White Paper July 2025

Optimizing your emerging markets equity portfolio

Kamal Gupta, CFA, FRM Investment Strategist Altaf Kassam, CFA
Europe Head of
Investment Strategy &
Research

Alejandro E Gaba Head of Quantitative Research



Contents

3	Executive	summary

- 4 The changing face of EM equity investing
- 6 EM indexing: A foundation, not a finish line
- 8 Seeking opportunity along the activeness spectrum
- 14 'Optimal' EM portfolio allocations
- The impact of portfolio design choices on ex-ante efficiency
- 23 The bottom line



Executive summary

Emerging market (EM) equity portfolios have traditionally relied on broad market indexing and fundamental active strategies — both regional and country-specific exposures. In recent years, interest in the range of available portfolio building blocks has meaningfully expanded to include quantitatively driven active approaches, multifactor and enhanced strategies, and small-cap segments. This broader and nuanced toolkit allows for more intentional portfolio design across market segments and return drivers.

In this paper, we offer a practical, two-dimensional framework for EM portfolio construction, anchored in an allocator's openness to different strategy types ("conceptual activeness") and their tolerance for benchmark-relative risk ("active risk budget"). It is designed to help allocators evaluate trade-offs across strategy segments and align portfolio design with their specific beliefs, constraints, and objectives.

Key takeaways:

- 1 Broader openness to active approaches can improve portfolio efficiency.
- 2 Enhanced strategies can play a pivotal role in boosting portfolio efficiency, offering a compelling balance of alpha potential, scalability, and costeffectiveness.
- 3 Small-cap active exposures deserve a strategic role — even in conservative risk budgets and under cautious beta assumptions — thanks to their diversification and robust alpha potential.
- 4 Focusing on net alpha maximization even within strict fee regimes can enhance outcomes more effectively than mechanically adjusting unconstrained portfolios by eliminative higher-fee segments.

This is a framework for allocators seeking a structured, evidence-led approach to evaluate design trade-offs and make more informed EM portfolio decisions.



The changing face of EM equity investing

The opportunity set for EM equities has changed dramatically over the past three and a half decades. When the MSCI EM Index was first introduced in 1988, it represented ten economies. Each of these could be roughly characterized as "underdeveloped, but growing rapidly." By the end of Q1 2025, there were twenty-four economies reflected in the Index, and there is a healthy debate over whether some of its constituent economies, capital markets, and infrastructures are too mature to even qualify for the "emerging" label.

The current EM Index is quite different from its initial incarnation, as economic growth has translated into increased breadth, depth, and maturity in the EM capital markets.

- In geographic terms, Asian firms made up nearly 46% of the EM Index at inception. As of end-Q1 2025, this number has jumped to over three-quarters of the Index, with China accounting for more than 30% and India inching close to the 20% mark.
- At a sector level, the EM Index's tilt has shifted from production to consumption, with the financial, technology, consumer discretionary, and communications sectors displacing, to some extent, materials, staples, and industrials.

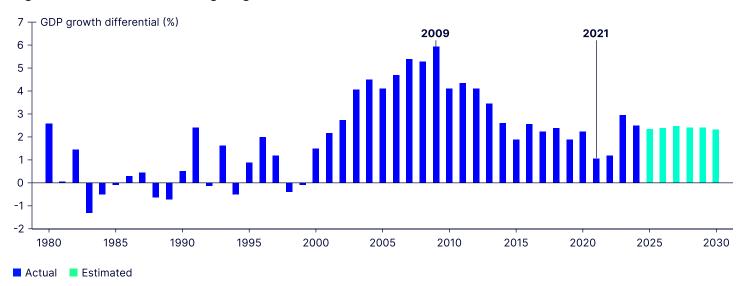
• Finally, in terms of **market cap**, mega- and large-cap stocks¹ make up over 60% of the EM Index as of end-Q1 2025. Twenty years ago, these two capitalization categories together made up less than 20% of the total Index weight. While the nominal market capitalization of listed equities has increased over this period, the proportionate increase in mega- and large-cap companies in the EM Index has been much higher than in the Developed Market (DM) Index.

Even as the composition and characteristics of EM change, EM equities continue to offer investors access to faster-growing economies — a dynamic that has held true especially since the early 2000s. The GDP growth differential between emerging and developed markets is expected to return to its pre-COVID baseline, as shown in Figure 1.

As of end-Q1 2025, EM represents a little over 10% of the MSCI All Country World Index (ACWI), a widely followed benchmark for global equity exposure. This is notably disproportionate to EM's role in the global economy, where it accounts for 41% of global nominal GDP² and contributes the majority of global GDP growth. As EMs continue to develop and become more integrated into global markets, their influence is likely to grow. That said, given the non-trivial transfer of EM economic strength into equity market outperformance, we believe a more nuanced approach is needed one that looks beyond index-based investing. In the following sections, we examine key considerations for building effective EM equity exposure, including the role of indexing, the relevance of core factors, the case for active management, and opportunity in EM small caps. Within this, we explore the role of various portfolio building blocks. Finally, we will conclude by presenting a set of optimal EM equity portfolio allocations to serve as a foundation for further thinking.



Figure 1: EM offers access to higher growth



Source: IMF World Economic Outlook, State Street Investment Management calculations, as of April 2025. Gross domestic product growth shown in constant prices.



EM indexing: A foundation, not a finish line

- Best-in-class EM index managers can mitigate many of the higher trading costs prevalent in EM through smart portfolio construction and efficient trading.
- While indexing remains a valuable component of EM portfolios, the uneven transmission of economic growth into indexed equities' performance, as well as their higheralpha opportunities, highlights the need to look beyond indexing to fully capture the EM opportunity set.

Indexed investments in EMs have been gaining popularity in recent years, offering low-cost, scalable exposure and serving as a valuable source of liquidity — especially for large investors. Market-cap weighted index strategies provide a simple and efficient way to access broad EM exposure, and they continue to play a significant role in investor portfolios. That said, implementing index exposures in EM can be more complex than in developed markets, given local execution dynamics.

Historically, higher trading costs, liquidity constraints, and market frictions often resulted in non-trivial performance drag and wider tracking error — especially when compared to developed market index funds. Emerging markets have come a long way with improving liquidity and market structures, though some of these challenges such as capital controls and settlement delays persist. Best-in-class EM index managers can mitigate many of these challenges through smart

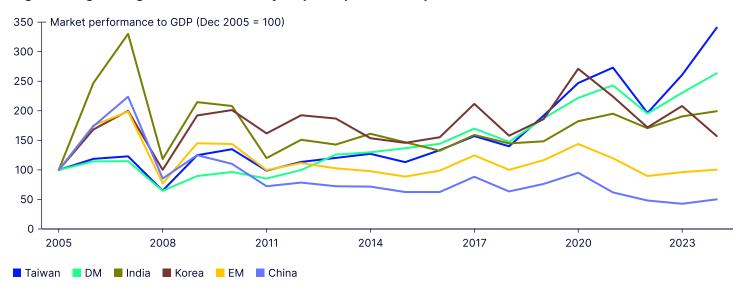
portfolio construction and efficient trading, especially around index rebalance periods — narrowing the gap between fund and benchmark returns.

These issues are not exclusive to index strategies, but they tend to be more binding in passive portfolios due to their rigid structures. Beyond these implementation challenges, there is a deeper issue: The weak and uneven transmission of EM economic strength into equity market returns, as we show in the below figure. While markets like Taiwan and India — and to some extent Korea — have effectively turned their economic growth advantage into equity performance, others such as China have significantly lagged the major developed and emerging equity markets despite strong economic growth. This uneven transmission between economic fundamentals and equity outcomes means that passive benchmarks may not fully capture the breadth of EM opportunity set.

Given both the structural inefficiencies of index implementation and the highly heterogeneous nature of growth-to-performance transmission, we advocate a more nuanced approach for accessing the EM equity opportunity set. In the next section, we move up the activeness spectrum to explore the role of active approaches.



Figure 2: High GDP growth does not always equal superior Index performance in EMs



Source: FactSet, IMF, State Street Investment Management calculations as of Dec 31, 2024. Equity performance is measured using total returns in USD for the respective MSCI country/region standard indices. GDP is measured in current dollar terms. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income as applicable.



Seeking opportunity along the activeness spectrum

- Core factor strategies can provide a transparent, low-cost foundation for capturing risk premia in EM. They serve as a scalable midpoint between indexing and active management, and a natural entry point for investors progressing along the active spectrum.
- Enhanced strategies can deliver riskadjusted returns at scale, with fee efficiency, making them especially attractive for institutions seeking consistent outcomes.
- Active strategies can capture the full EM opportunity set by exploiting macro shifts, cross-sectional dispersion, and under-researched segments like small caps.

As discussed in <u>Casting a Wide Net: Why True Passive Strategies Are Rare Catches</u>, activeness is not a binary choice between passive and active — it is a spectrum that spans from systematic beta strategies to enhanced and fully active approaches. Each strategy type offers a different balance of simplicity, transparency, and acceptance, and thus appeals to different investor preferences, risk budgets, and implementation constraints.

Systematic factor solutions in EM: Low-fee access to the EM active opportunity set

Systematic factor solutions sit closer to the index end of the spectrum. They are typically high in simplicity and transparency, and are widely adopted by market participants. These strategies offer low-cost, rules-based exposure to academically validated factors like Value, Quality, Small Size, Low Volatility, and Momentum.

Their appeal is reinforced by the empirical evidence from EMs. Our analysis of factor spreads over the past two decades, based on our proprietary factor definitions, reveals that EM present a particularly fertile ground for factor-based strategies. As illustrated in the chart below, factor return spreads in EM are robust across most factors.

Given single-factor strategies are susceptible to cyclical performance, many investors are increasingly adopting core factor strategies. These multi-factor approaches combine complementary factors to mitigate cyclicality and improve return consistency³. Our core factor approach embodies this philosophy by combining Quality, Value, and Momentum, three factors that have shown particularly strong spreads, while carefully managing factor interactions to ensure robust diversification and more reliable outcomes.

Core factor strategies offer a compelling middle ground between index and active approaches. Like capweighted indexing approaches, they provide liquidity, scalability, and cost-efficiency, making them suitable for large institutional portfolios. At the same time, by systematically tilting toward premium factors, they have the potential to deliver excess returns over the

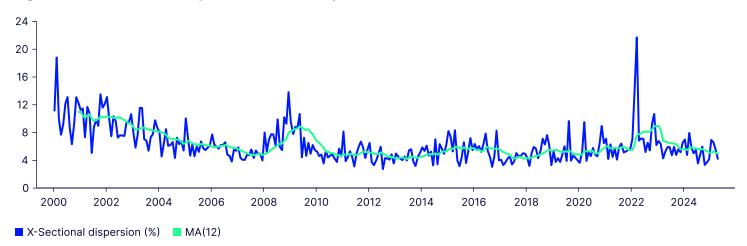


Figure 3: Factors can exploit inefficiency in EMs

Large + Mid Cap (Jan 2003-May 2025)	Low volatility (%)	Value (%)	Quality (%)	Momentum (%)	Small size (%)
Q1	1.8	7.0	4.6	10.1	0.0
Q2	1.7	3.2	3.3	3.9	1.0
Q3	1.7	1.2	0.6	-0.2	0.7
Q4	1.9	-0.5	-0.7	-4.3	1.8
Q5	-2.5	-6.2	-3.1	-4.8	1.1
EM spread (Q1-Q5)	4.3	13.2	7.7	14.9	-1.1
DM spread (Q1-Q5)	3.7	7.3	6.5	8.3	-1.8

Source: FactSet, State Street Investment Management. Time period from Jan 2003 to May 2025. Study period utilizes the longest possible common data for emerging markets and developed markets, including their small cap counterparts to facilitate an easy comparison. Quintile Returns to Smart Beta Factors for MSCI EM Index are shown along with quintile spread comparison against the Developed Market Index. Factor returns represent the equal-weighted returns of components of the EM equity universe which have been grouped methodically based on their factor exposure. Proprietary factor definitions were used. The performance assumes no transaction and re-balancing costs, so actual results will differ. Past performance is not a reliable indicator of future performance. Index returns reflect all items of income, gain and loss and the reinvestment of dividends. Performance of an index is not indicative of the performance of any product managed by State Street Investment Management.

Figure 4: Cross-sectional dispersion of EM country returns



Source: MSCI EM index country data, January 2000–April 2025 (Monthly), Gross Return in U.S. Dollars. Cross-sectional dispersion for a month calculated as the standard deviation across all MSCI EM country monthly returns for that month. Past performance is not a reliable indicator of future performance.

benchmark in the long term. For fee-sensitive investors, core factor strategies represent a pragmatic choice — offering low-cost, diversified access to factor premia while maintaining transparency and discipline.

Importantly, these strategies can also serve as a stepping stone along the active spectrum: Investors seeking to further enhance returns or express more nuanced views can build upon this foundation by moving toward more active, high-conviction approaches.

Active management in EM

Core factor strategies offer a simpler, scalable, and transparent way to capture long-term factor premia in EM. However, their simpler, static, and less adaptive nature limits responsiveness to changing market conditions and makes them vulnerable to factor crowding and mean-reverting environments. This can lead to extended periods of underperformance, especially when dominant factors fall out of favor.



This is particularly relevant in EMs — a heterogeneous group of economies, each shaped by distinct policy, political, and structural dynamics. As shown in Figure 4, episodic spikes in return dispersion across EM countries create significant opportunities for active managers. Given the concentrated nature of the EM index — with only 7 of 24 countries carrying weights above 2% as of this writing — bottom-up stock selection can provide a truly broader opportunity set than an approach that solely relies on country selection.

By design, core factor strategies usually overlook sophisticated modeling features that active approaches use to capture alpha opportunities. More active strategies can exploit complex orthogonal alpha sources, capitalize on segment-specific value drivers and mispricing opportunities (including around intangible assets), and adapt dynamically to evolving macroeconomic environments, including regime shifts, sentiment changes, and structural market developments. These dynamics can recommend a move further up the activeness spectrum.

Systemic active strategies offer scale and repeatability in a cost-effective manner

Systematic active strategies are well-positioned to bridge the gap between core factor and traditional active investing. Through openness to more complexity relative to core factor solutions, best-ideas combination of a higher number of segment-specific proprietary signals, and targeted complementary dynamic factor tilts, they can capture short-term mispricing while accounting for how factors interact with broader economic conditions. Their high breadth and rules-based adaptability make them especially effective in EM, where information asymmetries are more pronounced, and analyst coverage is thinner.

Operating across a spectrum of tracking error budgets, these strategies can be tailored to different investor needs. Those with tighter risk constraints — often referred to as Enhanced — apply the same sophisticated signals and systematic processes, but with a focus on delivering alpha efficiently. Their lower active risk profile often results in higher information ratios⁴ and more consistent outcomes, making them

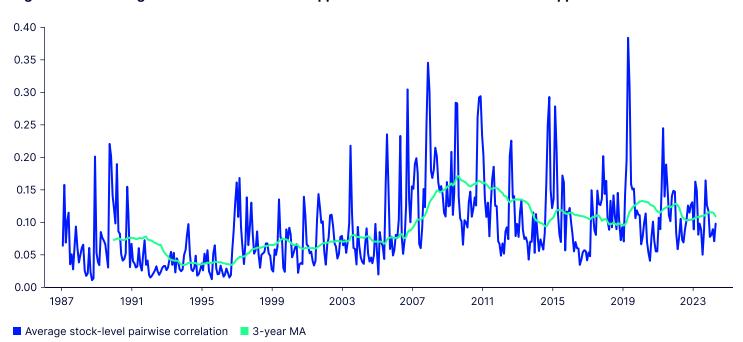


Figure 5: Low average stock-level correlation supports fundamental stock-selection approach

Source: FactSet, State Street Investment Management calculations, as of March 31, 2025.



particularly attractive for institutional portfolios seeking scalable and repeatable sources of excess return in a fee-efficient manner.

Traditional fundamental active strategies remain essential

While systematic approaches offer a scalable and repeatable path to alpha, traditional active strategies remain essential. With the highest level of conceptual activeness, they are rooted in qualitative insights and discretionary judgement — although the gap between the two is narrowing. These strategies can be especially adept at navigating market frictions, avoiding value traps, and identifying early-stage growth stories.

While average stock-level correlations have increased since the 1990s — driven by globalization and rising capital flows — they remain relatively low, reinforcing the relevance of bottom-up selection and local context to uncover deep, idiosyncratic alpha that systematic models may miss. A low correlation environment can enable fundamental active managers to translate company-specific insights into factor-independent alpha.

Systematic and Fundamental strategies together can form a powerful and complementary toolkit. The former

can bring consistency, breadth, and cost efficiency, while the latter can offer depth, intuition, and flexibility. The historically low correlation of excess returns between the two can allow investors to diversify alpha drivers and potentially achieve more stable alpha generation with improved risk-adjusted outcomes over time.

EM small cap (EMSC): Adding value for active managers with less concentration risk

We can see that factor return spreads, based on our proprietary factor definitions, are already pronounced in EMs and even wider among EM small-cap firms, as shown in Figure 6. In fact, EMSCs present a particularly ripe opportunity for active management to drive outperformance, with the caveat that as we move down the capitalization spectrum, these theoretical factor returns can be harder to capture in practice.

This opportunity is bolstered by the growing accessibility of EMSC markets. Over the past 20 years, mid- and small-cap EM stocks have increasingly become a viable universe for investors. The creation in 2007 of the MSCI EM IMI Index, which includes large-, mid- and small-cap stocks, has helped to foster the inclusion of small-cap names in EM portfolios.

Figure 6: Quintile Returns to Smart Beta Factors Across EM and DM Standard and SC Universes

Large + Mid Cap (Jan 2003-May 2025)	Low volatility (%)	Value (%)	Quality (%)	Momentum (%)
Q1	2.2	7.4	5.4	10.3
Q2	1.2	2.8	3.9	4.3
Q3	3.0	1.8	0.1	0.2
Q4	1.7	-1.1	-0.8	-4.9
Q5	-4.1	-6.9	-4.6	-6.1
EM SC spread (Q1-Q5)	6.3	14.3	10.0	16.4
DM SC spread (Q1-Q5)	5.1	8.5	7.9	9.3
EM spread (Q1-Q5)	4.3	13.2	7.7	14.9
DM spread (Q1-Q5)	3.7	7.3	6.5	8.3

Source: FactSet, State Street Investment Management. Time period from Jan 2003 to May 2025. Study period utilizes the longest possible common data for emerging markets and developed markets, including their small cap counterparts to facilitate an easy comparison. Quintile Returns to Smart Beta Factors for MSCI EM Index are shown along with quintile spread comparison against the Developed Market Index. Factor returns represent the equal-weighted returns of components of the EM equity universe which have been grouped methodically based on their factor exposure. Proprietary factor definitions were used. The performance assumes no transaction and re-balancing costs, so actual results will differ. Past performance is not a reliable indicator of future performance. Index returns reflect all items of income, gain and loss and the reinvestment of dividends. Performance of an index is not indicative of the performance of any product managed by State Street.



Figure 7 shows the evolution of the market cap and name distribution of the EM IMI Index since inception in 2007. The rise of the mega- and large-caps as a proportion of market capitalization is clear, squeezing the mid- and small caps, but crucially the number of names has increased broadly in line with the Index's growth, so the breadth remains.

So, despite the startling rise in index concentration across DMs and EMs, EM small-cap concentration continues to offer great breadth. This is reiterated in Figure 8, where we see that the top 20% of names cover more than 70% of the Index by weight in the EM as well as DM indices, but comprise less than 50% of the EM Small-Cap Index. In contrast, the top 20% of names cover nearly 85% of the weight of the China Index.

100 - Weight (%) Stock count - 3,000 40 40 13 2,500 80 2,000 60 **37** 34 1,500 30 40 1,000 20 25 24 500 18 0 June 2007 December 2014 December 2024 Small Cap weight Mid Cap weight Large Cap weight Mega Cap weight Small Cap stocks - Mid Cap stocks — Large Cap stocks — Mega Cap stocks

Figure 7: Market cap and name distribution of the MSCI EM IMI Index

Source: FactSet, State Street Investment Management calculations as of December 31, 2024. MSCI EM IMI was launched in June 2007.

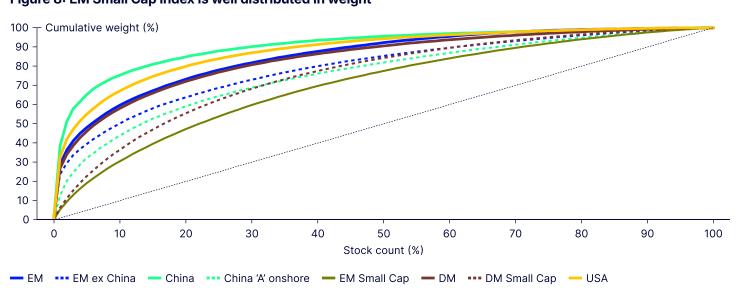


Figure 8: EM Small Cap Index is well distributed in weight

Source: FactSet, State Street Investment Management, as of May 30, 2025.



As discussed above, the EM equity opportunity set is growing more top-heavy. This means that the size and variability of the EM small-cap universe yields fertile ground for a range of approaches to active stock selection. With more than 1,900 securities, the level of information flow and analyst coverage among EM small caps varies from virtually non-existent — 15% by name of the MSCI EM small-cap universe has no analyst coverage — to a level of coverage most often associated with large-cap DM stocks. The median MSCI EM small-cap stock is followed by only six analysts.⁵ In this environment, investors may derive value from active quantitative approaches⁶ that are able to exploit the full breadth of the small-cap universe to construct their portfolios.

In Figure 9, we enumerate the full spectrum of EM strategies — from index and core factor to enhanced, active approaches, including small caps — showing how each one plays a distinct role in investor portfolios.

Next, we turn to the question of how investors might position these building blocks within a portfolio.

Figure 9: Each segment plays a distinct role in investor portfolios

	Index	Core Factor	Enhanced	Systematic Active	Small Cap Systematic Active	Fundamental Active
Alpha potential	_	Low	Medium	High	Very high	High
Tracking error	_	Low	Low	High	Very high*	High
Information ratio	_	Low	High	Medium	Medium	Medium
Fee	Low	Low	Medium	High	Very high	High
Country/sector nuance	_	Low	Low	Medium	Low	High
Execution	Passive	Rules-based passive	Rules-based active	Rules-based active	Rules-based active	Discretionary active
Capacity	High	High	High	High	Low	Medium

Source: State Street Investment Management. *Relative to EM Standard index.



'Optimal' EM portfolio allocations

Our analysis highlights a fundamental truth: there is no one-size-fits all *optimal* portfolio. The breadth of available tools allows a wide range of configurations, each shaped by investor-specific considerations. What works for one asset owner may not suit another. As such, EM equity allocators must tailor their portfolios to reflect their unique preferences, constraints, and beliefs.

One of the first considerations is an allocator's openness to different strategy segments. This is shaped by their investment philosophy and regulatory environment. For instance:

- · Do they believe in factor-based investing?
- Are they permitted to allocate to concentrated active strategies?
- · Can they access small-cap exposures?
- Are they comfortable with less transparent, more complex, and less accepted (by the market) strategies?

To capture the spectrum of allocator's preferences, we use the Conceptual Activeness (CA) Level,⁷ classifying investor openness into four levels:

Figure 10: Conceptual Activeness Levels

Level	Segments included
0	Index No openness to active strategies, limited to index investing.
1	Index, Core Factor Allows core factor - based approaches — valued for their simplicity, transparency, and broad acceptance.
2	Index, Core Factor, Enhanced, Systematic Active, Small Cap Active Permits dynamic systematic strategies, including enhanced, active quant, and small-cap active strategies.
3	Index, Core Factor, Enhanced, Systematic Active, Small Cap Active, Fundamental Active Embraces fundamental active strategies, enabling high- conviction, discretionary investing.

Source: State Street Investment Management.

The CA dimension governs what strategies we allow in the portfolio based on asset allocator tolerance — but not how much each should be allocated. To address the latter, we utilize a second axis: the Active Risk Budget. While it might sound like CA, this dimension specifically refers to the level of benchmark-relative risk, typically measured by tracking error, that an allocator is willing to tolerate. It directly influences how much allocation each segment can take. We consider three tiers: Low (25bps), Medium (150bps), and High (300bps) tracking error budgets to cover a wide range of investor appetite.

With this two-dimensional framework in place, we explore a series of pre-constructed, optimized portfolio mixes. These serve as illustrative templates, helping investors visualize what an "optimal" design might look like under different combinations of activeness and risk appetite. Allocators can fine-tune these mixes to reflect their specific constraints and objectives.



Setup and methodology

We begin by tabulating our assumptions and defining the opportunity set in terms of expected return and tracking error in the below figure. These estimates are based on a combination of our own investment offerings and certain assumptions, including use of stated strategy objectives instead of live performance.

Notably, our estimates for the EM small cap active segment are expressed relative to the broader MSCI EM standard index, which does not include small caps, and represents the most accepted proxy for passive EM exposure. Higher expected alpha reflects the high active opportunity in the small cap universe, driven by its inefficiency and breadth on offer. No size premia assumptions are implied, and we deliberately leave it to the investor as to how to consider EMSC, bearing in

mind that tracking error for our EM SC active strategies, when measured against the MSCI EM SC Index, typically falls in the 4–6% range.

Figure 12 shows the excess-return (relative to EM standard index) correlations between the different segments. Notably, we have sought to be "conservative" to the EM Index assumptions, including assuming a zero before-management fees expected drag, 5bps annualized active risk, and zero pair-wise correlations for the index segment, in-line with its theoretical estimates. Other correlations were based on our own experiences and simulations. Low pair-wise correlations between fundamental and systematic active segments reflect the differing nature of alpha sources of these segments. These correlations will vary, given the exact choice of segments and study period, a topic we hope to explore in further analysis.

Figure 11. Risk and return assumptions

Segment	Conceptual activeness	Gross expected (%)	Expected tracking error (%)	Information ratio (IR)	Fee assumptions (bps)
EM Index	0	0.00	0.05	0.00	5
EM Core Factor*	1	0.59	1.25	0.47	15
EM Enhanced	2	0.88	1.25	0.70	30
EM Systematic Active	2	2.00	3.50	0.57	45
EM Small Cap Active	2	4.00	7.00	0.57	90
EM Fundamental Active	3	3.00	5.50	0.55	60

Source: State Street Investment Management, as of March 31, 2025. Gross-of-fee estimates of alpha values are shown. Above risk and returns are for illustration purposes only and there is no guarantee that they will be realized. "We do not currently offer an EM core factor strategy. The estimates above are hypothetical and for illustrative purpose only.

Figure 12. Excess return correlations assumptions

	EM Index	EM Core Factor	EM Enhanced	EM Systematic Active	EM Small Cap Active	EM Fundamental Active
EM Index	1.00					
EM Core Factor	0.00	1.00				
EM Enhanced	0.00	0.46	1.00			
EM Systematic Active	0.00	0.59	0.76	1.00		
EM Small Cap Active	0.00	0.43	0.40	0.49	1.00	
EM Fundamental Active	0.00	-0.15	-0.07	-0.09	-0.08	1.00

Source: State Street Investment Management, as of March 31, 2025. Gross-of-fee estimates of alpha values are shown. Above risk and returns are for illustration purposes only and there is no guarantee that they will be realized. "We do not currently offer an EM core factor strategy. The estimates above are hypothetical and for illustrative purpose only.



Our optimization process seeks to maximize expected alpha for a given level of active risk using the abovementioned capital market assumptions. This approach allows us to identify portfolio allocations that deliver the highest expected outperformance for each level of CA and active risk the investor is willing to accept.

We evaluated two distinct optimization approaches to determine the most practical method for generating netof-fee outcomes:

- net-of-fee inputs, which provide better specification but involve complex fee estimation, and
- gross-of-fee inputs with subsequent net-of-fee calculations, which introduces misspecification but enables simpler estimation.

While these approaches yielded different segment allocations, final net-of-fee outcomes did not materially differ. We therefore adopted the simpler and more robust gross-of-fee optimization approach.

Conceptual Activeness Level 0 (CA0): Index-only case

This tier represents investors who maintain pure index exposure to EM, typically due to regulatory constraints, explicit risk management policies, fee controls that preclude active strategies, or a fundamental belief that active management cannot add value. While this

approach provides broad EM exposure, investors operating under these constraints should recognize that relaxing such constraints, where feasible, could unlock alpha opportunities by moving up the activeness spectrum. As this tier involves no portfolio optimization beyond index replication, we do not present a portfolio mix here but proceed to examine the next tier where systematic factor solutions become accessible.

Conceptual Activeness Level 1 (CA1): Optimized mixes

Figure 13 presents the information ratio (IR) frontier and optimal portfolio combinations for investors with level 1 conceptual activeness. In this tier, indexing is preferred at lower active risk budgets, with increasing allocation to the core factor segment as risk tolerance expands.

Investors focusing solely on the index can be expected to lag the benchmark on a net-of-fee basis, sometimes materially. Investors seeking to offset index performance drag can consider modest allocations to core factor approaches, as the combination with index exposure has demonstrated net-of-fee positive alpha expectation without significant increases in active risk budgets or investment complexity. Figure 14 shows optimized mixes for pre-set active risk tolerances. Notably, medium and high risk levels cannot be reached within this tier, but would be achievable with higher active risk core factor solutions.

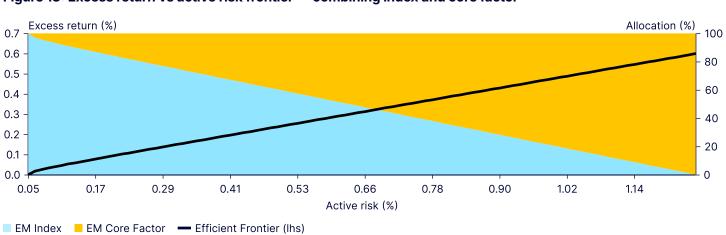


Figure 13: Excess return vs active risk frontier — combining index and core factor

Source: FactSet, State Street Investment Management calculations as of December 31, 2024. MSCI EM IMI was launched in June 2007.

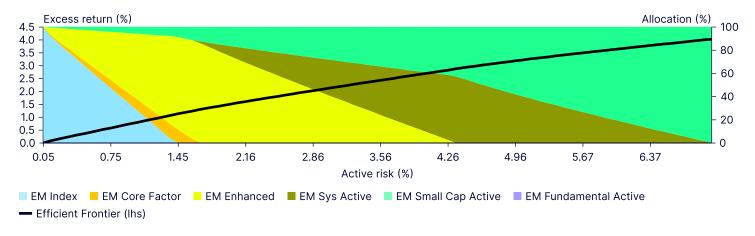


Figure 14: Excess return correlations assumptions

Risk level	EM composition (%)							Characteristics		
	Index	Core Factor	Enhanced	Sys Active	SC Active	Fundamental Active	Net expected alpha (bps)	Expected active risk (bps)	Net IR	
Low	80	20	0	0	0	0	5	25	0.18	
Medium	_	_	_	_	_	_	_	_	_	
High	_	_	_	_	_	_	_	_	_	

Source: State Street Investment Management, as of March 31, 2025. Composition weights are rounded and may not add to 100. Above results are based on estimates and reflect subjective judgments and assumptions. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Net of fee excess returns are shown. Low, medium, and high corresponds to 25bps, 150bps, and 300bps active risk, respectively.

Figure 15: Excess return vs active risk frontier — higher Conceptual Activeness improved portfolio outcomes



Source: State Street Investment Management, as of March 31, 2025. Above results are based upon estimates and reflect subjective judgments and assumptions. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Gross of fee excess returns are shown.

Moving up the activeness spectrum to Conceptual Activeness Level 2 (CA2): Optimized mixes

For investors seeking to capitalize on EM opportunities, we recommend advancing up the activeness spectrum. In this higher CA tier, the enhanced segment plays a more prominent role in portfolio construction due to superior risk-adjusted returns, while the active segment gains allocations at higher risk budgets. Notably, the EMSC active segment enters portfolios at surprisingly low risk budgets, challenging conventional wisdom that typically reserves small cap strategies for higher risk allocations. This early inclusion demonstrates that small cap active strategies can provide meaningful

diversification benefits—even within conservative portfolios and without the need of an expected EM small cap premium due to the alpha generation superiority. Interestingly, the lower Conceptual Activeness Core Factor strategy has a complementary role to the higher-IR, higher-CA Enhanced strategy, up to approximately the 150bps active risk budget level.

The addition of enhanced segment allocations at lower risk budgets delivered improved net-of-fee alpha and information ratios compared to the previous tier. For investors with higher risk budgets, meaningful excess returns can be generated by incorporating active segments, including small-cap active strategies, which unlock additional alpha opportunities within the broader EM universe.

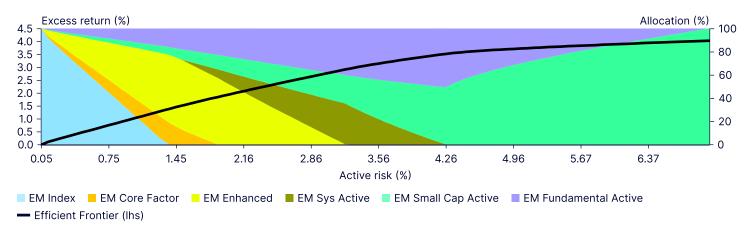


Figure 16: Optimized mixes — Higher activeness and risk budgets enabled greater EM opportunity capture

Risk level	EM composition (%)							Characteristics		
	Index	Core Factor	Enhanced	Sys Active	SC Active	Fundamental Active	Net expected alpha (bps)	Expected active risk (bps)	Net IR	
Low	83	2	14	0	1	_	10	25	0.37	
Medium	0	9	81	0	10	_	81	150	0.54	
High	0	0	41	31	28	_	158	300	0.53	

Source: State Street Investment Management, as of March 31, 2025. Composition weights are rounded and may not add to 100. Above results are based on estimates and reflect subjective judgments and assumptions. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Net of fee excess returns are shown. Low, medium, and high corresponds to 25bps, 150bps, and 300bps active risk respectively.

Figure 17: Excess return vs active risk opportunity — fundamental segment integration enhanced portfolio outcomes



Source: State Street Investment Management, as of March 31, 2025. Above results are based upon estimates and reflect subjective judgments and assumptions. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Gross of fee excess returns are shown.

Rising to the highest Conceptual Activeness Level 3 (CA3): Fundamental active integration

For investors open to all CA levels and the widest possible manager selection, we advocate advancing to the highest CA tier by integrating high-conviction fundamental active strategies. Due to their negative-to-low excess return correlations with systematic approaches, fundamental active allocations provided meaningful diversification benefits. Crucially, both systematic and fundamental active segments contributed to overall portfolio efficiency, with each approach capturing distinct alpha sources within the EM opportunity set.

The integration of fundamental active allocations delivered improved net-of-fee-alpha and information ratios to the previous tiers across all risk budgets, as demonstrated in the below optimized results. This performance enhancement reflects the complementary nature of fundamental and systematic approaches in capturing EM market inefficiencies.

In practice, this diversification across alpha sources can help smooth the excess return profile and reduce portfolio volatility. However, investors must carefully balance allocations to fundamental strategies while considering the capacity constraints inherent in these approaches and the increased manager selection and due diligence requirements they entail.



Figure 18: Optimized mixes — Fundamental segment integration enabled even greater alpha capture

Risk level	EM composition (%)							Characteristics		
	Index	Core Factor	Enhanced	Sys Active	SC Active	Fundamental Active	Net expected alpha (bps)	Expected active risk (bps)	Net IR	
Low	82	4	11	0	1	3	16	25	0.63	
Medium	0	13	60	0	9	18	121	150	0.81	
High	0	0	9	31	23	37	236	300	0.79	

Source: State Street Investment Management, as of March 31, 2025. Composition weights are rounded and may not add to 100. Above results are based on estimates and reflect subjective judgments and assumptions. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Net of fee excess returns are shown. Low, medium, and high corresponds to 25bps, 150bps, and 300bps active risk, respectively.



The impact of portfolio design choices on ex-ante efficiency

Understanding how key design decisions can affect portfolios outcomes is crucial for allocators seeking to maximizing ex-ante portfolio efficiency. We examine three critical choices that materially impact portfolio construction: Conceptual Activeness Level selection, openness to small caps, and explicit fee constraints.

Conceptual Activeness Level: Choosing the right tier

A comparison of frontiers across activeness tiers reveals that limiting Conceptual Activeness can significantly reduce portfolio efficiency, as with any material constraint. The information ratio (IR) frontier shifted downward while offering a narrower range of solutions. While this outcome is not surprising, this comparison allows allocators to quantify the potential efficiency trade-offs inherent in their Conceptual Activeness limitations.

Given these potential efficiency benefits, we advocate for allocators to operate at the maximum permissible Conceptual Activeness tier within their underpinning beliefs around value generation, as well as organizational and regulatory constraints. The incremental complexity of higher activeness tiers is justified by the expected improvement in portfolio outcomes and the expanded opportunity set for capturing EM alpha.

Should you consider small caps?

Given the lack of an explicit asset allocation view (e.g. EMSC outperforming EM large cap), higher implementation expenses, elevated volatility, and perception of higher risks for small caps on a standalone basis, most asset owners exclude EMSC from EM policy benchmarks entirely. However, our analysis demonstrates that small caps can play a crucial role in EM portfolios, with their higher alpha potential and diversification benefits more than

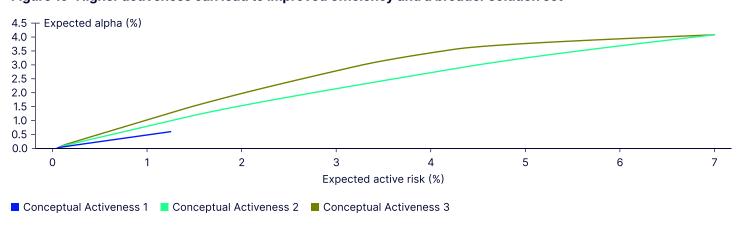


Figure 19: Higher activeness can lead to improved efficiency and a broader solution set

Source: State Street Investment Management, as of March 31, 2025. Above results are based upon estimates and reflect subjective judgments and assumptions. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Gross of fee excess returns are shown.



offsetting elevated implementations fees and increased tracking error relative to the standard benchmark. An expectation of EMSC index outperformance is not a pre-requisite to the investment case.

To evaluate the robustness of this conclusion, we tested small cap assumptions by systematically varying the performance of the EMSC relative to the EM standard index while holding all other inputs constant. Our base case assumes EMSC active managers generate alpha purely through manager skill versus the EMSC benchmark, with no assumed size premium relative to the EM standard index. We contrast this with a series of scenarios where we held alpha constant across the active strategy spectrum while varying the size premium — that is, the relative performance of the EMSC index versus the standard EM index. This approach isolates the impact of index-level underperformance, which is beyond manager control, while maintaining consistency in our assumptions about manager-driven alpha. It also reflects our highest conviction in the alpha potential of EMSC and ensures a realistic assessment of their role under varying beta conditions.

As shown in Figure 20, EMSC allocations declined but remained significant across risk budgets, reinforcing

their strategic value under the mild-to-moderate underperformance scenarios. As the size premium becomes increasingly negative, allocations further taper. However, even in the severe underperformance case, EMSC allocations retained a presence in higher active risk portfolios, highlighting their portfolio value proposition.

These results demonstrate that, while small cap allocations are sensitive to performance assumptions, they maintain meaningful roles even under moderately conservative scenarios across risk budgets, reinforcing their portfolio value proposition. This robustness suggests that the alpha generation potential and diversification benefits of small caps provide substantial value that can overcome index-level underperformance.

For asset allocators, we argue that small caps should ideally be included in policy benchmarks, as excluding them effectively ignores a significant portion of the broader EM investment universe — itself an active decision with material consequences. Notwithstanding benchmark considerations, small cap strategies deserve a strategic role in portfolios, with allocations carefully considered to balance their return enhancement potential against capacity and liquidity constraints⁸.

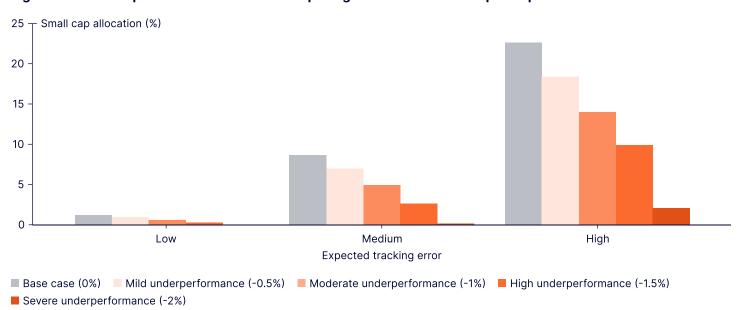


Figure 20: Small cap allocations remained compelling even with reduced alpha expectations

Source: State Street Investment Management, as of March 31, 2025. Iterations were performed in CA3 tier for varying level of EMSC index performance relative to standard index assumptions while holding other inputs constant, including the alpha generation estimate relative to EMSC benchmark. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate.



The small cap active opportunity can be potentially captured either through a dedicated EMSC active allocation or by extending EMSC access within broader EM active mandates. We favor the dedicated approach, as it allows managers to focus purely on alpha generation without the structural of managing to a broad EM benchmark, thereby maximizing the alpha potential achievable in this specialized segment.

Explicit fee constraints: Tradeoff between rigid fee targets versus expected net alpha maximization

Fee pressures facing allocators are both real and understandable. Allocators operate under fiduciary mandates, regulatory guidelines, or internal governance policies that enforce strict fee budgets or discourage performance-based fee structures. In such environments, the certainty of fee expenses — incurred regardless of performance outcomes — naturally becomes a focal point. This creates a strong and legitimate emphasis on cost control.

However, our analysis demonstrates that, while employing hard fee limits appears prudent, it can

inadvertently constrain portfolio efficiency, as illustrated by the downward shift in IR frontier under tighter fee limits in Figure 21.

For investors bound by fixed fee budgets, we advocate a more effective approach: fee-constrained optimization. Rather than mechanically adjusting an unconstrained optimal allocation to meet a pre-set fee target — which typically involves reducing or altogether dropping higher-fee active segments — this method systematically solves for the best combination of strategies within the allowable fee envelope. This ensures better alignment between fee realities and alpha opportunities, preserving efficiency without compromising governance requirements. By optimizing within constraints rather than retrofitting existing allocations, investors can maintain exposure to value-adding active management while respectful of fee limitations.

Ultimately, the goal is to strike the right balance between return enhancement and cost sensitivities. A thoughtful framework that prioritizes expected net-of-fee alpha, even within strict fee regimes, can help investors avoid overly conservative allocations and unlock higher long-term value.

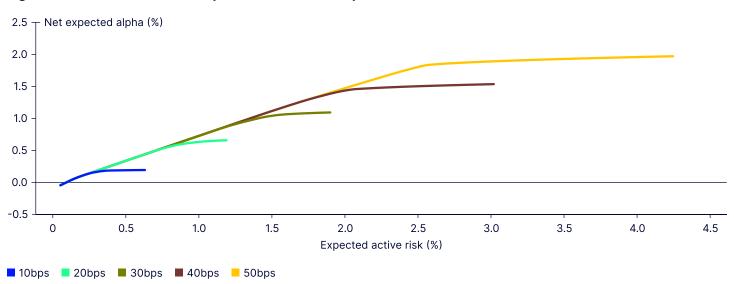


Figure 21: Focus on net-of-fee alpha rather than fee expense limits

Source: State Street Investment Management, as of March 31, 2025. IR frontiers are shown for a given fee budget. Above results are based upon estimates and reflect subjective judgments and assumptions. There can be no assurance that developments will transpire as forecasted and that the estimates are accurate. Gross of fee excess returns are shown.



The bottom line

Our analysis of EM portfolio construction demonstrates that strategic design choices drive investment outcomes. EMs are evolving — so should your equity portfolio. The traditional index-versus-active debate no longer suffices. Today's EM landscape demands a more nuanced approach that spans the full activeness spectrum.

Moving up this spectrum — from indexing through core factors, enhanced strategies, systematic active, small cap active, to fundamental active — consistently improves portfolio efficiency. Each strategy segment offers distinct advantages:

- Index approaches provide a low-cost, scalable, and transparent foundation
- The core factor segment offers a systematic way of tapping into the EM alpha opportunity without committing to higher fees or active risk budgets
- Enhanced strategies stand out for their ability to deliver strong risk-adjusted returns at scale with the fee efficiency and consistency that institutional investors value
- Systematic active strategies bring breadth and repeatability, exploiting short-term inefficiencies in a cost-effective way
- Small-cap actives extend this approach to underresearched areas that offer diversification benefits and high alpha potential beyond concentrated EM core
- Fundamental active strategies complement systematic approaches, uncovering idiosyncratic alpha through local insights and discretionary judgement.

Three key findings stand out:

- Operating at the highest permissible activeness tier delivers superior risk-adjusted returns
- Focusing on net-of-fee alpha, rather than rigid fee constraints, generates better outcomes
- Small cap active strategies provide valuable diversification — even with conservative alpha assumptions.

The evidence supports a multi-strategy approach over individual solutions.

The takeaway?

Activeness is not a binary choice — it is a design decision. The value comes from combining these building blocks to create a portfolio that is not just exposed to EM growth, but positioned to capture it. Our framework offers a systematic, adaptable approach to navigating choices across Conceptual Activeness, risk budget, and cost — and that can be extended to incorporate evolving objectives such as sustainability or impact.

We welcome the opportunity to aid and accompany our clients on this journey toward capturing EM's rising influence.



Endnotes

- 1 Here, mega-cap refers to stocks with a free-float market capitalization above USD 200 billion, while large-cap refers to stocks with a free-float market capitalization between USD 10 billion and USD 200 billion.
- 2 Nominal GDP for 2024 in US Dollars, IMF WEO April 2025.
- 3 What is the Best Approach to Factor Investing?
- 4 The-case-for-enhanced-active-strategies.pdf
- The standard MSCI EM Index which has just over 1,200 members has only 6% of stocks with zero analyst coverage, and a median of 17 analysts on each name. Comparatively, these figures stand at 5% and 7 analysts for the MSCI DM Small-Cap Index. The data is from MSCI and Bloomberg as of close March 31, 2025.
- 6 "The Case for Emerging Markets Small-Cap Equity," (Christopher Laine, Jay Siegrist, and Timothy Herlihy, State Street Global Advisors, 2023).
- 7 Casting a Wide Net: Why True Passive Strategies Are Rare Catches by Alejandro E Gaba, Jennifer Bender, Yvette Murphy, John Tucker
- 8 Small Caps: More Than Just a Factor Premium

About State Street Investment Management

At State Street Investment Management, we have been helping to deliver better outcomes to institutions, financial intermediaries, and investors for nearly half a century. Starting with our early innovations in indexing and ETFs, our rigorous approach continues to be driven by market-tested expertise and a relentless commitment to those we serve. With over \$4 trillion in assets managed*, clients in over 60 countries, and a global network of strategic partners, we use our scale to create a comprehensive and cost-effective suite of investment solutions that help investors get wherever they want to go.

* This figure is presented as of March 31, 2025 and includes ETF AUM of \$1,553.58 billion USD of which approximately \$106.42 billion USD in gold assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated. Please note all AUM is unaudited.



statestreet.com/investment-management

Marketing Communication

State Street Global Advisors (SSGA) is now State Street Investment Management. Please go to statestreet.com/investment-management for more information.

State Street Global Advisors Worldwide Entities

Important Risk Information

The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without State Street Global Advisors' express written consent.

The views expressed in this material are the views of Altaf Kassam, Kamal Gupta, and Alejandro Gaba through June 30, 2025 and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor.

All information is from State Street Global Advisors unless otherwise noted and has been obtained from sources believed to be reliable, but its accuracy is not guaranteed. There is no representation or warranty as to the current accuracy, reliability or completeness of, nor liability for, decisions based on such information and it should not be relied on as such

Past performance is not a reliable indicator of future performance.

Investing involves risk including the risk of loss of principal.

Investing in foreign domiciled securities may involve risk of capital loss from unfavorable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations.

Investments in emerging markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Equity securities may fluctuate in value in response to the activities of individual companies and general market and economic conditions. Investments in small-sized companies may involve greater risks than in those of larger, better known companies. Currency Risk is a form of risk that arises from the change in price of one currency against another. Whenever investors or companies have assets or business operations

across national borders, they face currency risk if their positions are not hedged.

The trademarks and service marks referenced herein are the property of their respective owners. Third party data providers make no warranties or representations of any kind relating to the accuracy, completeness or timeliness of the data and have no liability for damages of any kind relating to the use of such data.

For EMEA Distribution: The information contained in this communication is not a research recommendation or 'investment research' and is classified as a 'Marketing Communication' in accordance with the applicable regional regulation. This means that this marketing communication (a) has not been prepared in accordance with legal requirements designed to promote the independence of investment research (b) is not subject to any prohibition on dealing ahead of the dissemination of investment research.

This communication is directed at professional clients (this includes eligible counterparties as defined by the appropriate EU regulator) who are deemed both knowledgeable and experienced in matters relating to investments. The products and services to which this communication relates are only available to such persons and persons of any other description (including retail clients) should not rely on this communication.

Investments in small-sized companies may involve greater risks than in those of larger, better known companies.

Companies with large market capitalizations go in and out of favor based on market and economic conditions. Larger companies tend to be less volatile than companies with smaller market capitalizations. In exchange for this potentially lower risk, the value of the security may not rise as much as companies with smaller market capitalizations.

The strategy may emphasize a "growth" style of investing. The market values of growth stocks may be more volatile than other types of investments. The prices of growth stocks tend to reflect future expectations, and when those expectations change or are not met, share prices generally fall. The returns on "growth" securities may or may not move in tandem with the returns on other styles of investing or the overall stock market.

Actively managed funds do not seek to replicate the performance of a specified index. The Strategy is actively managed and may underperform its benchmarks. An investment in the strategy is not appropriate for all investors and is not intended to be a complete investment program. Investing in the strategy involves risks, including the risk that investors may receive little or no return on the investment or that investors may lose part or even all of the investment.

The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without State Street Investment Management's express written consent.

© 2025 State Street Corporation. All Rights Reserved. ID2974000-2685736.4.2.GBL.INST 0725 Exp. Date: 07/31/2026

