EM EQUITY STRATEGY

EM Equities: Concentration Conundrum

- **The EM equity index has grown increasingly tech-focused and concentrated, raising concerns over AI's growing dominance.** Driven by the AI investment boom, outsized gains in tech hardware stocks have pushed EM index concentration to record highs – Korea and Taiwan now account for about half of the MSCI EM, with Infotech at >40% and the Top 3 stocks (the 'AI trio' of TSMC, Samsung Electronics and SK Hynix) at ~30%. Recent summer volatility has revived fears over concentration and single-theme overexposure. With the headline index becoming more correlated with AI, we explore how EM investors can adapt their portfolio construction, benchmarks, and risk management frameworks.
- **Rising concentration reflects exceptional profit growth, rather than speculative exuberance, with earnings normalizing well above history.** Backed by exceptionally strong earnings delivery, MSCI EM valuations have de-rated by over 20% this year despite rising concentration, as profit growth outpaced price gains. MSCI EM profits surged 95% y/y in Q2 2026, and we forecast 65% growth for 2026, with the AI trio driving ~40% of net profits and ~60% of index EPS growth. We expect EPS growth to moderate to ~20% in 2027 and 14% in 2028, supported by persistent memory tightness and resilient non-tech earnings – a marked improvement from the -1% USD profit CAGR between 2013–24.
- **EM investing requires a more differentiated, granular approach.** While acute summer dislocations – triggered by leveraged ETF positions and forced selling – have eased**,** the broad EM index remains more correlated to AI, less diverse and less sensitive to traditional macro drivers than it was a couple of years ago. In contrast, EM ex-tech remains tightly coupled with global macro and local factors, which we think supports a more granular approach to managing EM risk.
- **How should investors navigate high concentration?**
  - **Diversify across EM regions.** While North Asia provides global AI exposure, India offers a deep, liquid domestic market. LatAm has rates and commodity exposure, South Africa adds gold miners and domestic plays, and select CEE markets offer idiosyncratic catalysts. We continue to expect EM performance to broaden further as macro volatility stabilizes, and

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

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

Kamakshya Trivedi
+44(20)7051-4005 | kamakshya.trivedi@gs.com
Goldman Sachs International

Tarun Lalwani, CFA
+1(212)934-5821 | tarun.lalwani@gs.com
Goldman Sachs India SPL

Mambuna Njie
+44(20)7051-7705 | mambuna.njie@gs.com
Goldman Sachs International

Shuyi Fang
+44(20)7051-8159 | shuyi.fang@gs.com
Goldman Sachs International

This report is intended for distribution to GS institutional clients only.

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.

remain OW Brazil, South Africa, Greece, and Hungary, alongside North Asia.

- **Balance tech and momentum with defensive factors.** High dividend yield and minimum volatility have delivered superior risk-adjusted returns over the past 1–3 years, with lower sensitivity to AI and a history of outperforming in tech sell-offs. High shareholder yield also remains an attractive regional theme, with policy catalysts.
- **Consider alternate benchmarks**. Equal-weighted or capped benchmarks such as EM 10/40 and 25/50 indices can reduce benchmark-driven concentration for investors facing tighter stock and sector limits. While AI trio proxies can ease single-stock constraints, they offer little protection against a broader tech sell-off.
- **Use derivative overlays to hedge.** We suggest staying fully invested through the earnings cycle while hedging macro and concentration risks. With elevated volatility and low skew, put-spread collars offer a relatively low-cost way to protect downside while retaining equity upside. Custom hedges such as EM ex-AI trio or KOSPI 198 can help mitigate macro risks.

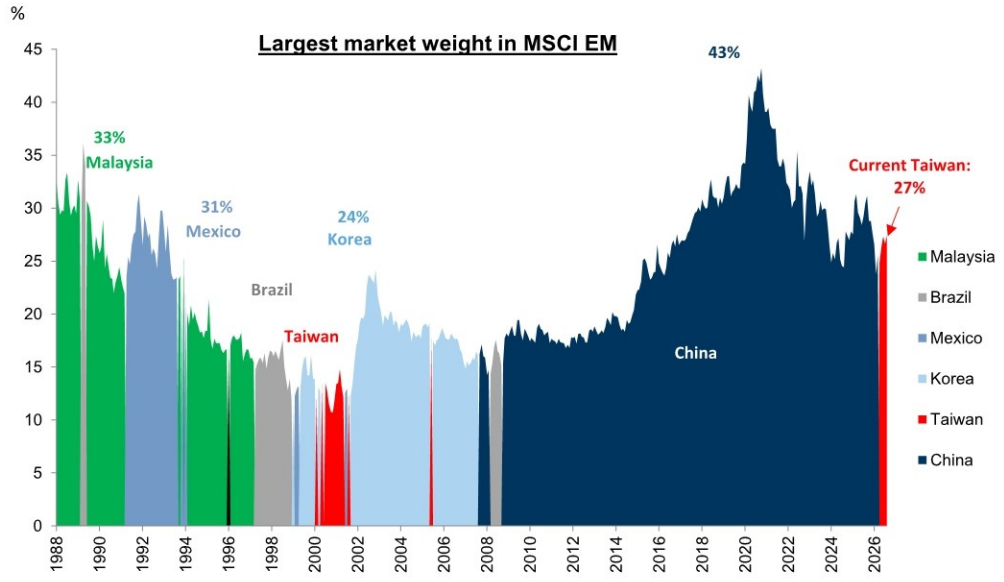
EM Equity Index Evolution: More Tech, More Concentrated, But Also More Growth

The composition of the EM equity benchmark (MSCI EM) has meaningfully changed over the past year. The AI investment boom has led to significant gains in the tech/AI infrastructure pockets and outsized moves in a few large semiconductor stocks in Asia. This has made the MSCI EM index more concentrated in terms of market, sector, and top stocks.

EM Index has become more North Asia and tech-focused

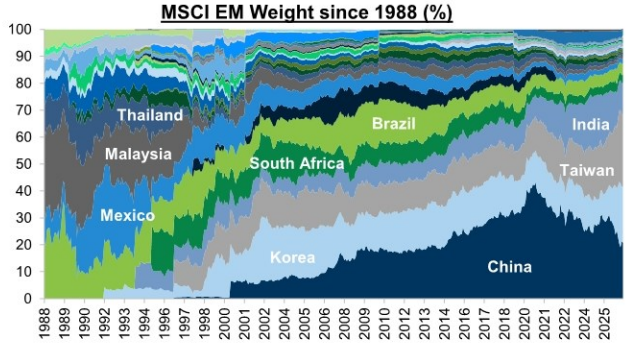
The most visible shifts have been at the geographic and sector level. Taiwan has become the largest market in MSCI EM at a 27% weight, overtaking offshore China, which held the top spot for eight years from 2008 until 1Q 2016. Korea is the second-largest market with a weight of more than 20%, and together tech-heavy Korea and Taiwan account for about half of the index weight. Sector composition has also changed: Infotech now accounts for more than 40% of the index weight compared with just 25% at the start of 2025, with the rise in tech weight coming at the expense of financials, TMT and consumer cyclicals.

Exhibit 1: Taiwan has now become the largest market in the MSCI EM Index, overtaking offshore China, which held the top spot for eight years from 2008 until 1Q 2016



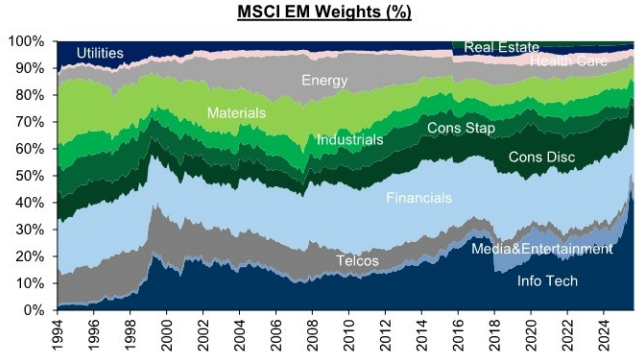
Source: MSCI, FactSet, Goldman Sachs Global Investment Research

Exhibit 2: Korea's share has risen to more than 20% and together tech-heavy Korea and Taiwan account for about half of the EM index weight



Source: MSCI, FactSet, Goldman Sachs Global Investment Research

Exhibit 3: Sector composition has also changed with Infotech accounting for 40% of the index weight compared with just 25% at the start of 2025, with the rise in tech weight coming at the expense of financials, TMT, and consumer cyclicals

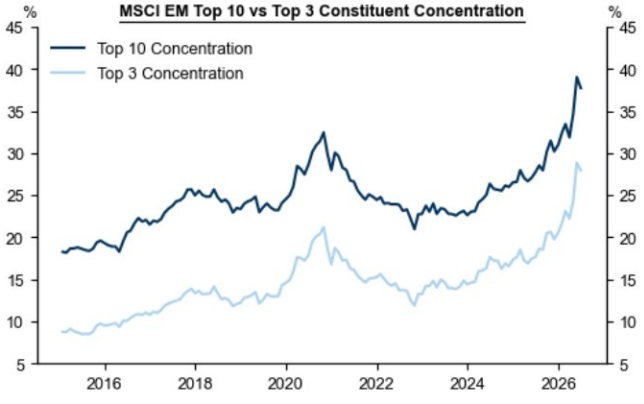


Source: FactSet, Goldman Sachs Global Investment Research

Concentration in top stocks has risen to historical highs

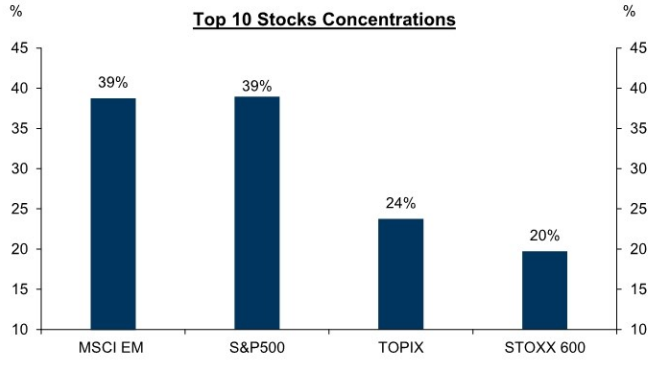
The MSCI EM index has also witnessed a rise in index concentration in terms of top index stocks. The Top 3 stocks in MSCI EM – TSMC, Samsung Electronics and SK Hynix – are all tech hardware and semiconductor stocks that have been beneficiaries of AI capex. This 'AI trio' accounts for nearly 30% of the MSCI EM index (vs. 15% a year ago), which is the highest index concentration in the Top 3 stocks in the EM Index in a decade. Similarly, the Top 10 stocks in MSCI EM index include 9 tech stocks (hardware and consumer internet combined) and account for nearly 40% of the index, similar to that of the S&P 500, and much higher than for Japan and European benchmarks. While MSCI EM index concentration is similar to that in the S&P 500, the semiconductor companies are highly correlated and perceived as more cyclical historically than the 'hyperscalers' in the US, which are considered less cyclical businesses with stronger balance sheets.

Exhibit 4: MSCI EM index concentration in top stocks has risen to historical highs...



Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 5: ...with the Top 10 concentration similar to that of S&P 500, and much higher than for Japan and European benchmarks



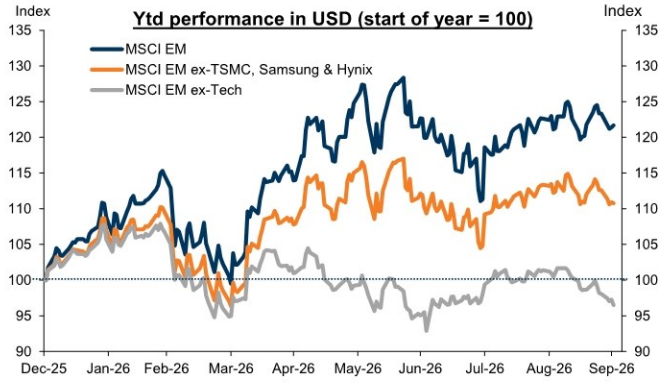
Source: Bloomberg, FactSet, Goldman Sachs Global Investment Research

Index performance has been concentrated too

The outsized impact of the tech sector and the AI trio on the MSCI EM goes beyond the

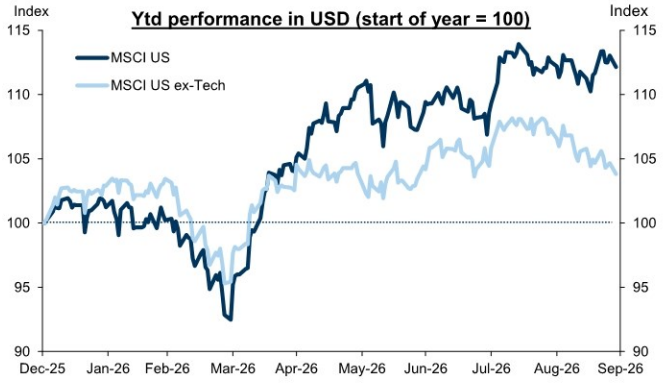
index weights, as they have contributed the majority of the ytd gains in the EM index. While MSCI EM has risen more than 20% year-to-date, MSCI EM excluding the tech sector is down for the year and EM excluding the Top 3 stocks is up by about just 10% ytd. More broadly, the market breadth in EM has been extremely narrow – relative to history – which partly reflects the rising tech dominance, but also weak risk appetite given elevated volatility from energy prices and core DM rates. This is similar to the dynamics in the US equity market where AI strength has kept the headline S&P 500 relatively resilient, but the market breadth is at its lowest levels since the Dot-Com Bubble.

Exhibit 6: Tech and the Top 3 AI-related stocks have contributed the majority of the strong EM index gains this year...



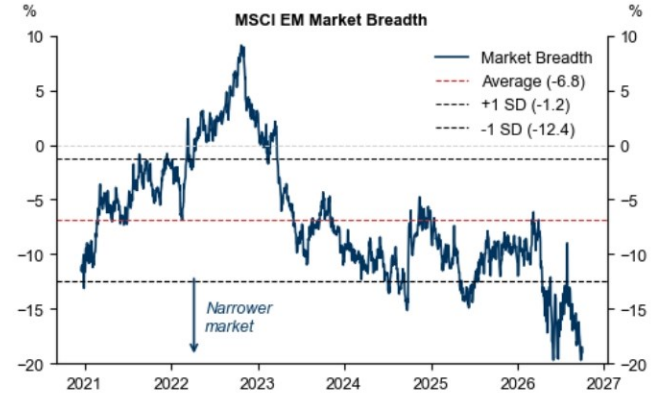
Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 7: ...similar to US equities, where strength in AI stocks has kept the headline index relatively resilient



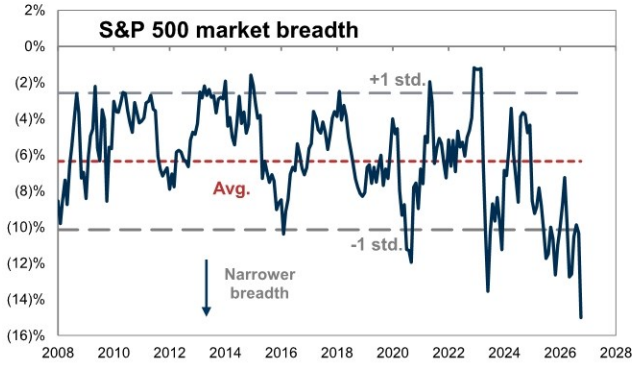
Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 8: MSCI EM market breadth remains narrow compared with its historical levels
Market breadth calculated as the difference between the distance of the aggregate MSCI EM Index from its 52-week high and the distance of the median MSCI EM constituent from 52-week high



Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 9: ...similar to S&P 500 where market breadth has narrowed sharply
Market breadth calculated as the difference between the aggregate index and median stock respective distances from 52-week highs



Source: FactSet, Goldman Sachs Global Investment Research

The recent summer volatility in technology/AI stocks has raised some investor concerns around index concentration and AI dominance in the MSCI EM index. We think the concerns are overstated as the rise in concentration has been accompanied by strong earnings accrual rather than P/E re-rating, which is likely to continue going forward, and many of the market dislocations during the summer have eased, as we show in the subsequent sections.

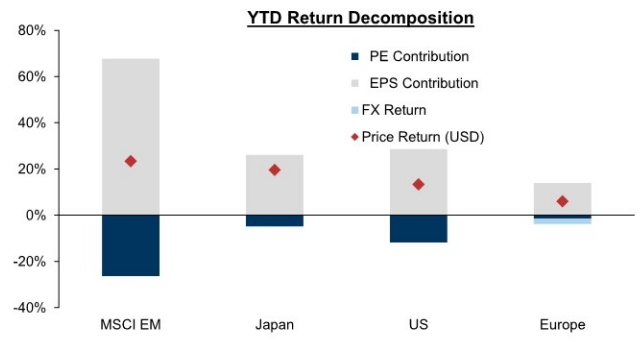
Not All Concentration Is Bad, If Driven by Earnings

Earnings have outpaced prices, while aggregate valuations have compressed

While the significant outperformance of the tech sector and the top semiconductor stocks has led to a rise in EM index concentration, we think the aggregate index is less vulnerable as the gains have been driven by underlying earnings accrual and EPS upgrades, while the P/E multiples have declined year-to-date, reflecting less exuberance at an aggregate level.

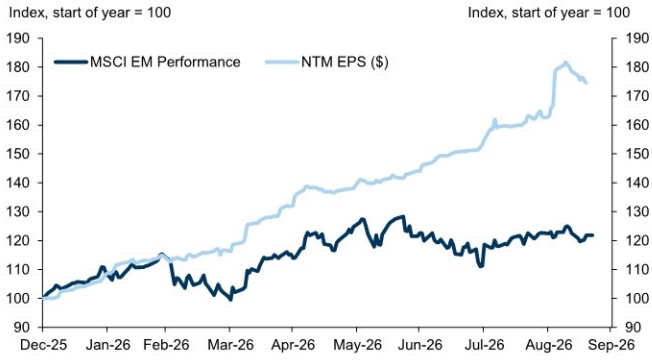
This is true for the EM tech sector where consensus forward EPS estimates have seen a three-fold increase ytd, despite a positioning unwind in stock prices, but also true for the aggregate MSCI EM index where EPS revisions have outpaced price gains, while valuations have de-rated by more than 20% (from 13.5x at the start of the year to 10x currently). While there is wide disparity across EM markets and sectors, excluding the tech sector, valuations are at their 10-year average levels, and EM equity valuations (both cum and ex tech) trade at a meaningful discount to US and other key DM regions globally.

Exhibit 10: Earnings have been primary driver of strong gains in MSCI EM index while valuations have sharply de-rated ytd



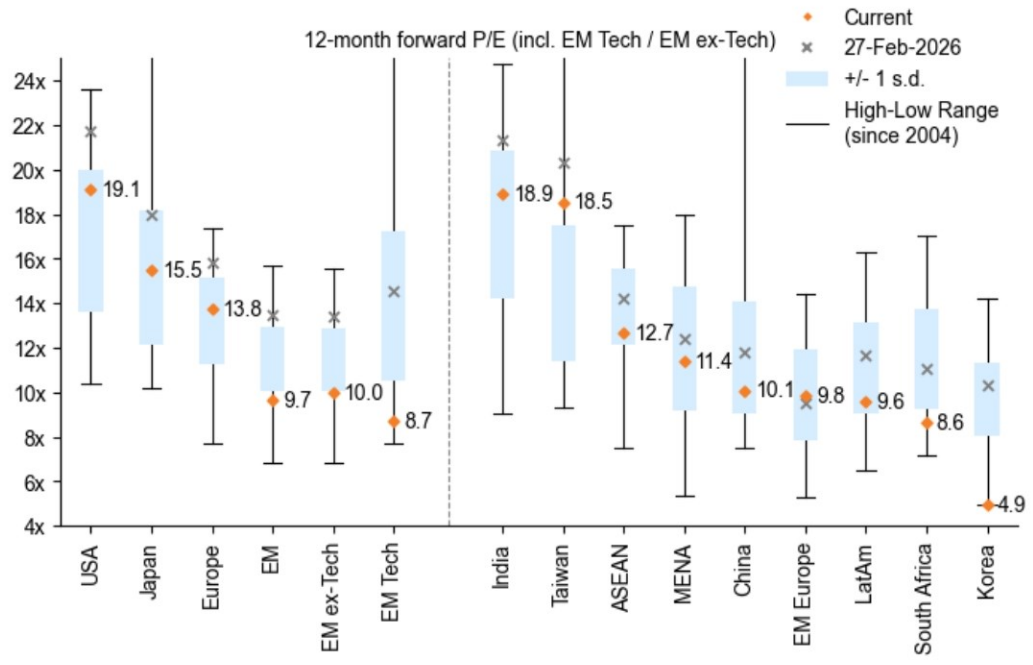
Source: FactSet, MSCI, Goldman Sachs Global Investment Research

Exhibit 11: Consensus forward EPS estimates have been revised up sharply, significantly outpacing the MSCI EM price gains year-to-date



Source: FactSet, MSCI, Goldman Sachs Global Investment Research

Exhibit 12: EM equity aggregate valuations are at low end of their historical range and remain at a discount to US and other key DM regions globally



Source: FactSet, Goldman Sachs Global Investment Research

Earnings growth to normalize from current exceptional levels, but remain well above history

MSCI EM profits grew by an extraordinary 95% year/year in Q2 2026, and we and consensus are expecting EPS to grow 65% and 70% respectively this year (for the full-year 2026). North Asia and tech earnings should account for roughly two-thirds of the index EPS growth this year. This strength in current tech/AI earnings has raised concerns around their sustainability going forward and whether the market is in an 'earnings bubble'.

Although we do expect earnings to decelerate from current 'super normal' levels, we still expect a strong absolute level of profit growth (of about 20% next year and 14% in 2028 for MSCI EM in aggregate), which is higher compared with the extended period of poor profit delivery at the EM index level over much of the past decade. From 2013 to 2024, MSCI EM delivered negative yoy profit growth in USD in seven out of 12 years, with USD CAGR of -1%.

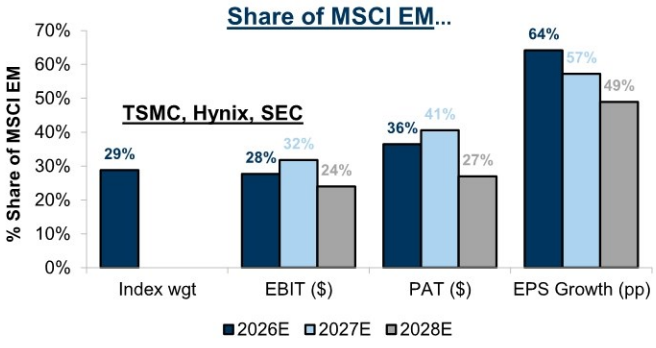
The continued strength in earnings is partly driven by our stronger-for-longer view on the tech hardware/memory sector, as we believe AI infrastructure spending can potentially remain strong over the next few years, and most memory companies are expecting persistent demand/supply tightness supporting higher pricing and margins for at least the next 12-18 months. For the AI trio (TSMC, Samsung Electronics and SK Hynix) in particular, they would account for about 30% of operating profits, 40% of net profits and about 60% of the EPS growth in MSCI EM over this year and next, per consensus forecasts.

Outside of the tech sector, we expect cyclical recoveries in many other domestic and non-tech markets (e.g. India, South Africa), which should also support strong profit

growth at the aggregate EM index level.

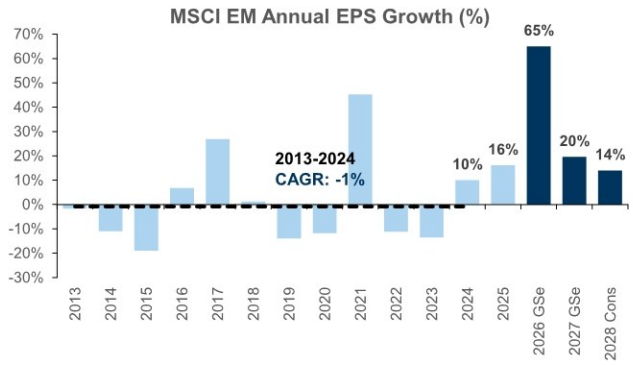
These forecasts are consistent with our Asia's strategy team's view of a strong tech-driven earnings recovery in the region (see Investing in a differentiated Asia for further details).

Exhibit 13: Consensus expects the EM 'AI trio' (TSMC, SK Hynix, Samsung Electronics) to account for a large share of expected MSCI EM profits over the next two years



Source: FactSet, MSCI, Goldman Sachs Global Investment Research

Exhibit 14: We forecast MSCI EM earnings to grow 65% this year and 20% in 2027, in contrast to the extended period of poor profit delivery at index level over much of the past decade



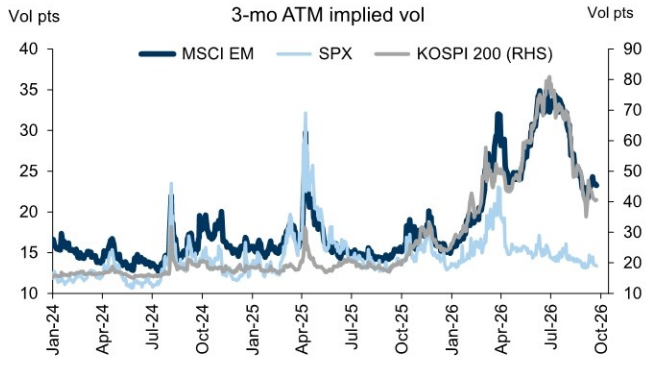
Source: FactSet, Goldman Sachs Global Investment Research

Acute Market Dislocations Have Eased; EM Investing Requires a More Differentiated Approach

The rise in EM index concentration is driven by earnings-led outperformance of tech hardware mega caps, which improves the aggregate profitability of the EM index. But it has also created several market dislocations, such as rising index volatility, concentrated forced selling by institutional investors, and an increase in leveraged ETF products – which hurt investors during the summer tech sell-off. That said, most of those acute dislocations and market stresses have already eased, as briefly outlined below:

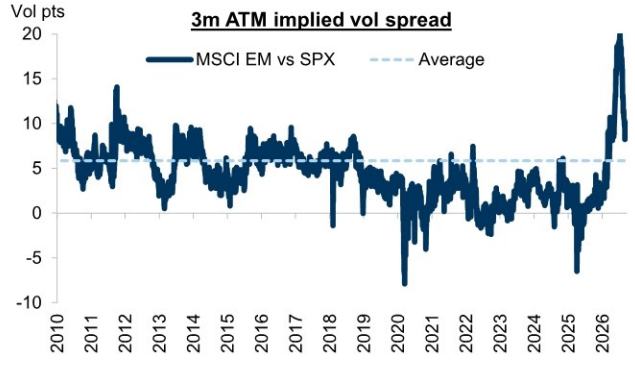
- **Extreme volatility is normalizing** – First, volatility in the tech-heavy equity indices and the broader MSCI EM index rose sharply during the first half of the year. Korea has been the poster child of extreme volatility this year, as the implied volatility index (VKOSPI) hit nearly 100 at the end of June, amplified in part by leveraged retail ETF flows and dealer-rebalancing activities. The index has declined back to 40 (below the past 1-year average of 50, but slightly above the 3-year average of 30). For the aggregate EM index, short-dated implied vols also rose sharply this year, with the EM/SPX vol spread reaching the widest levels since the Global Financial Crisis. However, spreads have moderated from their highs – the 3-month ATM implied vol spread between EM/SPX has halved from highs of 20v to 10v, although it remains above the post-GFC mean spread of 5 vol points.

Exhibit 15: Short-dated implied vols in Korea/MSCI EM rose sharply relative to SPX, although vols have since declined from peak levels...



Source: Goldman Sachs Global Investment Research, Goldman Sachs FICC and Equities

Exhibit 16: ...with the relative vol spread between EM/SPX moderating from its widest levels since the Global Financial crisis

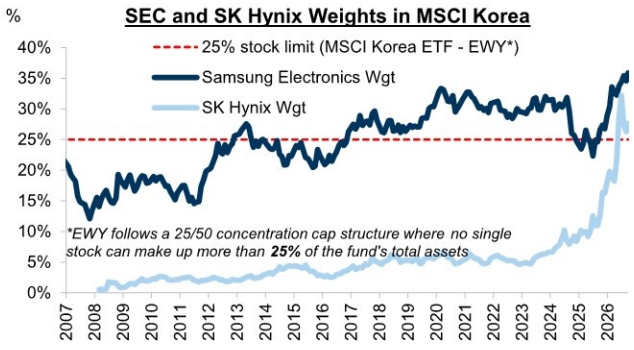


Source: Goldman Sachs Global Investment Research

- **Leveraged ETF positions have declined meaningfully** – Second, the sharp rise in stock prices and consequently the index weights of the AI/tech-hardware mega stocks exposed single-stock and country concentration constraints in various regulated funds and ETFs, notably under US RIC and UCITS rules. As an example, both Samsung Electronics and SK Hynix's weight in MSCI Korea rose above 25%, breaching the single-stock concentration cap threshold for EWY, which is not allowed to hold more than 25% of its total assets in any single name. This is also true for many active country-focused and regional funds that have single-stock caps. The breach of single-stock limits forced funds to rebalance their portfolios by selling these outperforming stocks. This is most evident in Korea where foreign investors have cumulatively sold US$120bn year-to-date, about 90% of which is just in the

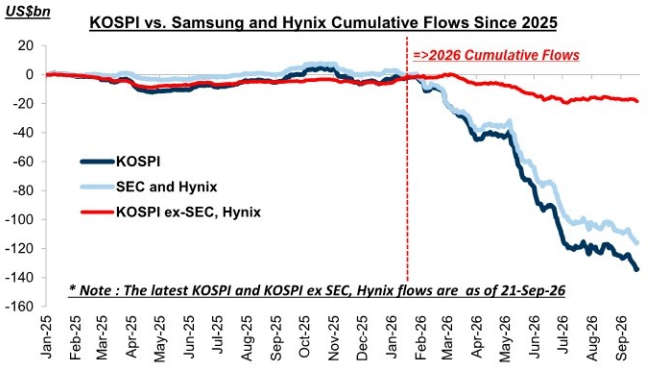
two memory stocks – Samsung Electronics and SK Hynix. In addition to concentration constraints, use of leveraged ETF products and the associated dealer gamma rebalancing amplified index moves driving volatility. While the tech/AI sell-off in the summer partly eased some of the weight cap constraints and stabilized foreign selling, more promisingly, leveraged ETF position AUMs – both in the US and North Asia – have declined meaningfully from highs (about 30% for US tech ETFs and 50% for Korea/Taiwan ETFs), suggesting cleaner positioning.

Exhibit 17: Sharp rise in index weights of memory stocks exposed single-stock concentration constraints in various regulated funds and ETFs...



Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 18: ...and drove concentrated forced selling by institutional investors in major semiconductor stocks



Source: Quantiwise, Goldman Sachs Global Investment Research

Exhibit 19: Leveraged ETF positions in US / Asia have declined meaningfully from highs



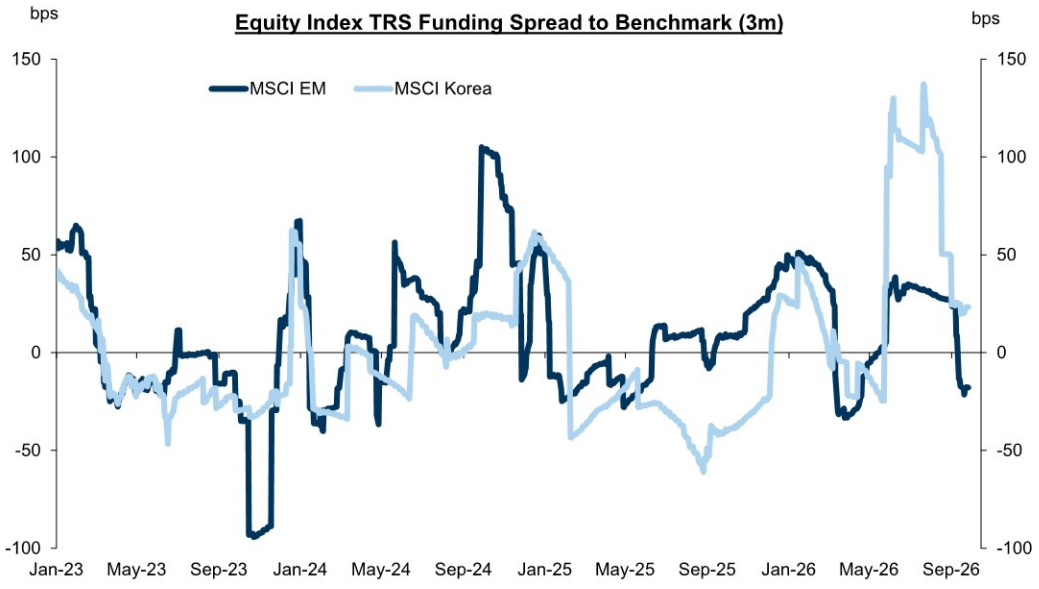
Universe excluding US ex-Tech and inversed exposed ETFs.

Source: EPFR, Goldman Sachs Global Investment Research

- **Equity funding spreads have reversed most of their widening** – Third, the sharp moves in the AI/tech complex against a backdrop of concentrated investor positions in a few mega cap tech stocks caused an increase in demand for hedging and macro products in EM and North Asia. Consequently, the equity funding spreads for MSCI

EM and North Asian markets (notably in Korea) rose sharply this year. With declining volatility and cleaner positioning now, these spreads have reversed most of their widening through June, suggesting easing market stress.

Exhibit 20: Equity funding spreads have reversed most of their widening through June in Korea and in broader EM, suggesting easing market stress



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Although macro volatility and geopolitical risks remain elevated, the evidence above suggests that the acute positioning and market-structure pressures seen earlier in the summer have eased. However, investors remain concerned about AI's growing dominance in the index and the risk of excessive exposure to a single factor.

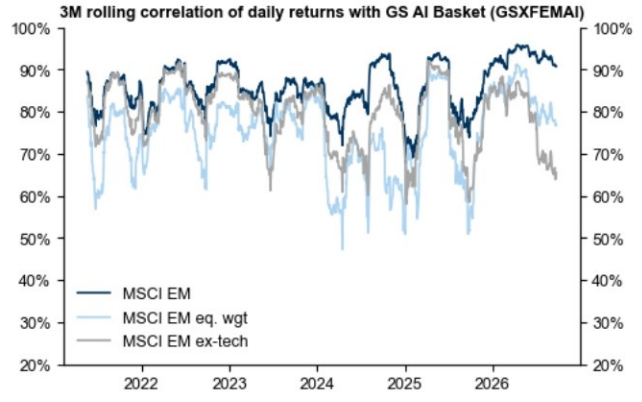
Need for a more differentiated approach to EM

The dominant index cap and profits share of technology stocks in the index does indeed leave the broad EM index more exposed to the global AI investment cycle than it was a couple of years ago, but this does not make the EM asset class synonymous with AI, in our view. As we show below, the headline MXEF's correlations with the GS EM AI Ecosystem equity basket (GSXFEMAI Index, created by GS Global Banking & Markets) has risen over the past year, but correlations of MSCI Equal-weighted EM and MSCI EM ex-Tech indices with the AI basket are relatively low and have declined in recent months. This underscores the importance of regional and sector diversification – which we have been emphasizing for most of this year – and managing tech/North Asian EM exposure separately from non-tech markets, rather than simply having a top-down framework for aggregate EM.

The non-tech EM index contains higher exposure to domestic markets (for example, India, China, ASEAN), financials across the region and commodity and rate-sensitive pockets of LatAm and South Africa, and is thus more sensitive to moves in key global macro variables than just AI-related news flow. This is corroborated by our regional macro model (which incorporates US/China Growth, US rates, the US Dollar and oil prices) wherein the R-squared for MSCI EM has declined meaningfully from its past 10-year value (2015-2024) of nearly 70% to ~50% in past 20-months (since the start of

2025), whereas the model R-squared for EM ex-tech and Equal-weighted EM have stayed high at about ~65-70%. In other words, the variance in MSCI EM in the past 2 years can be explained less by macro variables than by micro factors (shown by a rising residual factor), where EM ex-tech has remained stable as shown in Exhibit 23. This supports the argument for a more differentiated approach to EM and an increasing need for investors to adapt their EM portfolio construction and risk management frameworks, as discussed in the next section.

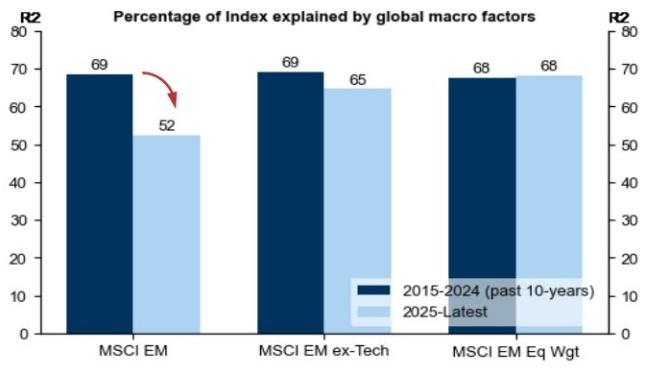
Exhibit 21: Broad EM index correlations with the AI theme have risen over the past year, while equal-weighted and non-tech EM are relatively less correlated with the AI factor



Source: Bloomberg, Goldman Sachs FICC and Equities, FactSet, Goldman Sachs Global Investment Research

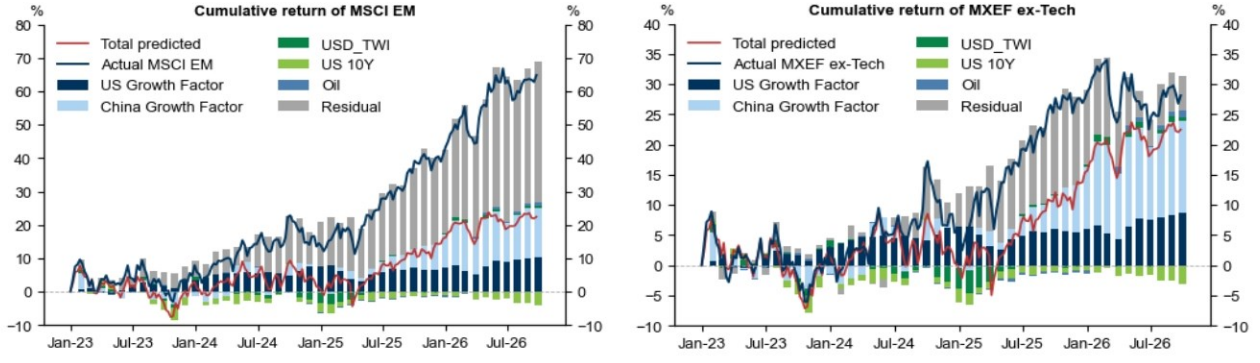
Exhibit 22: Aggregate EM index returns have become less sensitive to key global macro factors over the past year and a half, while sensitivities for non-tech EM equities and equal-weighted EM index have remained relatively stable

R^2 of weekly return regression of each index on weekly change in US growth, China growth, USD TWI Index, US 10y yield and oil price



Source: FactSet, Bloomberg, Goldman Sachs Global Investment Research

Exhibit 23: MSCI EM index moves over the past year can be explained less by macro variables than by micro factors, as shown by rising residuals in our Macro Model, while EM ex-tech has closely moved with macro variables



Predicted values are computed using betas from a regression of weekly returns of the index on weekly changes in the US growth, China growth, USD TWI, US 10Y Yield, and oil price over the past 10 years (2015-2024).

Source: FactSet, Bloomberg, Goldman Sachs Global Investment Research

How Should Investors Navigate High Concentration?

With high stock, sector and market concentration, we see several ways for active investors to adapt their portfolio construction, benchmarking and risk management frameworks. We continue to recommend diversifying across regions and factors, and using derivative overlays to mitigate risks where possible.

1. Diversify across EM regions: Outside of North Asian tech exposure, we like several non-tech pockets that offer differentiated macro and sector exposures and have idiosyncratic catalysts in some cases. We remain OW Brazil, South Africa, Hungary and Greece within our EM equity allocations, in addition to North Asian tech markets, and see better return prospects in India. India has been a significant EM laggard with improving fundamentals and a large and liquid domestic market. South African equities offer exposure to gold miners and domestic equities, while Brazil/LatAm offers rate-sensitive and commodity exposure. Select markets in Europe have idiosyncratic catalysts – for example, potential Euro adoption in Hungary – that could drive a structural re-rating in equities. Many of these markets have historically tended to outperform North Asia and broad EM, during prior US Tech/TMT drawdowns, emphasizing the benefits of regional diversification.

Exhibit 24: Previous US TMT drawdowns since early 2000s show that non-tech EM regions like CEE, LatAm, MENA, South Africa have outperformed North Asia and broader EM index, emphasizing the benefits of regional diversification

EM Market Performance in US TMT Drawdowns since 2000

Peak	Trough	US TMT Perf	CEE	Latam	MENA	S.Africa	India	ASEAN	China	North Asia	EM	EM Ex-tech
Mar-00	Sep-02	-79%	-39%	-51%	-71%	-27%	-53%	-37%	-48%	-47%	-47%	-37%
Dec-21	Sep-22	-33%	-48%	-4%	-1%	-21%	-10%	-12%	-33%	-39%	-29%	-20%
Dec-24	Mar-25	-11%	28%	11%	2%	13%	-3%	-10%	15%	-8%	2%	6%
Oct-25	Mar-26	-11%	10%	20%	-5%	8%	-18%	-1%	-13%	13%	0%	-4%
May-26	Jul-26	-11%	0%	-1%	-2%	-9%	2%	0%	0%	-22%	-11%	-3%
Median			**0%**	**-1%**	**-2%**	**-9%**	**-10%**	**-10%**	**-13%**	**-22%**	**-11%**	**-4%**

Source: FactSet, Goldman Sachs Global Investment Research

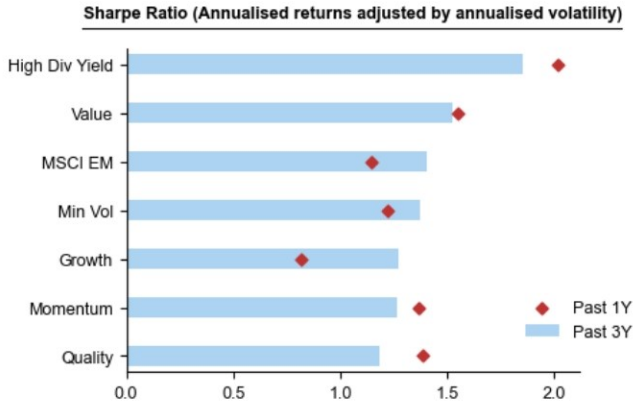
2. Balance tech and momentum strategies with defensive factor tilts. Looking at exposures through a factor lens, we note that Momentum and Growth strategies have outperformed in EM over the past two years, but they have also been relatively volatile and have high sensitivity to the technology sector. The sharp unwind in momentum and tech stocks during the summer has brought Asian hedge fund exposure from a peak of about 80% to about 30% of fund equity allocations. That said, the exposures still look relatively elevated over a longer 5-year lookback period, suggesting room for further de-risking. On the other hand, defensive factors such as High Dividend Yield and Minimum Volatility (Min Vol) have performed better over the past 1 and 3-years on a risk-adjusted basis. These factors have a lower sensitivity to the MSCI EM tech sector and have historically outperformed during the tech sell-off. This is consistent with the findings from our global asset allocation team that both low-volatility and high-dividend stocks have become more negatively correlated with tech, and in line with their preference of having a well-diversified portfolio of global AI-exposed stocks and high-dividend, low-volatility stocks. Within EM, we continue to like high shareholder yield (high dividend yields, high FCF yields) as a defensive but attractive theme with policy catalysts that could continue to trade well over the medium term.

Exhibit 25: Momentum and Growth strategies in EM have outperformed over the past two years, albeit with higher volatility



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 26: Defensive strategies like High Dividend Yield and Min Vol have offered better risk-adjusted returns in recent years



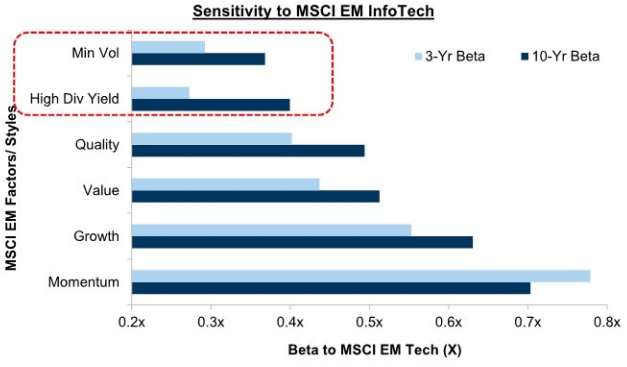
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 27: Positioning in Momentum factor among Asian Hedge funds has reduced sharply from peak levels, but still high over a longer lookback period



Source: Goldman Sachs FICC and Equities

Exhibit 28: High Div yield and Minimum Vol factors have low sensitivity to EM Tech, while Momentum and Growth have the highest sensitivity



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 29: Quality, Min Vol, Div Yield factors have outperformed during prior EM Tech sell-offs

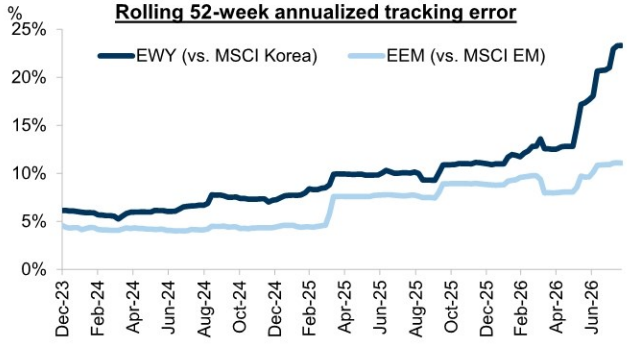
Peak	Trough	MSCI EM	EM Tech	Eq Wgt EM	Growth	Value	Momentum	High Div Yield	Min Vol	Quality
Jan-22	Oct-22	-32%	-44%	-28%	-35%	-27%	-27%	-31%	-22%	-28%
Jul-23	Oct-23	-11%	-14%	-11%	-13%	-9%	-13%	-7%	-10%	-5%
Jul-24	Aug-24	-10%	-20%	-5%	-11%	-8%	-12%	-9%	-3%	-7%
Feb-25	Apr-25	-13%	-26%	-10%	-14%	-13%	-15%	-10%	-8%	-14%
Nov-25	Nov-25	-5%	-12%	-4%	-7%	-4%	-5%	-3%	-2%	-4%
Feb-26	Mar-26	-13%	-18%	-11%	-13%	-13%	-19%	-10%	-9%	-10%
Jun-26	Jul-26	-11%	-27%	-3%	-14%	-8%	-28%	2%	-8%	-7%
Median		-11%	-20%	-10%	-13%	-9%	-15%	-9%	-8%	-7%

Source: Bloomberg, Goldman Sachs Global Investment Research

3. Consider capped/equal weight benchmarks – The high single-stock and single-country concentration within the standard MSCI EM index, in a strong outperforming tech/AI sector encourages EM funds to 'hug the benchmark', leading to crowding risk. At the same time, funds with concentration constraints (for example, the regulated funds under US RIC and EU UCITS rules), cannot raise their exposure above

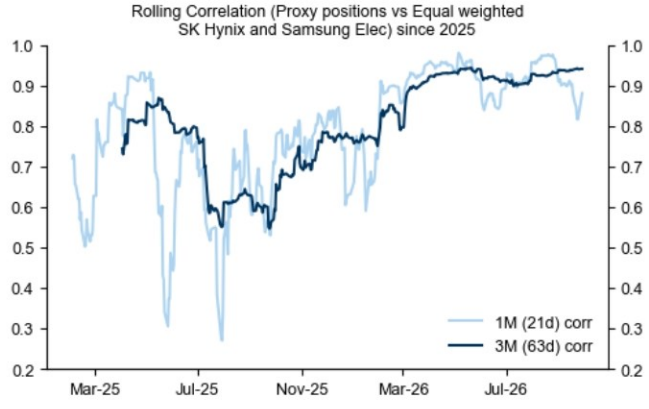
certain thresholds, and have become structurally underweight mega-cap tech stocks, which in turn has led to higher tracking errors this year (as can be seen in the case of EEM and EWY ETFs on MSCI EM and Korea). In some cases, funds have tried to raise exposure to related-companies or 'proxy' stocks that have shareholdings in SK Hynix and Samsung Electronics, as a way to indirectly raise their exposure to these two memory mega-caps. While these holdings stocks partly address single-stock constraints and reduce underweights, they have been equally volatile during the summer tech unwind and have offered similar Sharpe ratios and thus limited diversification.

Exhibit 30: Sector and stock concentration constraints have led to higher tracking errors vs. benchmarks for country-focused and regional funds and ETFs



Source: FactSet, Goldman Sachs Global Investment Research

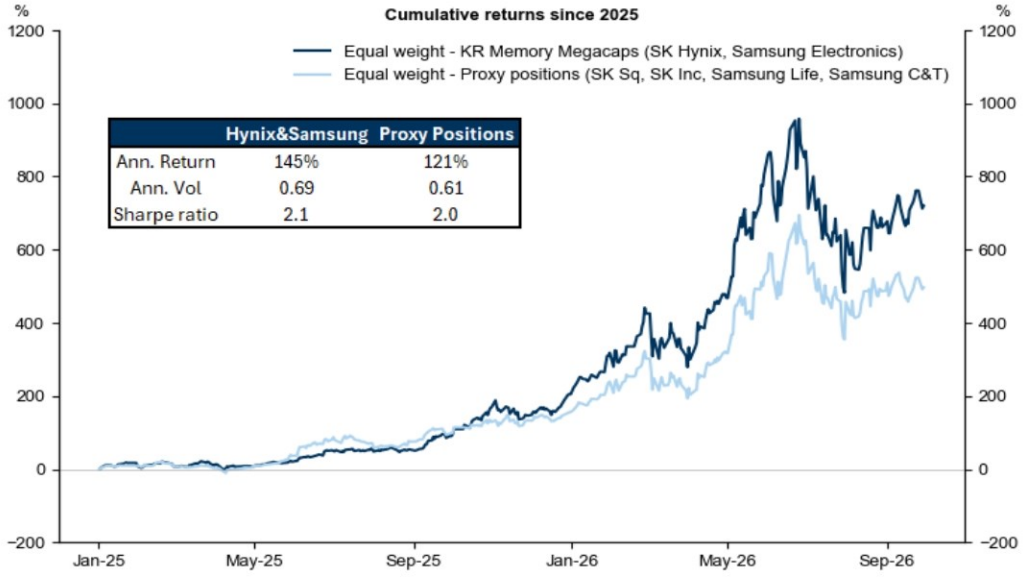
Exhibit 31: 'Proxy' positions that have holdings in Samsung Electronics & SK Hynix have been highly correlated with these two mega-cap tech/memory stocks...



Proxy positions include SK Square, SK Inc, Samsung Life Insurance, Samsung C&T that have stakes in SK Hynix and Samsung Electronics

Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 32: ...and have offered limited diversification during the recent tech unwind



Proxy positions include SK Square, SK Inc, Samsung Life Insurance, Samsung C&T that have stakes in Hynix and Samsung Electronics

Source: FactSet, Goldman Sachs Global Investment Research

On the other hand, transitioning the benchmarks to MSCI equal weighted or other capped variants like the MSCI EM 10/40 Index or MSCI 25/50 indices could reduce benchmark-driven concentration in a single stock or a single sector. These capped indices have a transparent methodology and try to minimize tracking error vs. parent benchmark and index turnover as per MSCI guidelines. These indices are also more suitable benchmarks for regulatory compliance – MSCI 10/40 indices are designed to comply with European UCITS III directives, while 25/50 indices comply with US diversification rules for Regulated Investment Companies (RICs). The below table compares the various features of MSCI capped indices like MSCI EM 10/40 index, with equal weighted and the standard float-cap weighted MSCI EM (MXEF) benchmark.

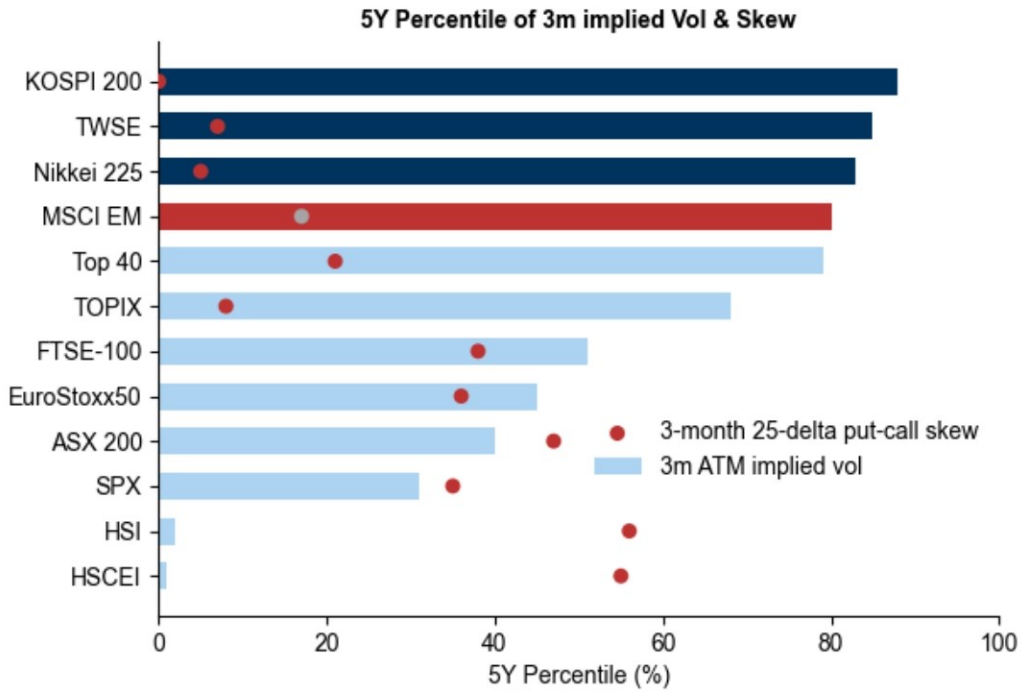
Exhibit 33: Capped benchmarks like EM 10/40 or 25/50 indices have lower stock and sector concentration risks
as of Sep 30, 2026

	MSCI EM Index	MSCI EM 10/40 Index	MSCI EM Equal Weighted Index
Weighting Methodology	Free-float-adjusted **market-capitalization** weighting	Same constituents as MSCI EM, but **capped** so no single issuer exceeds 10% weight, and the sum of all issuers individually weighted above 5% cannot exceed 40%	Same constituents as MSCI EM Index, but each stock is assigned an **equal weight**; rebalanced quarterly back to equal weights
Purpose / Regulatory Driver	Broad, cap-weighted EM benchmark — the "parent" index	Designed for **UCITS diversification compliance** (EU fund rules limiting issuer concentration)	Designed to remove market-cap concentration bias and give more balanced exposure across constituents; used as a "smart beta"/factor benchmark
Rebalancing of Caps/Weights	Standard quarterly index reviews (Feb, May, Aug, Nov) plus semi-annual (May/Nov) larger reviews	Capping applied when limits breached and reset **quarterly**	Equal weights reset **quarterly**
Sector Composition (Top 3 Sectors)	Top 3 Sectors ~70% Weight: IT (44%), Financials (19%), Cons Disc (7.4%)	-	Top 3 Sectors ~52% Weight: Financials (21%), Cons Disc (17%), Staples (14%)
Top Stock Weight (approx.)	Largest stock: MSCI EM 15.7%; MXAPJ: 15.5%	Largest stock: MXAPJ 10/40: 9.4%	Each Stock ~0.09%

Source: FactSet, Goldman Sachs Global Investment Research

4. Use derivative overlays to hedge, while staying invested. We stay constructive on the broad emerging markets and expect further upside ahead, led by strong underlying earnings, but near-term markets remain vulnerable to correction amid elevated macro risks (from ongoing energy/rate shocks) and AI news flow, especially given strong gains and concentration in the AI complex over the past two years. We suggest investors use option overlays to mitigate downside risks, while retaining upside market exposure. Elevated implied vol and low put-call skew on MSCI EM and tech-heavy North Asian markets make put-spread collars (sells calls to fund put-spreads) attractive at zero or very low cost without giving up too much upside. On the other hand, investors looking to hedge macro cyclical risks efficiently while retaining AI upside exposure can consider outright puts or put-spreads on custom indices excluding the mega-cap AI/tech stocks (e.g. MSCI EM ex-Top 3 stocks or KOSPI 198 which excludes SK Hynix and Samsung Electronics from KOSPI 200 index).

Exhibit 34: Elevated implied vol and low put-call skew on MSCI EM and tech-heavy North Asian markets make put-spread collars attractive



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

We, Sunil Koul, Timothy Moe, CFA, Kamakshya Trivedi, Tarun Lalwani, CFA, Mambuna Njie and Shuyi Fang, 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.

Contributing Authors: Sunil Koul Goldman Sachs International, Timothy Moe, CFA Goldman Sachs (Singapore) Pte, Kamakshya Trivedi Goldman Sachs International, Tarun Lalwani, CFA Goldman Sachs India SPL, Mambuna Njie Goldman Sachs International, Shuyi Fang Goldman Sachs International.

Unless otherwise stated, the individuals listed in the Contributing Authors disclosure 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 redisseminated 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.

Option Specific Disclosures

Price Target Methodology: Please refer to the analyst's previously published research for methodology and risks associated with equity price targets.

Pricing Disclosure: Option prices and volatility levels in this note are indicative only, and are based on our estimates of recent mid-market levels(unless otherwise noted). All prices and levels exclude transaction costs unless otherwise stated.

General Options Risks: The risks below and any other options risks mentioned in this research report pertain both to specific derivative trade recommendations mentioned and to discussion of general opportunities and advantages of derivative strategies. Unless otherwise noted, options strategies mentioned in this report may be a combination of the strategies below and therefore carry with them the risks of those strategies.

Buying Options: Investors who buy call (put) options risk loss of the entire premium paid if the underlying security finishes below (above) the strike price at expiration. Investors who buy call or put spreads also risk a maximum loss of the premium paid. The maximum gain on a long call or put spread is the difference between the strike prices, less the premium paid.

Selling Options: Investors who sell calls on securities they do not own risk unlimited loss of the security price less the strike price. Investors who sell covered calls (sell calls while owning the underlying security) risk having to deliver the underlying security or pay the difference between the security price and the strike price, depending on whether the option is settled by physical delivery or cash-settled. Investors who sell puts risk loss of the strike price less the premium received for selling the put. Investors who sell put or call spreads risk a maximum loss of the difference between the strikes less the premium received, while their maximum gain is the premium received.

For options settled by physical delivery, the above risks assume the options buyer or seller, buys or sells the resulting securities at the settlement price on expiry.

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.

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.

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 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.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. 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.