2025

Concentration & Opportunity.

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For Professional Investors Only

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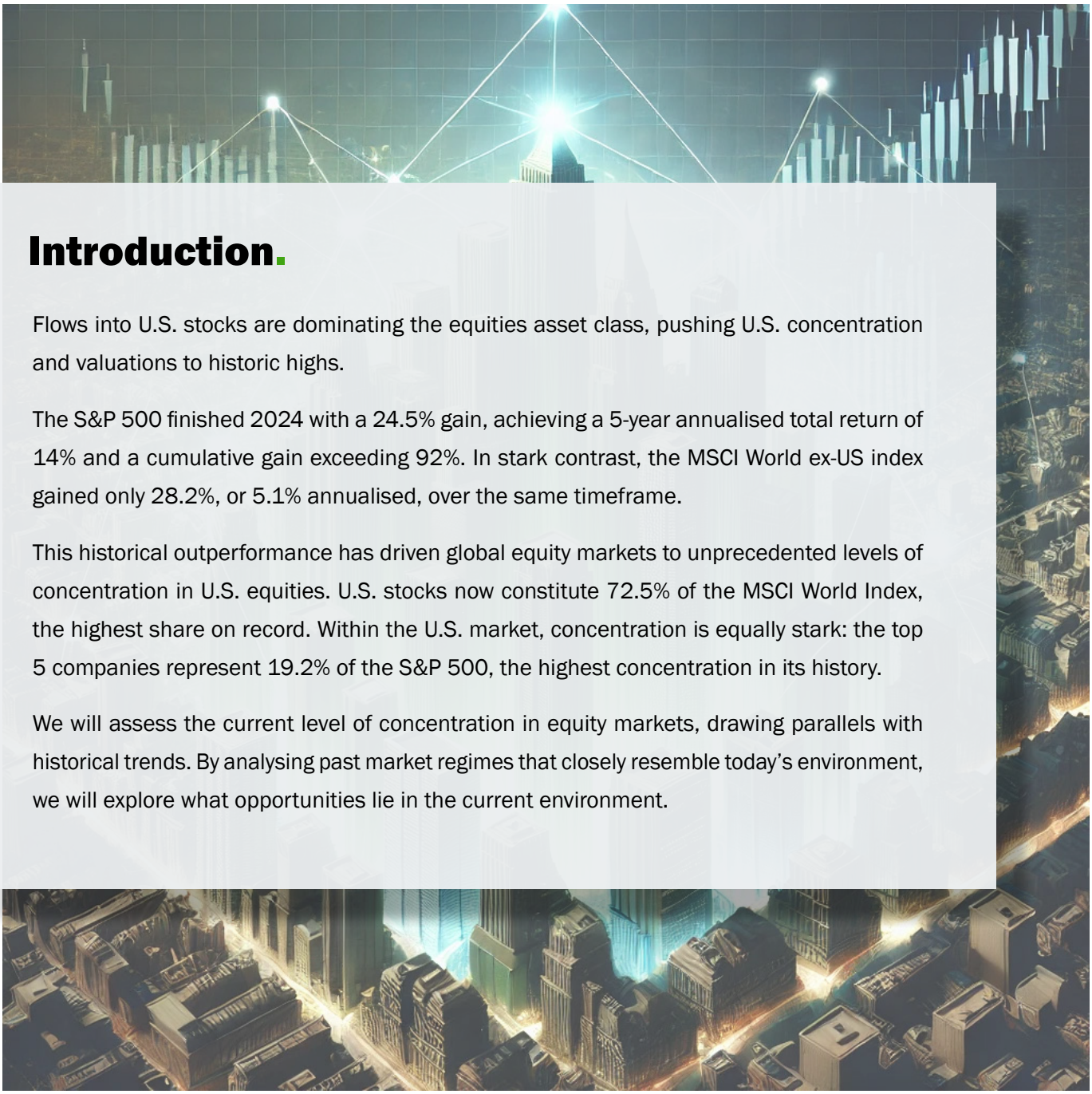

Introduction.

Flows into U.S. stocks are dominating the equities asset class, pushing U.S. concentration and valuations to historic highs.

The S&P 500 finished 2024 with a 24.5% gain, achieving a 5-year annualised total return of 14% and a cumulative gain exceeding 92%. In stark contrast, the MSCI World ex-US index gained only 28.2%, or 5.1% annualised, over the same timeframe.

This historical outperformance has driven global equity markets to unprecedented levels of concentration in U.S. equities. U.S. stocks now constitute 72.5% of the MSCI World Index, the highest share on record. Within the U.S. market, concentration is equally stark: the top 5 companies represent 19.2% of the S&P 500, the highest concentration in its history.

We will assess the current level of concentration in equity markets, drawing parallels with historical trends. By analysing past market regimes that closely resemble today's environment, we will explore what opportunities lie in the current environment.

MSCI World Index Concentration: A Critical Juncture in the Super Cycle.

The chart below illustrates the evolution of concentration within the MSCI World Index from 1996 to the present. The cyclical nature of market concentration becomes evident, with current levels echoing the peaks observed in March 2000, during the dot-com bubble.

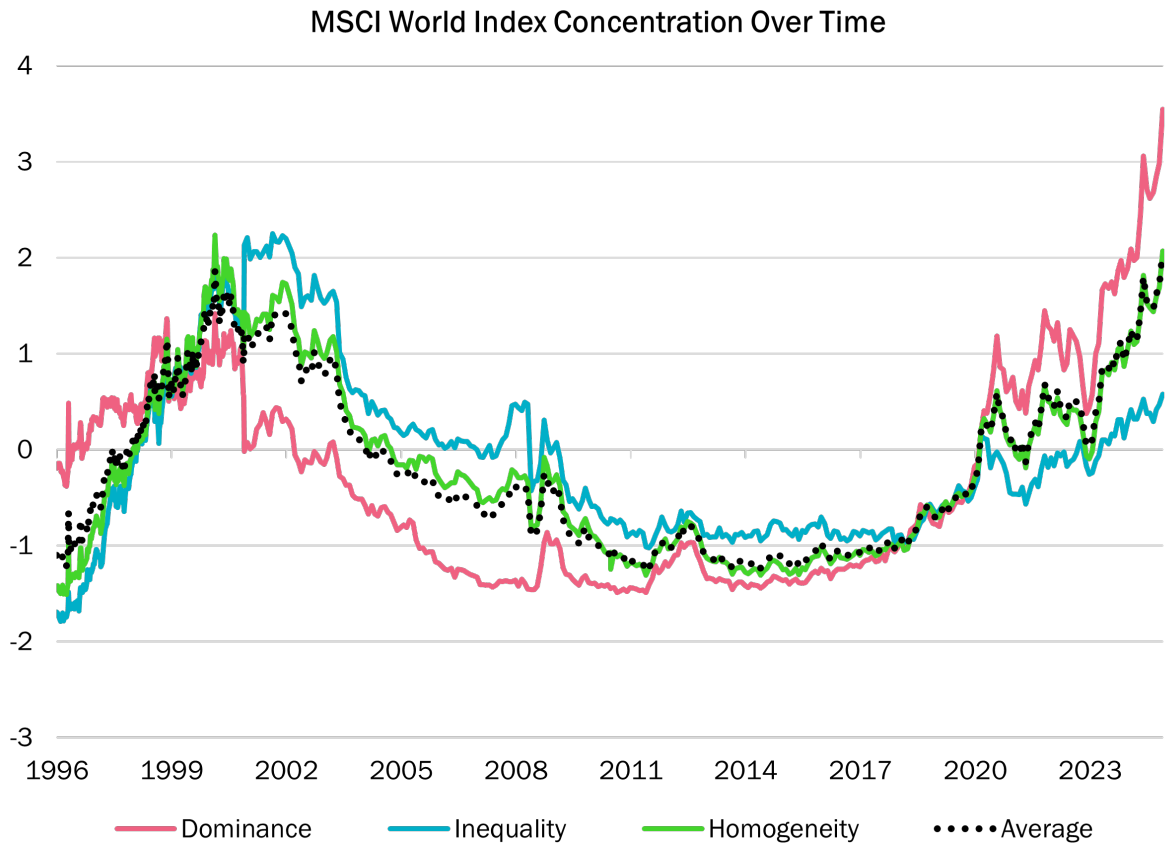

Figure 1. Source: RAM AI, MSCI, data as of end of December 2024. Prior to 2001, the MSCI World Index was reconstituted by RAM AI using MSCI's methodology.

The concentration measure shown in the chart has been standardised over time and averages three distinct aspects of concentration — dominance, inequality and homogeneity (i.e. lack of diversity) — to provide a comprehensive perspective on market structure.

Dominance

measures the extent to which a small number of constituents dominate an index, reflecting how heavily the largest weights contribute to the overall composition, through a blend of two metrics, HHI and Top 10 Concentration:

- **HHI** (the Herfindahl-Hirschman Index) is calculated as:

$$\mathrm{HHI} = \sum_{i=1}^{n} w_i^2$$

Where w_i is the weight of the i^{th} stock in the index, and n is the total number of constituents. A higher HHI indicates greater dominance by a few stocks.

- **Top 10 Concentration** measures the sum of weights of the 10 largest constituents:

$$Top\ 10\ Concentration = \sum_{i=1}^{10} W_i$$

Inequality

captures the disparity in weight distribution among all constituents, highlighting whether weights are evenly spread or concentrated in a few stocks, as seen with the Gini Index, which measures the inequality of weight distribution and is defined as:

$$G = \frac{\sum_{i=1}^{n} \sum_{j=1}^{n} |w_i - w_j|}{2n\bar{w}}$$

Where $\bar{w}$ is the average weight. A Gini Index of 0 indicates perfect equality, while a value closer to 1 signifies extreme inequality.

Homogeneity

indicates a lack of variation or diversity among the constituents' weights, captured by the inverse of normalised Shannon Entropy. Shannon Entropy is defined as:

$$E = -\sum_{i=1}^{n} w_i \, ln(w_i)$$

To ensure comparability as the number of constituents (n) varies over time, normalisation is applied:

$$E_{normalised} = \frac{E}{ln(n)}$$

The inverse is then taken to align it with the other measures, where higher values indicate higher concentration.

The historical average concentration measure reveals striking parallels between today's levels and the peak in March 2000 during the dot-com bubble. Both periods show extremely high dominance by the largest companies. In March 2000, technology companies like Cisco and Intel dominated the index, while today, companies like Apple, Microsoft and Alphabet hold similar dominance.

Dominance is even more pronounced today than back in the dot-com bubble. However, during that period, valuations were driven by price-to-sales (P/S) ratios instead of traditional metrics like price-to-earnings (P/E). Cisco, for example, traded at a P/S ratio exceeding 40x, while today's tech giants exhibit lower (but still elevated) ratios above 10x. While the various components of market concentration today differ somewhat from their levels in 2000 — dominance is higher, lack of diversity is comparable and inequality is lower — their overall average appears to be similar.

Clustering Macro Environments: in What Regime Are We?

Detecting phases in the global economy often relies on macroeconomic data, which lags significantly and undergoes multiple revisions. For example, Q4 2024 U.S. GDP will only be finalised by March 2025, creating inherent delays.

Instead, we use a real-time approach, leveraging tradeable asset classes—such as debt, equities, currencies and commodities—that react immediately to news and economic data. By analysing liquid indexes, we derive real-time proxies for macroeconomic conditions and market expectations.

Our methodology is inspired by Two Sigma's approach as detailed by Geoff Duncombe and Bradley Kay in 'Introducing the Two Sigma Factor Lens.' In another publication ('A Machine Learning Approach to Regime Modeling' by Alex Botter and Doris Bao), the authors apply a Gaussian Mixture model to these macro factors, clustering the dates and exhibiting market regimes. We enhance the base set of risk premia by adding two equity style factors and apply a similar clustering method to the factors time series.

Key Factors & Indexes

1. Interest Rates
Bloomberg Barclays Global Aggregate Index

2. World Equities
MSCI World Total Return Index

3. Credit
A 50/50 mix of US and European debt, each further divided into High Yield (80%) and High Grade (20%) components (prior to 1999, US debt only)

4. Commodities
Bloomberg Commodity Index

5. Foreign Exchange (FX)
GDP-weighted basket of G10 currencies against the USD

6. Emerging Markets
A mix of the deltas between Emerging Market Debt and Equity indexes and their US counterparts

7. Short Volatility
CBOE S&P 500 PutWrite Index

8. Inflation
Bloomberg US Government Inflation-Linked 7–10 Year Total Return Index

9. Growth Style
MSCI World Growth Index

10. Value Style
MSCI World Value Index

To ensure independence between factors, we apply rolling regressions, regressing each factor on those preceding it (e.g., Commodities on Interest Rates and Equities). We retain only the residuals, isolating each factor's unique contribution, independent of the influence of other economic dimensions.

Using these orthogonalised factors, we cluster dates within the time series and predict cluster memberships for any given date using a Gaussian Mixture Model (GMM) algorithm.[1] In essence, this allows us to identify, at any time, the set of past dates that most closely resemble the current market dynamics across a broad range of asset classes.

The Macro Clusters.

We base our clustering on the monthly returns of these factors, using data from 1997 onward. The data is divided into four clusters, each representing approximately four-and-a-half years on average.

Additionally, we analyse the average levels of each input factor within each cluster, as provided by the GMM model. This helps us understand how different economic phases differ and provides insights into the typical characteristics of each cluster.

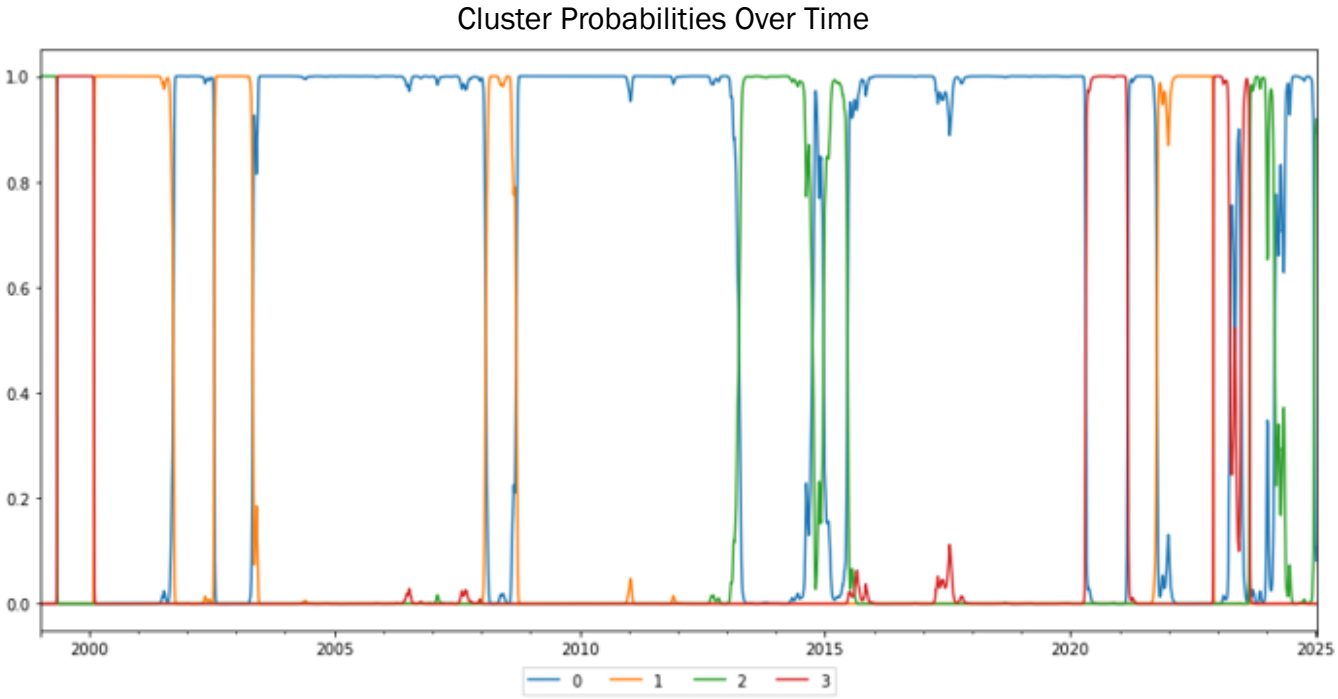

Figure 2. Economic phase probability. The GMM Clusters are estimated using data ranging from January 1999 to January 2025. Source: RAM AI, Bloomberg, data as of January 2025.

The chart above illustrates the probability of each economic phase occurring at any given date between 1999 and January 2025. The current phase (depicted in green) shares similarities with periods in 1999, 2013, 2014 and 2023.

[1] *A Gaussian Mixture Model (GMM) is a probabilistic model that assumes a dataset is generated from a mixture of several Gaussian distributions, each representing a different cluster or component within the data.*

Current Cluster Characteristics.

The current cluster, Phase 2, is characterised by strong recent equity performance, a recent rise in interest rates and underperformance in Emerging Markets equities and commodities. Below is a summary of key factors with their average 4-week returns, standard deviations and latest values:

Factor Name	*Cluster Average (4-week Avg. Returns)*	*Standard Deviation*	*Latest Values*
Interest Rates	0.05%	±0.45%	0.12%
World Equities	1.21%	±0.48%	1.13%
Credit	0.28%	±0.23%	0.27%
Commodities	-1.12%	±0.98%	0.06%
Foreign FX	-0.02%	±0.23%	-0.03%
Emerging Markets	-1.67%	±1.01%	-0.31%
Short Volatility	0.270%	±0.419%	0.845%
Inflation	-0.178%	±0.395%	-0.128%
World Value	-0.458%	±0.900%	-0.715%
World Growth	0.147%	±0.831%	0.477%

Figure 3. Average characteristics of the current economic phase and their latest values. Source: RAM AI, Bloomberg, data as of January 2025.

Time for Stock Selection?

To assess the attractiveness of the current environment for stock selection and each cluster, we compute the 1-year forward return of the BarclayHedge Equity Market Neutral Index (BEMN). This index, published by Barclays, is representative of a market-neutral strategy with medium rebalancing frequency and a long performance history dating back to the mid-1990s.

Phase Label	*BEMN Avg. 1-Year Forward Return*	*BEMN Avg. 1-Year Forward Standard Deviation*	*Sharpe Ratio*
0	2.77%	2.88%	0.6
1	4.27%	3.56%	0.8
2	6.75%	3.33%	2.8
3	9.90%	5.40%	1.8

Figure 4. Average forward return for the BarclayHedge Equity Market Neutral Index for each economic phase. Source: RAM AI, Bloomberg, data as of January 2025.

The current cluster (Phase 2) does not yield the highest average forward return among all clusters but is historically the macro cluster where market neutrals have historically their highest Sharpe Ratio, the current phase providing the most favourable risk-adjusted return profile for market neutrals.

What Styles Have Prevailed & What's Next?

In this section, we examine how different macroeconomic environments—organised into distinct clusters—impact traditional investment factors, using our proprietary versions. Focusing on recent and current regimes, we aim to show how economic conditions shape factor performance and assess how our funds align with these dynamics.

In 2024, the period from February to December was classified under Cluster 0, a significant regime that has been recurrent since 1999 and was also prominent in mid-2003 and late 2008.

Historically, during periods identified as Cluster 0, Analyst Revisions emerged as the top-performing factor in Western Europe and North America, followed by Growth at a Reasonable Price (GARP) and Value. On the short side, the worst-performing GARP stocks, the most shorted names and those with negative Analyst Revisions underperformed significantly. In Emerging Markets, long-side factors like GARP, Value and Analyst Revisions also delivered strong performance, while high-volatility stocks and those with negative GARP metrics lagged on the short side.

The figures below show the recent performance of factors that have been notable over the long term across all observations of Cluster 0. They specifically illustrate the most recent occurrence of Cluster 0, between February and December 2024, with Figure 5 focusing on Europe and Figure 6 on Emerging Markets.

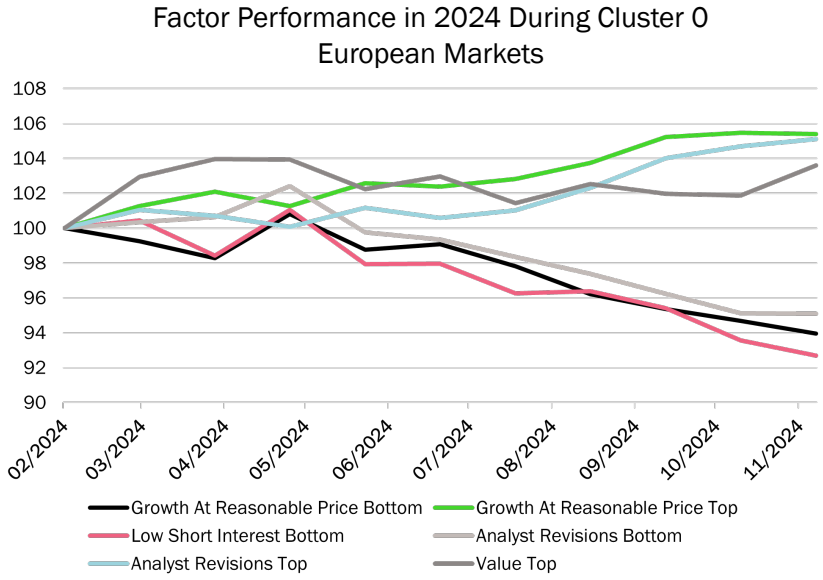

Figure 5. Factor performance in 2024 for European Markets during periods when the market was identified as Cluster 0. Source: Factset, RAM AI, data from 8.2.2024 to 14.11.2024.

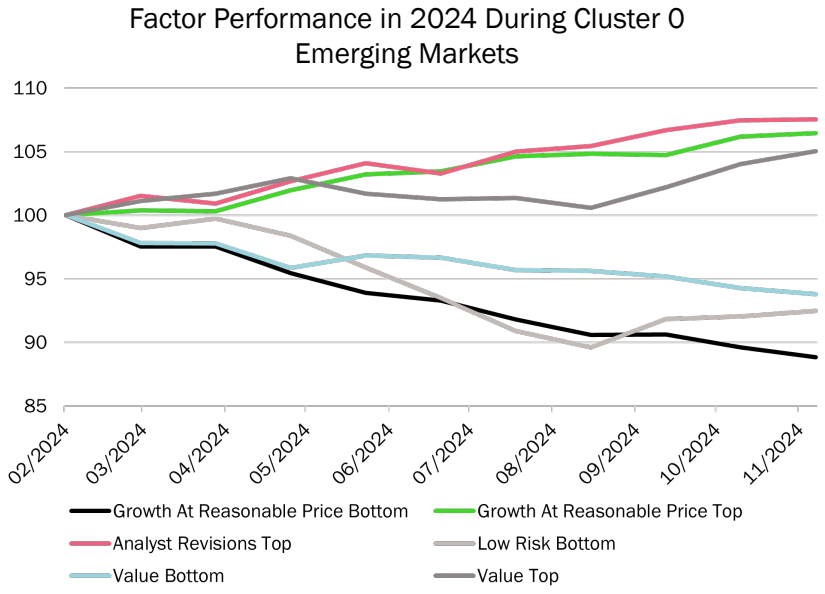

Figure 6. Factor performance in 2024 for Emerging Markets during periods when the market was identified as Cluster 0. Source: Factset, RAM AI data from 8.2.2024 to 14.11.2024.

The current cluster (Cluster 2) in Europe and North America is typically defined by a strong performance of the Value factor, with an average outperformance of approximately 6.4%. Additionally, Low Short Interest and GARP have shown noteworthy contributions. Interestingly, the short side exhibits a symmetrical pattern, where the market strongly penalises high-valuation stocks, high short-interest names and companies with low GARP.

Developed Markets	Cluster 2 Average Return
Value Top	6.4%
Low Short Interest Top	4.0%
GARP Top	3.8%
GARP Bottom	-3.6%
Low Short Interest Bottom	-4.2%
Value Bottom	-4.3%

Figure 7. Performance of the top/bottom quintiles of the most notable factors (equal-weighted) relative to the investable universe (equal-weighted) during periods associated with Cluster 2 in Europe and North America. Source: RAM AI, FactSet data as of January 2025.

In Emerging Markets, Cluster 2 is characterised by the prominence of GARP and long-term Momentum on both the long and short sides. The market also tends to favor smaller-cap stocks while significantly penalising companies with negative Analyst Revisions.

Emerging Markets	Cluster 2 Average Return
Long-Term Momentum Top	10.8%
GARP Top	10.4%
Size Bottom	7.3%
Long-Term Momentum Bottom	-6.2%
GARP Bottom	-11.0%
Analyst Revisions Bottom	-14.1%

Figure 8. Performance of the top/bottom quintiles of the most notable factors (equal-weighted) relative to the investable universe (equal-weighted) during periods associated with Cluster 2 in Emerging Markets. Source: RAM AI, FactSet, data as of January 2025.

RAM AI's systematic strategies leverage Machine Learning and hundreds of alpha signals to trade on fundamental, price, sentiment and liquidity-driven inefficiencies. The strategies are well positioned for the current market environment, as evidenced by the fundamental profile of its strategies. The figures below provide a detailed view of the weighted average percentile rank of strategy positions as of January 2025, for the RAM European Market Neutral Equity strategy (Figure 9) and the RAM Emerging Markets Equities strategy (Figure 10).

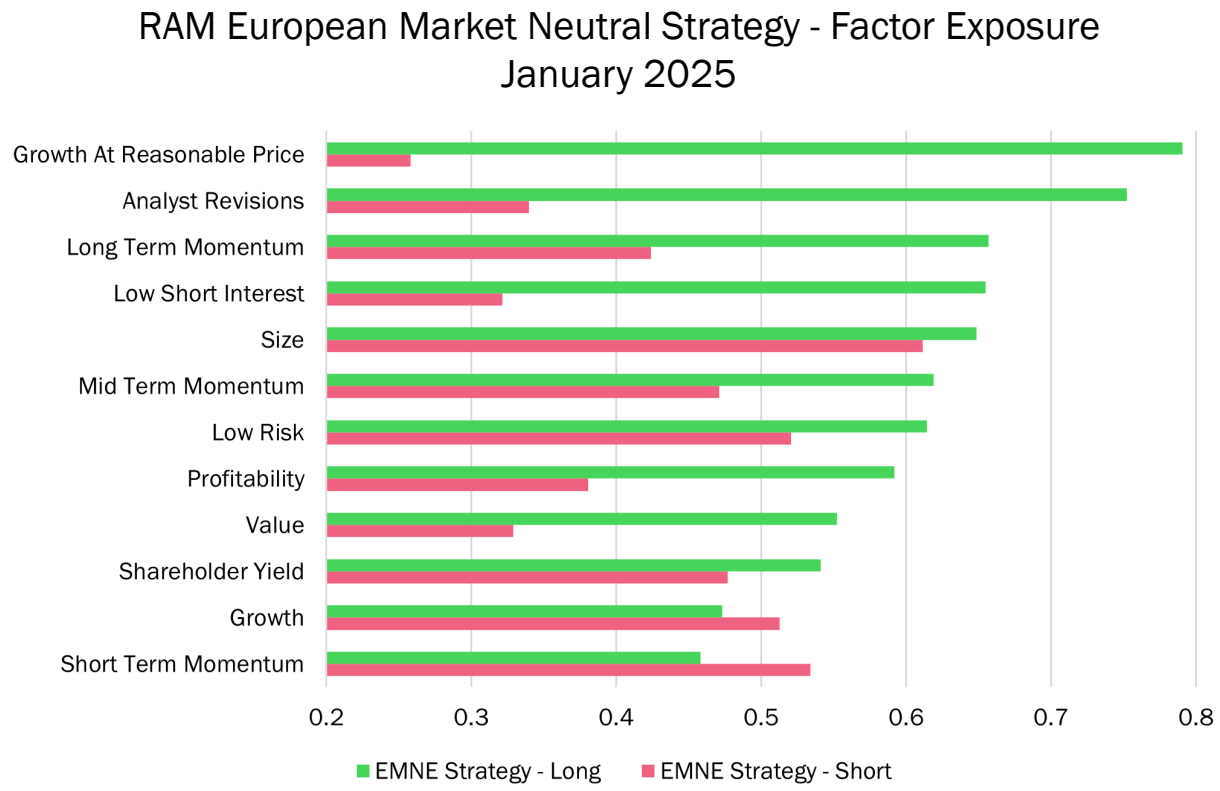

Figure 9. Weighted Average Percentile Rank of Strategy Positions – RAM European Market Neutral Equity Strategy. Source: Factset, RAM AI, data as of January 2025.

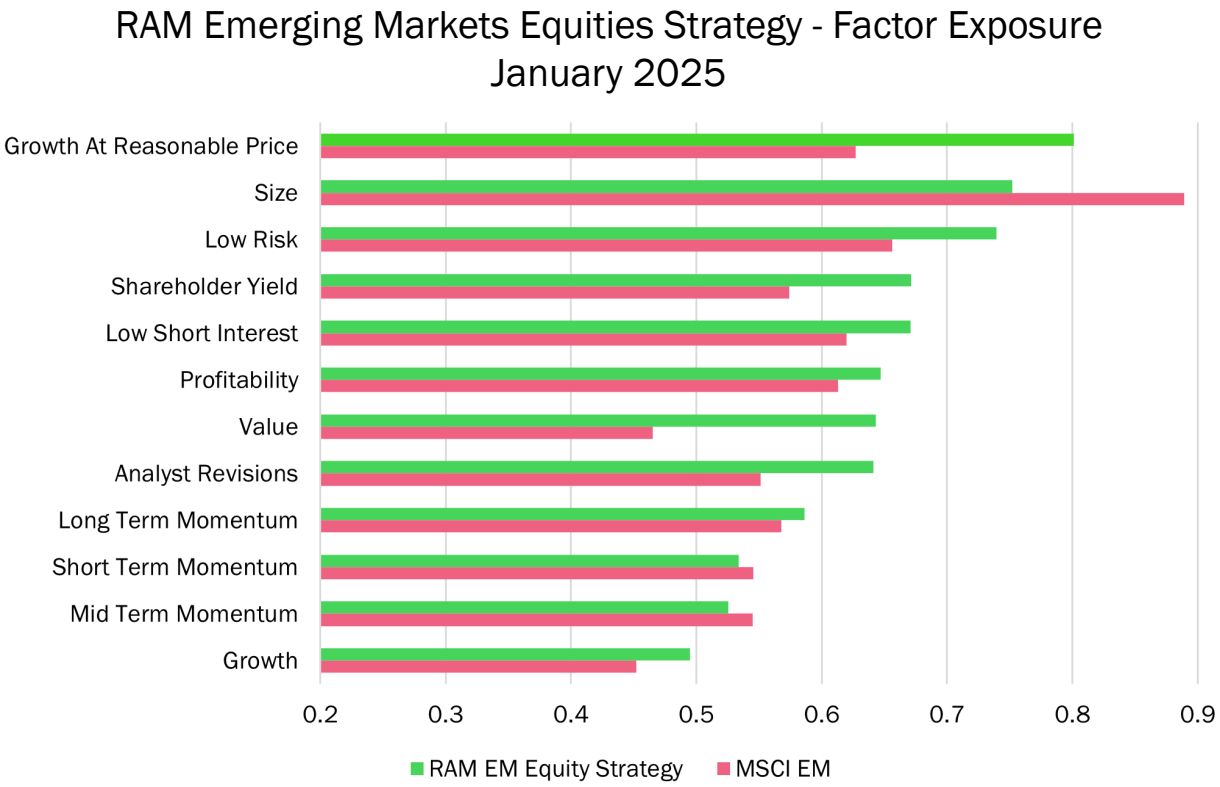

Figure 10. Weighted Average Percentile Rank of Strategy Positions – RAM Emerging Markets Equities Strategy. Source: Factset, RAM AI, data as of January 2025.

Conclusion.

Current equity markets are concentrated by every measure, to a level of dominance by top US Mega-Caps not seen since the Dot-com bubble.

The present environment of strong equities, strong USD, weak Emerging Markets and outperformance of growth to value is reminiscent of the year 1999, which falls within the same macroeconomic environment cluster. This type of market and macro regime has historically favoured stock selection, with market-neutral funds delivering historically their best Sharpe ratio in this context looking forward over the next year.

In light of this, investors should consider diversifying equity exposures through active strategies, particularly in European mid-cap segments and Emerging Markets, which offer appealing valuations and market dispersion. These conditions have proven favourable to fundamental stock selection and market-neutral approaches, positioning them well for returns and diversification in the current landscape.

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