CHINA HUMANOID ROBOT

2026 WRC takeaways: Healthy shift to commercialization & ROI

Jacqueline Du
+852-2978-1783 | jacqueline.du@gs.com
Goldman Sachs (Asia) L.L.C.

We attended the **2026 World Robot Conference (WRC)** across Aug 19-20, 2026 (with the full event running from Aug 19-24), and met with **10 leading humanoid robot companies: Engine AI, Fourier, Galaxea, Galbot, LimX Dynamics, Paxini, Robotera, Spirit AI, UBTech, and X Square Robot** (all private or non-covered; company names listed in alphabetical order). **Key takeaways:** The 2026 WRC marked a **significant and healthy shift in the humanoid robotics industry, moving firmly from technical demonstrations to a focus on product-market fit ("PMF"), measurable ROI, and early commercialization.** The event itself expanded and transitioned into an application-driven, demand-matching platform, with logistics sorting emerging as a visible early commercialization direction, targeting small-batch volume ramp by late 2026 and larger-batch in 2027. While no new AI model paradigm shifts were observed, there's a growing emphasis on model engineering capability, scientific data collection and effective data frames to refine existing models. This evolving landscape necessitates selective investment in supply chain stocks: We stay Buy on Inovance (on CL), Sanhua H, Shuanghuan; Neutral rated on Leaderdrive, Sanhua A, Luster, Best Precision; Sell rated on Moons' Electric.

The event itself scaled materially, with the exhibition area expanding to 55,000 sqm (+10% yoy) and exhibitor numbers increasing to over 300 (+36% yoy). Notably, the count of humanoid robot OEMs grew to approximately 42 (+56% yoy). More critically, WRC's introduction of themed days, including a dedicated Procurement Day, and the launch of the Global Robot Application Exploration Program, signaled a strategic transition from a product exhibition platform to an application-driven, demand-matching, and transaction-enabling forum.

Key Takeaways:

1. **Shift Towards Commercialization and ROI:** The industry mindset has firmly pivoted towards real application ramp-up, Return on Investment (ROI) calculation, and product-market fit ("PMF"). While demonstrations of locomotion and entertainment still attract interest, discussions are now centered on quantifiable metrics such as task performance, success rates, throughput, and payback periods, reflecting a healthy maturation of the sector.
2. **Logistics Sorting as a Leading Early Application:** Logistics sorting has emerged as one of the most visible early commercialization directions. Companies are now

discussing concrete metrics like throughput (e.g., 1,300-1,800 parcels per hour), success rates (95% to 98%), and working-hour assumptions (e.g., 10+ hours daily, three-shift support, 4-5 year design life). This segment is projected to enter small-batch volume ramp by late 2026 and larger-batch ramp in 2027, driven by measurable ROI.

3. **Continuous Refinement in AI Models and Data Strategy:** No new paradigm shifts in AI model architecture were observed since **our mid-year check-in**. Instead, the focus remains on continuous refinement: scaling model parameters, enhancing multimodal perception, collecting more real-world operating data, and refining policy learning. There is a growing emphasis on model engineering capability, scientific data collection methodologies, effective data frames, and efficient conversion into high-quality, usable data, underscoring a constructive balance between scalability, cost, and quality.
4. **Upcoming Cost Reduction Driven by Scale and Standardization:** The magnitude of hardware form factor redesign and price reduction appears more limited compared to earlier stages. Previous cost reductions were largely achieved through actuator/joint design optimization, and supply-chain localization. Moving forward, the next phase of cost reduction will primarily depend on scale leverage, manufacturing yield improvements, standardized Bills of Materials (BOMs), and platform reuse. This shift is also influenced by cost inflation in critical components like chips (e.g., Nvidia Jetson Thor).

The author would like to thank Zhou Li, Hao Chen, Zhihan Ye and Junfang Zhang for their contribution to this report.

Investment thesis, price targets & risks

Shenzhen Inovance is a domestic leader in industrial automation. We like the company's growth outlook given: 1) although its two key products, i.e., inverter/servo already reached 25%/33% or No.1/No.1 in China as of 2025, the company still has opportunities in overseas markets; 2) we expect the company to gain market share in small/large PLC, which will serve as a building block for it to extend into digitalization and transform into an IoT solution provider; 3) EV components continue to ramp up share on top of fast industry growth; and 4) digitalization business development with the potential to exceed our expectations. We view Inovance's major competitive moats that will underpin its resilience through cycles as: 1) industry leading R&D effectiveness with high success rates for new product lines; and, 2) a comprehensive product portfolio and end-market coverage that reinforce customers' switching costs. We view valuation as attractive given the shares are trading at around historical average multiples with a solid long-term growth and return profile; we are Buy rated.

Price Target Risks and Methodology - Shenzhen Inovance Technology Co.
Valuation methodology: Our 12-month TP of Rmb92.90 is based on 35x 2027E P/E at 9.5% CoE.

Key downside risks: 1) Slower-than-expected industrial automation market share gains;

2) Weaker-than-expected margin trends; 3) EV component segment ramp-up coming slower than expected; 4) general manufacturing capex/automation demand slowing down.

Investment Thesis – Shuanghuan Driveline

Shuanghuan Driveline is one of the largest gear manufacturers in China, and one of the few producing high-precision gears. We expect its market share to grow from 12% in 2022 to 17% in 2025E within a Rmb65bn TAM by 2025E, as it extends its gear applications from traditional end-markets (motorcycles, construction machinery, power tools) to growing new applications (automatic transmissions for passenger/ commercial vehicles, electric vehicle gears, robotic RV reduction gears). We believe Shuanghuan's EV gears revenue will deliver 23%/24% yoy growth in 2025E/26E, driven by increasing content value and market share gain in ex-China markets. In the meantime, Shuanghuan is proactively developing its new growth driver, intelligent transmission gears, for which we forecast 55%/43% yoy growth in 2025E/26E. We forecast 11%/19% firmwide revenue/net profit CAGR in 2024-26E, reflecting strong OP leverage from previous CAPEX investments as scale increases. We are **Buy** rated on consistently better-than-expected margins and operational resilience, and we believe future catalysts include faster overseas passenger vehicle gears share gain and better-than-expected GPM improvement.

Price Target Risks and Methodology – Shuanghuan Driveline

Valuation: Our 12-month TP of Rmb46.80 is based on 25x 2027E P/E.

Downside risks: 1) Lower-than-expected market share in NEV segment; 2) Lower-than-expected new energy revenue outlook; 3) Lower-than-expected industrial robot gears revenue.

Investment Thesis – Leader Harmonious Drive Systems Co.

We are Neutral rated on LeaderDrive, the domestic leader in China's harmonic reduction gear market. We are positive on the company for its growing harmonic reduction gear TAM expansion, driven by a broadening set of applications both domestically and globally across industrial robots, collaborative robots, humanoid/service robots, CNC machine tools and other high-end equipment, including solar, SPE, medical and aerospace. Beyond its core harmonic reduction gear business, LeaderDrive has also been expanding its humanoid robot product offering toward higher-content integrated modules, combining reducers with motors, encoders and sensors, which should support higher value per robot versus selling standalone components. The company continues to gain traction with overseas partners including volume shipments to the Chinese factories of at least two of the Big 4 international robot brands since 2024 and expects more meaningful revenue contribution into the next few years. While we are constructive on the company's long-term growth potential and see gradual humanoid robot contribution kicking in, we maintain our Neutral rating as valuation already appears to price in substantial long-run humanoid growth, leaving a more balanced risk-reward despite the company's improving content value and customer traction.

Price Target Risks and Methodology – Leader Harmonious Drive Systems Co.

Target price: Our 12-month target price for Leader Harmonious Drive Systems Co. is

Rmb186.7, based on a 2030E P/E of 50x discounted back to 2027E with an 11.5% CoE.

Upside risks: (1) faster-than-expected volume production and/or technology advancement of humanoid robots; (2) faster-than-expected penetration into key robot customers (especially foreign brands). Downside risks: (1) worse-than-expected domestic industrial/collaborative robot demand; (2) more competition pressure from overseas and local brands.

Investment Thesis - Sanhua Intelligent Controls
Sanhua is a global leader in HVAC control & thermal management components. We like its growth potential in humanoid robot actuators on top of a solid market leadership position in its core business, and expect it to deliver 16%/17% revenue/net profit CAGR in 2025-30E. On the HVAC component segment, we believe the company is well positioned to deliver revenue growth above the residential HVAC industry, driven by commercial HVAC market share gain and ramp up in sensor products. On the EV thermal management segment, we believe the company's revenue growth will be driven by further global EV penetration increase and modest content value gain. In addition, we see humanoid robots as a significant long-term technology trend, with Sanhua likely to secure a key role in the supply chain, as a high visibility actuator assembler. Catalysts include technology advancement in humanoid robot functionality, volume production for humanoid robot big customers, and further EV penetration in Europe. However, we think the market has priced in a too bullish outlook for humanoid robots compared to rather a delayed timeline of Optimus production. We are Neutral/Buy-rated on Sanhua-A/H.

Price Target Risks and Methodology - Sanhua Intelligent Controls
Valuation: Our 12m target price for Sanhua A/H is Rmb39.8/HK$41.2, based on 2030E P/E of 25X, discounted back to 2027E with a COE of 9.5%.

Sanhua-A key upside/downside risks: (1) Faster/Slower-than-expected revenue contribution from humanoid robots; (2) Better/Worse-than-expected global EV sales; (3) Better/Worse-than-expected home appliance sales.

Sanhua-H key downside risks: (1) Slower-than-expected revenue contribution from humanoid robots; (2) Worse-than-expected global EV sales; (3) Worse-than-expected home appliance sales.

We believe the company is on track to become a competitive supplier of planetary roller screws (PRS) for humanoid robots, on the back of stable auto parts business growth (including ICEs and EVs). We adopt a long-term valuation approach for the company given the potential benefits we expect it to reap from entering the supply chain of high-spec humanoid robots, which we forecast will post an 80% global shipment CAGR in 2024E-35E. We expect Best to secure 10% global market share of PRS used in high-spec humanoid from 2027E onward, on the back of precision manufacturing experience gathered from fixtures products and the capacity support fr procurement. Meanwhile, commercialization of machine tool componer with ball screws and linear guides starting to see adoption by a few dom tool makers in 2024. That said, we believe the risk-reward is fair as com China Industrial Tech coverage and within the humanoid robot supply c hence we are Neutral-rated.

Price target: Our 12-month target price of Rmb22.5 is based on a 2030E P/E of 32x discounted back to 2026E at a CoE of 9.5%.

Upside/downside risks: (1) faster transmission components development; (2) faster EV parts capacity ramp-up. Downside risks: (1) slower turbocharger penetration growth; (2) lower-than-expected margins.

Investment Thesis – Luster LightTech Co.

Within the fast-growing machine vision sub-sector, we expect Luster's market share in traditional machine vision systems to grow mildly on the back of solution capabilities to service big customers and selective in-house software, cameras and lenses. Beyond traditional machine vision, Luster has been expanding into higher-growth new businesses, including ESS/new energy, AI servers and optical modules, which should support a more favorable product mix and margin profile over time. Starting from 2025, Luster's FZMotion motion capture system also began to increase its exposure to humanoid robot data collection, creating a second growth driver alongside its core machine vision business. While we are constructive on Luster's long-term growth potential from humanoid MoCap (motion capture) business and higher-margin new businesses, we maintain our Neutral rating as valuation already appears to reflect part of this business mix improvement and humanoid-related optionality.

Price Target Risks and Methodology – Luster LightTech Co.

Price target: Our 12-month target price of Rmb40.1 is based on a 2030E P/E of 30x discounted back to 2027E with a CoE of 11.5%.

Upside/downside risks: (1) Faster/slower-than-expected penetration and recovery in new energy sector; (2) Faster/slower-than-expected development on vision software; (3) Better/worse-than-expected motion capture business development; (4) Easing/Intensifying pricing competition in the machine vision industry.

Investment Thesis – Moons' Electric

We are Sell-rated on Moons' Electric, a domestic leader in motor and drive solutions. We expect the company to become an important player in the humanoid robot coreless motor supply chain, supported by its leading position in coreless motor products and broader motion-control capabilities. However, we remain cautious on the magnitude and profitability of this opportunity, given 1) potential for lower-than-previously-expected coreless motor adoption in dexterous hands amid a still-evolving technology roadmap; 2) intensifying competition across the coreless motor supply chain; and 3) near-term margin pressure from higher R&D and marketing expenses, raw material inflation, and early-stage investment in new businesses with limited economies of scale. While Moons' Electric's 2025 topline was supported by solid growth across FA, auto, robot and 3D-printing end-markets, and key products such as servo systems, coreless motors and automation systems continued to grow strongly, profitability has remained under pressure. Management is focused on cost reduction, supply-chain optimization and stricter expense control, but we see limited margin upside in the near term. After factoring in the company's humanoid robot growth potential in humanoid robots and its main business (Motors and Drives), we maintain our Sell rating as near-term margin pressure and execution uncertainty keep the risk-reward less compelling relative to other opportunities in our coverage.

Price Target Risks and Methodology - Moons' Electric
Valuation: Our 12-month target price of Rmb39.6or Moons' Electric is based on an unchanged 2030E P/E of 37x, discounted back to 2027E at a CoE of 9.5%.

Upside risks: (1)aster-than-expected humanoid robots progress; (2) higher coreless motor adoption in dexhand or blended market share vs. our expectations; (3) stronger-than-expected product competitiveness and share gain progress in Motors & Drives.

Disclosure Appendix

Reg AC

I, Jacqueline Du, hereby certify that all of the views expressed in this report accurately reflect my personal views about the subject company or companies and its or their securities. I also certify that no part of my compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

Contributing Authors: Jacqueline Du Goldman Sachs (Asia) L.L.C..

Unless otherwise stated, the individuals listed in the Contributing Authors disclosure of this report are analysts in Goldman Sachs' Global Investment Research division.

GS Factor Profile

The Goldman Sachs Factor Profile provides investment context for a stock by comparing key attributes to the market (i.e. our universe of rated stocks) and its sector peers. The four key attributes depicted are: Growth, Financial Returns, Multiple (e.g. valuation) and Integrated (a composite of Growth, Financial Returns and Multiple). Growth, Financial Returns and Multiple are calculated by using normalized ranks for specific metrics for each stock. The normalized ranks for the metrics are then averaged and converted into percentiles for the relevant attribute. The precise calculation of each metric may vary depending on the fiscal year, industry and region, but the standard approach is as follows:

Growth is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

Financial Returns and Multiple use the Goldman Sachs analyst forecasts at the fiscal year-end at least three quarters in the future. Growth uses inputs for the fiscal year at least seven quarters in the future compared with the year at least three quarters in the future (on a per-share basis for all metrics).

For a more detailed description of how we calculate the GS Factor Profile, please contact your GS representative.

M&A Rank

Across our global coverage, we examine stocks using an M&A framework, considering both qualitative factors and quantitative factors (which may vary across sectors and regions) to incorporate the potential that certain companies could be acquired. We then assign a M&A rank as a means of scoring companies under our rated coverage from 1 to 3, with 1 representing high (30%-50%) probability of the company becoming an acquisition target, 2 representing medium (15%-30%) probability and 3 representing low (0%-15%) probability. For companies ranked 1 or 2, in line with our standard departmental guidelines we incorporate an M&A component into our target price. M&A rank of 3 is considered immaterial and therefore does not factor into our price target, and may or may not be discussed in research.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

Disclosures

Pricing data

Inovance — most recent close: Rmb59.03, Sanhua H — most recent close: HK$27.52, Shuanghuan — most recent close: Rmb36.08, Leaderdrive — most recent close: Rmb314.35, Sanhua A — most recent close: Rmb36.71, Luster — most recent close: Rmb47.26, Best Precision — most recent close: Rmb20.04, Moons' Electric — most recent close: Rmb47.40

The rating(s) for Best, Leader Harmonious Drive Systems Co., Luster LightTech Co., Moons' Electric, Sanhua Intelligent Controls (A), Sanhua Intelligent Controls (H), Shenzhen Inovance Technology Co. and Shuanghuan Driveline is/are relative to the other companies in its/their coverage universe: Best, Bochu, CRRC Corp. (A), CRRC Corp. (H), Centre Testing Intl Group, Estun Automation Co.(A), Estun Automation Co.(H), Faratronic, Haitian International Holdings, Han's Laser Technology, Hongfa Technology, Huaming, Kehua Data Co., Lead Intelligent (A), Lead Intelligent (H), Leader Harmonious Drive Systems Co., Luster LightTech Co., Megmeet, Moons' Electric, NARI Technology, Nantong Jianghai Capacitor Co., OPT Machine Vision Tech Co., Sanhua Intelligent Controls (A), Sanhua Intelligent Controls (H), Shanghai Baosight Software, Shenzhen Envicool Technology, Shenzhen Inovance Technology Co., Shenzhen Kstar Science & Tech, Shuanghuan Driveline, Sieyuan Electric, Techtronic Industries, Wuhan Raycus Fiber Laser Tech, Yiheda Automation, Yingliu, Zhejiang Supcon Technology Co., Zhuzhou CRRC Times Electric Co. (A), Zhuzhou CRRC Times Electric Co. (H)

Company-specific regulatory disclosures

Compendium report: please see disclosures at https://www.gs.com/research/hedge.html. Disclosures applicable to the companies included in this compendium can be found in the latest relevant published research

Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global Equity coverage universe

	Rating Distribution			Investment Banking Relationships		
	Buy	Hold	Sell	Buy	Hold	Sell
Global	50%	34%	16%	65%	59%	43%

As of July 1, 2026, Goldman Sachs Global Investment Research had investment ratings on 3,104 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by the FINRA Rules. See 'Ratings, Coverage universe and related definitions' below. The Investment Banking Relationships chart reflects the percentage of subject companies within each rating category for whom Goldman Sachs has provided investment banking services within the previous twelve months.

Price target and rating history chart(s)

Compendium report: please see disclosures at https://www.gs.com/research/hedge.html. Disclosures applicable to the companies included in this compendium can be found in the latest relevant published research

Target price history table(s)

Leader Harmonious Drive Systems Co. (688017.SS)

Date of report	Target price (Rmb)	Closing price (Rmb)
22-Jul-26	186.70	316.70
23-Apr-26	138.00	203.77
24-Feb-26	123.00	232.70
03-Nov-25	124.10	159.50
17-Aug-25	124.20	148.31
06-Aug-25	112.90	140.13
13-May-25	131.40	146.06
07-May-25	119.60	146.07
20-Feb-25	134.60	169.83
12-Jan-25	111.30	120.04
04-Nov-24	61.20	106.20
05-Sep-24	60.10	65.04
18-Jul-24	93.00	71.70
09-May-24	107.50	115.31
01-Mar-24	128.40	129.88
08-Jan-24	149.50	131.96
06-Sep-23	122.00	117.20

Sanhua Intelligent Controls (A) (002050.SZ)

Date of report	Target price (Rmb)	Closing price (Rmb)
05-May-26	39.80	46.92
24-Mar-26	36.40	42.57
24-Feb-26	41.00	52.73
02-Nov-25	40.90	49.93
29-Aug-25	32.70	31.88
06-Aug-25	30.40	27.65
27-Mar-25	34.90	30.29
11-Mar-25	36.60	30.49
20-Feb-25	36.50	34.03
12-Jan-25	35.20	26.70
04-Dec-24	26.20	24.80
18-Oct-24	26.40	22.45
05-Sep-24	25.00	17.94
18-Jul-24	32.70	19.08
01-May-24	36.00	21.91
07-Feb-24	36.30	22.69
08-Jan-24	39.00	26.07
31-Oct-23	38.00	26.74
06-Sep-23	38.20	28.59

Shenzhen Inovance Technology Co. (300124.SZ)

Date of report	Target price (Rmb)	Closing price (Rmb)
01-Jun-26	92.90	74.50
28-Apr-26	86.00	61.36
24-Feb-26	75.40	74.35
26-Oct-25	82.10	78.38
02-Oct-25	82.50	83.82
06-Aug-25	75.50	65.86
13-May-25	80.50	69.28
30-Apr-25	74.80	71.59
11-Mar-25	87.10	78.05
26-Dec-24	61.20	60.08
18-Oct-24	61.10	58.50
05-Sep-24	54.20	42.58
27-Aug-24	65.00	41.70
01-Jul-24	70.60	49.90
09-May-24	74.30	63.68
23-Apr-24	67.90	59.95
08-Jan-24	69.00	58.80
30-Oct-23	88.80	61.08
06-Sep-23	97.10	70.03

Luster LightTech Co. (688400.SS)

Date of report	Target price (Rmb)	Closing price (Rmb)
22-Jul-26	40.10	44.64
05-May-26	29.50	59.32
24-Feb-26	26.10	45.73
22-Dec-25	26.40	40.64
03-Nov-25	25.00	39.36
02-Oct-25	25.20	47.87
02-Sep-25	23.60	40.61
06-Aug-25	22.10	33.87
13-May-25	15.30	28.68
07-May-25	14.00	28.64
12-Mar-25	13.20	37.50
04-Nov-24	11.00	23.60
18-Oct-24	11.30	20.25
05-Sep-24	10.60	17.67
18-Jul-24	13.20	14.11
09-May-24	14.90	18.68
28-Mar-24	18.10	20.76
01-Nov-23	18.60	23.62
06-Sep-23	20.20	25.98

Moons' Electric (603728.SS)

Date of report	Target price (Rmb)	Closing price (Rmb)
05-May-26	39.60	59.35
24-Feb-26	40.90	71.97
11-Jan-26	41.40	73.26
03-Nov-25	52.80	71.75
02-Oct-25	52.90	84.64
02-Sep-25	48.70	65.74
06-Aug-25	49.80	62.75
13-May-25	54.90	65.29

Best (300580.SZ)

Date of report	Target price (Rmb)	Closing price (Rmb)
18-Aug-26	22.50	22.13
22-Jul-26	23.00	19.34
05-May-26	26.40	28.95
24-Feb-26	24.10	24.39
03-Nov-25	25.40	26.10
15-Aug-25	24.50	27.15
06-Aug-25	23.70	27.06
07-May-25	27.10	28.11

Moons' Electric (603728.SS)

Date of report	Target price (Rmb)	Closing price (Rmb)
07-May-25	50.90	65.72
20-Feb-25	53.30	82.49
12-Jan-25	49.40	53.97
04-Nov-24	28.00	49.93
05-Sep-24	30.50	36.34
18-Jul-24	42.40	36.59
09-May-24	48.20	54.84
08-Jan-24	49.00	54.65

Best (300580.SZ)

Date of report	Target price (Rmb)	Closing price (Rmb)
21-Apr-25	24.70	26.40
20-Feb-25	28.20	32.70
12-Jan-25	29.70	24.31
26-Dec-24	20.40	25.58
04-Nov-24	19.60	19.81
18-Oct-24	19.90	16.85
05-Sep-24	19.60	13.81
09-Aug-24	22.00	13.72
18-Jul-24	24.50	13.62
09-May-24	38.65	18.49
08-Jan-24	35.46	18.56

Sanhua Intelligent Controls (H) (2050.HK)

Date of report	Target price (HK$)	Closing price (HK$)
05-May-26	41.20	34.82
24-Mar-26	40.40	28.86
24-Feb-26	43.20	35.80
02-Nov-25	43.10	40.88
29-Aug-25	34.40	31.16
06-Aug-25	33.20	27.88

Shuanghuan Driveline (002472.SZ)

Date of report	Target price (Rmb)	Closing price (Rmb)
22-Jul-26	46.80	36.95
05-May-26	48.20	39.27
24-Feb-26	42.50	42.89
02-Oct-25	44.80	49.81
27-Aug-25	42.60	36.51
06-Aug-25	44.70	36.35
07-May-25	45.00	34.32
11-Mar-25	39.70	38.21
18-Oct-24	31.60	29.44
05-Sep-24	29.10	21.41
18-Jul-24	29.80	21.77
09-May-24	29.90	24.36
08-Jan-24	27.10	23.88
06-Sep-23	32.20	33.42

Price targets shown in table(s) are unadjusted for corporate actions.

Sachs Canada Inc., an affiliate of The Goldman Sachs Group Inc., or another registered Canadian dealer. **Hong Kong:** Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. **India:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited, Research Analyst - SEBI Registration Number INH000001493, 10th Floor, Ascent-Worli, Sudam Kalu Ahire Marg, Worli, Mumbai-400 025, India, Corporate Identity Number U74140MH2006FTC160634, Phone +91 22 6616 9000, Fax +91 22 6616 9001. Goldman Sachs may beneficially own 1% or more of the securities (as such term is defined in clause 2 (h) the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Goldman Sachs (India) Securities Private Limited compliance officer and investor grievance contact details, a copy of the annual compliance audit report and other relevant information and disclosures can be found at this link: https://www.goldmansachs.com/worldwide/india/research-analyst. **Japan:** See below. **Korea:** This research, and any access to it, is intended only for "professional investors" within the meaning of the Financial Services and Capital Markets Act, unless otherwise agreed by Goldman Sachs. Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. **New Zealand:** Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for "wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests is available at: https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. **Russia:** Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. Research reports do not constitute a personalized investment recommendation as defined in Russian laws and regulations, are not addressed to a specific client, and are prepared without analyzing the financial circumstances, investment profiles or risk profiles of clients. Goldman Sachs assumes no responsibility for any investment decisions that may be taken by a client or any other person based on this research report. **Singapore:** Goldman Sachs (Singapore) Pte. (Company Number: 198602165W), which is regulated by the Monetary Authority of Singapore, accepts legal responsibility for this research, and should be contacted with respect to any matters arising from, or in connection with, this research. **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union and United Kingdom: Disclosure information in relation to Article 6 (2) of the European Commission Delegated Regulation (EU) (2016/958) supplementing Regulation (EU) No 596/2014 of the European Parliament and of the Council (including as that Delegated Regulation is implemented into United Kingdom domestic law and regulation following the United Kingdom's departure from the European Union and the European Economic Area) with regard to regulatory technical standards for the technical arrangements for objective presentation of investment recommendations or other information recommending or suggesting an investment strategy and for disclosure of particular interests or indications of conflicts of interest is available at https://www.gs.com/disclosures/europeanpolicy.html which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan Type II Financial Instruments Firms Association, and Investment Management Association of Japan. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Ratings, coverage universe and related definitions

Buy (B), Neutral (N), Sell (S) Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's total return potential relative to its coverage universe. Any stock not assigned as a Buy or a Sell on an Investment List with an active rating (i.e., a stock that is not Rating Suspended, Not Rated, Early-Stage Biotech, Coverage Suspended or Not Covered), is deemed Neutral. Each region manages Regional Conviction Lists, which are selected from Buy rated stocks on the respective region's Investment Lists and represent investment recommendations focused on the size of the total return potential and/or the likelihood of the realization of the return across their respective areas of coverage. The addition or removal of stocks from such Conviction Lists are managed by the Investment Review Committee or other designated committee in each respective region and do not represent a change in the analysts' investment rating for such stocks.

Total return potential represents the upside or downside differential between the current share price and the price target, including all paid or anticipated dividends, expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The total return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

Coverage Universe: A list of all stocks in each coverage universe is available by primary analyst, stock and coverage universe at https://www.gs.com/research/hedge.html.

Not Rated (NR). The investment rating, target price and earnings estimates (where relevant) are removed pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or in a strategic transaction involving this company, when there are legal, regulatory or policy constraints due to Goldman Sachs' involvement in a transaction, and in certain other circumstances. **Early-Stage Biotech (ES).** An investment rating and a target price are not assigned pursuant to Goldman Sachs policy when this company has neither a drug, treatment or medical device that has passed a Phase II clinical trial nor a license to distribute a post-Phase II drug, treatment or medical device. **Rating Suspended (RS).** Goldman Sachs Research has suspended the investment rating and price target for this stock, because there is not a sufficient fundamental basis for determining an investment rating or target price. The previous investment rating and target price, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS).** Goldman Sachs has suspended coverage of this company. **Not Covered (NC).** Goldman Sachs does not cover this company.

Global product; distributing entities

Goldman Sachs Global Investment Research produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; Public Communication Channel Goldman Sachs Brazil: 0800 727 5764 and / or contatogoldmanbrasil@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Canal de Comunicação com o Público Goldman Sachs Brasil: 0800 727 5764 e/ou contatogoldmanbrasil@gs.com. Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9h às 18h; in Canada by Goldman Sachs & Co. LLC; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. LLC. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom.

Goldman Sachs International ("GSI"), authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA, has approved this research in connection with its distribution in the United Kingdom.

European Economic Area: Goldman Sachs Bank Europe SE ("GSBE") is a credit institution incorporated in Germany and, within the Single Supervisory Mechanism, subject to direct prudential supervision by the European Central Bank and in other respects supervised by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and Deutsche Bundesbank and disseminates research within the European Economic Area.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates and forecasts contained herein are as of the date hereof and are subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by Global Investment Research. Goldman Sachs & Co. LLC, the United States broker dealer, is a member of SIPC (https://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analyst's published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analyst's fundamental equity rating for such stocks, which rating reflects a stock's return potential relative to its coverage universe as described herein.

We and our affiliates, officers, directors, and employees will from time to time have long or short positions in, act as principal in, make a market or act as liquidity provider in, and buy or sell, any securities, derivatives, or other financial instruments referred to in this research (including any financial instruments issued by the companies referred to herein), unless otherwise prohibited by regulation or Goldman Sachs policy.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options and futures disclosure documents which are available from Goldman Sachs sales representatives or at https://www.theocc.com/about/publications/character-risks.jsp and https://www.goldmansachs.com/disclosures/cftc_fcm_disclosures. Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

Differing Levels of Service provided by Global Investment Research: The level and types of services provided to you by Goldman Sachs Global Investment Research may vary as compared to that provided to internal and other external clients of GS, depending on various factors including your individual preferences as to the frequency and manner of receiving communication, your risk profile and investment focus and perspective (e.g., marketwide, sector specific, long term, short term), the size and scope of your overall client relationship with GS, and legal and regulatory constraints. As an example, certain clients may request to receive notifications when research on specific securities is published, and certain clients may request that specific data underlying analysts' fundamental analysis available on our internal client websites be delivered to them electronically through data feeds or otherwise. No change to an analyst's fundamental research views (e.g., ratings, price targets, or material changes to earnings estimates for equity securities), will be communicated to any client prior to inclusion of such information in a research report broadly disseminated through electronic publication to our internal client websites or through other means, as necessary, to all clients who are entitled to receive such reports.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data related to one or more securities, markets or asset classes (including related services) that may be available to you, please contact your GS representative or go to https://research.gs.com.

Disclosure information is also available at https://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282.