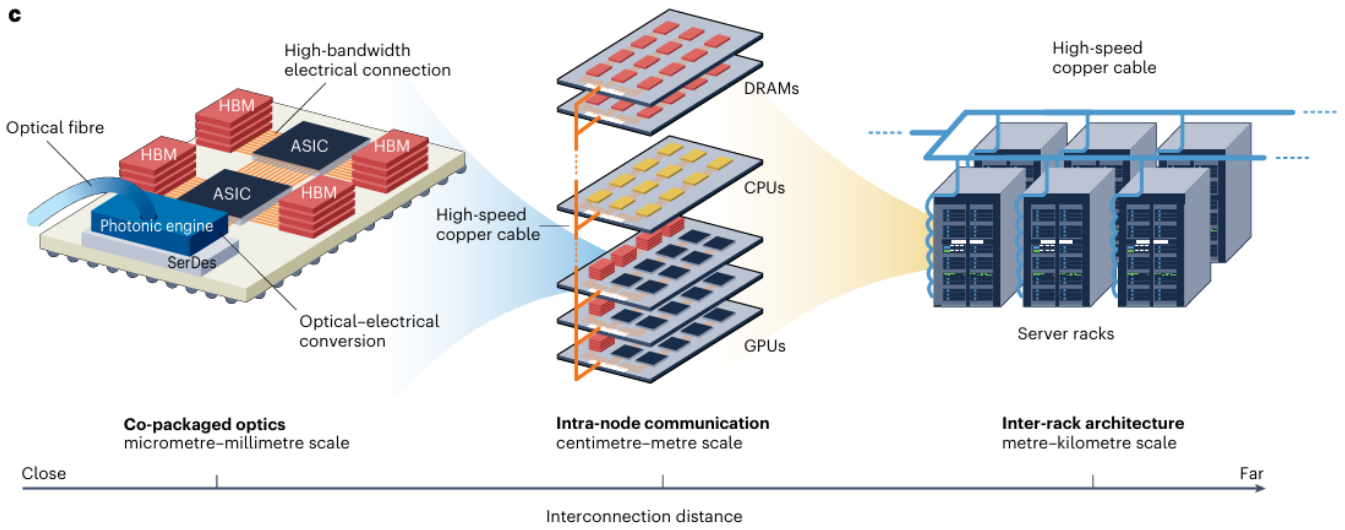
Balance Sheet (Wb)	2024	2025	2026E	2027E	2028E
Cash & cash equiv.	19,007	23,538	202,891	391,213	586,507
Accounts receivables	12,232	16,157	49,421	62,375	67,221
Inventory	12,722	12,813	16,072	21,851	29,257
Net fixed & other tangibles	56,069	69,573	102,963	156,682	249,072
Goodwill & intangibles	5,977	25,964	25,412	24,859	24,307
Financial & other assets	13,346	14,616	22,828	26,026	27,223
Total assets	**119,352**	**162,660**	**419,587**	**683,005**	**983,587**
Accounts payable	2,129	2,620	4,017	6,675	10,924
Short-term debt	9,757	9,657	9,557	9,457	9,357
Long-term debt	20,011	20,411	21,911	22,311	22,711
Provisions & other liab	14,388	15,412	17,664	19,015	20,501
Total liabilities	**46,286**	**48,101**	**53,150**	**57,459**	**63,494**
Shareholders' equity	73,067	114,560	366,438	625,547	920,094
Minority interests	-1	-1	-1	-1	-1
Total equity	**73,067**	**114,560**	**366,437**	**625,546**	**920,093**
Net debt (Adj)	**10,761**	**6,531**	**-171,422**	**-359,444**	**-554,438**
Net debt to equity (Adj) (%)	14.7	5.7	-46.8	-57.5	-60.3

Valuation ratios	2024	2025	2026E	2027E	2028E
PE (x)	62.3	28.7	4.9	4.6	4.0
PB (x)	16.9	10.8	3.4	2.0	1.3
EV/EBITDA (x)	33.9	20.0	4.2	2.6	1.8
FCF yield (%)	1.0	2.1	14.6	16.0	16.7
Dividend yield (%)	0.1	0.2	0.8	0.9	0.9
Payout ratio (%)	8	5	4	4	4
ROE (%)	31.3	45.7	105.6	54.2	39.5

Cashflow (Wb)	2024	2025	2026E	2027E	2028E
EBITDA	36,601	61,774	270,487	372,949	422,427
Working capital	-4,910	-3,771	-41,087	-17,921	-7,714
Other	-3,070	-4,258	-157	-86,427	-97,887
Operating cashflow	**28,621**	**53,744**	**229,243**	**268,601**	**316,826**
Capex	-15,946	-27,519	-49,100	-71,000	-111,400
Net acq/disposals	0	0	0	0	0
Other	-2,059	-20,535	0	0	0
Investing cashflow	**-18,005**	**-48,054**	**-49,100**	**-71,000**	**-111,400**
Dividends paid	-826	-1,426	-2,071	-9,579	-10,432
Financing cashflow	**-526**	**-1,126**	**-671**	**-9,279**	**-10,132**
Net change in cash	**10,090**	**4,564**	**179,472**	**188,322**	**195,294**
Free cashflow to s/holders	**12,675**	**26,225**	**180,143**	**197,601**	**205,426**

For definitions of the items in this table, please click here.

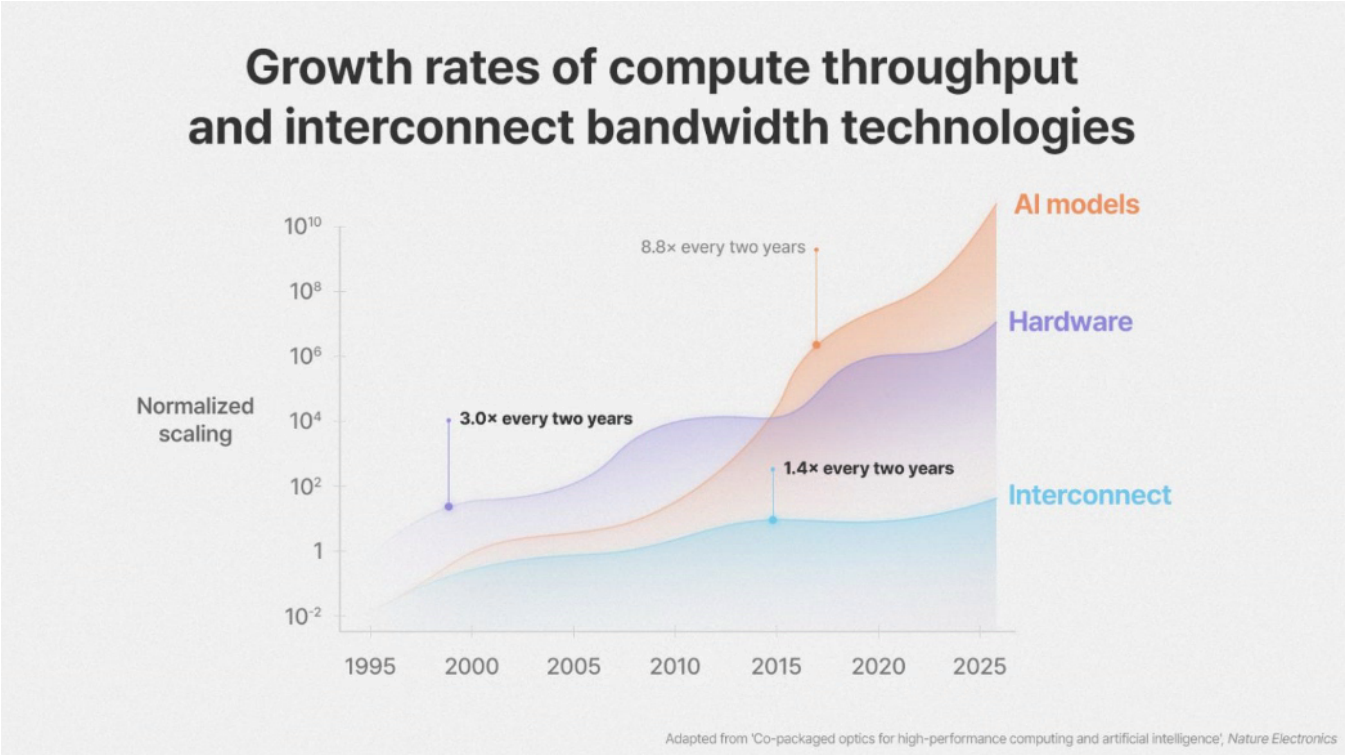
Figure 1. Hierarchical Deployment of Optical Interconnects



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Source: Kim, B. et al., "Co-packaged optics for high-performance computing and artificial intelligence", Nature Electronics (2026), Citi Research

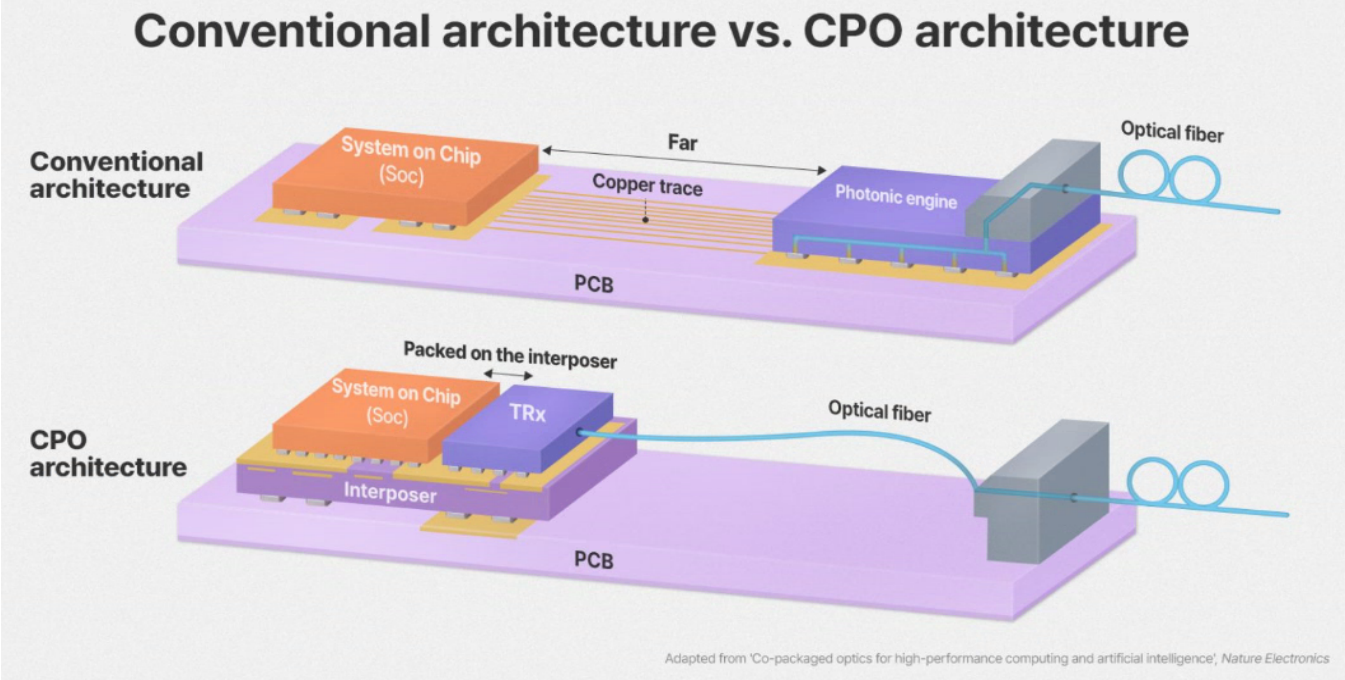
Figure 2. Growth Rates of Compute Throughput and Interconnect Bandwidth Technologies



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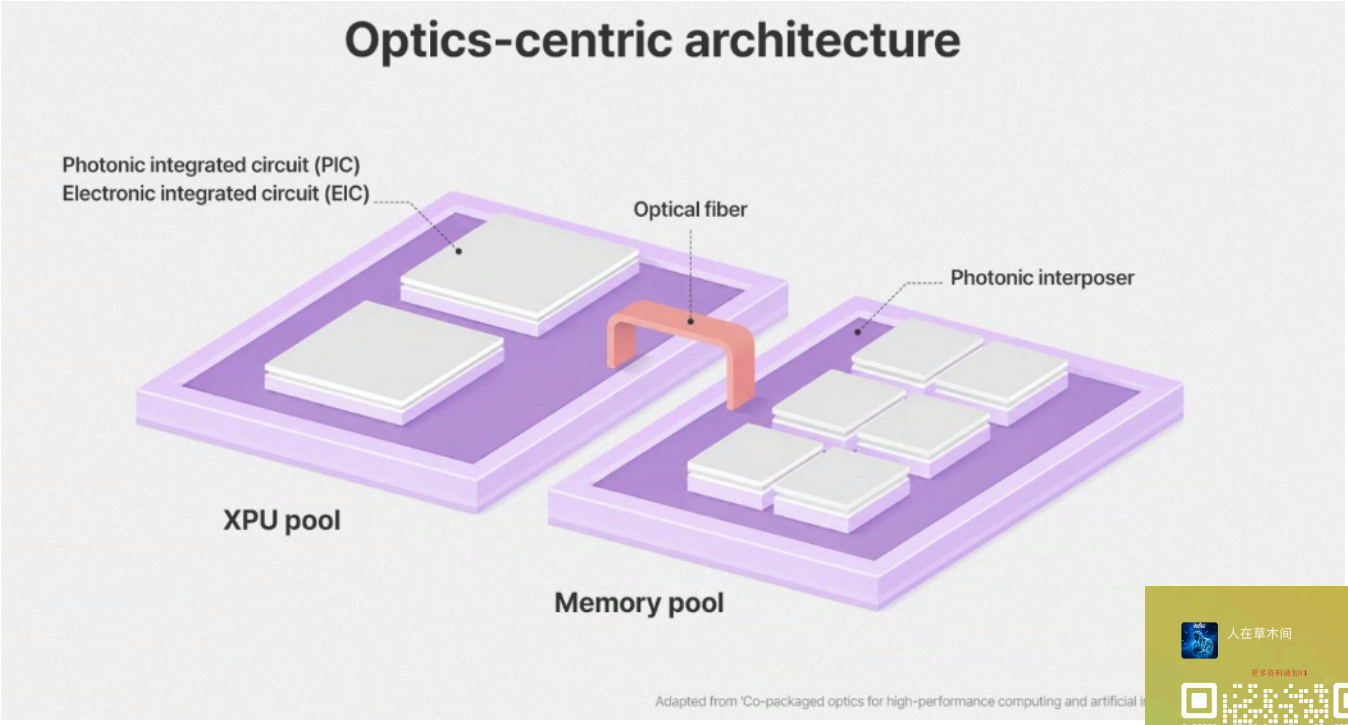
Source: SK Hynix, Citi Research

Figure 3. Conventional Architecture vs. CPO Architecture



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Source: SK Hynix, Citi Research

Figure 4. Optics-Centric Architecture Enabling Memory Pooling via Photonic Interposer



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Source: SK Hynix, Citi Research

Bull/Bear: SK Hynix (000660.KS)

₩3,800,000	₩3,000,000	₩1,400,000
▲124% Upside	▲77% Upside	▼17% Downside



Spread 142pp
Current Price and expected returns (upside/downside) as of 01 Sep 2026

BULL Assumptions

- 2026E DRAM ASP Chg. YoY +200%
- 2026E NAND ASP Chg. YoY +300%
- Accelerated customization of memory products; continued upcycle of memory market supported by better-than-expected commodity memory pricing.

BASE Assumptions

- 2026E DRAM ASP Chg. YoY +163%
- 2026E NAND ASP Chg. YoY +264%
- 2026E EV/EBITDA SOTP (HBM: 8.6x 26E EBITDA; Commodity: 7.7x 26E EBITDA) on continued HBM leadership & the initiation of commodity market upcycle

BEAR Assumptions

- 2026E DRAM ASP Chg. YoY +100%
- 2026E NAND ASP Chg. YoY +150%
- 1.6x P/B on DRAM market share loss & unexpected termination of memory upcycle

SK Hynix

Company description

SK Hynix manufactures semiconductors such as DRAM, NAND flash memory and SRAM chips.

Investment strategy

We rate SK Hynix shares as Buy. We believe SK Hynix is well positioned to benefit from the DRAM market recovery driven by limited supply growth. In particular, we see SK Hynix's technology leadership in DRAM, coupled with the high exposure to fast-growing server applications, supporting the company's long-term earnings growth. Additionally, we think SK Hynix's acquisition of Intel's NAND business should produce synergies with the company's existing NAND business and strengthen its product portfolio.

Valuation

Our 12-month target price for SK Hynix of W3,000,000 is derived using a sum-of-the-parts (SOTP) methodology, based on 2026E EBITDA. In calculating total operating value, we break down SK Hynix's operating businesses into HBM and commodity/others business to reflect a structural change in next-gen memory market. We reference a global peer (TSMC) in assigning a fair-value EV/EBITDA multiple for HBM business, as we project the memory market is evolving from a traditional commodity market into a highly customized & customer-specific market much closer to the foundry business. For commodity memory business, we apply a historical average of 12m fwd EV/EBITDA during the beginning or early stage of memory upcycles in the past. We apply 8.6x EV/EBITDA to HBM segment and 7.4x to commodity segment to derive the target price.

Risks

Downside risks that could prevent the shares from reaching our target price include: 1) a downturn in DRAM demand; 2) weaker NAND demand than our forecasts; and 3) weakness in global consumption.

TSMC

(2330.TW; NT$2385.0; 1; 02 Sep 26; 13:30)

Valuation

Our target price for TSMC shares of NT$3,800 is based on 25x the average of our 2027E EPS, higher than its three-year average forward PER, versus global peers' average of 15-23x. We believe our PER target is justified by TSMC's leading position in advanced process node and robust AI demand growth outlook. Given its continuing leadership in the semiconductor foundry industry, we believe TSMC's stable order visibility and earnings outlook make it less vulnerable than peers to a potential global economic downturn. Our