QUANTITATIVE INVESTING

The alpha and beta of emerging markets equities

ROBECO
The Investment Engineers

- Emerging markets have been fertile ground for quant investing
- They offer growth at value prices, amid risks and ESG concerns
- In new paper we discuss the asset class and active management approaches

Robeco's approach to emerging markets investing was initially met with considerable skepticism, but the live performance of our model has exceeded expectations. David Blitz, Robeco's Chief Researcher, shares his thoughts on quant equities investing in emerging markets.

Robeco is a pioneer of quant investing in emerging markets. In van der Hart, Slagter, and van Dijk (2003) we showed that value and momentum factors that are known to predict stock returns in developed markets are also highly effective in emerging markets, and in van der Hart, de Zwart and van Dijk (2005) we compared behavioral versus risk-based explanations. Initially, our quantitative approach to emerging markets investing was met with considerable skepticism, as the data quality for such markets was commonly believed to be inadequate.

In defiance of this conventional wisdom, the live performance of our model has exceeded expectations. Clients have recognized this success, and a sizable part of our quant business nowadays is in emerging markets strategies. In this note I share my thoughts on quant investing in emerging markets, having personally lived through the (mostly) ups and (occasional) downs. I will first consider emerging markets as an asset class (the beta), and then zoom in on active management styles (the alpha).

Emerging markets as an asset class

Why emerging markets?

The appeal of emerging markets is a classic growth story. Emerging markets may achieve higher economic growth than developed markets because starting at a lower base leaves room for catching up. Their populations also tend to be younger and increasing quickly, which can be a source of additional economic vitality. The problem with growth stories, however, is that investors are often lured into overpaying for growth. This phenomenon is the source of the value premium, which is one of our core quant factors. However, instead of trading at a premium, emerging markets trade at a valuation discount compared to developed markets. Thus, emerging markets appear to be a case of growth at value prices!

Investors do tend to overestimate the relevance of economic growth. Dimson, Marsh, and Staunton (2002) and Ritter (2012) find that the long-term correlation between GDP growth and stock returns across countries is zero, or even negative. Perhaps the benefits of economic growth accrue primarily to consumers and workers instead of

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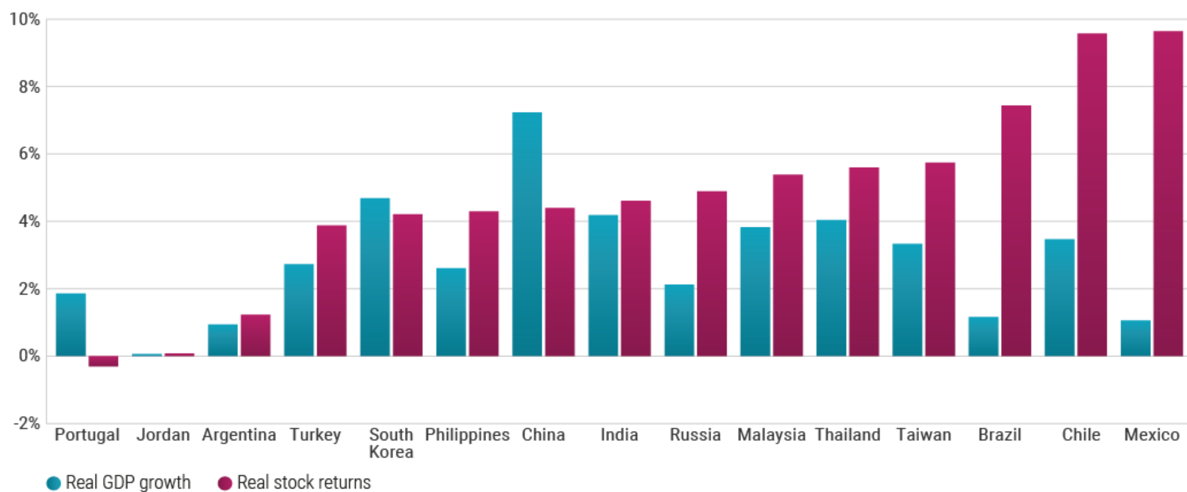
shareholders, or to the shareholders of privately held firms. It may also be that corporate managers pursue growth too aggressively, at the expense of profitability. More recently, Hsu, Ritter, Wool, and Zhao (2022) confirm that GDP growth and stock market returns are effectively unrelated, but they also find a significant relation between stock market returns and earnings growth of listed companies. So growth does matter, but only earnings growth, and although this might seem closely related to GDP growth, it really is not.

Figure 1 - Relation between GDP growth and stock returns in 15 EM countries



Source: Hsu et al. (2022)

Risk and ESG concerns

A concern with emerging markets is that they tend to be a bit riskier than developed markets. Most of the time, volatility is higher and drawdowns more severe. In efficient markets this higher systematic risk ought to be rewarded with a higher return, i.e. a commensurate risk premium. However, riskier stocks generally do not deliver higher average returns, a phenomenon which is known as the low-risk anomaly.

A good cautionary principle is therefore to focus on safe stocks, and to shy away from the riskier ones. Interestingly, the emerging markets universe contains many stocks that are less volatile than the average stock in developed markets, despite the overall market being somewhat more volatile. Additionally, the volatility of the global equity market portfolio with and without emerging markets is more or less the same, so the risk of emerging markets effectively diversifies away in a global portfolio.

Table 1 - Return and risk of regional indices, January 1988 to March 2023

		AME	EUR	JAP	APX	EM		DM	AC
Return									
Full sample		10.6%	8.0%	1.7%	8.6%	9.6%		8.0%	7.9%
1988-2010		10.0%	9.3%	0.2%	11.0%	14.1%		7.4%	7.7%
2011-2023		11.7%	5.7%	4.7%	4.1%	1.6%		9.2%	8.3%
Volatility									
Full sample		14.9%	17.4%	19.6%	20.3%	22.2%		15.1%	15.3%
1988-2010		15.0%	17.6%	22.0%	21.2%	24.2%		15.4%	15.7%
2011-2023		14.7%	16.9%	14.2%	18.4%	17.8%		14.6%	14.6%

Source: Robeco, MSCI

Another concern with emerging markets is that they tend to do worse than developed markets on Environmental, Social, and Governance (ESG) criteria. For instance, emerging markets generally have less economic and political freedom, weaker property rights, questionable human rights, greater corruption, inferior labor rights, more pollution, and higher greenhouse gas emissions. Sustainable investors might therefore conclude that emerging markets are best avoided.

However, it is not really fair to compare countries at different stages of development. Many countries that are now considered developed dealt with similar challenges and resembled emerging markets in their past. A successful transformation can be accelerated by foreign investment. In addition, most of the ESG concerns mentioned above relate to government policies that are beyond the influence of individual companies. Should investors refrain from investing in a healthcare company that produces life-saving medicines if the company operates within an external environment that is less than ideal? Last but not least we should not only look at the market in aggregate, as our research shows the most sustainable companies in emerging markets are actually on par with their developed markets counterparts.

Are emerging markets a separate asset class?

The days that emerging markets are merely providers of basic commodities are long gone. Embraer in Brazil manufactures passenger planes used by airlines around the globe, Korea is known for advanced electronics and cars (with strong brands such as Samsung, LG, Hyundai, and Kia), Taiwan is the main producer of semiconductors, and China is leading with solar panels that are needed for the global energy transition. As such, firms in emerging markets comprise an important and integral part of the global economy and hence of a global equity portfolio.

From a quant perspective the entire distinction between emerging and developed markets is actually rather arbitrary. The split tends to be based on criteria such as economic development, market size and liquidity, and market accessibility. Of course this all makes sense, but a binary view of emerging versus developed classification simply does not do justice to the fact that there are many stages of development, or that countries can be developed on one dimension but emerging on another.

A logical starting point would simply be the all-country (DM + EM) market portfolio containing the full opportunity set, and then thinking about which particular stocks to select from this broad pool, without favoring or ruling out any particular segment of the market in advance. For instance, if a car manufacturer in Korea is cheaper, has

better momentum, more positive earnings revisions, and stronger fundamentals than a German one, then it likely presents a better investment opportunity.

Table 2 - Correlation matrix regional index returns January 1988 to March 2023

	AME	*EUR*	*JAP*	*APX*	*EM*
AME	1				
EUR	0.81	1			
JAP	0.49	0.57	1		
APX	0.72	0.75	0.52	1	
EM	0.68	0.69	0.50	0.82	1

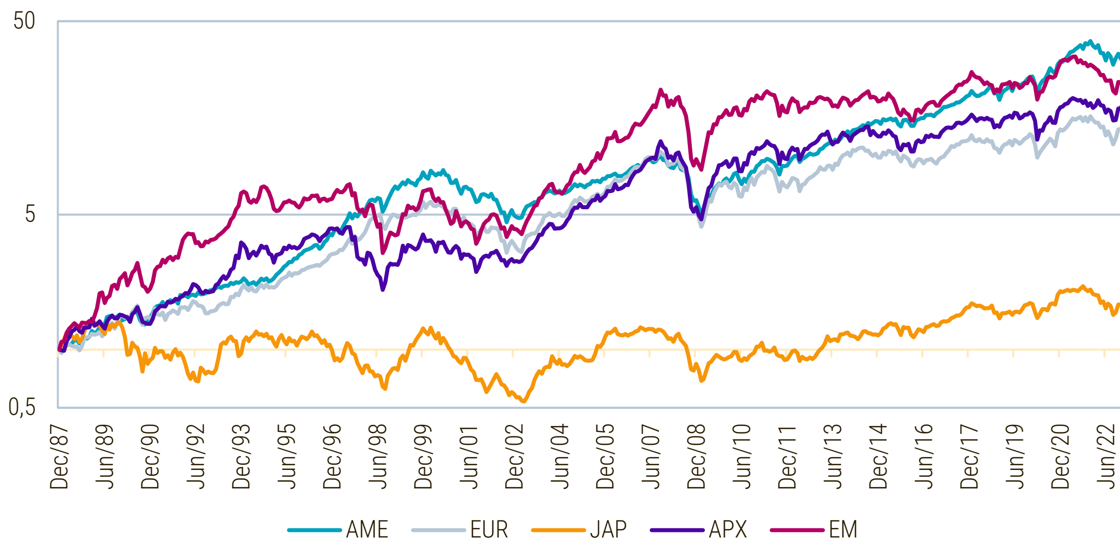
Source: Robeco, MSCI

Looking at the major regions, we observe that emerging markets have a correlation of about 0.8 with developed Asia-Pacific excluding Japan. This relates to the fact that the emerging markets index has over 75% weight in Asia-Pacific countries, and less than 25% weight in all the other regions combined, such as Latin America, Eastern Europe, South Africa, and the Middle East.

The correlation between emerging markets and developed Asia-Pacific excluding Japan, is similar to and about as high as the correlation between the US and Europe, while the correlations between these two blocks are about 0.7. The region that actually stands out the most is Japan, with correlations of only about 0.5 with all other regions. Because Japan behaves in such a unique manner, the most effective partitioning of the global equity universe is everything else versus Japan.

If Japan is considered too small to warrant special treatment, then an Atlantic (US and Europe) versus Pacific split would seem to make most sense. When allowing for three regions the data suggests Atlantic, Pacific excluding Japan and Japan. Thus, historical return data does not strongly support the classic developed versus emerging distinction. However, this categorization is so deeply entrenched that it is unlikely to change any time soon. Moreover, many asset managers have organized their activities around the developed versus emerging split, so for manager selectors it also makes sense to focus on the many available developed and emerging markets offerings.

Figure 2 - Total return indices per region, January 1988 to March 2023

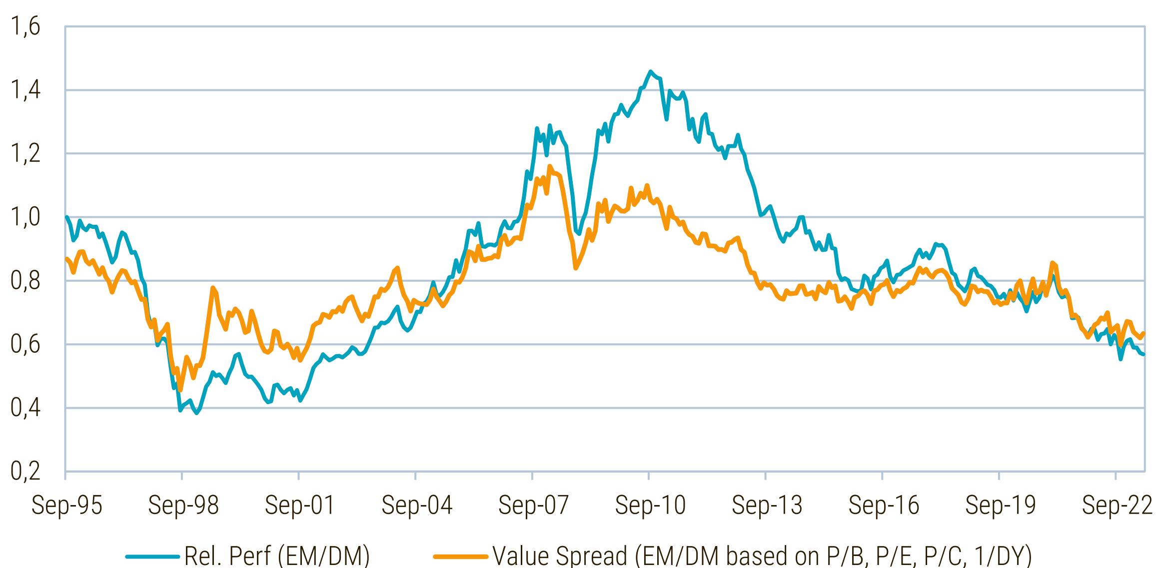


Source: Robeco, MSCI

What is the outlook for emerging markets?

When discussing the outlook for emerging markets it is useful to look to the past. Until 2010 emerging markets outperformed every developed region by a wide margin, but from 2011 onwards they lagged all the other regions. Thus, emerging markets can boost portfolio performance, but they can also be a significant drag. After two diametrically opposed episodes, the million-dollar question is what will the next ten years look like? Unfortunately, such market timing calls are extremely tough, and the quantitative toolkit is of little use here. A key argument in favor of emerging markets is that they are cheap compared to developed markets. In fact, a large part of the underperformance since 2011 can be explained by a steadily widening valuation gap. However, emerging markets have been cheap for quite some time, so a catalyst for a reversal is needed.

Figure 3 – Relative performance and valuation EM vs. DM, September 1995 to May 2023



Source: Robeco

The momentum of emerging markets is still weak, and one might argue that this cancels out the valuation argument. Long-term mean reversion obviously gives a positive signal, however, according to Robeco's Multi-Asset team, the 5-year macro outlook is negative. Consequently, the signs are mixed, which would argue for a neutral position in emerging markets, in line with their weight in the all-country market portfolio (in which, as argued above, they clearly belong). This may not be a particularly bold statement, but timing decisions are notoriously challenging.

In the remainder of this paper, I will focus on a more fruitful question, namely, how do you invest in emerging markets?

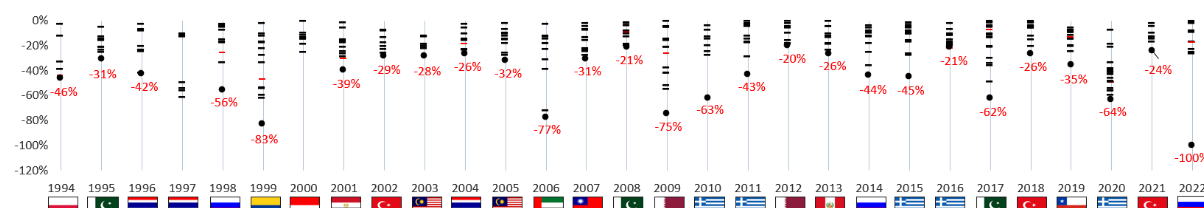
Active investing in emerging markets

The siren song of country allocation

Each year there is a large difference between the returns of the best and worst performing countries, so country allocation is potentially a major source of return. But in the absence of predictability, the large variation in country returns becomes just a big risk factor. Unfortunately, it is hard to link long-term country returns to fundamentals, even with hindsight.

As discussed previously, there does not appear to be a relation between GDP growth and long-term country returns. In some cases, shareholders have been wiped out when countries decided to replace a free market economy with state-controlled socialism (like Venezuela) or became international pariahs by invading their neighbors (like Russia). Getting demoted from developed to emerging market status is also something best avoided from a shareholder perspective (like Greece). But of course the challenge is to identify such cataclysmic events in advance.

Figure 4 - Underperforming emerging markets countries per calendar year, 1994 to 2022



Source: Robeco, MSCI. Every horizontal dash represents an individual underperforming country, and the dot shows the country with the worst underperformance that year.

Economists might expect the best long-term performers to be countries with the most favorable business conditions, such as economic freedom, property rights, rule of law, absence of corruption, no war or sectarian violence, etc. Empirically such relations are not clear cut. Latin American countries, such as Brazil, Mexico, Chile, and Argentina, are among the long-term winners, albeit due to very strong returns in the first half of the sample.

Egypt has also outperformed the broad emerging markets index since inception, again due to strong returns in the early years, but Jordan and Pakistan have not. Among the Eastern European countries, the Czech Republic and Hungary did well, while Poland did not. In Asia, India has been one of the best long-term performers, beating Asian Tigers such as Korea and Taiwan. The Gulf countries, such as Saudi Arabia, Kuwait, Qatar, and UAE, have only recently been added, so for these countries the jury is still out.

Country addition and deletion events can be a nice source of alpha. Passive managers wish to minimize their tracking error compared to the index, so a lot of trading occurs on the effective date of country reclassifications.

Burnham, Gakidis, and Wurgler (2018) find that this causes substantial buying or selling pressure, and that prices tend to revert in the following period. A better performance can be obtained by implementing country reclassifications at the announcement date or several months after the effective date. This has also been our experience. For country allocation in general we find that the quant factors that are effective at stock selection, such as value and momentum, also have some predictive power for country allocation.

The problem, however, is that the breadth of this decision is low. Quant factors tend to be much more successful at selecting 200 stocks from a pool of 1,000 than at selecting 5 countries out of 25. For this reason, we focus on bottom-up stock selection for our strategies, allowing only small deviations from the index in terms of country positioning. If country bets are not tightly controlled, the allocation decision quickly becomes dominant, which is suboptimal if the goal is to maximize risk-adjusted returns.

Common concerns with quant investing in emerging markets

The classic objection to quant investing in emerging markets equities is that the data quality may be subpar, but this concern seems quite exaggerated. Good price data is readily available, which already allows one to calculate momentum signals. Financial statement data is also available, and although accounting standards may not be as advanced as in developed markets, this data tends to be sufficiently reliable for our purposes.

In order to determine whether we have a value or growth stock we need to know if the P/E is 10 or 30, and it does not really matter if the exact level is 15.3 or 15.7. Although analyst coverage of stocks in emerging markets is generally a bit lower than in developed markets, it is still more than adequate for effective earnings revisions signals. With inputs like these one already goes a long way to creating a base-case quantitative stock selection model.

This is not to say that data quality is a non-issue. Over the years we have stumbled upon lots of data quirks that required our attention, often for specific countries. For example, when calculating the book value to market value ratio of a firm that is 90% state-owned, one should make sure that these two figures align, instead of for example dividing the full 100% book value by the market capitalization of the 10% listed equities. There have also been scandals with firms cooking the books, although developed markets cannot boast a clean slate in this regard either. In any case, such issues are not a reason to give up, but rather show the importance of being mindful and of developing the necessary checks and balances.

Do fundamental investors have an edge?

Nevertheless, there seems to be a widely held belief that emerging markets are better suited to a fundamental investment approach. But why that would be the case? If there are many less knowledgeable investors present in emerging markets then this should not only benefit fundamental professionals, but also quant models that exploit recurring mispricing patterns. Fundamental investors would only have a clear edge if they were to have access to proprietary, non-public information. That, however, is a euphemism for insider trading, which is not only illegal in developed markets but also in emerging markets. If emerging markets are merely less informationally efficient, then this offers more alpha opportunities to fundamental and quant investors alike.

Instead of seeing fundamental and quant as opposing investment approaches, they may actually be mutually reinforcing. To illustrate, Robeco’s fundamental analysts and portfolio managers use quantitative model signals for buy/sell ideation, and their scrutiny has proven very useful for identifying data issues with certain stocks or groups of stocks. For our quantitative investment process we also frequently reach out to our fundamental colleagues to get a better understanding of local market conditions, which helps to enhance factor definitions and portfolio construction. This gives us a vital edge compared to firms that are fully specialized in either quant or fundamental investing.

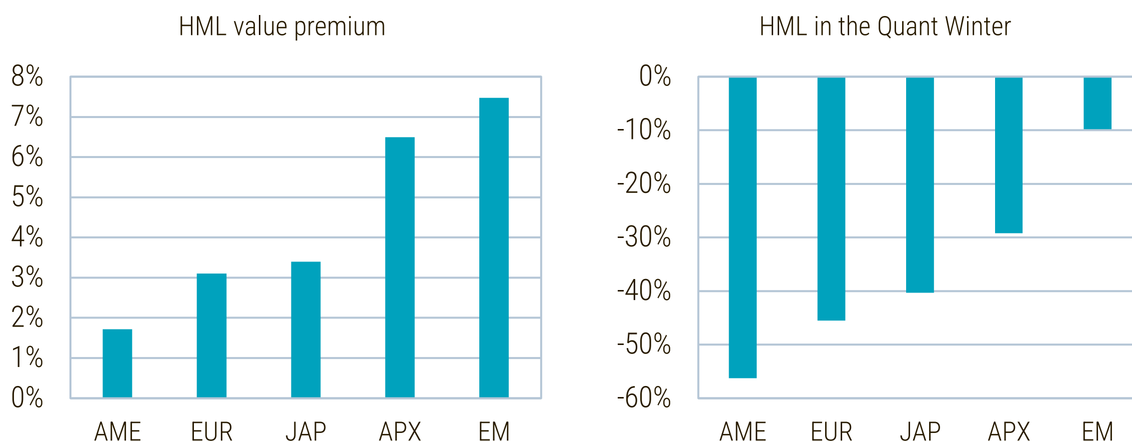
As quants we have built a wealth of fundamental knowledge over the years, for instance, on how to deal with dual listings, ADRs versus locals, country additions and deletions, and cross-holdings. In addition, we have learned how to minimize trading costs, taxes (which can depend on client jurisdictions), slippage from currency conversions,

and so on. Also for such matters I am happy we are supported by a seasoned fundamental emerging markets team.

Diversifying factor alpha

Emerging markets offer fertile ground for alpha factors. Using the publicly available data library of Professor Kenneth French we find that the value premium (HML) in emerging markets is bigger than in any other region. The correlations between the value factor in emerging markets and the other regions are low, varying between 0.2 and 0.4. Thus, the emerging markets value factor is largely a distinct phenomenon, rather than simply capturing the same alpha as the value factor in developed markets. A case in point is the Quant Winter from May 2018 to September 2020, when the value factor in emerging markets was only mildly affected, in stark contrast to what happened in developed markets. Thus, emerging markets provide a strong diversification opportunity for factor alpha.

Figure 5 – Value premium per region in the long run (July 1990 to March 2023) and during the Quant Winter (May 2018 to September 2020)



Source: Robeco, Kenneth French

The momentum factor has also been very strong in emerging markets. In developed markets this performance is only matched by the Europe and Developed Asia-Pacific excluding Japan regions, while the generic momentum premium has been weaker in the US and even entirely absent in Japan. At the same time, the volatility of the momentum factor has been lowest in emerging markets, resulting in less extreme drawdowns. The correlations between momentum in emerging markets and the other regions are about 0.5, which indicates that although there is some co-movement, the alpha is still largely unique.

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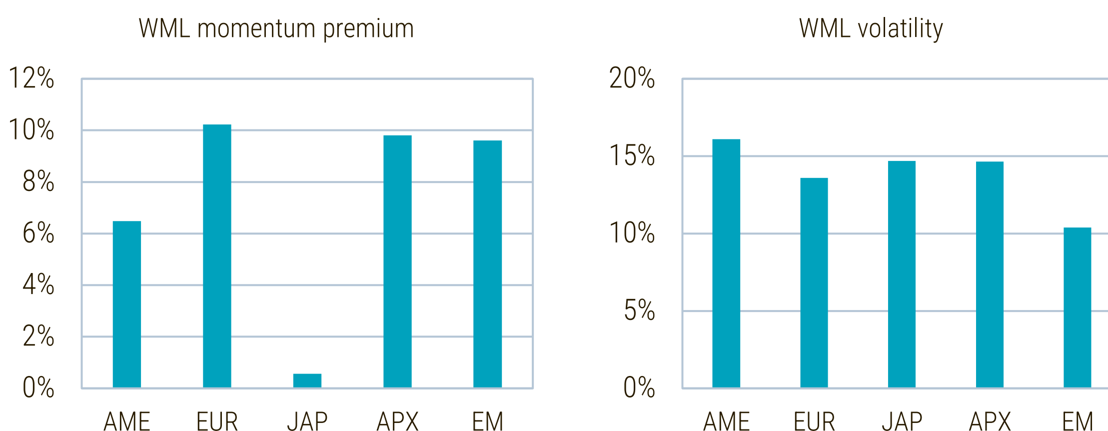
Figure 6 – Momentum premium per region, July 1990 to March 2023



Source: Robeco, Kenneth French

Beyond value and momentum

In Blitz, Pang, and van Vliet (2013) we show that the low-risk anomaly is strongly present in emerging markets. Similarly to developed markets, low-volatility stocks have a slightly higher average return than the market but with much lower risk, while high-volatility stocks have much lower average returns than the market despite their high risk. In Hanauer and Lauterbach (2019) we show that alongside the value, momentum, and low-risk factors the more recently established quality factor exists in emerging markets.

The quality metrics considered here include gross profitability, accruals, net operating assets, asset growth, and investments. Thus, the main quant factors known from developed markets all carry over to emerging markets. Moreover, Jacobs and Müller (2020) find that, in contrast to previous findings for the US stock market, there is no evidence of post-publication performance decay in emerging markets. In other words, factors have remained strong over time.

In Blitz et al. (2023) we find that short-term alpha signals are also highly effective in emerging markets. These include short-term reversal, short-term industry momentum, short-term analyst revisions, and short-term seasonal effects. In Hanauer and Kalsbach (2023) we establish that advanced machine learning algorithms can unlock additional alpha in emerging markets by moving beyond linear relationships and capturing nonlinear and interaction effects between factors. Emerging markets also provide exciting opportunities for alternative data. In particular for the Chinese market many unique new datasets are available, for instance relating to the investment activities of private investors that are very active in this market.

For our proprietary factor definitions we also find that factor performance is more often than not stronger in emerging markets than in developed markets. On average, factor premiums appear to be about 50% higher in emerging markets. This confirms that emerging markets provide excellent hunting ground for quant alpha. But before getting overexcited, note that we are talking about raw returns before implementation costs. And these costs, such as fees, commissions, taxes, and market impact are most certainly higher in emerging markets.

Moreover, active strategies in emerging markets tend to have lower capacity because liquidity is generally lower. Thus, higher gross returns are actually needed to overcome the more severe limits to arbitrage in emerging markets. Nevertheless, our practical experience illustrates that very attractive and diversifying net returns can be captured with quant investing in emerging markets.

Conclusion

It is easy to dislike emerging markets equities because they have been underperforming developed markets equities for more than a decade, with generally higher risk and lower ESG standards. On the other hand, emerging markets have become an integral part of the global economy, they trade at a large valuation discount, and history shows that they can deliver stellar performance. Quant factors are particularly effective in emerging markets, so there is no reason to limit active management to fundamental approaches. Factors offer the highest risk-adjusted returns when applied to stock selection within countries, as opposed to making big risky country bets. Experience and fundamental knowledge are vital to prevent the pitfalls of a systematic investment approach applied to markets that have all kinds of peculiarities.

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Generally, no offer or sale of the Shares is permitted in Malaysia unless where a Recognition Exemption or the Prospectus Exemption applies: NO ACTION HAS BEEN, OR WILL BE, TAKEN TO COMPLY WITH MALAYSIAN LAWS FOR MAKING AVAILABLE, OFFERING FOR SUBSCRIPTION OR PURCHASE, OR ISSUING ANY INVITATION TO SUBSCRIBE FOR OR PURCHASE OR SALE OF THE SHARES IN MALAYSIA OR TO PERSONS IN MALAYSIA AS THE SHARES ARE NOT INTENDED BY THE ISSUER TO BE MADE AVAILABLE, OR MADE THE SUBJECT OF ANY OFFER OR INVITATION TO SUBSCRIBE OR PURCHASE, IN MALAYSIA. NEITHER THIS DOCUMENT NOR ANY DOCUMENT OR OTHER MATERIAL IN CONNECTION WITH THE SHARES SHOULD BE DISTRIBUTED, CAUSED TO BE DISTRIBUTED OR CIRCULATED IN MALAYSIA. NO PERSON SHOULD MAKE AVAILABLE OR MAKE ANY INVITATION OR OFFER OR INVITATION TO SELL OR PURCHASE THE SHARES IN MALAYSIA UNLESS SUCH PERSON TAKES THE NECESSARY ACTION TO COMPLY WITH MALAYSIAN LAWS.
Additional information for investors with residence or seat in Mexico
The funds have not been and will not be registered with the National Registry of Securities or maintained by the Mexican National Banking and Securities Commission and, as a result, may not be offered or sold publicly in Mexico. Robeco and any underwriter or purchaser may offer and sell the funds in Mexico on a private placement basis to Institutional and Accredited Investors, pursuant to Article 8 of the Mexican Securities Market Law.
Additional information for investors with residence or seat in Peru
The Superintendencia del Mercado de Valores (SMV) does not exercise any supervision over this Fund and therefore the management of it. The information the Fund provides to its investors and the other services it provides to them are the sole responsibility of the Administrator. This Prospectus is not for public distribution.
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Robeco Institutional Asset Management B.V., Sucursal en España with identification number W0032687F and having its registered office in Madrid at Calle Serrano 47-14º, is registered with the Spanish Commercial Registry in Madrid, in volume 19.957, page 190, section 8, sheet M-351927 and with the National Securities Market Commission (CNMV) in the Official Register of branches of European investment services companies, under number 24. The investment funds or SICAV mentioned in this document are regulated by the corresponding authorities of their country of origin and are registered in the Special Registry of the CNMV of Foreign Collective Investment Institutions marketed in Spain.
Additional information for investors with residence or seat in South Africa
Robeco Institutional Asset Management B.V. is registered and regulated by the Financial Sector Conduct Authority in South Africa.
Additional information for investors with residence or seat in Switzerland
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Additional information relating to RobecoSAM-branded funds/services
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The sale of the Fund qualifies as a private placement pursuant to section 2 of Uruguayan law 18,627. The Fund must not be offered or sold to the public in Uruguay, except under circumstances which do not constitute a public offering or distribution under Uruguayan laws and regulations. The Fund is not and will not be registered with the Financial Services Superintendency of the Central Bank of Uruguay. The Fund corresponds to investment funds that are not investment funds regulated by Uruguayan law 16,774 dated 27 September 1996, as amended.

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