

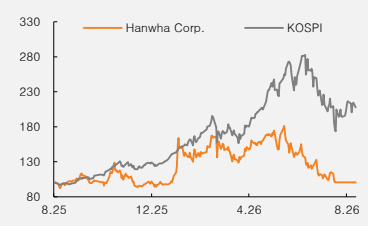
Equity Research
 August 25, 2026

(Maintain)	Buy
Target price	▲ W185,000
Current price (8/24/26)	W83,800
Upside	120.8%

OP (26F, Wbn)	7,422
Consensus OP (26F, Wbn)	5,902
EPS growth (26F, %)	354.1
Market EPS growth (26F, %)	281.0
P/E (26F, x)	4.7
Market P/E (26F, x)	6.7
KOSPI	6,696.96

Market cap (Wbn)	5,909
Shares (mn)	53
Free float (%)	39.0
Foreign ownership (%)	21.1
Beta (12M)	0.70
52-week low (W)	77,700
52-week high (W)	150,900

(%)	1M	6M	12M
Absolute	-12.7	-36.5	3.6
Relative	-12.8	-43.4	-51.0



Mirae Asset Securities Co., Ltd.

Jay JH Ryu

jay.ryu@miraeeasset.com

000880 KS • Multi-Sector Holdings

Hanwha Corp.

Spin-off creates a clear path to discount narrowing

Hanwha Corp. resumes trading following spin-off

Effective Aug. 1, five subsidiaries with a combined book value of W784.7bn—Hanwha Vision, Hanwha Galleria, Hanwha Hotels & Resorts, Hanwha Momentum, and Hanwha Robotics—were transferred from Hanwha Corp. to the newly established Hanwha Machinery & Service Holdings, together with roughly W100bn in cash. The spin-off ratio is approximately 0.76 (surviving entity) to 0.24 (new entity). Trading for Hanwha Corp. shares resumed on Aug. 25, while Hanwha Machinery & Service Holdings was listed on the same day. Virtually all borrowings remain with the surviving entity.

The surviving Hanwha Corp. retains the group's core subsidiaries in defense, shipbuilding, energy, and financial services, as well as its existing construction and global businesses. With Hanwha Aerospace accounting for around 80% of the value of listed subsidiaries, the surviving company has effectively been reorganized around defense and shipbuilding.

Clear path to discount narrowing; raise TP to W185,000

We estimate Hanwha Corp.'s NAV at W18.12tr. This comprises W22.88tr from its stakes in three listed subsidiaries (32.18% in Hanwha Aerospace, 35.61% in Hanwha Solutions, and 43.24% in Hanwha Life) plus W1.71tr in capitalized brand royalties, minus adjusted net debt of W5.45tr, capitalized holding company overhead, and preferred shares.

We assume that the NAV discount will narrow from the 54.75% observed immediately before the trading suspension on Jul. 29 to 50.85% over the next 12 months. This reflects a structural reduction in discount factors following the transfer of all unlisted subsidiaries to the new entity. We also adjusted the share count to reflect the spin-off. Accordingly, we raise our target price to W185,000 (from W107,000).

Investors should monitor the share price immediately after trading resumes. Based on the last closing price and the spin-off ratio, the theoretical post-spin-off price implies a NAV discount of 75.8%, wider than the pre-spin-off discount. This is the result of the mismatch between the assets transferred and the spin-off ratio: the five transferred subsidiaries represented only 7% of NAV, compared with a 24.4% allocation to the new entity under the spin-off ratio. Each 5%p change in the starting discount translates into roughly W13,000/share.

2H26 outlook: Defense to fill the gap

For 2Q26, Hanwha Corp. reported record consolidated operating profit of W2.41tr (+80% YoY). Earnings were mainly driven by Hanwha Aerospace (+58% YoY), Hanwha Solutions (+200% YoY), and Hanwha Life (+160% YoY). On a standalone basis, OP margin was resilient at 11.3%, aided by improved construction cost ratios. The consolidation scope will narrow in 2H26, but the impact should be offset by increased defense and shipbuilding volumes. Notably, most of the resources available for shareholder returns remain with the surviving company, and Hanwha Corp. has committed to a minimum annual DPS of W1,000 and taken steps to cancel treasury and preferred shares.

(Dec.)	2024	2025	2026F	2027F	2028F
Revenue (Wbn)	55,647	74,785	92,734	96,334	100,090
OP (Wbn)	2,416	4,147	7,422	8,926	9,682
OP margin (%)	4.3	5.5	8.0	9.3	9.7
NP (Wbn)	773	372	1,555	1,931	2,134
EPS (W)	7,916	3,939	17,887	28,374	31,371
ROE (%)	7.2	3.3	12.5	13.9	13.5
P/E (x)	3.4	20.7	4.7	3.0	2.7
P/B (x)	0.2	0.6	0.5	0.4	0.3
Dividend yield (%)	3.0	1.3	1.8	2.0	2.3

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

Source: Company data, Mirae Asset Securities Research estimates

Analysts who prepared this report are registered as research analysts in Korea but not in any other jurisdiction, including the US. Please see analyst certifications and important disclosures & disclaimers in Appendix 1 at the end of the report.

Post-spin-off: Structure and valuation of the surviving entity

Structure: Control preserved; net debt stays with surviving entity

The spin-off structure has now been finalized through regulatory disclosures. The surviving Hanwha Corp. retains its stakes in the defense, shipbuilding, energy, and financial units, as well as its directly operated construction and global businesses. The newly established Hanwha Machinery & Service Holdings comprises five subsidiaries with a combined book value of W784.7bn—Hanwha Vision, Hanwha Galleria, Hanwha Hotels & Resorts, Hanwha Momentum, and Hanwha Robotics—together with W100bn in cash. Virtually all borrowings remain with the surviving entity; the new company assumes only W29bn in liabilities, all of which are non-current. Preferred shareholders were allocated shares in both companies using the same ratio as common shareholders.

The stated purpose of the spin-off is to establish greater accountability by business segment and allow each business to be valued more appropriately by the market. In practical terms, the spin-off seeks to address the discount historically applied to Hanwha Corp.'s diversified holding company structure by separating businesses with different characteristics. With approximately 80% of the value of its listed subsidiary holdings concentrated in Hanwha Aerospace, the surviving company effectively becomes a defense- and shipbuilding-focused holding company. The new company, meanwhile, becomes a separate holding company for domestic-oriented and mature businesses spanning retail, leisure, robotics, and machinery. A key benefit of the spin-off is that it allows growth assets and mature assets to be valued under separate frameworks.

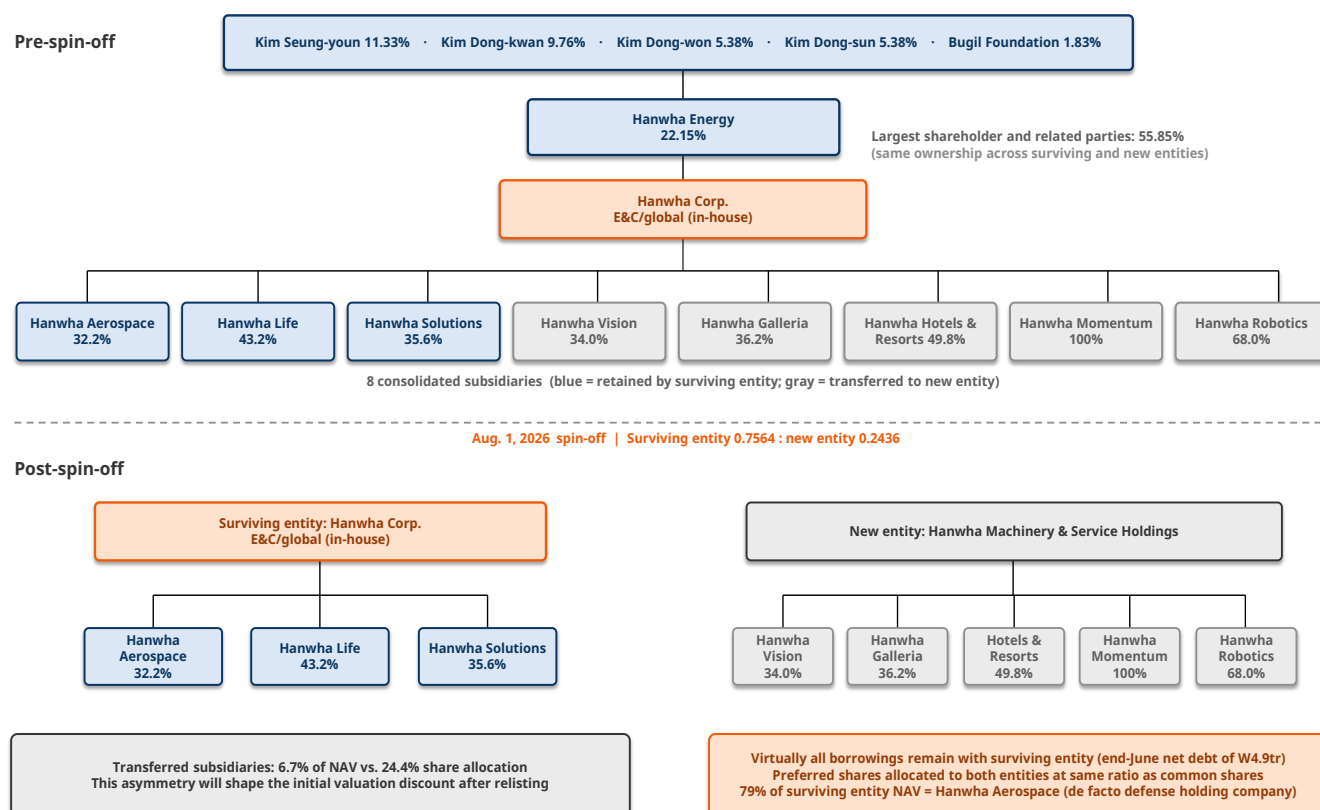
Table 1. Spin-off timeline

Date	Event
Jan. 14, 2026	Board approves the spin-off; "value-up" plan announced on the same day
May 14, 2026	Spin-off plan amended; final spin-off ratio set at 75.63533% for the surviving Hanwha Corp. and 24.36467% for the new entity, reflecting the cancellation of treasury shares
Jul. 15, 2026	Spin-off plan approved at an extraordinary general meeting of shareholders
Jul. 29, 2026	Final trading day before the spin-off; trading suspended from Jul. 30 to Aug. 24
Aug. 1, 2026	Effective date of spin-off
Aug. 3, 2026	Spin-off registered; allocation of preferred shares finalized
Aug. 25, 2026	Surviving Hanwha Corp. relisted; Hanwha Machinery & Service Holdings newly listed

Source: DART, Mirae Asset Securities Research

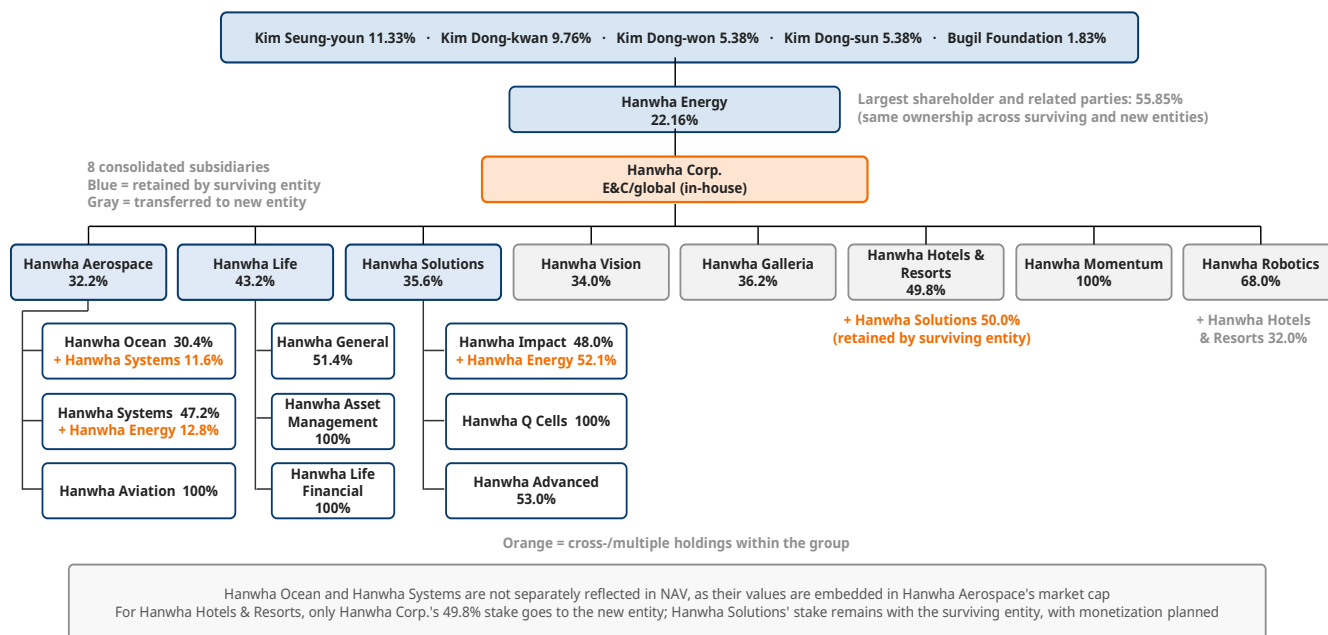
The controlling family retains the same degree of control over both companies. The largest shareholder and related parties, which collectively held 55.85% of Hanwha Corp. (including Hanwha Energy's 22.15% stake and Chairman Kim Seung-youn's 11.33% stake) retain equivalent ownership stakes in both the surviving and new entities (with their effective ownership percentages increasing slightly following the cancellation of treasury shares). The allocation of businesses also closely aligns with the respective areas overseen by each family member. The surviving company holds the defense and energy businesses overseen by Vice Chairman Kim Dong-kwan and the financial businesses overseen by Hanwha Life President Kim Dong-won, while the new entity holds the retail, leisure, robotics, and machinery businesses overseen by Kim Dong-sun. Further separation of affiliates through stake realignment remains a possible scenario, but no such plan has been disclosed.

Figure 1. Hanwha Corp.'s ownership structure before and after the spin-off: Consolidated basis



Source: DART, Mirae Asset Securities Research

Figure 2. Hanwha Corp.'s post-spin-off ownership structure and key second-tier subsidiaries



Source: DART, Mirae Asset Securities Research

Surviving company valuation: Maintain Buy; raise TP to W185,000

We estimate the surviving company's NAV at W18.12tr. This comprises W22.88tr from its stakes in three listed subsidiaries (32.18% in Hanwha Aerospace, 35.61% in Hanwha Solutions, and 43.24% in Hanwha Life) plus W1.71tr in capitalized brand royalties, minus capitalized holding company overhead (W554.9bn), adjusted net debt (W5.45tr), and preferred shares (W430.2bn). Adjusted net debt comprises end-June net debt of W4.94tr, W100bn in cash transferred to the new company, and W410.6bn paid into Hanwha Solutions' rights offering.

Table 2. Hanwha Corp. (surviving): NAV and 12-month fair value estimate

(Wbn)

	Value	Notes
Listed subsidiaries	22,878.0	
- Hanwha Aerospace	18,335.4	Market cap × 32.18% stake
- Hanwha Solutions	2,574.7	Market cap × 35.61% stake following rights offering
- Hanwha Life	1,967.9	Market cap × 43.24% stake
Brand royalties	1,705.0	3Y avg.; capitalized
Holding company overhead (-)	-554.9	W50bn annually; capitalized
Adjusted net debt (-)	-5,453.0	End-June net debt of W4.94tr + W100.0bn in transferred cash + W410.6bn for participation in Hanwha Solutions' rights offering
Residual value of directly operated businesses (-)	-20.5	
Preferred shares (-)	-430.2	14,708,840 shares allocated to surviving company × Jul. 29 closing price of W29,250
NAV total	18,124.4	
12M fair value/share	W185,000	Assumes the discount narrows to 50.85% over 12M; based on 52,472,375 shares outstanding and 12-month NAV growth of 8.8%

Note: Based on Aug. 24 closing prices except where indicated

Source: KRX, DART, Mirae Asset Securities Research

We assume that the discount will narrow from the 54.75% observed immediately before the trading suspension on Jul. 29 to 50.85% over the next 12 months. We raise our target price to W185,000 (from W107,000). Adjusted net debt is a provisional estimate incorporating only major confirmed events and will be replaced with the reported figure when 3Q26 results are released in November. It is based on end-June net debt of W4.94tr, with adjustments for confirmed post-spin-off events. Given that the company has indicated that it intends to keep year-end net debt below W5tr, progress on real estate sales could provide upside to our valuation.

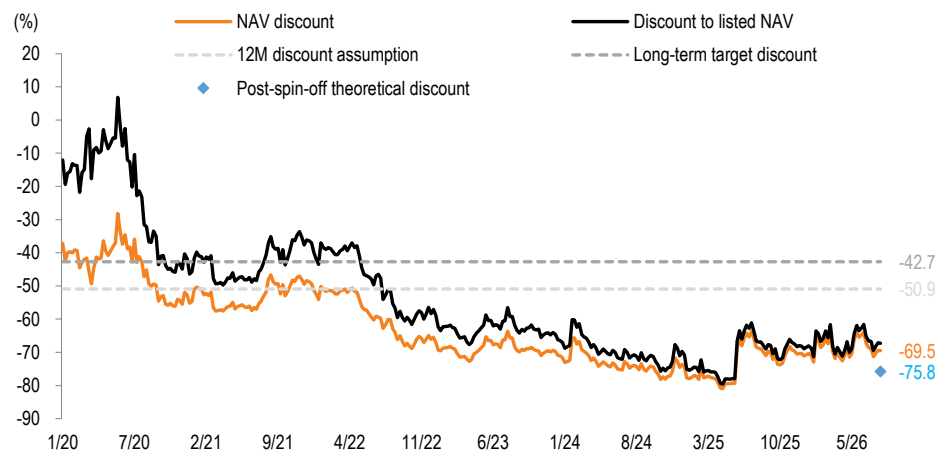
One point to watch is price discovery immediately after relisting. The surviving company's theoretical post-spin-off price of W83,592—based on Hanwha Corp.'s last closing price of W83,800—implies a NAV discount substantially wider than the pre-spin-off discount of 54.75%. This is the result of the mismatch between the assets transferred and the spin-off ratio: the five transferred subsidiaries represented only 7% of NAV, compared with a 24.4% allocation to the new entity under the spin-off ratio. We may revisit the starting point of our fair value calculation depending on how the initial price discovery period plays out.

Impact of the spin-off on target discount calculation

The spin-off changes not only Hanwha Corp.'s earnings profile but also the framework for determining the target discount. First, unlisted subsidiaries now account for virtually none of the surviving company's asset value, eliminating the additional discount previously applied for the opacity of unlisted assets. Second, defense assets now represent approximately 80% of the value of its listed holdings, shifting the relevant peer group from diversified holding companies to defense-focused holding companies. Third, the "value-up" plan (e.g., minimum dividend and share cancellation commitments) was designed on the assumption that the spin-off would proceed and remains in effect post-spin-off. Execution of this plan is a central assumption underlying the projected narrowing of the discount.

From a dividend perspective, the transfer of five non-dividend-paying businesses should slightly improve the surviving company's dividend profile. However, a direct comparison with Hanwha Corp.'s average discount over the five years preceding the spin-off is no longer meaningful. Notably, the NAV discount chart below is based on the pre-spin-off company; a new historical series for the surviving company will begin to build after relisting.

Figure 3. Hanwha Corp.'s NAV discount trend and post-spin-off positioning (weekly)



Notes: Historical data are based on pre-spin-off Hanwha Corp.; the 54.75% starting discount cited in the text is calculated on a surviving-entity basis

Source: KRX, DART, Mirae Asset Securities Research

Table 3. 2Q26 review

(Wbn, %, %p)

	2Q25	1Q26	2Q26P		Growth	
			Preliminary	Mirae Asset	YoY	QoQ
Revenue	19,242	21,451	28,638	21,175	48.8	33.5
OP	1,333	1,267	2,409	1,588	80.7	90.1
OP margin (%)	6.9	5.9	8.4	7.5	1.5	2.5
Pretax profit	495	922	2,148	1,283	333.9	133.0
NP	73	145	441	271	504.1	204.1

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

Source: Company data, Mirae Asset Securities Research

Table 4. Hanwha Corp.'s quarterly and annual earnings: Spin-off impact reflected from 3Q26F

(Wbn, %)

	1Q25	2Q25	3Q25	4Q25	1Q26	2Q26	3Q26F	4Q26F	2025	2026F	2027F
Revenue	16,643	19,242	17,787	21,114	21,451	28,638	19,350	23,295	74,785	92,734	96,334
Standalone	1,102	1,130	1,076	1,006	1,058	1,001	993	928	4,315	3,980	3,980
Hanwha Aerospace	5,484	6,311	6,486	8,421	5,751	9,293	7,707	9,677	26,703	32,428	35,549
Hanwha Life	6,455	7,790	5,847	7,344	9,985	12,604	5,991	8,374	27,436	36,954	39,077
Hanwha Solutions	3,094	3,117	3,364	3,757	3,882	4,583	4,560	5,094	13,333	18,119	19,491
Five transferred companies	851	1,137	1,518	1,634	1,502	1,724	423	0	5,139	3,648	0
Other/consolidation adj.	-343	-243	-504	-1,048	-727	-567	-324	-778	-2,141	-2,395	-1,763
OP	1,073	1,335	1,344	395	1,267	2,409	1,857	1,890	4,147	7,422	8,926
Standalone	152	130	65	-5	189	113	109	102	341	514	514
Hanwha Aerospace	561	865	856	808	639	1,365	1,242	1,440	3,089	4,687	5,856
Hanwha Life	371	241	355	180	481	627	270	211	1,147	1,588	1,679
Hanwha Solutions	30	102	-7	-490	93	307	191	250	-365	841	1,171
Five transferred companies	28	67	82	43	35	85	32	0	219	152	0
Other/consolidation adj.	-69	-70	-7	-141	-170	-88	13	-113	-284	-360	-294
Pretax profit	548	497	1,123	-157	922	2,148	1,594	1,537	2,011	6,200	7,606
NP attributable to owners of the parent	86	74	365	-153	145	441	449	521	372	1,555	1,931
OP margin (%)	6.4	6.9	7.6	1.9	5.9	8.4	9.6	8.1	5.5	8.0	9.3

Note: Transferred subsidiaries' results included only through July

Source: Company data, Mirae Asset Securities Research

Hanwha Corp. (000880 KS)

Income statement (summarized)

(Wbn)	2025	2026F	2027F	2028F
Revenue	74,785	92,734	96,334	100,090
Cost of revenue	64,747	80,703	84,494	87,789
GP	10,038	12,031	11,840	12,301
SG&A expenses	5,891	4,609	2,913	2,619
OP (adj.)	4,147	7,422	8,926	9,682
OP	4,147	7,422	8,926	9,682
Non-operating profit	-2,136	-1,222	-1,320	-1,301
Net financial income	-1,204	-1,425	-1,367	-1,326
Net income from associates	153	354	261	300
Pretax profit	2,011	6,200	7,606	8,381
Income tax	19	1,112	1,429	1,584
Profit from continuing operations	1,992	5,088	6,177	6,797
Profit from discontinued operations	0	0	0	0
NP	1,992	5,088	6,177	6,797
Attributable to owners	372	1,555	1,931	2,134
Attributable to minority interests	1,619	3,533	4,246	4,663
Total comprehensive income	3,070	12,125	6,177	6,797
Attributable to owners	864	3,932	2,121	2,335
Attributable to minority interests	2,206	8,193	4,055	4,463
EBITDA	6,505	9,827	11,434	12,614
FCF	2,636	686	16,431	10,607
EBITDA margin (%)	8.7	10.6	11.9	12.6
OP margin (%)	5.5	8.0	9.3	9.7
Net margin (%)	0.5	1.7	2.0	2.1

Balance sheet (summarized)

(Wbn)	2025	2026F	2027F	2028F
Current assets	105,999	118,448	137,095	146,433
Cash & equivalents	14,685	19,652	33,445	42,113
AR & other receivables	8,536	9,418	10,425	10,826
Inventory	16,070	17,731	19,627	20,382
Other current assets	66,708	71,647	73,598	73,112
Non-current assets	183,330	182,185	187,201	191,551
Investments in associates	4,964	5,477	6,062	6,296
PP&E	37,085	35,268	39,593	43,662
Intangible assets	11,445	11,071	11,041	11,035
Total assets	289,329	300,633	324,296	337,984
Current liabilities	79,882	94,912	99,830	101,789
AP & other payables	10,350	11,419	12,641	13,127
Short-term financial liabilities	38,784	51,169	51,409	51,505
Other current liabilities	30,748	32,324	35,780	37,157
Non-current liabilities	161,012	151,428	164,096	169,142
Long-term financial liabilities	28,636	32,960	32,960	32,960
Other non-current liabilities	132,376	118,468	131,136	136,182
Total liabilities	240,894	246,339	263,926	270,932
Equity attributable to owners	11,840	13,005	14,834	16,855
Capital stock	474	364	364	364
Capital surplus	2,090	974	974	974
Retained earnings	8,479	9,814	11,644	13,664
Minority interests	36,595	41,289	45,535	50,198
Shareholders' equity	48,435	54,294	60,369	67,053

Cash flow statement (summarized)

(Wbn)	2025	2026F	2027F	2028F
Operating cash flow	8,320	5,136	22,813	17,182
NP	1,992	5,088	6,177	6,797
Non-cash income/expenses	3,838	3,846	3,880	4,378
Depreciation	1,784	1,891	2,057	2,506
Amortization	574	514	451	426
Other	1,480	1,441	1,372	1,446
Chg. in working capital	-571	-5,606	13,063	6,467
Chg. in AR & other receivables	-219	-957	-860	-343
Chg. in inventory	-2,615	-355	-1,896	-755
Chg. in AP & other payables	1,455	242	702	280
Income tax	-974	-834	-1,429	-1,584
Cash flow from investing activities	-12,800	869	-6,971	-6,696
Chg. in PP&E	-5,533	1,812	-6,382	-6,575
Chg. in intangible assets	-389	2	-420	-420
Chg. in financial assets	-555	-618	-706	-281
Other	-6,323	-327	537	580
Cash flow from financing activities	10,330	5,315	-1,724	-1,885
Chg. in financial liabilities	16,720	13,790	240	96
Chg. in equity	297	-1,226	0	0
Dividends	-72	-99	-101	-114
Other	-6,615	-7,150	-1,863	-1,867
Chg. in cash	5,840	4,967	13,793	8,668
Beginning balance	8,844	14,685	19,652	33,445
Ending balance	14,685	19,652	33,445	42,113

Source: Company data, Mirae Asset Securities Research estimates

Key valuation metrics/ratios

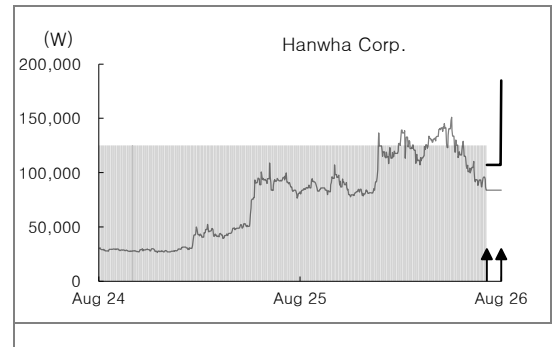
	2025	2026F	2027F	2028F
P/E (x)	20.7	4.7	3.0	2.7
P/CF (x)	1.3	0.8	0.6	0.5
P/B (x)	0.6	0.5	0.4	0.3
EV/EBITDA (x)	14.0	5.4	3.8	3.1
EPS (W)	3,939	17,887	28,374	31,371
CFPS (W)	61,653	102,775	147,814	164,257
BPS (W)	126,620	179,068	218,431	248,123
DPS (W)	1,100	1,500	1,700	1,900
Dividend payout ratio (%)	3.8	1.5	1.4	1.5
Dividend yield (%)	1.3	1.8	2.0	2.3
Revenue growth (%)	34.4	24.0	3.9	3.9
EBITDA growth (%)	61.9	51.1	16.4	10.3
OP growth (%)	71.6	79.0	20.3	8.5
EPS growth (%)	-50.2	354.1	58.6	10.6
AR turnover (x)	10.2	12.1	11.4	11.0
Inventory turnover (x)	5.1	5.5	5.2	5.0
AP turnover (x)	11.4	12.9	12.2	11.8
ROA (%)	0.7	1.7	2.0	2.1
ROE (%)	3.3	12.5	13.9	13.5
ROIC (%)	8.0	13.3	15.6	15.4
Debt-to-equity ratio (%)	497.4	453.7	437.2	404.1
Current ratio (%)	132.7	124.8	137.3	143.9
Net debt-to-equity ratio (%)	98.9	10.6	-13.9	-25.6
Interest coverage ratio (x)	2.6	4.0	4.8	5.2

Appendix 1

Important disclosures and disclaimers

Two-year rating and TP history

Company	Date	Rating	TP (₩)
Hanwha Corp. (000880)	08/25/26	Buy	185,000
	07/30/26	Buy	107,000



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. and/or its affiliates do not have any special interest with the subject company and do not own 1% or more of the subject company's shares outstanding.

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 (USA) Inc.

810 Seventh Avenue, 37th Floor
New York, NY 10019
USA

Tel: 1-212-407-1000

Mirae Asset Securities (Singapore) Pte. Ltd.

6 Battery Road, #11-01
Singapore 049909
Republic of Singapore

Tel: 65-6671-9845

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

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 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 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

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)

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)

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

Mirae Asset Securities (UK) Ltd.

41st Floor, Tower 42
25 Old Broad Street,
London EC2N 1HQ
United Kingdom

Tel: 44-20-7982-8000

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 Mongolia UTsK LLC

#406, Blue Sky Tower, Peace Avenue 17
1 Khoroo, Sukhbaatar District
Ulaanbaatar 14240
Mongolia

Tel: 976-7011-0806

Shanghai Representative Office

38T31, 38F, Shanghai World Financial Center
100 Century Avenue, Pudong New Area
Shanghai 200120
China

Tel: 86-21-5013-6392