

Emerging markets' second growth wave is straight ahead



Celebrating 30 years
Emerging Markets Investing
1994-2024

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Five key insights from 30 years in EM equities

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Adding value in different market circumstances and over long periods

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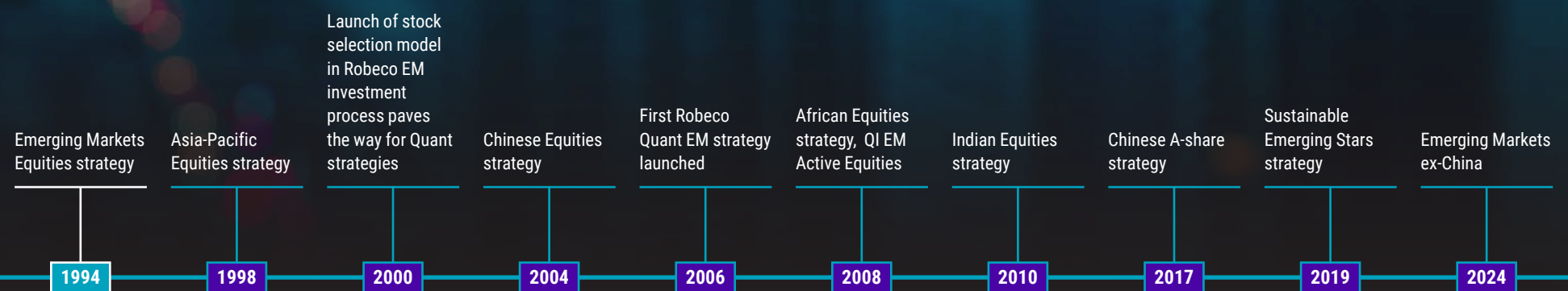
Blending in style: Fundamental and quantitative EM investing

ROBEKO
The Investment Engineers

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30 years of pioneering in emerging markets



THREE ESSENTIAL TRENDS

EMERGING MARKETS' SECOND GROWTH WAVE IS STRAIGHT AHEAD

Emerging markets will provide richer investment opportunities than developed peers over the next decade, driven by technological innovation, continued urbanization and shifting geopolitical and global trade dynamics.

COVER STORY

Emerging markets (EM) have long been the engine of global economic growth, offering vast opportunities and presenting unique challenges. With increased geopolitical uncertainty in recent years, the outlook for these markets is the subject of intense scrutiny. These dynamic countries, characterized by rapid growth, evolving demographics, and increasing urbanization, will play a crucial role in shaping the world economy.

Investors will look back at the last decade or so and wonder whether they should consider renewed or increased exposure to emerging markets (EM). It's easy to understand why expectations of EM are anchored to the past. From 2001 to 2010, the MSCI Emerging Markets Index outperformed the MSCI World Index by a wide margin. Yet since 2011, EM equities have significantly lagged developed markets, and many investors are now underweight the asset class.

However, even a cursory glance at the history of EM performance will quickly show that looking back to assess the future is not a particularly useful approach to take. Instead, we think investors should focus on the changing undercurrents in EM economies and markets that we expect will reignite returns in the decade ahead. As economic and political power continues to shift from West to East, several trends and challenges are likely to positively impact these markets significantly. Here we delve into the key factors shaping the trajectory of emerging markets in the next decade, and analyze the opportunities and challenges they face.

A story of two decades

The first decade of the 21st century was an outstanding one for EM stocks fueled by unique circumstances. China joined the World Trade Organization in 2001, increasing its share of world exports and accelerating globalization. The country made huge investments in fixed assets and real estate, plus it executed a massive credit expansion unleashing a commodities super-cycle. Between 2000 and 2010, China's GDP grew by an average of over 10.5% per year, boosting global economic activity while enriching commodity-producing EM countries and supporting their currencies. In the same period, developed markets struggled to perform, recovering from the tech 'dot.com' bubble bursting (2001) only to endure the sub-prime disaster in 2007. The US dollar also weakened significantly during this time further helping EM performance.

Coming out of the Global Financial Crisis (GFC) of 2008-2009, the overwhelming consensus was that US dominance after two 50% stock market crashes in one decade was over. EM countries were going to be the future. This consensus view could not have been more wrong in the decade that followed.

Between 2011 and now, the MSCI World Index significantly outperformed the MSCI EM Index. Central banks in developed markets used quantitative easing (QE) and artificially low interest rates to counter the fall-out from the GFC. This incentivized US corporate borrowing, increased leverage and stock buybacks resulting in PE multiple expansion and developed market outperformance. From 2014 onward, the US dollar also strengthened, eroding the relative competitiveness of EM exports. Commodity prices eased and geopolitical concerns intensified, from the

US-China trade wars to Russia's invasion of Ukraine, while the Covid pandemic added new challenges. China slowed down and undertook regulatory reform which undercut the fast-growing technology companies. Against this backdrop, emerging markets underperformed.

Navigating the dynamics

Will the next decade be a more rewarding one for EM investors? We believe so. Over the past few decades, emerging markets have witnessed remarkable economic growth, driven by factors such as demographic trends, urbanization, technological advancements, and globalization, and we expect this growth trajectory to continue. The expected recovery of EM stocks will, however, be propelled by a very different set of dynamics. Three essential trends will potentially define the next EM era.

1 TECHNOLOGICAL INNOVATION

We are in the midst of a technological revolution and emerging markets will be central to this both in terms of innovation, and as beneficiaries. Emerging markets are increasingly becoming hubs for technological innovation and entrepreneurship. Moreover, the adoption of digital technologies, such as mobile internet and e-commerce, has the potential to leapfrog traditional development stages and drive more inclusive growth, with accompanying wealth effects. Furthermore, the largest players in the global technology supply chain are in EM, especially Korea and Taiwan.

Compared with developed economies, emerging markets enjoy three distinct advantages related to adopting new technologies:

1. They likely won't have to upend existing costly infrastructure or deeply embedded legacy systems.
2. They have young populations that are digitally savvy, have a real thirst to embrace change, and are open to experiment and implement these technologies.
3. Their governments play a key role. While the private sector in mature markets tends to drive innovation, governments in some of the larger emerging markets are actively partnering and supporting entrepreneurial efforts in new technologies as a way to nurture local talent and skills.

Key areas of impact include:

- **Healthcare:** In regions like Southeast Asia and Africa, leapfrogging has led to significant improvements in healthcare. For instance, mobile health apps and telemedicine services have been adopted to address healthcare gaps.
- **Education:** Innovative e-learning platforms and digital content delivery have transformed education in areas with limited access to traditional schooling.
- **Agriculture:** Precision farming techniques, mobile-based crop management, and weather forecasting apps empower farmers to enhance productivity.
- **Digital payments:** Lack of traditional infrastructure in rural areas has hindered access to financial services. For example, in India, the widespread adoption of mobile phones enabled the leapfrogging of banking services through the 'unified payment interface' (UPI). UPI facilitates interbank transactions, making credit more accessible and convenient for millions.

The digital revolution is reshaping emerging markets. Increased internet penetration, mobile connectivity, and the adoption of e-commerce are transforming traditional business models. Fintech companies, for instance, are revolutionizing financial services by providing innovative solutions for payments, lending, and remittances. As digital infrastructure improves, emerging markets are leapfrogging into the digital age, creating new avenues for growth.



2 URBANIZATION, ENVIRONMENTAL ADAPTATION AND SUSTAINABILITY

By 2030, it is estimated that two-thirds of the global population will reside in cities, with the majority in megacities housing more than 10 million people. This shift presents both challenges and opportunities. Governments must invest in robust infrastructure – transport, energy, water, and sanitation – to support urban growth. Smart cities, sustainable transportation, and efficient logistics networks will be critical for economic competitiveness. Infrastructure gaps remain a significant impediment to growth in many EM. Addressing these gaps through investment in transportation, energy, and telecommunications infrastructure will be crucial for unlocking their economic potential and enhancing competitiveness.

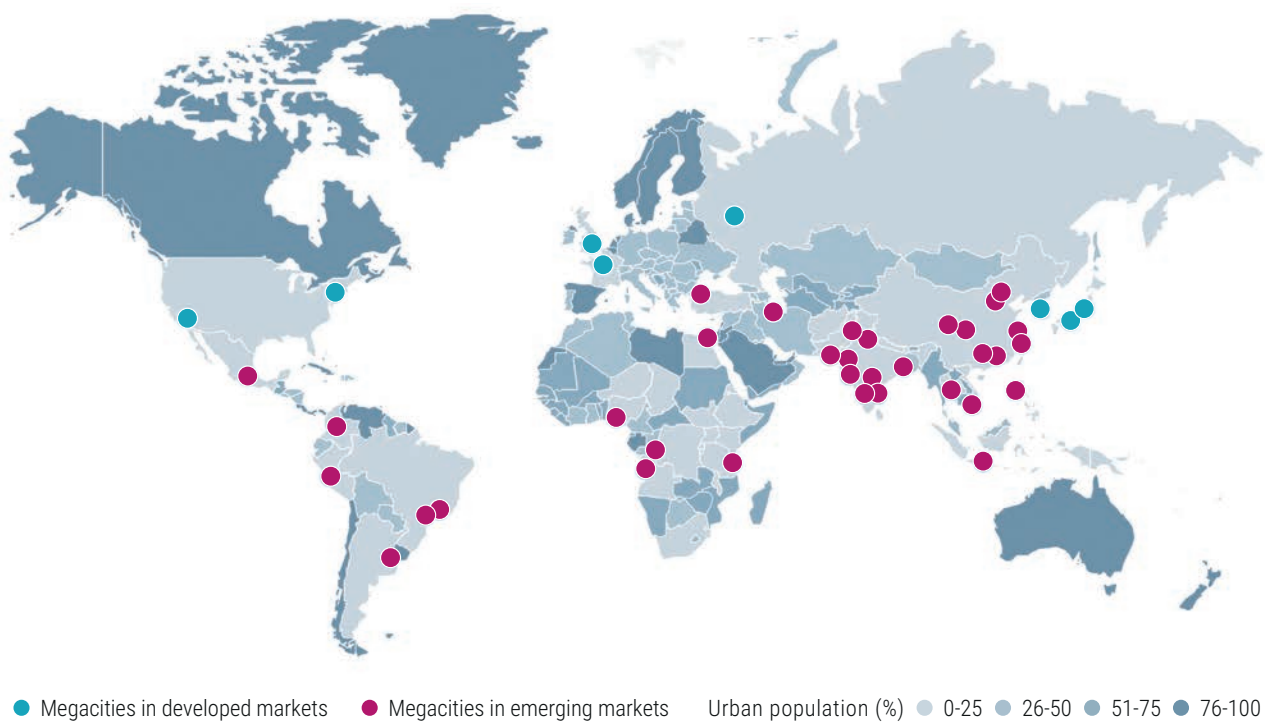
The environmental impact of rapid economic growth, urbanization and development is a growing concern in many emerging markets. Climate change, natural resource depletion, and pollution pose significant risks to long-term sustainability and could undermine economic growth prospects if left unaddressed. Transitioning to greener and more sustainable development models is imperative for mitigating environmental risks and promoting resilience. Balancing economic growth with environmental conservation is thus essential.

Many emerging countries have been pursuing green reform agendas to address environmental challenges and transition toward more sustainable development models. Some examples include:

1. **China's** green reform agenda refers to the country's efforts to transition toward a more environmentally sustainable and low-carbon economy. Key components of China's green reform agenda include investing heavily in renewable energy. The country is the world's largest producer of solar panels and wind turbines by a wide margin, with 90%+ of all solar panels¹ in the world coming from China. China aims to achieve carbon neutrality by 2060, and is already investing large sums in promoting green finance initiatives and biodiversity conservation programs.

2. **Brazil** has been working to combat deforestation in the Amazon rainforest and has set targets for reducing greenhouse gas emissions. The country has also been investing in renewable energy sources such as hydropower, wind, and solar. Renewables compose almost 45% of Brazil's primary energy demand,² which makes their energy sector one of the least carbon-intensive in the world. Brazil's national grid is made up of almost 80% from renewable sources.³

Figure 1: 35 out of 43 megacities are in emerging markets



Source: UN World Urbanization Prospects, 2019



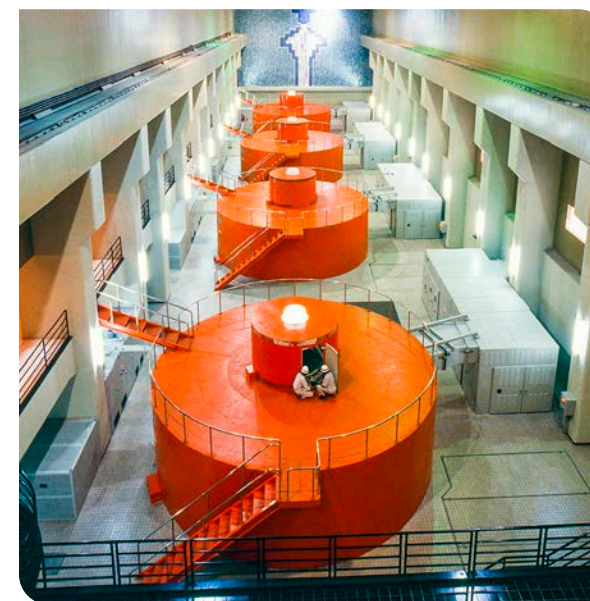
3. India's green reform agenda encompasses a range of initiatives and policies aimed at promoting environmental sustainability, combating climate change, and fostering green growth. India's Nationally Determined Contributions (NDCs) under the Paris Agreement include targets to reduce its emissions intensity of GDP by 33-35% by 2030 compared to 2005 levels. The country also aims to achieve 40% of its electric power capacity from non-fossil fuel sources by 2030. While these targets are significant steps toward reducing carbon emissions, they do not explicitly aim for carbon neutrality.

4. Indonesia has set ambitious targets for increasing the use of renewable energy as part of its energy transition efforts. One of the main targets outlined in its National Energy Policy is to achieve a renewable energy mix of 23% by 2025 and 31% by 2050.

Achieving these ambitious goals requires massive investment in wind and solar power, EVs, smart power grids, and other green technologies. Next to their large market shares in the wind and solar market, China and Korea have large automobile and battery manufacturers with significant market shares in the global EV supply chain.

Paradoxically, building climate resilience can be commodity-intensive, depending on the specific measures and strategies employed. Some aspects of climate resilience initiatives require significant use of commodities such as steel, timber, metal alloys, rare earth metals, lithium, silicon and plastics. Commodity-producing EM countries such as China, Brazil, Chile, Indonesia, South Africa, and Korea are likely to be economic beneficiaries of the energy transition.

1. Source: IEA.org, 2022
2. Source: IEA.org, 2023
3. Source: IEA.org, 2023



3 GEOPOLITICAL SHIFTS AND GLOBAL TRADE DYNAMICS

The outlook for emerging markets is intricately linked to the evolving dynamics of global trade. Rising protectionism, trade tensions, and shifts in supply chains pose both risks and opportunities for EM economies. The geopolitical landscape is also evolving rapidly. Trade tensions, regional alliances, and technological competition will impact emerging markets, as will internal change. For example, India is projected to become the largest emerging market within the next decade, likely around the 2030s, overtaking China. This will be driven by population growth, robust economic growth, a demographic dividend, continued market reforms, technology and innovation, and infrastructure development.

In particular, we are increasingly seeing companies adopting the 'China Plus One' strategy, employed by businesses to diversify their manufacturing or sourcing beyond China by adding at least one additional country to their supply chain. This approach aims to mitigate risks associated with overreliance on China, such as rising labor costs, geopolitical tensions, or disruptions in the supply chain. Closely related is the increasing trend of reshoring and onshoring. Reshoring refers to the practice of bringing back manufacturing operations and jobs to the domestic country from overseas locations. This could be due to various factors such as rising labor costs in offshore locations, quality control concerns, logistical issues, or changes in government policies. Onshoring is similar to reshoring but focuses specifically on sourcing inputs from a domestic location rather than from overseas. Onshoring

is often driven by similar reasons as reshoring, such as cost considerations, supply chain resilience, or strategic alignment with domestic markets. Both reshoring and onshoring are strategies aimed at enhancing supply chain resilience, and supporting local economies. EM countries are essential to these shifting supply chain dynamics, particularly, India, Mexico, Indonesia and Vietnam.

For example, Vietnam is benefiting from onshoring and the 'China Plus One' strategy in several ways:

- **Manufacturing growth:** Companies seek alternatives to manufacturing in China due to rising labor costs and geopolitical tensions. Consequently, Vietnam has emerged as a popular destination for relocation. The country offers lower labor costs compared to China, making it attractive for businesses looking to maintain competitive pricing while diversifying their manufacturing bases.
- **Trade agreements:** Vietnam's actively pursued trade agreements provide preferential access to key markets, making the nation an even more appealing destination for onshoring and manufacturing investments.
- **Geopolitical stability:** Compared to some other countries in the region, Vietnam has enjoyed relative political stability, which is crucial for businesses seeking a reliable manufacturing base.

- **Skilled workforce:** Vietnam has been investing in education and vocational training programs, resulting in a growing pool of skilled workers. This skilled labor force is essential for industries such as electronics, textiles, and manufacturing, making Vietnam an appealing destination for companies implementing onshoring or 'China Plus One' strategies.

The outlook for emerging markets in the next decade is characterized by a mix of opportunities and promising challenges. Demographic trends, technological innovation, and infrastructure development offer promising avenues for growth, while macroeconomic vulnerabilities, governance weaknesses, and environmental risks also offer significant challenges.

In summary, the next decade will be a transformative and positive period for emerging markets – a journey marked by resilience, adaptability, and shared aspirations. Both economically and geopolitically, power is shifting to the emerging markets such as Brazil, Mexico, Greater China, South Korea, India and some parts of Southeast Asia. The time is now right for investors to raise their EM exposure to capture this second wave in the emerging markets' growth evolution. ●

FIVE KEY INSIGHTS FROM 30 YEARS IN EM EQUITIES

by Wim-Hein Pals and Arnout van Rijn

Despite our Dutch roots, Robeco expanded into global investing in 1930, one year after the company was formed. Therefore, finding value on every continent has always been part of our DNA. In 1994 we launched our Emerging Markets Equities strategy to build on this heritage and apply our expertise in the era of globalization. The strategy has navigated three decades of change and returned over 800% in absolute terms in that time, consistently beating its benchmark.

That success depends on a consistent style and a stable team, with portfolio manager Wim-Hein Pals managing the strategy from the beginning. Wim-Hein is joined by another Robeco veteran, multi-asset portfolio manager Arnout van Rijn to share five of lessons learned in these 30 tumultuous years.

Wim-Hein Pals is Head of the Robeco Emerging Markets Equity team and Lead Portfolio Manager of the Global Emerging Markets Core strategy. Previously, he was Portfolio Manager Emerging European and African equities and Portfolio Manager Emerging Asian equities. Wim-Hein started his career in the investment industry at Robeco in 1990. He holds a Master's in Industrial Engineering and Management Sciences from Eindhoven University of Technology and a Master's in Business Economics from Tilburg University.

Arnout van Rijn is Portfolio Manager and member of the Sustainable Multi Asset team. Previously, Arnout was CIO Asia Pacific, Co-Head of the Asia Pacific team and Lead Portfolio Manager of Robeco Asia Pacific Equities. Before that, he was Lead Portfolio Manager of Rolinco, one of Robeco's flagship global equity products. From its inception in 1994 until 2000, he was Portfolio Manager of Robeco's Emerging Markets Equities strategy. He started his career in the investment industry in 1990. Arnout holds a Master's in Business Economics from Erasmus University Rotterdam.



Forex exposure is key

LESSON 1 Robeco entered emerging markets (EM) to invest in fast-growing global economies, but we quickly had to learn hard lessons about how to beat a passive approach by being tactical and clear-sighted. As the strategy launched in 1994, we were in the so-called ‘tequila crisis’, when Mexico was still a big part of the EM index, and the peso crashed but worse was to follow later in the 1990s.

Before you invest in an emerging market, you have to be comfortable with currency risk, of which Thailand in 1997 was a great example. We were cognizant of the risk and

thus exposed to the right companies, mainly exporters, with a Thai baht (THB) hedge in place. When the Thai baht fell from 25 to 29 against the USD we decided to close the hedge, but the THB continued to fall until it bottomed finally in 1998, around 50.

The Thailand crisis taught us to avoid a common mistake in EM investing: entering or re-entering a market too soon after a crisis to try and get in ahead of a recovery. We bought Thai banks at very low book values but they continued to fall. The investment eventually paid off at the end of 1998 when banks recovered to 0.6 times the book

value, but we should have waited a little longer and let the THB find stability. It’s probably better waiting a bit too long and losing a bit of the upside than being too early and going down another 20%. That was definitely a lesson learned.

Today this informs our approach to countries like Turkey and Argentina. It’s important to be patient and wait for a period of stability in order to go neutral before going overweight, as these crises have tended to overhang asset prices for longer than you might think.

Active management is essential

LESSON 2 Beating the benchmark consistently was (and is) very much about active management with a disciplined investment process. The positive 30-year track record of the Robeco Emerging Market Equity strategy against its benchmark rests to a large degree on companies we have owned throughout this period. Samsung Electronics and TSMC are two that have delivered remarkable year-on-year returns. We visited Samsung in the 1990s and it was a completely different company back then, but we saw the long-term attractiveness of its fundamentals, both in its technology focus and its undervaluation. TSMC had visionary leadership and the consistent execution that builds trust, even through cyclically weak periods or when competition emerged.

We also followed structural themes like being long consumer discretionary combined with underweight consumer staples – that has been a consistent bias, but the exceptional companies still stand out. These two stocks are also emblematic of a key development – that the tech sector was basically non-existent in EM when we started. We were investing in banks and telcos, and some industrial companies, but now the tech sector hovers around 30% of the strategy.

For active managers in EM, the global financial crisis was also a key turning point for region and country allocation and keeping a clear head. Just as in developed markets (DM), EM sold off at the end of 2008, with unprecedented collapses in some of the cyclical companies we had exposure to. We knew we had to commit to our strategy. It didn’t turn around until March 2009, when EM in general and our EM strategy in particular enjoyed one of its best years ever.

EM BUY-AND-HOLD HEROES

Figure 2: TSMC – annualized return 1994-2023 = 18%



Source: Robeco. MSCI, 2024

Founded by former Texas Instruments executive Morris Chang in 1987 with capital of USD 220 million, Taiwan Semiconductor Manufacturing Corporation was listed on the Taiwan Stock Exchange in 1994 with an initial market capitalization of USD 4 billion compared to USD 600 billion today.¹ TSMC pioneered the fabless business model, enabling chip designers to concentrate on their core competencies while significantly reducing their capital expenditures and risks. TSMC’s strategy has proved immensely successful, attracting a diverse and loyal customer base including Apple, Intel and Nvidia with 59% global market share.²

Figure 3: Samsung Electronics – annualized return 1994-2023 = 14%



Source: Robeco. MSCI, 2024

Descended from the well-known Korean industrial conglomerate, under the visionary leadership of Lee Kun-hee, who became the chairman in 1987, Samsung Electronics challenged its employees to create superior products and services that could compete with the best in the world. In the 2000s, Samsung’s success in memory chips was already established and then spread to LCD panels, TVs, and smartphones. As a result, Samsung has become one of the most valuable brands in the world. More recently Samsung has been concentrating its investments in its foundry business, with the aim of becoming one of the top two manufacturers capable of fabricating chips using 3 nanometer and 2 nanometer technologies and in HBM (High Bandwidth Memory) DRAM technology which plays a pivotal role in applications for AI and data centers.

This is not a buy, sell or hold recommendation for any particular security. No representation is made that these examples are past or current recommendations, that they should be bought or sold, nor whether they were successful or not. Past performance is no indication of current or future performance.

Volatility has turned to (relative) stability

LESSON 3 EM have always been characterized as more volatile than developed peers – but that has started to change recently. It wouldn't be a surprise to us if the volatility of EM in the longer term declines below the DM level. This is because of improved economic fundamentals in EM and the fact that recent financial crises have originated in DM and not in the emerging world.

The recurring crises in Latin America in the 1970s and 1980s, and the crisis of 1997 in Thailand and South East Asia, left EM banks much more cautious. That was not

always ideal for minority shareholders, but it did leave lots of EM financial institutions better capitalized than DM peers. That caution also spilled into macroeconomic policy leaving EM economies with solid fundamentals and more policy flexibility.

Local interest has also had a very important influence on both volatility and returns. India, Thailand and Taiwan are great examples where domestic investors are key to the market dynamics. The increasing wealth in EM across the income distribution and rising level of financial inclusion is intensifying this effect.

The fact that EM are being driven by domestic investors and institutions in the long run is a good sign, because it shows there is a connection between economic growth and stock market performance. The institutionalization of emerging equity markets has been a strong driver in India in recent years – a structural change where an increasingly wealthy population is sending inflows into the domestic stock market month on month. However, the reverse has been happening in China. Domestic confidence in equities has been a detractor there in the past year, so that needs to be restored before any recovery can be sustained.

Governance reform is gradually improving returns

LESSON 4 We recently investigated the Korea discount – how Korean stocks have been trading at consistently lower valuations than comparable companies in similar markets.

Well, it's been down to governance and corporate strategy and this is a long-term issue. To highlight Samsung again in the early 1990s, we saw the merit of increasing our weight, but at the same time, we all knew that they were not focused on return on equity (ROE), nor on the minority shareholders.

Back in those days, they were really targeting the number one position in market share, not making a nice return over their cost of capital. So that became a long-term theme and as the company matured we gradually started to enjoy the fruits of that change toward a focus on ROE.

Understanding a company's management focus in EM and how much value there is to unlock is really important and is standing us in good stead wherever in the emerging world

we invest. The research from the Robeco Sustainable Investing team has been instrumental in that regard and has helped us identify governance risks earlier in the investment process. This is where Asia has been playing catch-up. The number of IPOs coming from Asia has been phenomenal in the past two decades. In Latin America, the corporate culture was already basically Americanized and corporate behavior was more like US companies, potentially because many companies already had ADR listings.

Stay true to value style and leverage quant tools to enhance returns

LESSON 5 We started in 1994 from a point where we were doing traditional fundamental analysis the Robeco way. We did lots of research on key factors back in the early 1990s, and we found out that in EM, value was a much better style, performance-wise, than growth. Over the whole three decades, this definitely helped us in terms of outperforming the benchmark.

There's also a general herd mentality in markets and that's related to our comments about financial inclusion and institutionalization. In some markets retail investors would drive stocks to crazy levels, and we would take that as a

signal to reduce our exposure. In addition, from very early on in our EM journey we leveraged Robeco's quantitative rankings, which were value-focused as well, and that quant expertise has always given us discipline.

In the philosophical debate on being a growth or a value investor, we are clearly on the value side. That said, the debate didn't exist until the 2000s, so it was more like we were not willing to overpay and we were always trying to go against short-term hypes and maintain a long-term focus. Momentum still plays a role in our EM process, and we understand you can run a long way past fundamentals, and that has to be respected. Going back to that Thailand

experience in 1997 and 1998, we have also used charts to assess momentum. We believe that the more retail orientation you have in the market, the more momentum works. That puts us in a basket of 'value with momentum'. We're definitely not deep value managers.

In the future, as we see EM getting more institutionalized, we will get fewer of those opportunities where retail investors do crazy things, both on the downside as well as on the upside. Whether that comes to pass or not, we are confidently looking forward to the next thirty years in emerging markets! ●

THE BEST TIME TO INVEST IN EMERGING MARKETS WAS 30 YEARS AGO. THE NEXT BEST TIME IS TODAY

Figure 4: Robeco Emerging Markets Equities strategy vs MSCI EM Index



Source: Robeco, MSCI, 2024. The value of your investments may fluctuate. Past results are no guarantee of future performance.

Robeco's Emerging Markets Equities strategy was launched in 1994, three years after the internet became open access, and seven years before China joined the World Trade Organization. In the 30 tumultuous years since, the strategy has returned more than 750% in absolute terms, benefiting from a wave of globalization and growth as economic power has rebalanced from west to east. From the perspective of 2024, we believe emerging markets (EM) are set to drive the next era of global growth, while exhibiting increasingly healthy economic and demographic fundamentals compared to developed markets (DM). This is confirmed by volatility convergence between EM and DM in the past decade, making this an opportune time to initiate or extend emerging markets exposure.

Adding value in different market circumstances and over long periods



The Netherlands-based Rail & OV pension fund was a very early investor in Robeco's Emerging Markets Equities strategy. Niels Faassen, Senior Portfolio Manager External Mandates at Pensioenfonds Rail & OV, reflects on the decades-long relationship and, more broadly, on the role of emerging markets equities in a pension fund portfolio.

What is the motivation for taking exposure to emerging markets equities?

"Rail & OV has a long-term investment perspective, and equities play a fundamental role in our portfolio given that the asset class represents a vast and relatively transparent market. Equities also have a low correlation with our liabilities as a pension fund and, of course, provide good returns over cash and sovereign debt."

How did Robeco qualify for a role in this diversified emerging markets portfolio?

"Within equities, we consider emerging markets equities to be a good diversifier compared to developed market equities, owing to the fact that emerging and developed countries differ on a range of factors such as economic structure, growth paths and political landscape."

"Our emerging markets equity portfolio is structured using a multi-strategy, multi-manager approach, which prevents it from being overly dependent on one strategy, a specific style or a single manager. Our EME portfolio is split up between a multi-factor component to harvest clearly defined factor premiums and a fundamental component with Robeco fulfilling the role as a core manager within that fundamental component."

“While we acknowledge Robeco’s approach to value, which has helped it stand out compared with peers, the portfolio has a relatively low exposure to heavy-emitting industries like materials and energy, which typically are highly value-intensive sectors. And if you look at the execution, it’s very much the combination of both top-down and bottom-up allocation that drives performance, so we don’t consider the Robeco emerging markets team to be a value investor in the classical sense of the word. Our view is that it’s a core approach that is able to add value in different market circumstances as well as over longer periods.”

Why have you remained invested in the Robeco strategy for multiple decades?

“The stability and long experience of the team sets it apart from most emerging markets teams in the market. Wim-Hein Pals has been with the strategy for three decades, which is remarkable. Along with his co-portfolio manager Dimitri Chatzoudis as well as the emerging markets analyst team, they represent a stable portfolio management team.”

“The investment process is also important. The team follows a well-structured process that has top-down and bottom-up components, and with ESG considerations integrated. We have seen how this process has evolved over time in line with investors’ expectations, becoming more active from around 2010 – and therefore with an increased active share.”

“We are also pleased with the length and the strength of the team’s performance track record. They’ve proven that they are able to add value in different market circumstances as well as over longer periods.”

Emerging markets have had really good seasons over the years, while there have also been tough times. Has it been challenging to maintain your emerging markets exposure?

“It can be challenging in the short term, but we have a long-term horizon and have to match our long-term liabilities. This means that we stick with our strategic allocations and generally don’t respond to short-term market movements with tactical, momentum-related shifts in our positions.”

“Having said that, we do feel that the Robeco team is able to outperform in different market circumstances. It’s not a one-trick pony that only does well in a very specific market environment. We consider them to be more of a core manager rather than a very strictly focused value manager.”

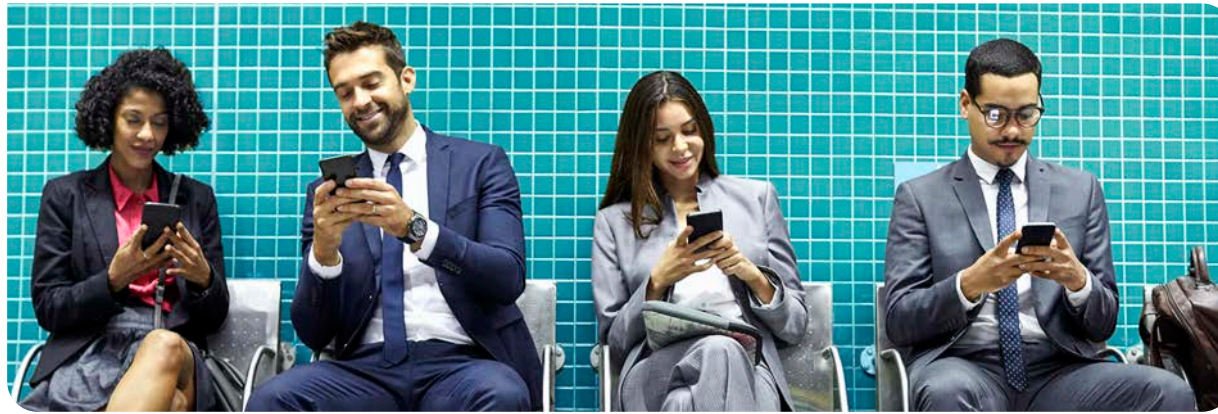
It’s been a long-term relationship between Rail & OV and Robeco. Aside from helping you meet your performance objectives, how would you describe this relationship?

As in any relationship, we’ve had our ups and downs. But in the end, we always find each other and come up with a solution. We value the team’s proactiveness and their ability to work with us to solve problems.”

“For example, we’re now in the process of transitioning from the Robeco fund structure toward a Rail & OV mandate so that we can shape the portfolio more strictly to our specific ESG objectives. In fact, the Robeco team has been instrumental in aligning our broader portfolio with the Paris Agreement and integrating the Sustainable Development Goals. That’s a good testament to the team’s forward-thinking approach in shaping our ESG ambitions.” ●



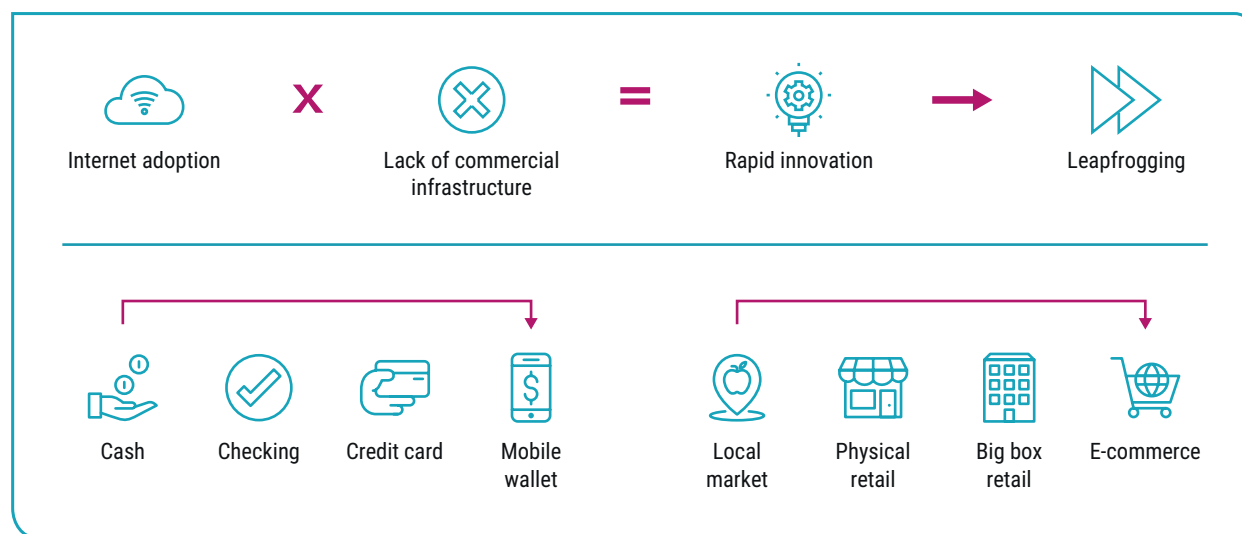
The tech leapfrog effect is producing EM fintech winners



In emerging markets a whole generation of technology is being quickly bypassed through superior and cheaper innovation, which has disrupted multiple industries. The telecommunications (straight to mobile) and energy (solar and wind in remote locations without grid infrastructure) industries are the most well-known examples. In finance it's having a particularly rapid impact with mobile telecommunications enabling new payment networks, while access to basic banking services has become easier, and costs have fallen.

This in turn has positive macroeconomic effects, bringing more of the population into the organized economy, reducing transaction costs, and potentially increasing the tax base, making this a powerful tailwind for emerging markets in general.

Figure 5: The leapfrog effect in finance and retail

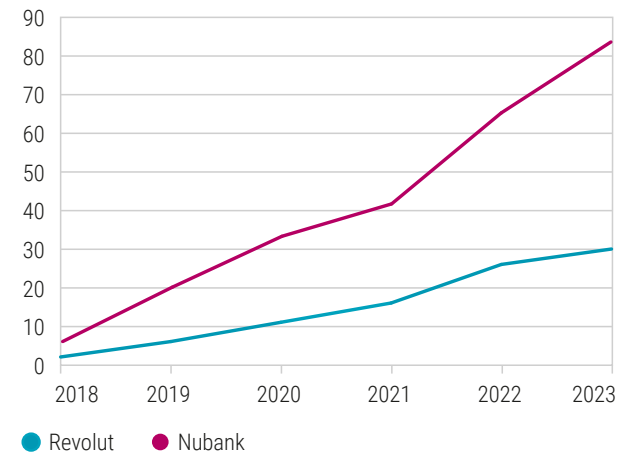


Source: Robeco

Can fintech scale more rapidly in EM?

There is evidence that digital leapfrogging is enabling EM fintech to scale faster than DM peers, which typically face stronger competition from traditional finance incumbents. A good illustration is to compare Nubank, now Brazil's fourth largest bank with over 90 million customers which recorded its first transaction in 2014, with Revolut, a similar online 'neo-bank', which entered the UK market in 2015 and now offers banking services across Europe.

Figure 6: Nubank versus Revolut growth trajectory (in millions of customers)



Source: Revolut, Nubank. Data to end of June 2023.

Leapfrogging to growth

There are some important reasons why Nubank has been able to grow faster. In emerging markets, the rise in internet connectivity combined with a lack of pre-existing offline commercial infrastructure is leading to exponential leaps in technology adoption and business model growth. Many new internet users have access to smartphones and mobile internet, but do not have access to traditional offline banking services. These users are either unbanked, or do not have access to physical bank branches that can provide services comparable to those in the US and Europe.

As a result, these new users tend to be rapid adopters of mobile money and electronic banking services, never needing to use an ATM or write checks. This is reflected in the data on financial inclusion. Brazil, Nubank's core market, had much lower financial inclusion than all developed economies. Thereby, a large underbanked community was waiting to be tapped, especially in younger demographics. According to World Bank data from 2014 to 2021, the percentage of adults (defined as older than 15 years old) with a bank account rose from 68% to 84% in Brazil. In contrast, developed economies were all above 95% in the same data set.

SECTOR CASE STUDY

Furthermore, the entrepreneurial spirit and innovation ecosystem in emerging markets play a crucial role in driving tech leapfrogging. Local entrepreneurs and startups are often at the forefront of developing and implementing innovative solutions tailored to the specific needs and constraints of their markets. This agility and adaptability enables emerging market economies to quickly adopt and integrate new technologies into their societies.

Not an isolated example

Nubank is not an isolated example of an EM fintech startup moving rapidly to scale. For example, Mercado Libre, which offers payments and ecommerce services

across South and Central America, listed back in 2007 and now has over USD 10 billion in annual revenues. In China, Alibaba's Alipay and Tencent's WeChat Pay power a structurally different but equally disruptive wallet-based closed-loop model. In Central Asia, Kaspi is attempting to extend its dominant position in payments and online banking in Kazakhstan into neighboring economies.

Similar trends are unfolding for other daily activities beyond fintech, such as buying groceries, looking for employment, consuming media, moving to new cities, and access to healthcare. Online adoption is faster, local solutions become smarter, and internet economies are booming.

Where will the next winners be found?

Robeco's EM team works with the thematic financials team who manage the Robeco Next Digital Billion strategy to discover and analyze the best fintech companies in emerging markets. There are gaps to fill in financial inclusion in other fast growing EM economies with high mobile penetration rates like India (where 78% of adults had a bank account in 2021, according to the World Bank), Indonesia (52%) and the Philippines (51%). Every opportunity is different depending on the market, the regulatory framework and the macroeconomic backdrop, but in our view it's likely that more regional, or potentially even global, fintech winners will come from EM in the coming years. ●

ENERGY TRANSITION

Asia equities will be transition winners

Mitigating climate change and decarbonizing the global economy is unleashing unprecedented levels of investment across emerging markets, especially in Asia. As a result, the opportunities for equity investors are significant across key sectors including basic materials, renewable energy, infrastructure and technology.

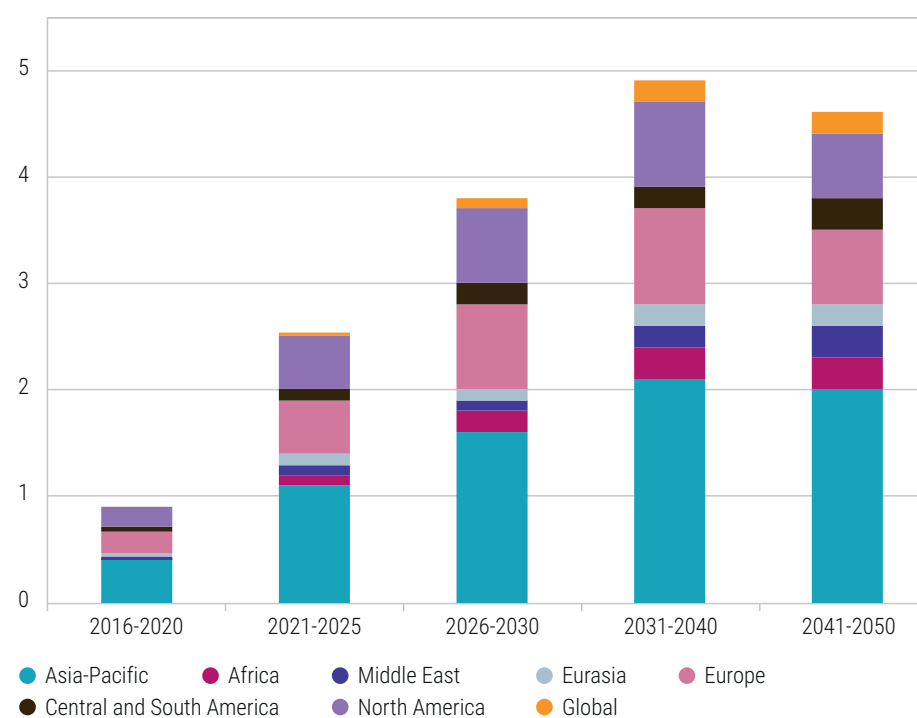
In the past ten years, emerging economies have accounted for 93% of the rise in carbon emissions.¹ In the next ten years, they will account for 98% of global population growth. This makes emerging markets a key part of the global transition story, where the greatest impact is needed, and can be made, if global net-zero targets are to be reached.

Decarbonizing emerging markets demands serious capital. A global net-zero transition hinges on transforming emerging economies and businesses, with Asia requiring nearly half of the USD 125 trillion² needed to make it happen by 2050.

More bang for buck

Cutting emissions in emerging economies is estimated to cost half as much as in advanced economies due to the relative ease of purchasing clean technologies. In a study of ten emerging economies, Standard Chartered reported that every dollar spent on adaptation in these countries in this decade would result in adding USD 12 of additional economic benefit.³ This supports a greater allocation of resources in emerging markets, where decarbonizing investments should deliver superior returns than in developed peers.

Figure 7: Annual average investment (USD trillions) required across regions



Source: Net Zero Financing Roadmaps 2021-2050 – GFANZ.



Transition in Asia

Although Asia accounts for half of the world's greenhouse gas emissions and is home to 60% of the global population, clean energy investment in Asia (excluding China) is proportionally lower compared with other regions. An estimated USD 150 billion annual clean energy investment will be needed by 2030 for ASEAN to be on a Paris-aligned trajectory. However, ASEAN countries attracted no more than USD 30 billion annually in 2021, indicating a need for investments to rise by a factor of five. This effort is nevertheless achievable given Asia has access to the transition materials, technology and funding required, bolstered by Australia's vast resources and Japan's strength in capital markets and technology.

Asian markets foster sustainability trends

To shift their energy mix, several ASEAN countries have announced ambitious plans and initiated government-backed investment schemes to accelerate the energy transition. Countries in the region have committed to net-zero emissions, or carbon-neutrality targets covering more than 80% of energy supply. According to the IEA, China has seen the largest increase in annual clean energy investments globally – USD 184 billion (2019-2023), in line with its core government priorities for the 14th Five-Year Plan period (2021-2025).

Furthermore, to power up the transition, fiscal incentives like smart carbon pricing and strategic public investments will play a pivotal role in closing the financing gap. It is expected that nearly 70% of clean energy investment will need to be shouldered by private entities over the next decade.

Alpha opportunities arise in imperfect markets

Imperfect information and market bias can reveal potential for attractive alpha opportunities for investors who find ways to fill in market gaps. While significant top-down change is required, it must be met with the bottom-up actions of asset owners and managers to provide research that will create greater transparency. These actions should also provide solutions that are increasingly mandated by regulators, while ensuring competitive financial returns.

Research-driven investors aim to understand what is beyond the numbers, moving beyond the known facts to seek what the market may have missed. This applies just as much to sustainability and transition assessments as it does to financial analysis.

In the high-emitting sectors, such as basic materials and energy, the ability to transition is fundamental to an investment case, and the conclusion should not be to avoid or exclude the sectors, but to invest in the winners and the solution providers. It means creating frameworks that will allow us to establish credible transition candidates. These frameworks should acknowledge the nuances of sector-specific decarbonization pathways, considering regional and technological differences.

Access the tools to navigate this complex landscape

Asset owners and managers play a crucial role in this complex ecosystem, acting as stewards of capital in the real economy. To fulfill this role effectively, they need to provide tools and analyses that guide capital toward the most impactful outcomes which in turn will be reflected in investment returns. Investments should not only drive decarbonization but also embrace activities that cushion the blows of a disruptive energy transition, including robust adaptation measures.

Our emerging markets and Asia-Pacific equities strategies employ bottom-up stock picking using a combination of fundamental research and quantitative models. We also incorporate leading-edge proprietary SI analysis with regional understanding.

In emerging markets, vital activities like power generation are often tied to carbon-intensive assets. Here we should be looking at the companies that have credible transition plans, as they will be the main beneficiaries of decarbonization. Of course, understanding the regional context is crucial. This requires tooling such as Robeco's geographical Sector Decarbonization Pathways (SDPs) and our Traffic Light credibility assessment. Our regionalized SDPs capture the different decarbonization timelines across varying regions. By evaluating companies' decarbonization strategies against these region-specific SDPs, we can more accurately identify laggards and leaders. This approach enables dialogues with companies and fosters effective discussions around transition.

Robeco's stewardship and active engagement strategy ensures that we are keeping a close eye on material sustainability issues. We are convinced that our tools improve transparency, overcoming inaction caused by greenwashing fears and channel investments to where impact can be maximized. Our structured, regionalized approach to corporate and policy engagement is a win-win: aiding entities in adopting good transition practices and deepening our understanding of each region's unique opportunities.

Investment has always been about anticipating the future, but climate change now requires us to also work collaboratively toward defined and agreed climate targets. Those at the forefront of this transition should seek impact and returns. Combined with the ongoing political and societal momentum behind sustainability in emerging markets, we believe 2024 is the time to build or extend equity exposure in these countries through a sustainable lens. ●

1. Source: Discussion paper 'Call for Urgent Action on Emerging Markets Transition Investment (EMTI)', September 2022.
2. EU – Asean Business Council EMTI – September 2022.
3. Mobilising capital to adapt to a changing climate – Standard Chartered 2024.

INTERVIEW

Sustainability has become an integral aspect of Robeco's investment processes but how has this evolved in emerging markets investing? Here, Jaap van der Hart and Karnail Sangha, portfolio managers for Robeco's Emerging Stars and Sustainable Stars strategies talk about their journey as investors.



Jaap van der Hart
Portfolio Manager



Karnail Sangha
Portfolio Manager

Building a sustainable investment strategy in emerging markets

You've both been with the Robeco Emerging Markets team since about 2000, so you've probably seen significant changes?

JH "Yes, there have indeed been big changes over the decades. Although issues related to corporate governance and sustainable business have always been relevant to us, sustainability is now taken into account more systematically. There is a far higher degree of disclosure by companies and much more data available."

"We took the initiative in 2001 to create our own corporate governance scores for emerging companies, as there simply wasn't enough data on these measures. Today there are several suppliers to choose from. So it has become easier to invest with a sustainability mindset, with less pioneering needed – although we are always innovating our approach."

"I would add that there has been a marked improvement in the quality of emerging companies. Corporate governance, for example, is overall much better than it was 20 years ago – even though it certainly is not perfect across the board. And company reporting on sustainability issues is also much better today."

Has this sustainability mindset changed the way you invest?

KS "As Jaap said, there is much more data available now. We have several sustainability risk indicators, SDG scores, climate scores and footprint data, among others. And Robeco now has a large Sustainable Investing (SI) Research team that analyzes companies on sustainability criteria and writes in-depth sustainability profiles. Given our access to all of this information, we can estimate the potential financial impact of sustainability issues with more precision and confidence. It is now a systematic part of how we analyze companies."

"With these advances in methodologies and access to quality sustainability-related information, Robeco was able to launch various strategies that have a more pronounced sustainability profile, like the Sustainable Emerging Stars strategy."

You are both involved in managing the Robeco Emerging Stars and the Robeco Sustainable Emerging Stars strategies. How do these strategies differ?

JH "First of all, we do sustainability integration for all our investment strategies. In other words, we always take these factors into account when we do a valuation analysis."

"What sets Sustainable Emerging Stars apart from the regular Emerging Stars strategy is that it aims to have a significantly better sustainability profile compared to the index. We set it up in 2019 for clients who want to steer on sustainability as a second objective next to returns. The overlap between the portfolios is roughly 75% to 80%. For the Sustainable Emerging Stars strategy we avoid companies that score less well on sustainability, and instead buy companies that we consider to be leading on sustainability matters and that are also financially attractive."



KS “The Robeco Sustainable Emerging Stars strategy is seeing good traction and we have landed several new clients recently. There are many institutions in Europe in particular that prefer a more pronounced sustainability profile.”

How do you define what a sustainable company is?

JH “Let me start by saying there is no single, perfect definition of sustainability. Different clients may have different opinions and preferences. And we’ve seen that the correlation between different sustainability scores and measures is actually quite low. Our approach is therefore to look at multiple dimensions of sustainability.”

“We have several binding elements to consider in our portfolio construction, based on measures such as Sustainalytics ESG risk scores, exclusions, fossil fuel exposure and CO₂ footprint, but as portfolio managers we also look beyond these to assess whether a company really is suited for a sustainable portfolio. For this we rely on a range of data sources, but the fundamental input from Robeco’s SI Research team and our own emerging markets analyst team is important.”

What examples are there of companies that you would include in the Robeco Sustainable Emerging Stars strategy?

KS “There are several good examples to mention. In India, for example, we invest in Bandhan Bank, a financial company with a strong micro-lending platform that supports financial inclusion in India. And in China we have a position in e-scooter company Yadea. In Korea, we own Samsung SDI, one of the globally leading EV battery companies that play a critical role in the energy transition. Typically, these companies are a bit more expensive than those we own in Emerging Stars, yet their ratings do go hand in hand with a higher growth outlook. For now, the Sustainable Emerging Stars strategy is smaller in size than Emerging Stars, which gives us more flexibility to also invest in some of the less liquid and smaller companies.”

JH “The other side of the coin would be the companies that feature in the Emerging Stars portfolio because of positive expected returns, yet do not make the cut for Sustainable Emerging Stars. The Brazilian oil company Petrobras is an example. It trades at low valuations and pays a nice dividend, but is still very much focused on expanding its oil production, which means it’s not a logical candidate for a sustainable portfolio. And in India, Emerging Stars holds ICICI Bank instead of Bandhan Bank; ICICI Bank is a larger and much more diversified private bank, also with an attractive return outlook, yet not focused on micro-credit.”

Finally, any thoughts on how sustainable investing will evolve in coming decades?

JH “Thirty years from now, we will be past 2050. If we’ve lived up to the promises, we should be close to a net-zero world and climate change would potentially have become a less urgent topic. Other sustainability topics would likely remain relevant or may have become even more relevant – think of issues like biodiversity, the use of plastics, a circular economy, poverty and human rights. There will still be plenty of challenges for the world, and areas where companies can make a difference. That means sustainable investing will remain relevant.”

KS “It will also be interesting to see how the investor community evolves in its approach. Sustainable investing is a particular focus topic for European institutions right now, while opinions in the US have become more polarized on the topic. Asia is where interest may be growing. The region is growing and developing, and sustainability is likely to become increasingly more relevant. It’s an exciting prospect for us, to see how it all plays out.” ●

This is not a buy, sell or hold recommendation for any particular security. No representation is made that these examples are past or current recommendations, that they should be bought or sold, nor whether they were successful or not.



**A QUANT
APPROACH TO
EMERGING
MARKETS
INVESTING**

Blending in style: Fundamental and quantitative EM investing

When portfolio managers rise to the challenge of harnessing EM investment opportunities, they tend to take either a fundamental or a quantitative approach. This begs the question: which investment style is best suited to reap the benefits while managing the risks in this environment? As pioneers in both – with our first two EM strategies dating back to 1994 and 2006 respectively – we recently examined this question at length.

What's in a name? The dichotomy of approaches

To address this timely question, we asked ourselves whether a fundamental approach is essential in these markets given their unique challenges. Or are fundamental investors actually quant investors in disguise, simply riding the same factor premiums that quant managers target systematically? Are fundamental managers more successful than their quant counterparts, and if so, is this thanks to their skill or thanks to their willingness to take on higher active risk?

Seeking answers, we compared the performance of both types of managers, adjusting for active risks. Beyond raw performance metrics, we explored whether fundamental and quant managers adopt distinct investment styles. And importantly, we wondered, is it possible to harness the strengths of both styles within a single portfolio?

Risk and reward: Mastering the tightrope

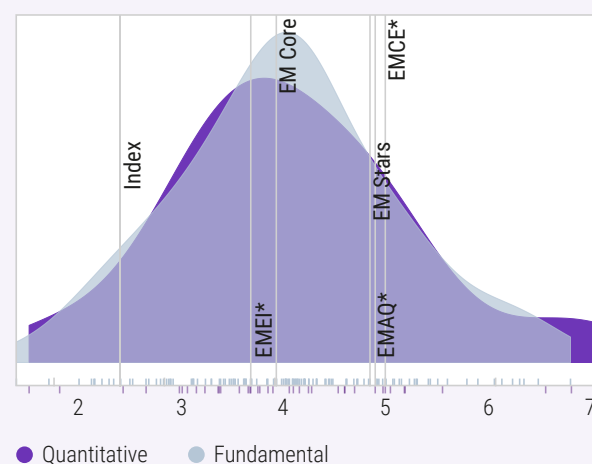
Our investigation honed in on active EM strategies, drawing from the eVestment database. Specifically considering active EM strategies with long track records from April 2011 to September 2023, our sample encompasses 162 strategies in the database, comprising 123 fundamental and 39 quant strategies.¹

Firstly, having scrutinized the return distributions for fundamental and quant strategies, we found that the returns of the fundamental and quant strategies were on

par, averaging around 4% per annum. Secondly, we noted that most strategies, whether fundamental or quant, demonstrated strong performance by beating the relevant benchmark index (MSCI EM Index).

Figure 8: Annualized return (%)

Return



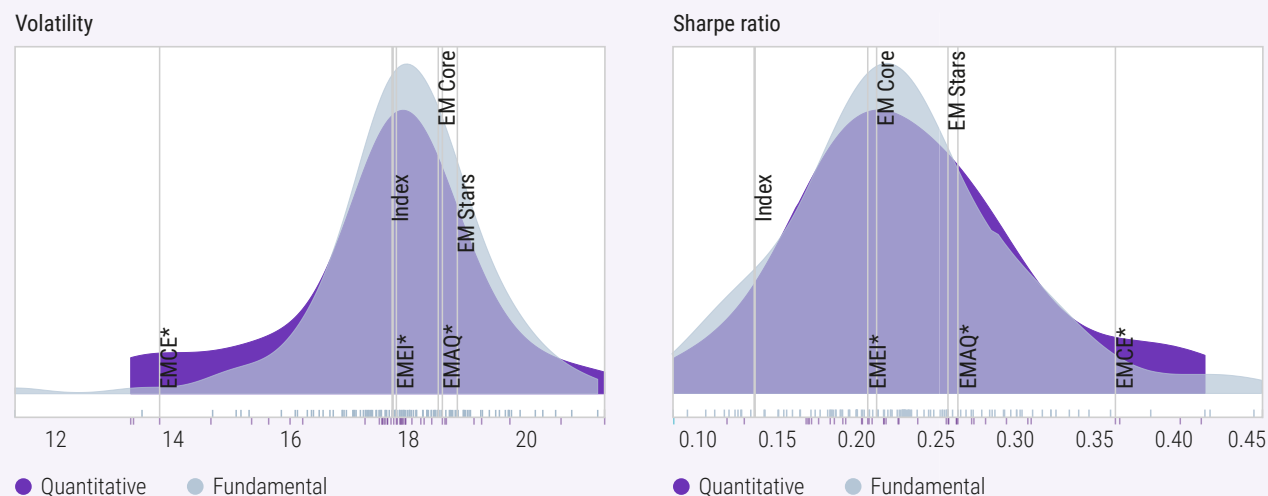
Source: Robeco, eVestment. The figure shows density plots of annualized mean returns. The density for the quantitative strategies is shown in purple and for fundamental strategies in grey. We include strategies that were active over the period from April 2011 to September 2023. The sample includes five Robeco strategies, which are highlighted in the figure. The two fundamental strategies are EM Core and EM Stars, and the three quantitative strategies (denoted with an asterisk) are EM Enhanced Indexing (EMEI), EM Active Quant (EMAQ) and EM Conservative Equities (EMCE), with the strategy labels placed right of the corresponding lines.

Was this due to the top performers sharing specific characteristics? Of the ten strategies with the highest returns, seven were fundamental and three quant, roughly matching the ratio of the whole sample. Unsurprisingly, six of these ten strategies had above-average tracking errors (TE), showing that at least part of their outperformance can be attributed to the managers taking higher active risks.

What about risk? While fundamental and quant strategies exhibited somewhat similar distributions, more of the latter displayed lower volatility. A good example is our EMCE strategy, which displayed only 78% of the index volatility over the sample period, aligning with its stated defensive investment objective. As a result, the risk-adjusted performance distribution (measured by the Sharpe ratio) generally echoed the distribution of absolute returns, but low-risk strategies such as EMCE were found at the far right of the distribution.

A QUANT APPROACH

Figure 9: Volatility and Sharpe ratio



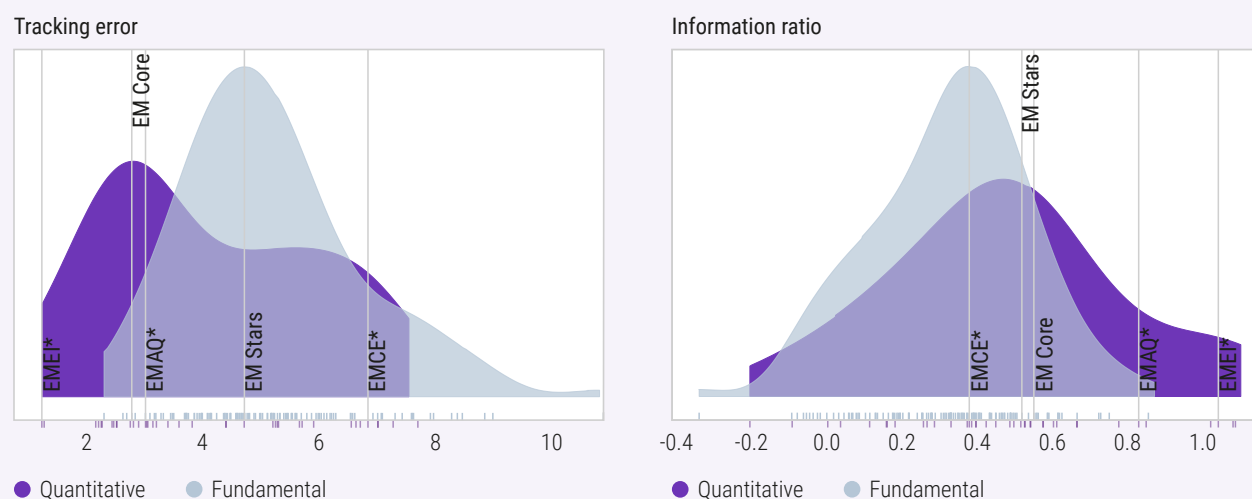
Source: Robeco, eVestment. The figure shows annualized return volatility and Sharpe ratio density plots. The densities for the quantitative strategies are shown in purple and for fundamental strategies in grey. We include strategies that were active over the period from April 2011 to September 2023. The sample includes five Robeco strategies, which are highlighted in the figure. The two fundamental strategies are EM Core and EM Stars, and the three quantitative strategies (denoted with an asterisk) are EM Enhanced Indexing (EMEI), EM Active Quant (EMAQ) and EM Conservative Equities (EMCE), with the strategy labels placed right of the corresponding lines.

But what about relative risks? On average, quant strategies exhibited lower active risks than fundamental ones, with a mean tracking error of 4.2% for quant strategies compared to 5.2% for their fundamental counterparts, suggesting

that fundamental managers tend to take higher active risks. Aply, quant strategies came out better with an average IR of 0.47 versus 0.32 for the fundamental ones.

Notably, we found that the two benchmark-relative strategies – EMEI and EMAQ – were in the top quintile in terms of the IR distribution among quant strategies, with both adhering to their targeted TE risk objective of 1% and 3%, respectively. EMEI has the lowest TE within the investigated sample while generating the third-highest IR. The fundamental EM Core and EM Stars strategies presented above-average IRs of approximately 0.5 at moderate TEs of 2.8% and 4.7%, respectively.

Figure 10: Tracking error and information ratio



Source: Robeco, eVestment. The figure shows annualized return tracking error and information ratio density plots. The densities for the quantitative strategies are shown in purple and for fundamental strategies in grey. We include strategies that were active over the period from April 2011 to September 2023. The sample includes five Robeco strategies, which are highlighted in the figure. The two fundamental strategies are EM Core and EM Stars, and the three quantitative strategies (denoted with an asterisk) are EM Enhanced Indexing (EMEI), EM Active Quant (EMAQ) and EM Conservative Equities (EMCE), with the strategy labels placed right of the corresponding lines.

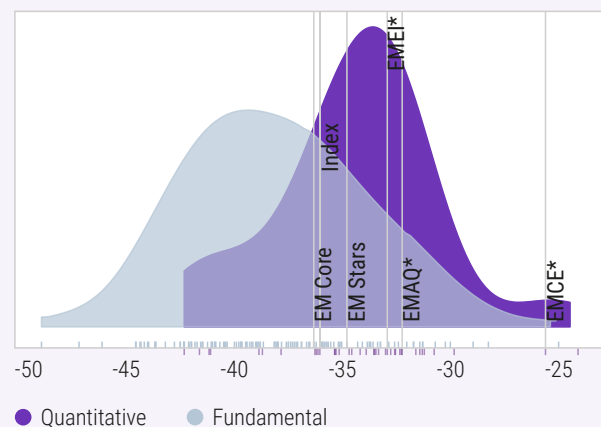
What about drawdowns?

Given the elevated risks associated with EM equity investing, we examined the associated drawdowns. Indeed, the maximum drawdown of the MSCI EM Index in the considered sample period was -36.0%. Notably, most quant strategies observed smaller absolute drawdowns, with low-risk offerings such as EMCE reducing drawdown to -25.6%. While two-thirds of the fundamental strategies studied experienced more severe drawdowns than the index, Robeco's two fundamental offerings showed an index-like drawdown, speaking to their effective risk management mechanisms.

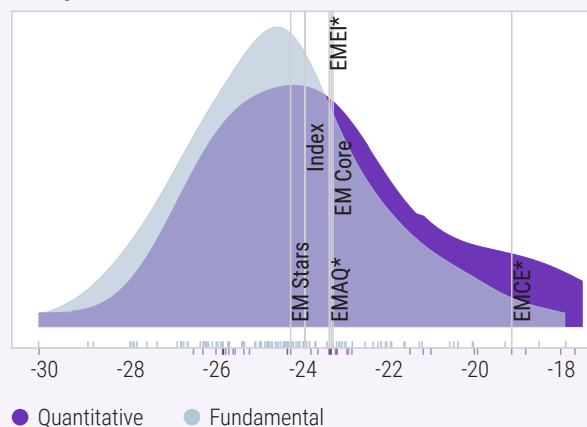
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Figure 11: Absolute drawdowns

Maximum absolute drawdown



Average worst five absolute drawdowns



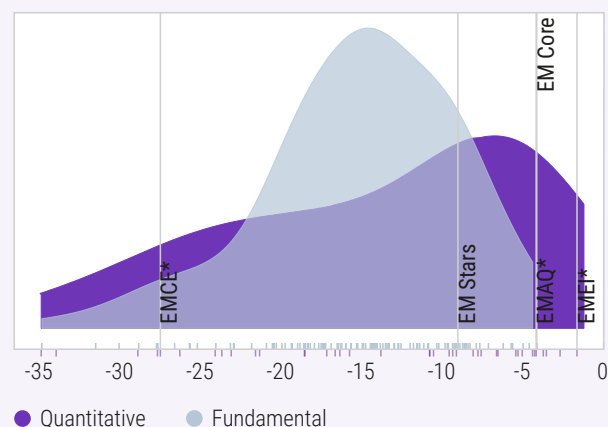
Source: Robeco, eVestment. The figure shows density plots for the maximum and average of the worst five absolute and relative drawdowns. The densities for the quant strategies are shown in purple and for fundamental ones in grey. We include strategies that were active over the period from April 2011 to September 2023. The sample includes five Robeco strategies, which are highlighted in the figure. The two fundamental strategies are EM Core and EM Stars, and the three quant strategies are EM Enhanced Indexing (EIE), EM Active Quant (EMAQ) and EM Conservative Equities (EMCE), with the strategy labels placed right of the corresponding lines.

Low-risk strategies exhibit the highest relative drawdowns. With their focus on low-risk investing, which tends to lag in times of rallying equity markets, such relative drawdown

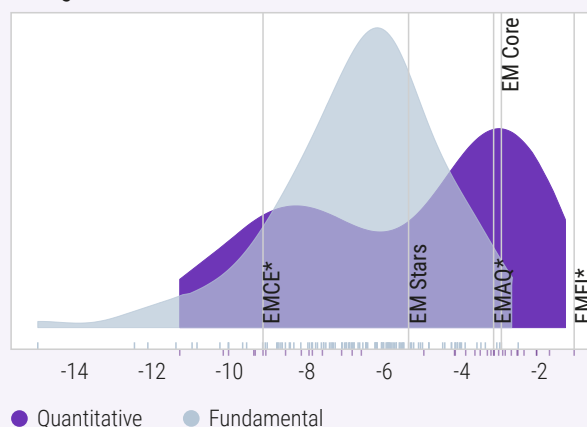
risk patterns are arguably to be expected and more of a feature than a bug.

Figure 12: Relative drawdowns

Maximum relative drawdown



Average worst five relative drawdowns



Source: Robeco, eVestment. The figure shows density plots for the maximum and average of the worst five relative drawdowns. The densities for the quant strategies are shown in purple and for fundamental ones in grey. We include strategies that were active over the period from April 2011 to September 2023. The sample includes five Robeco strategies, which are highlighted in the figure. The two fundamental strategies are EM Core and EM Stars, and the three quant strategies are EM Enhanced Indexing (EIE), EM Active Quant (EMAQ) and EM Conservative Equities (EMCE), with the strategy labels placed right of the corresponding lines.

Factors in style

Having considered performance, risk and drawdowns, what further differences were we able to pinpoint in the investment styles? And how and where did factors come into play? To this end we investigated a five-factor model for each strategy in our sample, including the market factor and the four well-established style factors: value, momentum, quality and size.

First, quant strategies showed significant exposure to value and momentum, with the evidence for quality being less pronounced.² Second, quant strategies clearly tapped into smaller companies. This is not necessarily done in search of harvesting a size premium but rather to gain higher and more diversified exposure to the other factors. Third, while fundamental strategies had negligible exposure to momentum, quality, and size, we noted a pronounced anti-value tilt, resonating with a growth investment objective. Finally, while Robeco's quant strategies were consistent with the above reading, we noted that its two fundamental strategies actually showed significantly positive value and quality exposures, in line with their stated investment objective. These salient differences between the two strategy types intuitively present an opportunity to enhance overall portfolio diversification by combining fundamental and quant strategies.

A QUANT APPROACH

Diversify, diversify, diversify

To foster this intuition about the complementarity of quant and fundamental strategies, we examined their outperformance correlations. In our sample period, the average outperformance correlation of strategies was highest within each group, i.e. 0.21 (fundamental) or 0.28 (quant). The average outperformance correlation of fundamental and quant strategies was very low – close to zero (0.06) – corroborating the idea that combining fundamental and quant strategies generates more stable outperformance by reducing active risk.

To illustrate, we considered all possible 50/50 fundamental and quant combinations. Our results suggest that investing in a fundamental-quant combination is typically advantageous. Namely, the average TE of the 50/50

combination is only 3.5%, 32% lower than the average TE of fundamental strategies (5.2%) and 16% lower than that of quant strategies (4.2%). Moreover, this approach decreases the risk of losses and drawdowns: the maximum relative drawdown for these combinations is -9.5%, 36% lower than the average maximum relative drawdown for the fundamental strategies (-14.9%) and 20% lower than the average maximum relative drawdown for the quant strategies (-13.9%).

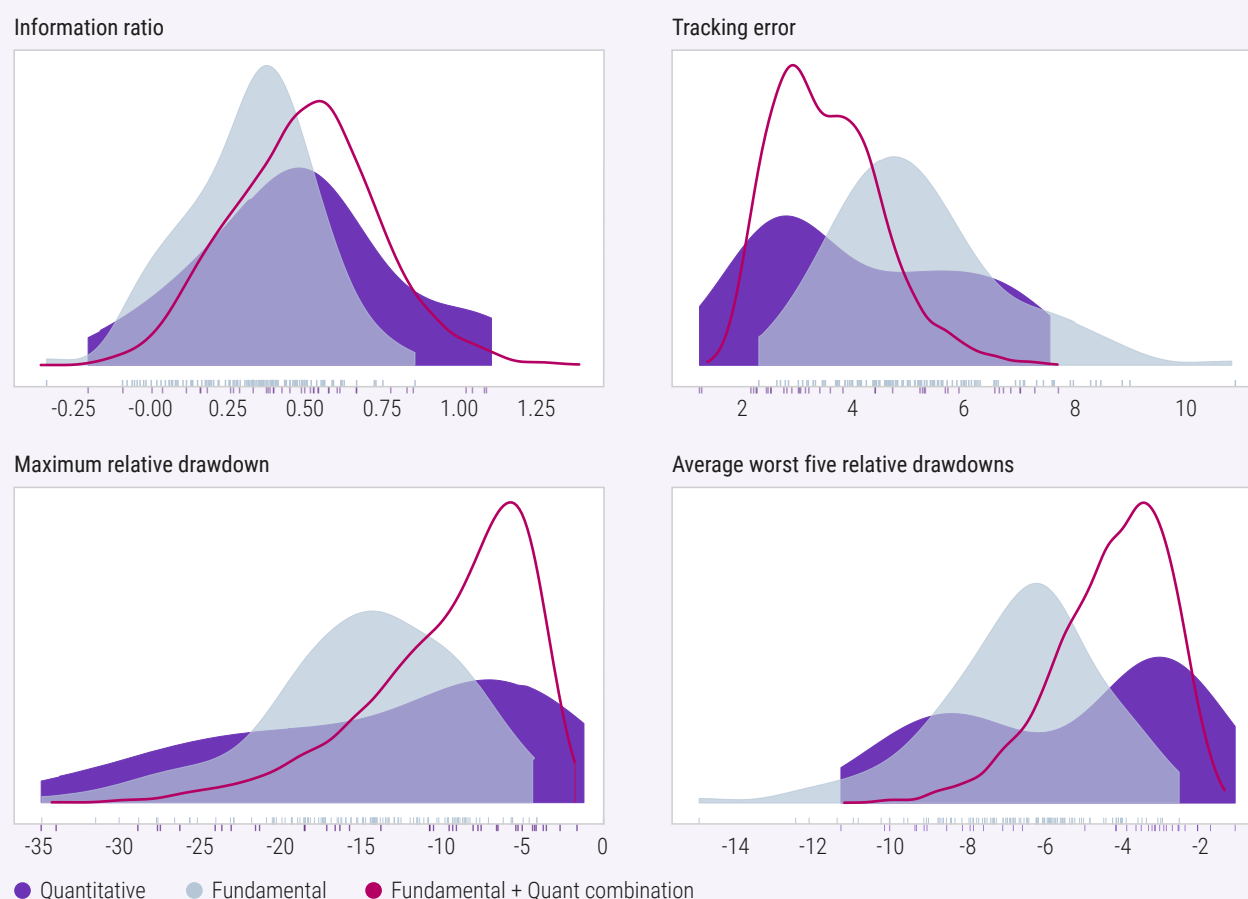
Finally, combining the active risks of both fundamental and quant strategies results in a beneficial shift of the IR distribution to the right. More specifically, the average IR of combinations is 0.49, representing an improvement of about 25% compared to the average of the two subgroups (0.32 and 0.47).

The last word

In the dynamic landscape of EM investing, active strategies – be they quantitative or fundamental – stand out for their potential to deliver benchmark outperformance and superior risk-adjusted returns, while doing so in different ways. For those seeking to optimize their EM investment strategy, Robeco offers expertise and a rich heritage in both styles. Our research shows that blending the two offers an valuable edge, thanks to diversification benefits, and could well offer the most balanced pathway to achieving enhanced financial outcomes. ●

1. For all the criteria applied to determine the sample, see: Roersma, V., Lohre, H., and Hanauer, M., 2024. "Embracing fundamental and quant investing in emerging markets", Robeco white paper.
2. This could relate to quality style investing enjoying a wider range of plausible factor definitions.

Figure 13: Information ratio, tracking error, and relative drawdowns for all 50/50 combinations



Source: Robeco, eVestment. The figure shows density plots for the annualized information ratio and tracking error, as well as maximum and average of the worst five relative drawdowns. The densities for the quantitative strategies are shown in purple, for fundamental ones in grey, and for the 50 fundamental/50 quant combinations in magenta. We include strategies that were active from April 2011 to September 2023. This results in 123 fundamental strategies, 39 quant ones, and $39 \times 123 = 4,797$ 50/50 combinations.

8 KEYS TO SUCCESS

Robeco EM Quant Equities strategy's recipe for success

Robeco's EM Enhanced and Active Equities strategies originated in the late 1990s, when a quantitative stock selection model was developed as an input for our fundamental EM team's investment process. The model's effectiveness paved the way for the launch of the EM Enhanced Equities (2007) and Active Equities (2008) strategies. In the years since, the disciplined approach employed by these systematic strategies has navigated the dynamic landscape of EM well, leading to strong long-term track records characterized by robust information ratios.

This success reflects Robeco's cautious pioneering philosophy, with the willingness to be first-movers in emerging markets (EM) quant investing rooted in research and empirical evidence. Join us as we delve deeper into the eight pivotal elements underpinning our strategies' robust framework and distinguished performance.

1 Our rules-based, bottom-up stock selection is based on solid academic evidence

Quant investing in EM was often seen as challenging because of poorer data quality and shorter simulation periods than developed markets (DM). As a result, when Robeco started to explore the possibilities there was limited research available. Our pioneering efforts were ultimately rewarded as our research showed that rules-based models worked well in these markets, as highlighted by the seminal 2003 paper¹ that focused on the value, momentum, and analyst revisions factors. More than two decades later, the findings from the study remain relevant, with the strong real-life track records of the EM Enhanced and Active strategies continuing to confirm the efficacy of the approach.

2 We design our enhanced factor definitions to improve risk-adjusted returns

Beyond establishing and contributing to the academic evidence, our researchers aimed to find an edge by refining established generic factors to reduce unrewarded risks and stabilize returns. Challenging the traditional view that the value premium comes from high-risk, often carbon-

intensive stocks, we found it was possible to capture the premium without overexposure to distressed or carbon-intensive sectors. We improved the **momentum** factor by eliminating common biases, such as correcting for beta, value and size to focus on stock-specific momentum, leading to more stable returns. For **quality**, we concentrated on the variables with the highest predictive power for future earnings and returns, as these beat standard measures like ROE in the long run. Lastly, despite data challenges in EM, our unique use of the **analyst revisions** factor has been a consistent positive contributor over the last 15 years, underscoring its significance in stock selection.

3 Our use of analyst revisions provides a stable and unique source of alpha

Delving deeper into analyst forecasts, we found that analysts often prefer large-cap growth or 'glamor' stocks, reflecting a bias toward well-known, growing companies over their value counterparts. We developed a proprietary method to mitigate such biases, adjusting for this preference. This significantly boosts the efficacy of the analyst revisions signal, substantially raising the return-to-risk ratio primarily due to reduced risk.

“Our pioneering efforts were ultimately rewarded as our research showed that rules-based models worked well in these markets”

Jan Sytze Mosselaar
Portfolio Manager Quantitative Equities



4 We exploit short-term market dynamics through proprietary short-term signals

To further diversify the stock selection model, we developed a basket of proprietary short-term signals (SHOT) to sit alongside our four enhanced factors that are longer term in nature. This basket fortifies our ranking model by considering short-term market dynamics, which has added value to our model even after accounting for transaction costs,² and boasts a robust standalone track record uncorrelated with our enhanced factors.

5 Our quant approach leverages the large investment universe of 2,500+ stocks

We take advantage of the opportunities in the EM arena by broadening the investment universe beyond the 1,440 constituents in the MSCI EM Index. We incorporate broader indices – the S&P, FTSE, and MSCI – and apply liquidity and market capitalization filters to identify around 2,800 liquid EM stocks. For EM Enhanced Equities, the investment universe includes MSCI EM Index constituents plus an additional 200 liquid off-benchmark stocks, while for EM Active Equities it includes the MSCI EM Index constituents and a further 1,400 names.

We proactively add new countries to our investment universe upon announcements from the MSCI, allowing us to preemptively invest in these markets before they are included in the passive indices. Some examples of these markets are the UAE, China A-shares, Saudi Arabia, and Kuwait. We select the security to invest in for companies with multiple listings based on liquidity, dividend policy, and price variances. We access the China A-share market using our A-share strategy, taking advantage of the efficacy of factor investing in this market.³

6 We ensure style consistency across all market environments through our systematic approach

Because investment strategies don't tend to consistently outperform across different market environments, investors may be tempted to alter their investment process after underperformance to show activeness or align with a particular narrative. However, it's often better to stay the course because different styles thrive in varying market circumstances, often unpredictably.

This is where quant investing's disciplined, transparent and systematic approach helps keep emotions at bay to exploit market inefficiencies caused by human behavior. Our approach is predicated on research-based evidence from decades of historical simulation data. This provides a level of reassurance on the consistency of our approach, which mitigates the influence of impulsive decision-making.

7 Our human oversight aims to lower costs, reduce risk and harvest event alpha

Our portfolio management team oversees daily operations for around 150 client portfolios, screening over 7,000 stocks across DM and EM. Rigorous human oversight is crucial because of the specific challenges related to EM, such as data quality, fluctuations in stock liquidity, currency volatility, geopolitical risks, and multiple listings. Our process aims to:

- Lower costs (scrutinizing instrument selection, market impact from potential trades and tax implications),
- Reduce risk (screening the universe, examining governance cases and engagement and managing cash flows),
- And harvest event alpha (assessing corporate actions, premiums or discounts on different securities and index changes).

The inclusion of many liquid A-shares in the MSCI EM Index in 2018 has made human oversight more necessary. Myriad governance issues, suspensions, backdoor listings and potential accounting manipulation afflict the Chinese A-share market. Our quant portfolio manager based in Shanghai liaises with Robeco's Fundamental Equity teams on the ground and conducts several governance screens to filter out suspect companies not automatically detected by our stock selection model.⁴

8 Minimizing transaction costs is an integral part of our portfolio construction process

Keeping transactions low is crucial as it enhances the long-term returns we can generate for our clients. We use three key approaches to minimize trading costs:

- **Trade-off alpha versus trading costs** based on our transaction cost model: Unsatisfactory third-party models led us to develop our transaction cost model tailored to our unique size, timing and location characteristics. This model is calibrated with Robeco's EM and DM trade data.

- **Using cash flows to rebalance** – buy top-ranked stocks with inflows: Instead of uniformly scaling positions, we use inflows to increase exposure to top-ranked stocks and outflows to decrease exposure to lower-ranked ones. This enhances model exposure and reduces market impact by allowing for staggered rebalancing across portfolios.

- **Active trading strategy** (low touch – high touch – liquidity provision), leading to lower market impact: We employ an in-house algorithm, informed by our transaction cost model, to manage trade sizes and timings, thereby reducing market impact and allowing for cost-efficient portfolio management, especially where lower transaction costs are crucial, like EM and small caps. ●

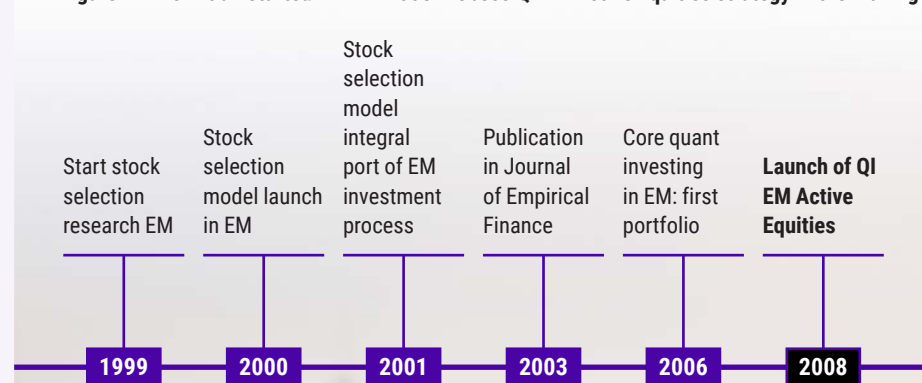
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 3. Jansen, M., Swinkels, L., and Zhou, W., 2021. "Anomalies in the China A-share market", *Pacific-Basin Finance Journal*.
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Quant EM: Then, now and next

The buzz around EM today is loud and clear: exciting, innovative companies, youthful demographics and a burgeoning middle-class mean opportunities are ripe for the picking. Investor interest in the EM arena is growing on the back of new leading global companies leveraging leapfrogging innovation across several themes such as e-commerce, electric vehicles, fintech, renewable energy, and semiconductors.

This is not a buy, sell or hold recommendation for any particular security. No representation is made that these examples are past or current recommendations, that they should be bought or sold, nor whether they were successful or not.

Figure 14: How it all started... 1999-2008: Robeco QI EM Active Equities strategy in the making



Source: Robeco, 2024.



Taking advantage of this requires putting our extensive IP, developed over years of research and experience (and sometimes in the face of considerable skepticism) to work. This, combined with our ever-present intellectual curiosity, has given us the conviction to embark on quant investing in EM when few were willing to so.

'To innovate, you need to innovate constantly' and Robeco's quant journey in EM investing is a testament to a history rich in conviction and strategic evolution, which has positioned us as leaders in the field. First, by pioneering both quantitative and sustainable investing strategies in the 1990s, we demonstrated our forward-thinking approach and unwavering commitment to research-driven strategies. Then, at the end of the decade, we made our first foray into quant EM investing. But it wasn't always easy! Join us as we recount how it started and where we're going next.

Lone wolf or ahead of the pack?

Robeco's venture into quant strategies within EM began in the late 1990s, marked by a dedication to groundbreaking research. This early period of exploration culminated in the official launch of our stock selection model in 2000. The following year, the model had already become a key component of our fundamental team's investment process, demonstrating our commitment to innovation and evidence-based strategies. Despite initial skepticism, largely due to concerns about data quality in EM, we remained steadfast. Our disciplined, transparent, and systematic approach was designed to take advantage of market inefficiencies driven by human behavior, and was aimed to ensure superior risk-adjusted returns for our clients in the long run.

The research underpinning this model gained academic recognition from 2003 to 2005, thanks to the efforts of Van der Hart, Slagter, and Van Dijk. This work demonstrated the efficacy of value and momentum factors in EM, akin to their success in DM, not only validating the practical application of our model but also contributing to the broader discourse on EM investing.

The period leading up to 2006 was instrumental in shaping Robeco's approach to EM, culminating in the launch of pure EM quant portfolios. In this era we drew on the expertise gained from managing quant DM portfolios. Our investment philosophy, which emphasizes the importance of a sound economic rationale behind every investment idea, supported by robust, research-based evidence, has been central to our efforts. We implement this approach prudently in a bid to help our clients meet their financial and sustainability goals.

Moreover, the presence of our in-house fundamental team, with its deep-rooted heritage in EM investing, has been invaluable. Leveraging their insights has significantly enhanced our investment strategy.



“Despite initial skepticism, largely due to concerns about data quality in EM, we remained steadfast

David Blitz
Chief Researcher at Robeco's Quant Equity
Research team

Constant innovation

Contrary to that early skepticism, the live performance of Robeco's EM quant models exceeded expectations. Throughout our journey, clients have recognized this success and reposed their trust in us, leading to a sizable part of our quant business nowadays being in EM strategies.

This doesn't mean we can sit on our laurels. While our quant approach pushed the envelope by venturing into the EM arena, our cautious pioneering DNA means we keep seeking new frontiers. The race for information and insight has always driven investing. It still requires innovation and research-based investment decisions. What is gradually changing is how people find the information and interpret it; a development that requires a pre-existing robust infrastructure and a client-focused work culture.

Novel signals aimed at enhanced risk-adjusted outcomes

At Robeco, we consistently leverage technological advancements to push the boundaries of quant investing. In 2010, for example, we started incorporating alternative data and faster signals – with one to three-month forecasting horizons – into our DM stock selection model, later adopting the same approach in our EM strategies.

Our research revealed that these fast signals effectively exploited short-term dynamics, such as the short-term reversal effect, as well as flow, momentum, and return

patterns in stock markets. Moreover, this approach has diversified our model given that these signals tend to be uncorrelated with established factors, such as value and quality, which are longer term in nature.

Today, the evolution of quant investing follows a path shaped by significant gains in computing power and accessibility, the big data deluge, and the growing prominence of advanced modeling techniques. These developments are unlocking new opportunities by allowing quant investors to explore new territories and gain insights into risk, return, and sustainability.

Incorporating sustainable alpha signals that provide further diversification

Our research agenda remains focused on improving and diversifying our investment approach, for example, through the use of alternative data sources and advanced techniques such as machine learning (ML) or natural language processing (NLP). For example, we use the former and latter to steer on two innovative sustainable alpha signals, namely resource efficiency (environmental) and employee engagement (social).

Carbon emissions, waste generation and water usage related to a firm's economic activities can measure its operational efficiency and are linked to its financial performance. Therefore, resource efficiency benefits a firm's bottom line and environmental footprint. Meanwhile, employee engagement sheds light on productivity levels.

Engaged employees are expected to be more motivated and, therefore, more productive. Moreover, a satisfied workforce is desirable for corporate social responsibility.

EM-specific innovation: case-in-point, China

Our research efforts also focus on identifying nuances in EM, such as China. By leveraging the latter's unique data ecosystem, technological advancements, and the behavioral data of its retail investors, quant investors can gain a competitive edge. China's strategic importance in the global financial landscape underscores the need for ongoing research, innovation, and adaptation of investment models to capture these dynamic opportunities.

Firstly, China's internet and technology platforms differ from those in the West, mainly due to government regulations and domestic consumer preferences. This separation has led to the creation of large, unique datasets as Chinese consumers use platforms like Baidu for searches, Taobao for shopping, and WeChat and Sina Weibo for social media, integrating services far beyond those of Western apps.

Secondly, a rich source of behavioral data has been created because China's retail investors are notably active on social media platforms, sharing investment ideas and opinions. Advanced NLP methods allow us to quantify and understand this data, potentially informing investment decisions and model adjustments.

Thirdly, regulatory reforms have contributed to significant improvements in market transparency. For example, requirements for companies to disclose changes in earnings expectations and detailed information about investor relations activities can now provide our quant models with additional data for analysis.

For these reasons, China offers fertile ground for advanced quant techniques while also posing unique challenges regarding data quality and the idiosyncrasies of its market structure. Our understanding of this, as well as the cultural and social nuances that influence consumer behavior and investment trends, is crucial for successful research outcomes leading to model enhancements.

Conclusion

Robeco's journey in EM investing is a narrative that weaves together the pioneering spirit, technological evolution, and resilience in our DNA. By adapting to market changes, leveraging our quant IP, and staying curious and critical, we remain at the forefront of exploiting the dynamic and rich potential of EM. ●

OUR RANGE OF EM STRATEGIES

Emerging Markets Equities and Emerging Stars Equities are our core and high conviction fundamental strategies respectively. Visit the Robeco website for information on our complete emerging markets strategy range.

Robeco Fundamental Emerging Markets Equities strategies

The Robeco **Emerging Markets Equities** strategy typically has 80 to 90 stock holdings and targets an active share of 70% or more. The concentrated **Emerging Stars Equities** strategy consists of 35 to 50 stocks and targets an active share of more than 80%. Our disciplined investment process, which entails top-down country analysis and bottom-up company selection, enables us to harness the inefficiencies resulting from market biases in emerging markets.

	Robeco Emerging Markets Equities strategy	Robeco Emerging Stars Equities strategy
Target outperformance (vs. index)	2%-3%	3%-4%
Number of holdings	80-90	35-50
Target active share	~70%	>80%
Benchmark	MSCI Emerging Markets index	MSCI Emerging Markets Index (reference index)
Tracking error limit	6%	n.a.
VaR limit (volatility measure vs. index)	n.a.	<150%
Turnover (rolling 3-year, single counted)	18%	27%
Inception date	December 1994	November 2006
Portfolio manager	Wim-Hein Pals & Dimitri Chatzoudis	Jaap van der Hart & Karnail Sangha

Cumulative returns (1995-2020)

● Robeco Emerging Markets Equities strategy ● MSCI EM index

Cumulative returns (2007-2023)

● Robeco Emerging Stars Equities strategy ● MSCI EM index

Source: Robeco, Factset, MSCI. Data as at 31 December 2023. The value of your investments may fluctuate. Past results are no guarantee of future performance.

Robeco Quantitative Emerging Markets Equities strategies

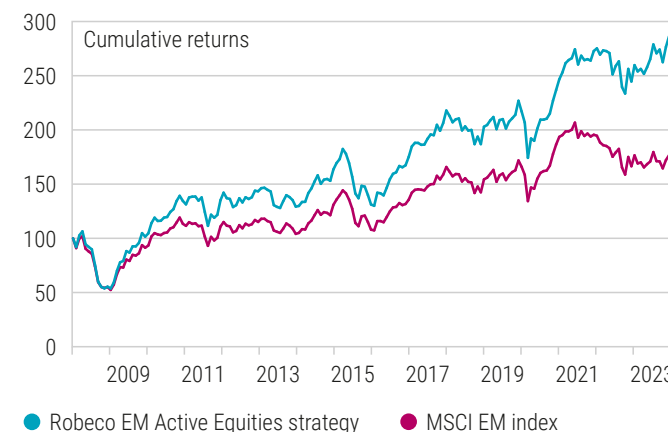
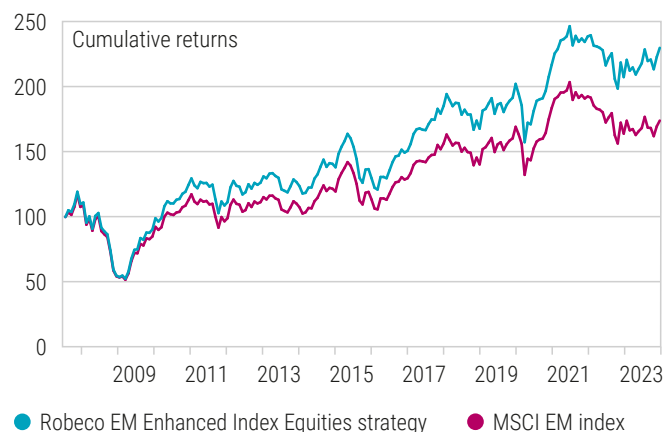
The Robeco **Emerging Markets Enhanced Index Equities strategy** is a compelling alternative to passive investing designed to systematically capture the equity risk premium through its balanced multi-factor exposure. It aims to deliver superior risk-adjusted returns with limited relative risk. **Emerging Markets Active Equities strategy** adopts the same integrated multi-

factor approach to invest more actively in emerging markets. It is designed to deliver superior risk-adjusted returns with moderate relative risk. Highly ranked stocks are overweighted against the benchmark, whereas low-ranked stocks are underweighted, resulting in a well-diversified portfolio.

	Emerging Markets Enhanced Index Equities strategy	Emerging Markets Active Equities strategy
Benchmark	MSCI Emerging Markets Index	MSCI Emerging Markets Index
Realized outperformance (since inception)	1.8%	3.2%
Tracking error limit (ex ante)	1.2%	3.0%
Target information ratio	1.0	0.8
Realized information ratio (since inception)	1.3*	1.0**
AuM	> EUR 15 billion	> EUR 3 billion
Inception date	July 2007	March 2008

Source: Robeco, Factset, MSCI. Data as at 31 December 2023. The value of your investments may fluctuate. Past results are no guarantee of future performance.

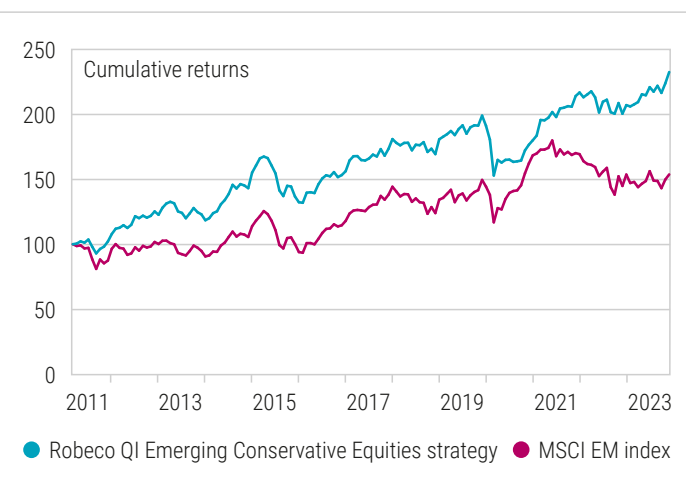
* In terms of information ratio, the strategy is ranked 1 out of 2,812 funds in the EM universe since its inception based on Robeco research using eVestment database. Please see: Blitz, D, 2024, "The unique alpha of Robeco Quant Equity strategies", Robeco article. ** In terms of information ratio, the strategy is ranked 14 out of 3,026 funds in the EM universe since its inception based on Robeco research using eVestment database. Please see: Blitz, D, 2024, "The unique alpha of Robeco Quant Equity strategies", Robeco article.



Emerging Conservative Equities is an actively managed strategy that invests in low-risk stocks in emerging countries worldwide to provide downside protection. The selected defensive stocks are characterized by high dividend yields, attractive valuations, strong momentum, and positive analyst revisions, creating a diversified, low-turnover strategy aiming to achieve stable returns and high income.

	Robeco QI Emerging Conservative Equities strategy
Benchmark	MSCI Emerging Markets Index
Realized outperformance (since inception)	3.0%
Volatility (since inception)	11.2%
Benchmark volatility (since inception)	14.4%
Realized risk reduction (volatility)	22.0%
Realized Sharpe ratio (since inception)	0.6
AuM	> EUR 3 billion
Inception date	April 2011

Source: Robeco, Factset, MSCI. Data as at 31 December 2023. The value of your investments may fluctuate. Past results are no guarantee of future performance.



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