The 720: Asia Refining, ANZ Data Centers, Global Memory, StanChart, APR Corp, BYDE, LVMH, Cross Asset Strategy

Michael Snaith
+852-2978-0455 | michael.snaith@gs.com
Goldman Sachs (Asia) L.L.C.

Caleb Chan
+852-2978-0790 | caleb.chan@gs.com
Goldman Sachs (Asia) L.L.C.

In Focus | Asia Refining

Asia Refining – Navigating the freight shock. We believe Asian refiners can initially buffer margins against the recent surge in crude transportation costs, as physically constrained global refining capacity has tightened refined product inventories relative to crude. The headline freight shock is also being partially offset by upstream producers widening crude discounts, evidenced by Saudi Aramco unexpectedly cutting November oil prices to Asia by US$3/bbl month-over-month. We highlight Conviction List name S-Oil as the most protected regional refiner, driven by its relatively low 50% exposure to spot freight rates and a strategic relationship with Aramco that has historically kept its landed crude costs well below regional peers. *Nikhil Bhandari*

Listen Up - GS Webcasts on the Agenda

Global Shipbuilding: 2027 Outlook: Bullish on the Upcycle | 830am HK | Access Webinar | with Herbert Lu, Norihiro Miyazaki, Michael Snaith

Investing in a Differentiated Asia | 4pm HK | Access Webinar | with Timothy Moe, Michael Snaith

New | ANZ Data Centers

ANZ Data Centres – Initiating our Supply-Demand Model. We introduce our ANZ Data Centre Supply-Demand model, projecting IT load demand to scale to 5.2GW by 2030E, outpacing deliverable supply to create a 0.7GW shortfall that should drive robust pricing power. With capital access emerging as a critical bottleneck, we believe operators with managed fund platforms or self-funding capabilities will secure significant speed-to-market advantages against grid constraints. Consequently, we initiate on Goodman Group and Megaport at Buy with 12m TPs of A$32 and A$25.90, respectively, favoring their secured power banks and high-return AI infrastructure. We also initiate NEXTDC, DigiCo REIT, and Macquarie Technology at Neutral with 12m TPs of A$11, A$2.60, and A$58, respectively. *Chris Boulus*

Themes in Play | NAND, Japan Aerospace & Defense

Global Memory: High-performance NAND could help crumble the AI memory wall. We are constructive on emerging high-performance NAND solutions, including High-Bandwidth Flash (HBF), viewing them as promising tools to address worsening memory constraints in AI inference with a potential TAM of $40 billion to $150 billion

Goldman Sachs does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. For Reg AC certification and other important disclosures, see the Disclosure Appendix, or go to www.gs.com/research/hedge.html. Analysts employed by non-US affiliates are not registered/qualified as research analysts with FINRA in the U.S.

by 2030. We believe HBF can meaningfully reduce the overall cost of inference throughput by approximately 30% by increasing GPU utilization, potentially translating to hundreds of billions in hyperscaler CapEx savings despite adoption challenges around latency, endurance, and manufacturing resource intensity. Within the space, we continue to favor SanDisk, SK Hynix, Kioxia, and Samsung Electronics given their technology leadership and strong core NAND portfolios, while viewing Micron as less of a direct beneficiary given its primary focus on DRAM. *James Schneider, et al*

Japan Aerospace & Defense – Maintain selective stance on civil aero engines. We mark to market our sector valuation multiple, driving an average 13% 12m TP reduction for Kawasaki Heavy Industries (7012.T, Neutral, ¥2,800), IHI (7013.T, Neutral, ¥2,800), AeroEdge (7409.T, Buy, ¥2,800), and SKY Perfect JSAT (9412.T, Buy, ¥4,300). While new aircraft deliveries and aftermarket aero engine demand remain solid, we maintain a selective stance favoring names where higher volumes directly translate to profit growth. We highlight AeroEdge for its strong LEAP engine blade shipments and SKY Perfect JSAT for its solid national security space business expansion. Conversely, we see near-term profit mix headwinds from new engine shipments for IHI, and uncertain non-aerospace profitability for Kawasaki Heavy. *Yuichiro Isayama*

US Macro | CPI & Rates

US Macro – September CPI Preview. We expect a 0.24% increase in September core CPI (vs. 0.2% consensus) and a 0.59% increase in headline CPI (vs. 0.6% consensus), driven largely by higher energy prices. This forecast reflects a pickup in autos inflation and a 3.0% increase in airfares due to higher jet fuel prices, partially offset by benign shelter readings from a continued slowdown in underlying trends. Our estimates are consistent with a slightly smaller 0.20% increase in September core PCE, and looking ahead, we project monthly core CPI of around 0.2% in October before cooling to 0.1% in November and December. *Jessica Rindels*

Global Markets – The Factors Behind the Rise in US Yields. We adopt a more bullish stance on US duration, as we believe yields are elevated versus macro fundamentals and front-end pricing remains excessively hawkish. While higher policy rate expectations explain the bulk of the recent selloff, longer-term forwards are now 40 to 50bp above our estimate of fair value. With underlying inflation pressures contained, extreme underweight investor positioning, and diminished technical risks from negative convexity, we see US duration on a firmer footing. We see value in fading recent cheapening to add long exposure, though we maintain our 4.75% year-end 10-year Treasury yield forecast amid lingering energy risks. *William Marshall*

Previews | StanChart, APR Corp, BYDE, India Healthcare

Standard Chartered – Q3'26 Preview: Estimate Revisions – Buy. We update our estimates ahead of Q3 results and raise our 2026-28E EPS by 1-2%, positioning our earnings forecasts 2-3% ahead of consensus. The revision is driven by a constructive view on top-line growth, primarily a c.2% increase in our medium-term net interest income forecasts following a recent uptick in forward rate expectations, alongside sustained momentum in Wealth and Markets flow income. Consequently, we raise our 12m TPs to 2,700p for STAN.L and HK$282 for 2888.HK, partially offset by slightly higher assumed operating expenses. *Chris Hallam, Melissa Kuang*

APR Corp – European strength offsets US seasonality but FX and logistics weigh on

margins – Buy. Following APR's 3Q26 preview call, management expects better-than-guided low-to-mid-single-digit QoQ revenue growth, driven by stronger European demand that successfully offset sequential US online softness. However, management guided a lower reported OPM of 21-22%, reflecting unfavorable currency movements under IFRS 18 alongside elevated European logistics costs and platform commissions. To reflect the strong European sales trend and elevated expenses, we revise our 2026E/27E/28E revenue estimates up by +2%/+7%/+9% and OP by -5%/-1%/0%, while leaving our 12m TP unchanged at W520,000. *Eric Cha*

BYDE – Stabilizing memory costs could support recovery – Sell. We slightly raise our 12m TP to HK$22 from HK$21, as we expect revenue and gross margin to recover through 2028, supported by stabilizing demand for smartphones and PCs. However, we reduce our 2026-2028 net income estimates by 40% / 3% / 32% on lower consumer electronics revenues, reflecting modest end demand amid high memory costs. We incorporate the company's expansion into the AI server supply chain into our forecasts, and we continue to anticipate a 2H26 revenue recovery at 24% HoH driven by better seasonality, flagship model launches, and product mix upgrades with Apple and BYD. *Verena Jeng*

India Healthcare – 2Q27 Preview: Strong performance expected across most players. Heading into 2QFY27 results, we revise our FY27-29 estimates and reiterate our structurally bullish stance on hospitals, driven by strong expected utilization trends, multi-year bed expansion plans, and sustained base ARPOB growth from inflation and a higher surgical mix. Conversely, we remain cautious on diagnostics due to a weak pricing environment, despite sustained improvements in base patient volumes where we expect Metropolis to outpace Dr. Lal. Key investor debates will likely center on regulatory news flows, such as recent anti-cancer drug margin capping, while we highlight our Buy ratings on KIMS, Max Health, and Manipal Health. *Shyam Srinivasan*

Connections | China IP Retailers

China IP Retailer and Toy Tracker – Sep Update. We see divergent September sales momentum across China IP retailers, highlighted by Miniso's strong third-quarter update where Mainland China GMV grew 25-30% year-over-year, tracking ahead of management's mid-teens second-half guidance. Conversely, Pop Mart's combined online sales fell 44% year-over-year in September as it lapped a high base from last year's peak supply, while Bloks delivered accelerated online growth alongside a high third-quarter product launch cadence. Globally, we view the broader collectibles market as resilient but highly competitive, with US demand increasingly skewing toward content-backed licensed intellectual property and facing rising pressure from value retailers. *Michelle Cheng*

Expert | China Restaurants

China Restaurants – FMD expert call takeaways. The expert notes that franchisee-operated Guming and Luckin stores sustained positive net sales growth in the first nine months of 2026, driven by a healthier channel mix and improved sales realization as heavy online subsidies normalized. While Guming's breakfast initiative remains at an early stage, its expanding coffee segment provides incremental growth despite diluting gross margins to roughly 20% compared to 55% for core fruit teas. The expert maintains a strong appetite for opening additional stores for both brands, citing their attractive unit economics—including average payback periods of roughly two years

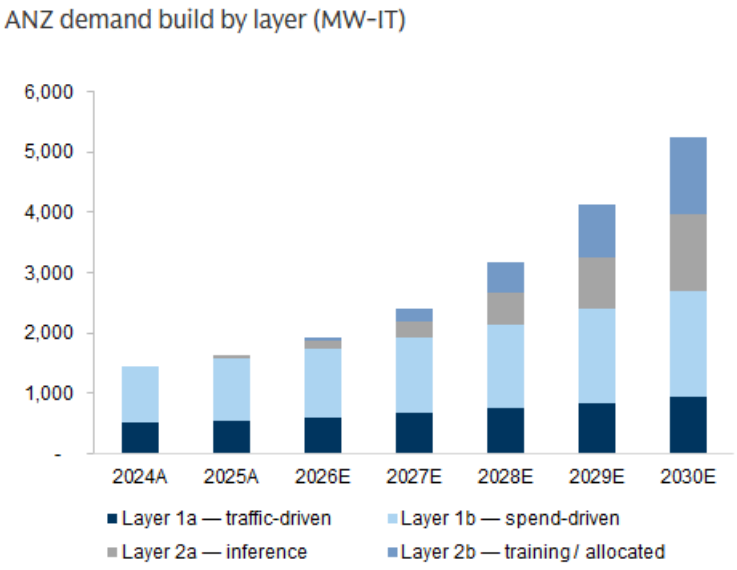
with 11-15% net profit margins—and views them as the most sustainable players amid intense industry competition. *Michelle Cheng*

Around the world | LVMH, Cross Asset Strategy

LVMH – 3Q fashion miss highlights challenged Chinese demand – Buy. LVMH reported a third-quarter Fashion and Leather sales decline of 5% in constant currency, missing expectations due to mid-teens weakness in the Chinese cluster, leading us to lower our 12m TP to €495 from €500. While overall group sales grew 1%, the core division suffered from US logistics issues at Louis Vuitton and slower stabilization at Dior, prompting management to accelerate self-help measures to protect margins. Consequently, we cut our fourth-quarter Fashion and Leather growth forecast to -2% from flat, bringing our FY26 estimate down to -2%, though we expect a rebound to 4% growth in FY27 as management organization and product initiatives gain traction. *Erwan Rambourg*

Global Cross Asset Strategy – Better asymmetry into Q3 earnings after valuation reset. In our latest GOAL asset allocation update, we shift to OW Equities and UW Credit over 3m, while moving to OW Bonds over 12m and OW Cash tactically. Earnings growth remains supportive, with 2026 EPS estimates for MSCI AC World rising by 7% over the past three months led by the US and Asia, improving asymmetry into the Q3 earnings season following recent broad P/E de-ratings. Within equities, we remain OW the US and Asia and UW Europe, continuing to favour a barbell of global Technology stocks paired with selective rate-sensitive, high-dividend, low-volatility, and bond-proxy equities that could benefit from eventual rate relief. *Christian Mueller-Glissmann*

Graphic language | ANZ Data Centers initiation



Source: ACMA, ABS, Goldman Sachs Global Investment Research

Asia Market Intelligence
Connecting research to markets and the themes that matter Explore >

GS Events (Home Page here)

- **China Next-Gen Power & Mobility Day | Shenzhen** | 2-4 Nov
- **APAC Healthcare Corporate Day 2026 - Part I | Hong Kong** | 3-6 Nov
- **Korea KRX Kosdaq Corporate Day | Hong Kong & Singapore** | 24-25 Nov
- **India Corporate Day | Hong Kong** | 30 Nov - 1 Dec
- **Japan Conference | Tokyo |** 30 Nov - 4 Dec

Disclosure Appendix

Reg AC

We, Michael Snaith and Caleb Chan, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our 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: Michael Snaith Goldman Sachs (Asia) L.L.C., Caleb Chan 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

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%	58%	43%

As of October 1, 2026, Goldman Sachs Global Investment Research had investment ratings on 3,094 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.

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; registered market maker. Goldman Sachs trades or may trade as a principal in debt securities (or in related derivatives) of issuers discussed in this report.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy generally prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director or advisor of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman Sachs & Co. LLC and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with a subject company, public appearances and trading in securities covered by the analysts.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. **Australia:** Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of Global Investment Research of Goldman Sachs Australia may attend site visits and other meetings hosted by the companies and other entities which are the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. To the extent that the contents of this document contains any financial product advice, it is general advice only and has been prepared by Goldman Sachs without taking into account a client's objectives, financial situation or needs. A client should, before acting on any such advice, consider the appropriateness of the advice having regard to the client's own objectives, financial situation and needs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests and a copy of Goldman Sachs' Australian Sell-Side Research Independence Policy Statement are available at: https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. **Brazil:** Disclosure information in relation to CVM Resolution n. 20 is available at https://www.gs.com/worldwide/brazil/area/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 20 of CVM Resolution n. 20, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. **Canada:** This information is being provided to you for information purposes only and is not, and under no circumstances should be construed as, an advertisement, offering or solicitation by Goldman Sachs & Co. LLC for purchasers of securities in Canada to trade in any Canadian security. Goldman Sachs & Co. LLC is not registered as a dealer in any jurisdiction in Canada under applicable Canadian securities laws and generally is not permitted to trade in Canadian securities and may be prohibited from selling certain securities and products in certain jurisdictions in Canada. If you wish to trade in any Canadian securities or other products in Canada please contact Goldman 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 s

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

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 S Goldman Sachs is acting in an advisory capacity in a merger or in a strategic transaction involving this company, when there are le



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.

© 2026 Goldman Sachs.

You are permitted to store, display, analyze, modify, reformat, and print the information made available to you via this service only for your own use. You may not resell or reverse engineer this information to calculate or develop any index for disclosure and/or marketing or create any other derivative works or commercial product(s), data or offering(s) without the express written consent of Goldman Sachs. You are not permitted to publish, transmit, or otherwise reproduce this information, in whole or in part, in any format to any third party without the express written consent of Goldman Sachs. You may not use, extract, download or retrieve this information, in whole or in part, to train, finetune, adjust, influence the weights or behavior of, or otherwise develop or improve a machine learning or artificial intelligence model or system, or provide or reproduce this information, in whole or in part, as a prompt or input to any such system without the express written consent of Goldman Sachs. Furthermore, you may not bulk download this information, or employ any robot, spider, crawler, scraper, automated agent, or other electronic means to scrape, harvest, extract, or retrieve this information, without the express written consent of Goldman Sachs. A breach of the above terms may result in termination of your right to access this service.