

Asian Equity Perspectives

What's on investors' minds

In the past two weeks, our Asia strategy team has had meetings with investors in HK, Singapore, the US, and Europe. Conversations continue to center on tariffs, AI, China, and geopolitics, with drilldowns into the larger regional markets. We summarize the key discussion points along with our views, emphasizing noteworthy new developments. We remain constructive on Asian equities, with 9% upside to our MXAPJ 640 index target, overweights on China (H and A), Japan, and Singapore, and a focus on alpha themes including AI beneficiaries, domestic exposure, defense spending, shareholder yield, and positive earnings revisions.

- **Tariffs:** Is April a clearing event or a risk window?
- **US concerns:** A case for better relative Asian equity performance?
- **Flows:** Could US economic and equity market weakening prompt portfolio flows into Asia/EM?
- **AI:** China AI software-related stocks continue to outperform regional AI hardware-related ones
- **China near-term outlook:** Correction possible, add on weakness, A-share tilt
- **China medium-term outlook:** Is a better investment case building?
- **Japan:** Positive investment case, but concerns over yen strength
- **India:** When to re-engage?
- **Korea/Taiwan:** Alpha focus amid uncertain tariff beta
- **Alpha ideas:** AI, tariffs, defense spending, cash returns, and earnings revision baskets

Timothy Moe, CFA

+65-6889-1199 | timothy.moe@gs.com
Goldman Sachs (Singapore) Pte

Alvin So, CFA

+852-2978-1585 | alvin.so@gs.com
Goldman Sachs (Asia) L.L.C.

Kinger Lau, CFA

+852-2978-1224 | kinger.lau@gs.com
Goldman Sachs (Asia) L.L.C.

Sunil Koul

+44(20)7051-4931 | sunil.koul@gs.com
Goldman Sachs International

Bruce Kirk, CFA

+81(3)4587-9950 | bruce.kirk@gs.com
Goldman Sachs Japan Co., Ltd.

Kazunori Tatebe, CFA

+81(3)4587-9898 | kazunori.tatebe@gs.com
Goldman Sachs Japan Co., Ltd.

John Kwon

+65-6654-6337 | jongmin.kwon@gs.com
Goldman Sachs (Singapore) Pte

Amorita Goel, CFA

+65-6654-5445 | amorita.goel@gs.com
Goldman Sachs (Singapore) Pte

Mark Hung

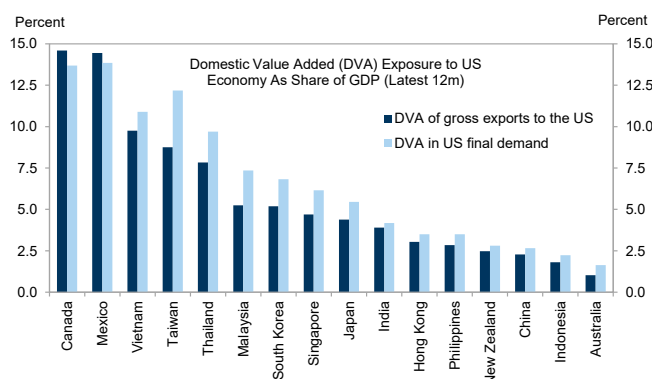
+852-3465-4266 | mark.hung@gs.com
Goldman Sachs (Asia) L.L.C.

1. Tariffs: is April a clearing event or a risk window?

The January 20 presidential memorandum on trade instructs the Secretary of Commerce, the Secretary of the Treasury, and the US Trade Representative to report by April 1 to the president on a global supplemental tariff, reciprocal tariffs, and the Section 301 investigation into China. An announcement on further tariffs is likely shortly after this deadline. Investors are now well aware of this timeline and are wondering if early April will be a window of risk or a clearing event.

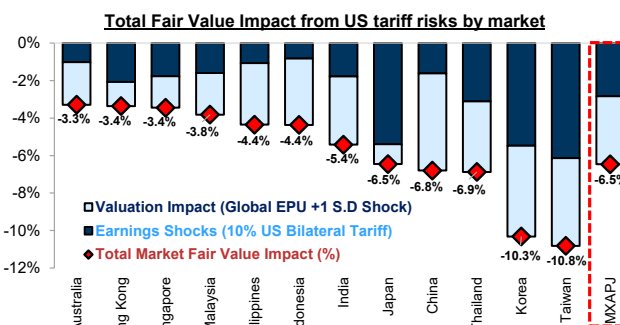
The answer, in our view, depends on a) how markets trade into this period, b) how severe any potential added tariffs are, and c) the response by impacted US trade partners. In the case of China, both we and consensus have factored the 20pp increase in tariffs that has already been imposed into our economic and corporate earnings forecasts. Further meaningful tariff increases without offsetting domestic policy support could prompt downward forecast revisions and profit taking in the equity market which has recently risen sharply (MSCI China +23% ytd). For India, consensus does not appear to have factored tariff increases into base case forecasts, and India has one of the widest tariff disparities with the US within Asia (6-11% depending on calculation method). Imposition of reciprocal tariffs by the US in the absence of policy response by India could prompt a moderate GDP forecast downgrade of 0.1-0.3pp, while a global tariff increase could lead to a domestic GDP growth impact of 0.1-0.6pp.

Exhibit 1: Higher US tariffs could weigh on Asian growth, particularly in smaller, export-oriented economies



Source: Goldman Sachs Global Investment Research

Exhibit 2: In the case of a 10% US universal tariff, the MXAPJ index could drop by 6-7%, consisting of a 3% decline in profits and a 4% drop in valuation, with Taiwan and Korea being the most impacted



Note: Earnings impacts are the average of the VAR analysis and the bottom-up approach

Source: FactSet, MSCI, policyuncertainty.com, Goldman Sachs Global Investment Research

2. US concerns: a case for better relative Asian equity performance?

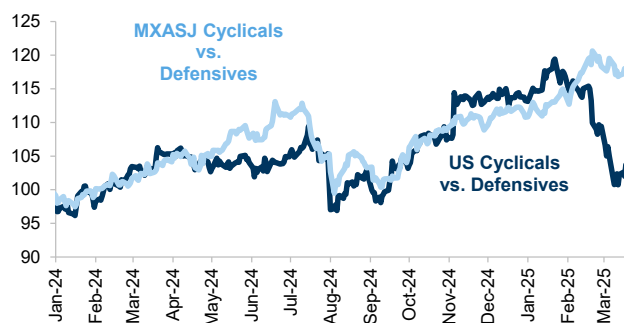
The unwind of the US exceptionalism trade featured prominently in our investor conversations and prompted questions of whether this could spur better relative performance for the Asian region. Reflecting in large part a sharp rise in policy uncertainty, over the past month our economists have cut their 2025 US GDP growth forecast 50bp to a below-consensus 1.7% (on a Q4/Q4 basis), our US strategists have trimmed their earnings forecasts and index target, the S&P500 index has corrected 10%, US 10yr yields have dropped 40bp, Fed Fund futures have priced another rate cut this year, and the dollar has weakened 5% (on a DXY basis). The relative performance of cyclical vs defensive stocks demonstrates this changing outlook: US cyclicals have

acutely underperformed defensives, whereas cyclicals in Asia continue to outperform. More granularly, US export-oriented stocks in Asia have started to weaken, while domestic consumption stocks are starting to recover. This points to a gathering narrative of better Asian relative performance along with a more internal focus, particularly given tariff uncertainty.

Exhibit 3: The relative performance of cyclicals vs. defensives in Asia compared to the US highlights how relative growth perceptions have changed

Cyclical vs defensive performances are on an ex-commodity basis

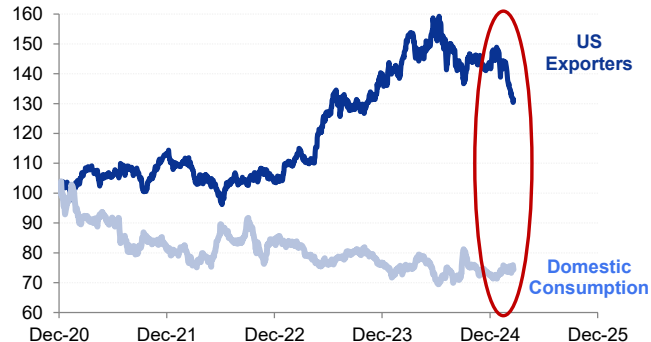
Relative Performance Index - Macro Slices



Source: FactSet, MSCI, Goldman Sachs Global Investment Research

Exhibit 4: Asian domestic consumption stocks have lagged those which export to the US, suggesting opportunity for improved performance given tariff risks

Relative performance of APxJ geo-sales exposure baskets vs. MXAPJ



Source: FactSet, Goldman Sachs Global Investment Research

3. Could US economic and equity market weakening prompt portfolio flows into Asia/EM?

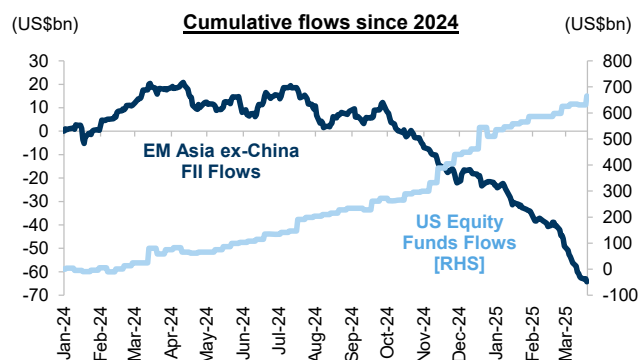
The question of whether a weaker US growth and equity market backdrop could spur portfolio flows into Asia (or emerging markets more broadly) has arisen in many recent investor conversations. We believe the best conditions for this would be when a) relative economic growth differentials are widening in Asia/EM's favor, b) the dollar is weakening, and c) the US equity market is range trading. Focusing on the latter, we observe that when US equities are performing strongly, investors naturally concentrate on that market (the world's largest and most liquid) and ignore smaller, less liquid, and more complicated markets. When the US market is under pressure, it tends to drag other markets down as well: since 1990, there have been 29 times the S&P500 index has declined 10% or more and the MXAPJ index has fallen in every episode (to a greater or lesser extent). The sweet spot tends to be when the US range trades, which prompts investors to seek returns elsewhere. Given significant flows into the US over the past few years and persistent selling of Asian equities, the potential for a reversal is high if the broad investment backdrop remains supportive as we expect.

Exhibit 5: Regional stocks have never delivered positive returns when the S&P500 index has corrected 10% or more; in the current episode, China equities have risen and AEJ market have outperformed

| Historical periods of SPX 10%+ corrections | | | | | | | | |
|--|-----------|------------|------------------|-------------------|-----------------------------|-----------------------------------|---------------------------------|-------------------|
| Start Date | End Date | SPX Return | MSCI APxJ Return | MSCI China Return | AEJ - US Growth (CAI Diff.) | MXAPJ / SPX rel. starting fPE (X) | MXAPJ / SPX rel. ending fPE (X) | MXAPJ Out-perform |
| 23-Apr-10 | 5-Jul-10 | (16%) | (13%) | (9%) | 0.28 | 0.92 | 0.95 | 1 |
| 29-Apr-11 | 25-Nov-11 | (15%) | (26%) | (27%) | 0.71 | 0.93 | 0.97 | 0 |
| 2-Apr-12 | 1-Jun-12 | (10%) | (14%) | (13%) | 1.90 | 0.87 | 0.86 | 0 |
| 21-May-15 | 25-Aug-15 | (12%) | (24%) | (31%) | -0.31 | 0.77 | 0.76 | 0 |
| 3-Nov-15 | 11-Feb-16 | (13%) | (16%) | (25%) | 0.60 | 0.79 | 0.76 | 0 |
| 26-Jan-18 | 8-Feb-18 | (10%) | (10%) | (13%) | 0.73 | 0.74 | 0.77 | 1 |
| 20-Sep-18 | 25-Dec-18 | (20%) | (11%) | (13%) | 1.16 | 0.72 | 0.89 | 1 |
| 19-Feb-20 | 23-Mar-20 | (34%) | (30%) | (20%) | 11.25 | 0.72 | 0.82 | 1 |
| 2-Sep-20 | 23-Sep-20 | (10%) | (6%) | (7%) | 2.40 | 0.69 | 0.75 | 1 |
| 3-Jan-22 | 8-Mar-22 | (13%) | (12%) | (16%) | 1.38 | 0.66 | 0.69 | 1 |
| 29-Mar-22 | 16-Jun-22 | (21%) | (12%) | (5%) | 3.05 | 0.65 | 0.77 | 1 |
| 16-Aug-22 | 12-Oct-22 | (17%) | (17%) | (19%) | -0.95 | 0.65 | 0.70 | 0 |
| 31-Jul-23 | 27-Oct-23 | (10%) | (13%) | (16%) | -0.64 | 0.69 | 0.69 | 0 |
| 16-Jul-24 | 5-Aug-24 | (8%) | (9%) | (7%) | 0.06 | 0.64 | 0.63 | 0 |
| 19-Feb-25 | 13-Mar-25 | (10%) | (4%) | 1% | 1.04 | 0.62 | 0.66 | 1 |
| Average | | -15% | -15% | -16% | 1.54 | 0.75 | 0.79 | 50% |

Source: FactSet, MSCI, Goldman Sachs Global Investment Research

Exhibit 6: Foreign investors have sold EM Asia and bought the US: current conditions suggest this could reverse



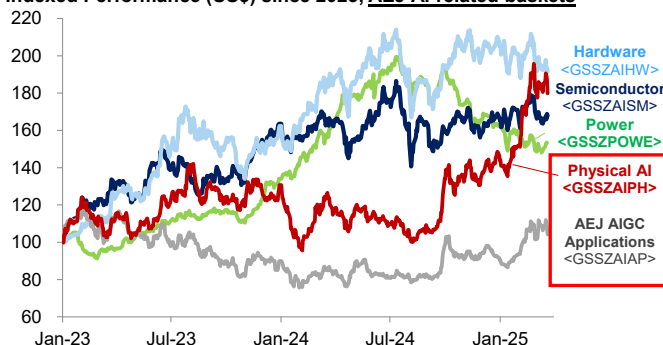
Source: Bloomberg, Respective Local Stock Exchanges, EPFR, Goldman Sachs Global Investment Research

4. AI: China AI software-related stocks continue to outperform regional AI hardware-related ones

Artificial intelligence remains top of mind for investors. Our summary view is that the advent of DeepSeek (and other low cost, high performing, open-source China models) changed the AI investment narrative from a focus on hardware-intensive model training to the software application layer, including the extension of AI into the physical world through robotics, AIoT, and assisted driving. This has also shifted the market focus from Taiwan, Korea, and (to a lesser extent) Japan, where AI revenues are mostly hardware and semiconductor-related, to China where AI revenues are mostly derived from applications and physical AI. As we have previously noted, this is the primary driver for the powerful rally in China equities this year and remains a key reason for our continued overweight market view.

Exhibit 7: AI applications and physical AI are outperforming as the investment narrative around artificial intelligence has shifted from hardware to software

Indexed Performance (US\$) since 2023, AEJ AI-related baskets



Source: FactSet, Goldman Sachs Global Investment Research

5. China: Near-term outlook: correction possible, add on weakness, A-share tilt

China was the foremost discussion topic after global issues including tariffs, AI, and geopolitics. The range of near-term issues encompassed takeaways from the Two Sessions (see [here](#), [here](#), and [here](#)), efforts to support [domestic consumption](#), US/China relations, Southbound net buying of Hong Kong-listed equities (which at ~\$50bn ytd is already half of 2024's record inflows), [US investment restrictions](#) on China securities, and the outlook for primary market activity.

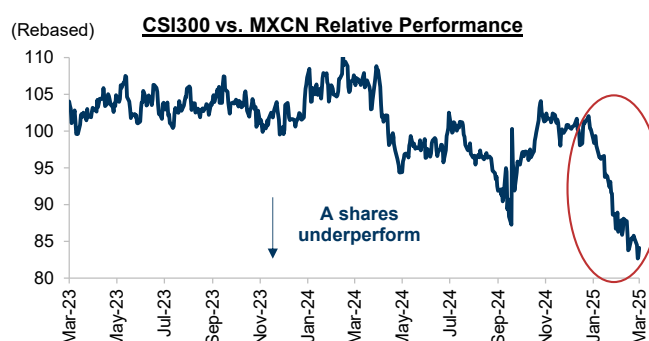
Within our continuing overweight stance on both China offshore and onshore equities, we note two key points. First, following a 33% rally from the Jan 13 low to the Mar 13 high, a [correction](#) should be expected given a) the speed and extent of the rally, b) negative divergence between price and momentum indicators, and c) the upcoming tariff risk window which serves as a reason for faster money to lock in gains. We would use this as an opportunity to add to positions given our MXCN 85 index target, which is based on a 12x target P/E and 9% 2025 EPS growth. Second, our tactical [A/H rotation model](#) suggests A shares may outperform offshore ones in coming months having lagged H shares by 20% ytd.

Exhibit 8: MSCI China has rallied 33% from January lows



Source: MSCI, FactSet, Goldman Sachs Global Investment Research

Exhibit 9: Onshore A shares have sharply lagged offshore H shares this year



Source: Wind, Bloomberg, Goldman Sachs Global Investment Research

6. China medium-term outlook: is a better investment case building?

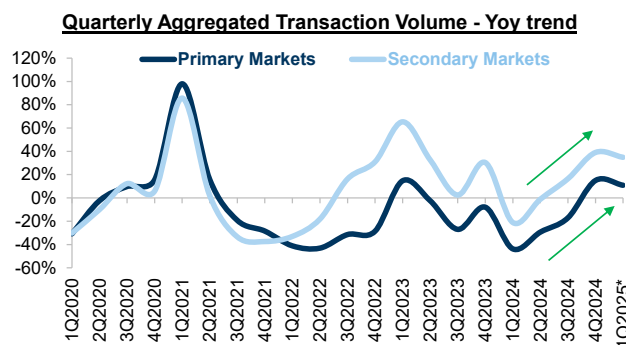
Many seasoned investors are asking whether a medium-term investment case for China is building. Recognizing China's continuing [macro challenges](#) and the tendency for positive price momentum to foster bullish narratives, there is a fact-pattern that supports a more constructive view which could support equity market upside beyond our current target. This includes policy efforts to address the main areas of economic weakness, notably property (early signs of [stabilization](#) are emerging), high debt levels (through [recapitalization](#) of systemically important banks), and consumption (although the recently announced wide-ranging special action plan needs greater specificity and follow-through). President Xi's high profile [February meeting](#) with private sector technology leaders stands in stark opposition to the regulatory tightening during 2020-2022 and suggests reduced valuation and earnings risk for private owned enterprises (POEs), which are regaining relative strength vs. state owned enterprises (SOEs) after an extended period of underperformance. Technology advances continue at

a rapid pace, notably in AI, EVs, and robotics, which provide new growth areas and help rebalance the economy away from its past reliance on property. Last, recent analyst field trips show signs of improving demand in infrastructure and construction machinery, suggesting a firmer outlook beyond technology-related sectors.

Exhibit 10: Private owned enterprises are outperforming state-owned ones after an extended period of underperformance



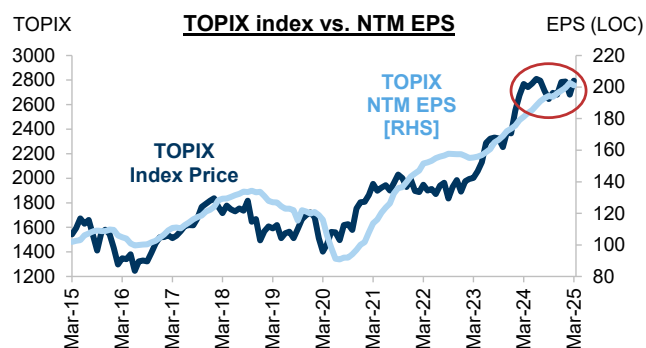
Exhibit 11: Primary and secondary market property transactions are showing signs of stabilization



7. Japan: positive investment case, but concerns over yen strength

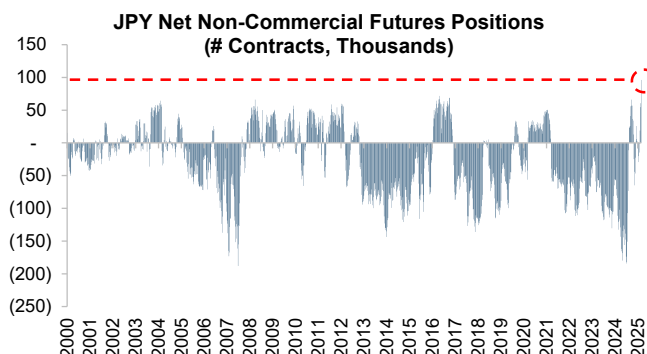
Conversations around Japan consistently focus on whether the market can regain momentum after nearly three quarters of trading in a narrow range. We remain overweight and retain a Topix 3100 target (+14% upside). In a nutshell, the investment case is a) earnings growth looks favorable at 9%/11%/8% EPS growth for FY24-26 (GS top-down est.), b) valuation is attractive at 13.4x forward P/E (2 points lower than at the July peak last year), c) foreign investors have sold all their net purchases since the start of 2023 and are at the lowest level of net buying in more than a decade, and d) alpha themes potential beneath the constructive beta outlook, including banks, domestic consumption, defense, AI, and corporate change. The main risk to this constructive outlook is further currency strength: JPY has retreated from 158 to 148, which raises the risk of earnings downgrades if the cross drops further. However, while the USD is now under pressure, non-commercial long positions in JPY futures are at a 25-year record high, suggesting headwinds to further yen strengthening.

Exhibit 12: Japan equities have traded in a range for 3 quarters while underlying earnings have been growing, suggesting a better risk/reward entry point



Source: I/B/E/S, FactSet, Goldman Sachs Global Investment Research

Exhibit 13: Non-commercial long positions in JPY are at a record high

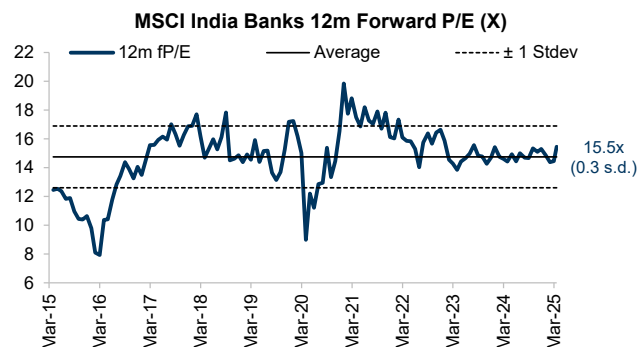
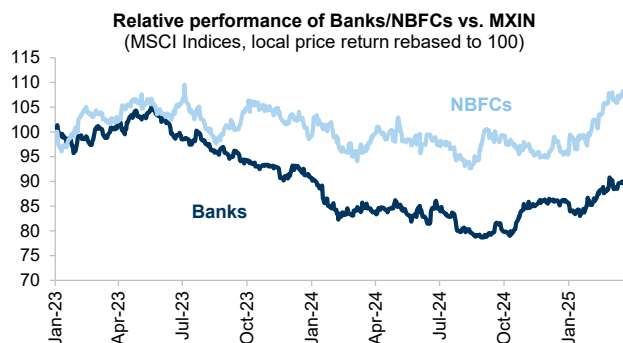


Source: Bloomberg, Goldman Sachs Global Investment Research

8. India: when to reengage?

When investor conversations turn to India, the consistent question has been when to reengage. After adopting a more cautious stance last October, we think it is still early for a broad-based upgrade. The main reasons are a) our below-consensus 2025 GDP growth forecast (6.4% vs. 6.8%), b) moderately restrictive monetary and fiscal policy, c) an ongoing EPS downgrade cycle (albeit at a lessening pace), d) valuations that are close to fair value for large caps but still expensive for SMIDs, e) high retail positioning in SMIDs, and f) impending risk regarding reciprocal tariffs. That said, the longer-term investment case for India remains compelling and the market is stabilizing after a 16% decline from Sep-24 highs. We think large caps look better for investors looking to build positions and recently upgraded financials to MW after extended underperformance: valuations are mid-range and margins may benefit if local liquidity eases (we expect the RBI to cut in April).

Exhibit 14: For investors looking to begin to re-engage in India, large caps look better value; we upgraded financials to MW from UW after extended underperformance

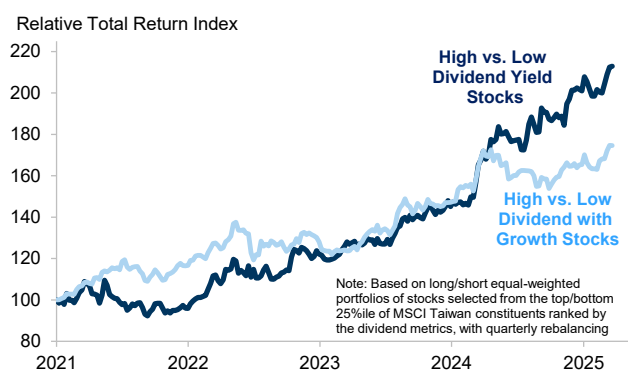


Source: MSCI, FactSet, Goldman Sachs Global Investment Research

9. Korea/Taiwan: alpha focus amid uncertain tariff beta

Against a backdrop of uncertainty over global growth, tariffs, and technology shifts, discussions on Korea and Taiwan tend to focus on alpha opportunities. For Korea, a topical issue is the lifting of the short selling ban on March 31. We expect an increase in foreign investor trading activity once short selling resumes and note several alpha opportunities around this event based on past episodes. These include a potential rebound in KOSDAQ relative performance vs. KOSPI given currently stretched levels. In Taiwan, high dividend stocks look attractive after the market's 10% correction.

Exhibit 15: High dividend stocks in Taiwan look attractive after the market pullback



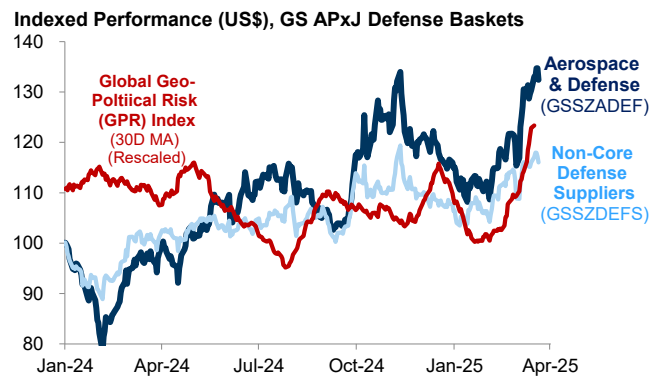
Source: FactSet, MSCI, Goldman Sachs Global Investment Research

10. Alpha ideas

Our MXAPJ 640 index target implies 9%/11% USD price/total 12m return driven by earnings. Beneath this moderately constructive beta backdrop, we emphasize themes that may deliver alpha. Our favored themes include:

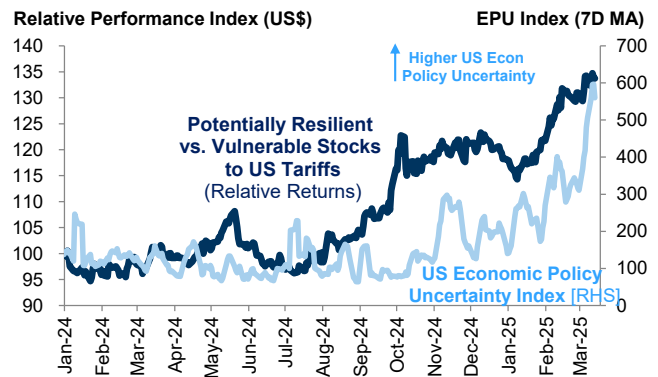
- **AI:** notably AIGC Applications (GSSZAIAP), Physical AI (GSSZAIPIH), Taiwan Apple Suppliers (GSSZAPPL), and Power & Electricity (GSSZPOWE)
- **Tariff risk:** Potentially Resilient Stocks to tariff risks vs. Potentially Vulnerable Stocks
- **Defense spending:** Aerospace & Defense (GSSZADEF) and Non-core Defense Suppliers (GSSZDEFS)
- **Cash returns and Quality:** High Dividend Yield with Growth (GSSZDIVG), Stable Growth (GSSZSTGW) and Strong vs. Weak Balance Sheets (GSSZSBAL vs. GSSZWBAL)
- **Revision Momentum:** Strong vs. Weak Earnings Revisions (GSSZSERV vs. GSSZWERV) and Consensus Revision Winners vs. Losers (GSSZREVV vs. GSSZREVL)

Exhibit 16: Our Aerospace & Defense basket has risen 16% YTD amid a spike in global geopolitical risk, and Non-Core Defense Suppliers have also gained 10%, compared to a 3% return for MXAPJ



Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 17: Markets are trading tariff concerns at the granular stock levels, as reflected by the performance of domestic-facing stocks with lower sensitivity to macro growth vs. exporters to the US



Source: FactSet, PolicyUncertainty.com, Goldman Sachs Global Investment Research

Exhibit 18: We focus on alpha themes within a moderately constructive beta backdrop

| Summary Views | |
|--|--|
| Returns & Growth (MXAPJ) | 12m index target: 640, implying 9%/11% USD price/total return; GSe path (3/6/12m): 600/610/640; 10%/11% EPSg in 2025/26 |
| Markets | <u>OW</u> China Offshore, China A, Japan, Philippines, Singapore |
| | <u>MW</u> Korea, Taiwan, India, Malaysia, Indonesia |
| | <u>UW</u> Thailand, Hong Kong, Australia |
| Sectors | <u>OW</u> Internet/Media/Entertainment, Consumer Retail & Durables, Insurance & Other Fins, Capital Goods, Utilities |
| | <u>MW</u> Autos, Transportation, ex-China/AU Banks, Telecom, Health Care, Tech Hardware & Semis, Software & Serv, Consumer Staples |
| | <u>UW</u> China/AU Banks, Energy, Chemicals, Metals & Mining, Property |
| Themes & Implementation Ideas | AI Beneficiaries: AIGC Applications & Physical AI, Taiwan Apple Suppliers, Power & Electricity |
| | China Policy Support: Government Spending, New Tech/Infra and AI, Shareholder Returns, EM exporters |
| | Domestic Exposure: Potentially Resilient Stocks vs. Vulnerable (US Exporters) to Tariff Risks |
| | Quality: Stable Growth, Strong Balance Sheet |
| | Shareholder Yield: Secure Dividend (with Growth), Buyback |
| Revision Momentum: Consensus Revision Winners, Strong EPS Revisions | |
| Geopolitics / Defense Spending: Aerospace & Defense, Non-Core Defense Suppliers | |

Source: Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

We, Timothy Moe, CFA, Alvin So, CFA, Kinger Lau, CFA, Sunil Koul, Bruce Kirk, CFA, Kazunori Tatebe, CFA, John Kwon, Amorita Goel, CFA and Mark Hung, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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

Disclosures

MSCI disclosure

All MSCI data used in this report is the exclusive property of MSCI, Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced or disseminated in any form and may not be used to create any financial instruments or products or any indices. This information is provided on an "as is" basis, and the user of this information assumes the entire risk of any use made of this information. Neither MSCI, any of its affiliates nor any third party involved in, or related to, computing or compiling the data makes any express or implied warranties or representations with respect to this information (or the results to be obtained by the use thereof), and MSCI, its affiliates and any such third party hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the data have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages. MSCI and the MSCI indexes are service marks of MSCI and its affiliates. The Global Industry Classification Standard (GICS) were developed by and is the exclusive property of MSCI and Standard & Poor's. GICS is a service mark of MSCI and S&P and has been licensed for use by The Goldman Sachs Group, Inc.

Basket Disclosure

The ability to trade the basket(s) in this report will depend upon market conditions, including liquidity and borrow constraints at the time of trade.

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; for equity securities, market making and/or specialist role. 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 subject company, public appearances and trading securities held 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, 951-A, Rational House, Appasaheb Marathe Marg, Prabhadevi, 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) of the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. Investment in securities market are subject to market risks. Read all the related documents carefully before investing. 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 can be found at this link: <https://publishing.gs.com/disclosures/hedge.html#/general/equity>. **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, The Investment Trusts Association, Japan, and Japan Investment Advisers Association. 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.

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: GSI, authorised by the PRA and regulated by the FCA and the PRA, disseminates research in the following jurisdictions within the European Economic Area: the Grand Duchy of Luxembourg, Italy, the Kingdom of Belgium, the Kingdom of Denmark, the Kingdom of Norway, the Republic of Finland and the Republic of Ireland; GSI - Succursale de Paris (Paris branch) which is authorised by the French Autorité de contrôle prudentiel et de résolution (“ACPR”) and regulated by the Autorité de contrôle prudentiel et de résolution and the Autorité des marchés financiers (“AMF”) disseminates research in France; GSI - Sucursal en España (Madrid branch) authorized in Spain by the Comisión Nacional del Mercado de Valores disseminates research in the Kingdom of Spain; GSI - Sweden Bankfilial (Stockholm branch) is authorized by the SFSA as a “third country branch” in accordance with Chapter 4, Section 4 of the Swedish Securities and Market Act (Sv. lag (2007:528) om värdepappersmarknaden) disseminates research in the Kingdom of Sweden; 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 in the Federal Republic of Germany and those jurisdictions within the European Economic Area where GSI is not authorised to disseminate research and additionally, GSBE, Copenhagen Branch filial af GSBE, Tyskland, supervised by the Danish Financial Authority disseminates research in the Kingdom of Denmark; GSBE - Sucursal en España (Madrid branch) subject (to a limited extent) to local supervision by the Bank of Spain disseminates research in the Kingdom of Spain; GSBE - Succursale Italia (Milan branch) to the relevant applicable extent, subject to local supervision by the Bank of Italy (Banca d'Italia) and the Italian Companies and Exchange Commission (Commissione Nazionale per le Società e la Borsa “Consob”) disseminates research in Italy; GSBE - Succursale de Paris (Paris branch), supervised by the AMF and by the ACPR disseminates research in France; and GSBE - Sweden Bankfilial (Stockholm branch), to a limited extent, subject to local supervision by the Swedish Financial Supervisory Authority (Finansinspektionen) disseminates research in the Kingdom of Sweden.

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.

We and our affiliates, officers, directors, and employees will from time to time have long or short positions in, act as principal in, and buy or sell, the

securities or derivatives, if any, referred to in this research, 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 focused on investment themes across markets, industries and sectors. It does not attempt to distinguish between the prospects or performance of, or provide analysis of, individual companies within any industry or sector we describe.

Any trading recommendation in this research relating to an equity or credit security or securities within an industry or sector is reflective of the investment theme being discussed and is not a recommendation of any such security in isolation.

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.fiadocumentation.org/fia/regulatory-disclosures_1/fia-uniform-futures-and-options-on-futures-risk-disclosures-booklet-pdf-version-2018. 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.

© 2025 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. This foregoing restriction includes, without limitation, using, extracting, downloading or retrieving this information, in whole or in part, to train or finetune a machine learning or artificial intelligence system, or to provide or reproduce this information, in whole or in part, as a prompt or input to any such system.