



Robeco Quantitative Equities

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Robeco – The Investment Engineers

Organization Overview

Global Asset Manager

Founded in the Netherlands in 1929, Robeco is a dedicated asset manager with a long-term investment view and a global presence

Research-driven

Research lies at the heart of everything we do; we perform in-depth fundamental, quantitative and ESG analysis where innovative ideas are tested and re-tested, hence we call ourselves ‘The Investment Engineers’

Key strengths

Deep investment expertise in Sustainable Investing, Quant, Emerging Markets and Credits with a focus on building solutions for clients

EUR 196 billion

Total firm AUM **EUR 196 billion** and **EUR 76.3 billion** in assets based on quant models.

1,049

Employees

319

Investment Professionals

13

Countries with Robeco offices



Enhanced Indexing at glance

Designed to efficiently capture returns while aiming to minimize risk

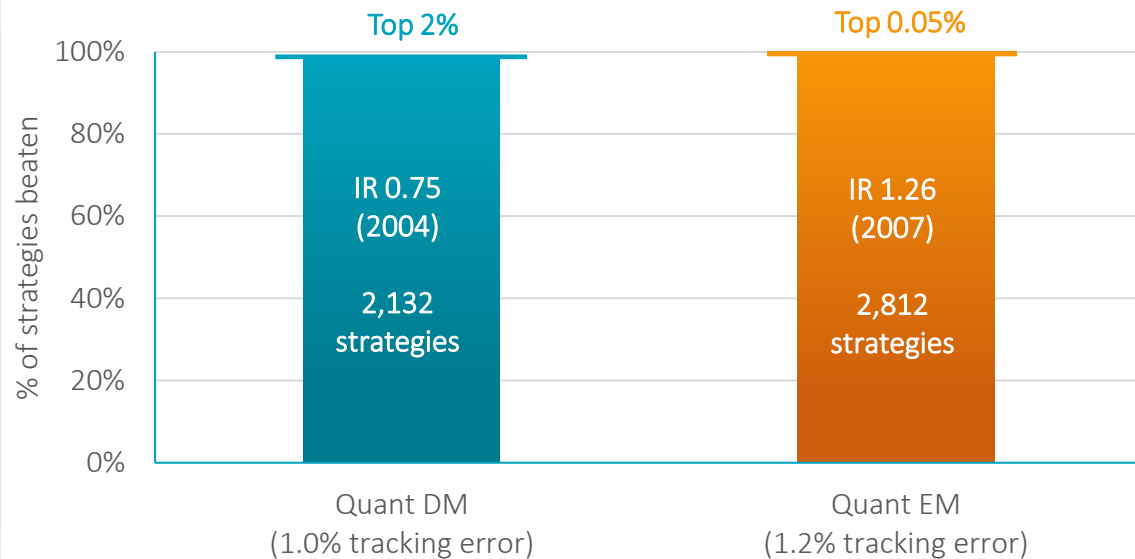
	Passive Investing	Robeco Enhanced Indexing
Broad market exposure	✓	✓
Predictable risk- and return profile	✓	✓
Low costs	✓	✓
Smart company selection	✗	✓
Smart rebalancing	✗	✓
Better return potential	✗	✓
Advanced sustainability profile	✗	✓
Flexible customization	✗	✓

Celebrating 20 years of Robeco Quant Investing in 2024

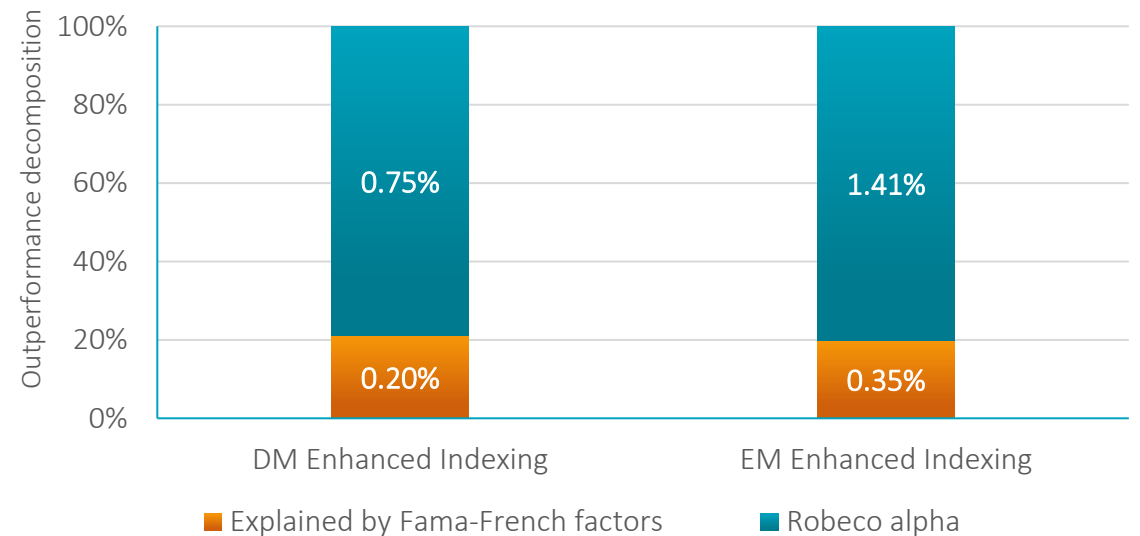
Strategies rank in top 2% eVestments league table of active managers with same years of live performance

- > Robeco Developed Enhanced Indexing (2004) delivered an information ratio (IR) of 0.75, outscoring 98% of >2,000 active strategies
- > With an IR of over 1.25 Robeco Emerging Markets Enhanced Indexing (2007) is ranked #1, outperforming all >2,800 active strategies
- > 80% of the outperformance is solely attributed to Robeco's distinctive alpha

Robeco Quant Strategies belong to top 2% of active managers

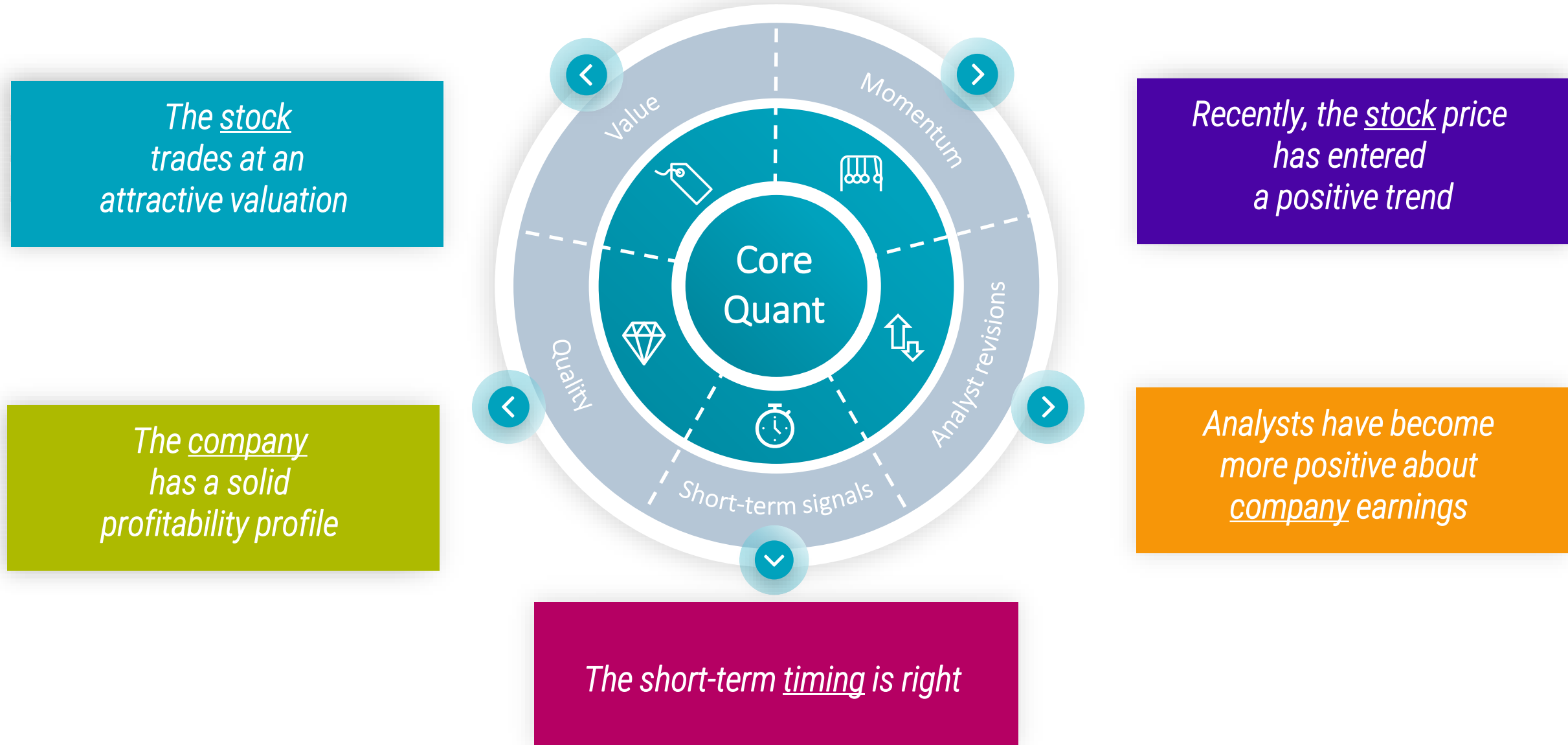


Alpha decomposition in Developed and Emerging Markets



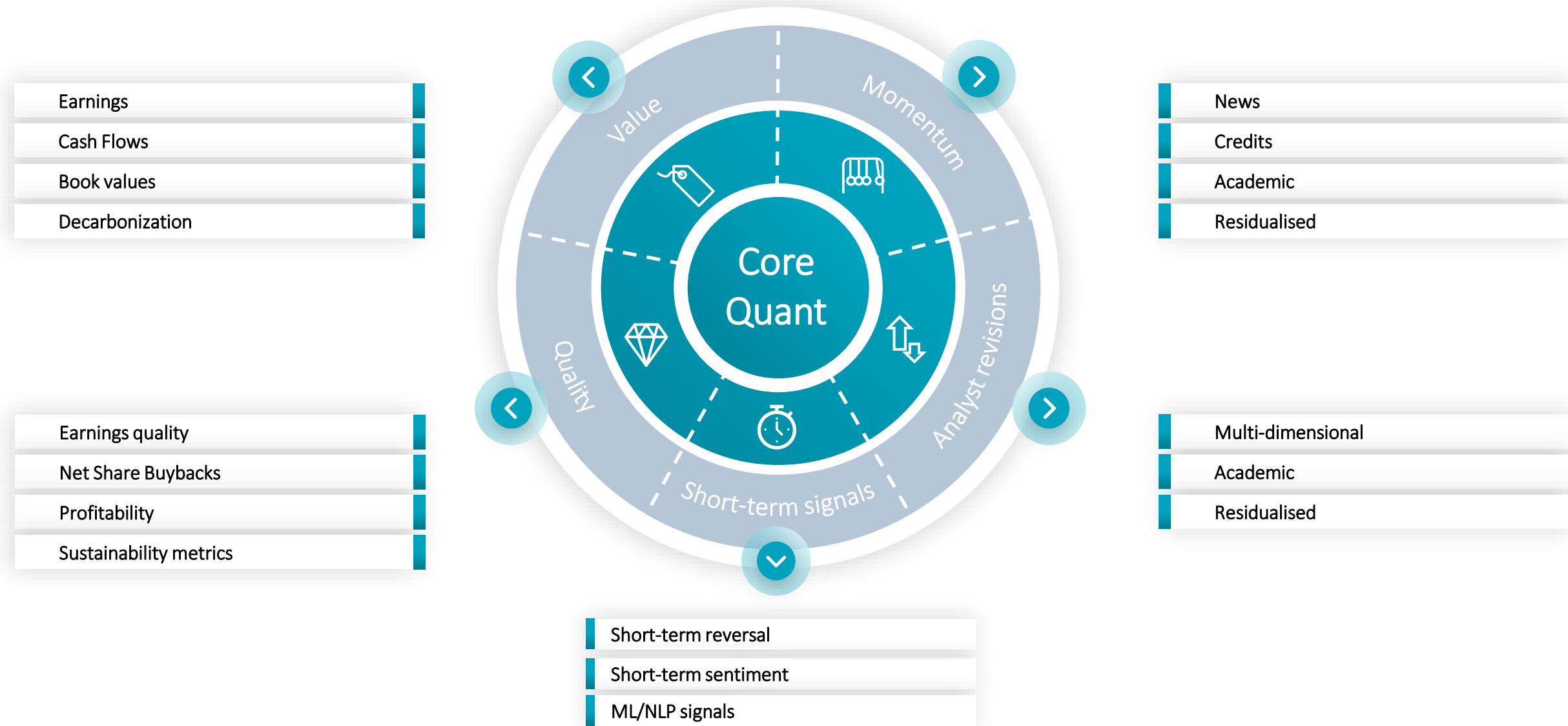
Source: Robeco, [Kenneth French data library](#). Blitz, D. (February, 2024). *The unique alpha of Robeco Quant Equity strategies*. Robeco article. Graph left: The figure shows the annualized information ratios of the Robeco Composite Global Developed Enhanced Indexing Equities (since inception in November 2004), gross of fees, in EUR, the Robeco Composite Emerging Enhanced Indexing Equities (since inception in July 2007), gross of fees, in EUR, and the Robeco Composite Active Quant Emerging Markets Equities (since inception in March 2008). The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future. Graph right: The chart shows Robeco annualized outperformance explained and not explained by Fama-French large/mid-cap generic academic portfolios, for DMs and EMs, respectively. Figures calculated based on Robeco QI Institutional Global Developed Enhanced Indexing Equities and Fama-French developed markets 6 factor return series from September 2004 to October 2023, and on Robeco QI Institutional Emerging Markets Enhanced Index Equities and Fama-French emerging markets 6 factor return series from June 2007 to October 2023.

Proprietary stock selection model – finding the “super stock”



The exhibit shows the set-up of the Robeco proprietary stock selection model that is used as the sole performance driver. Please note that the figure is only an illustrative representation for explanatory purposes.







Proprietary stock selection model



The exhibit shows the set-up of the Robeco proprietary stock selection model that is used as the sole performance driver. Please note that the figure is only an illustrative representation for explanatory purposes.

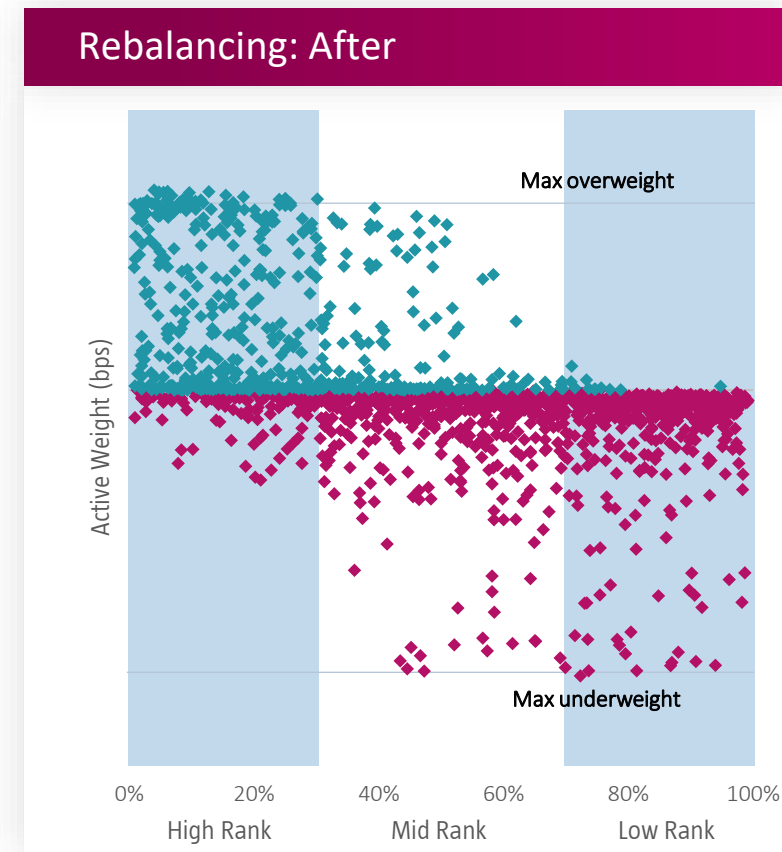
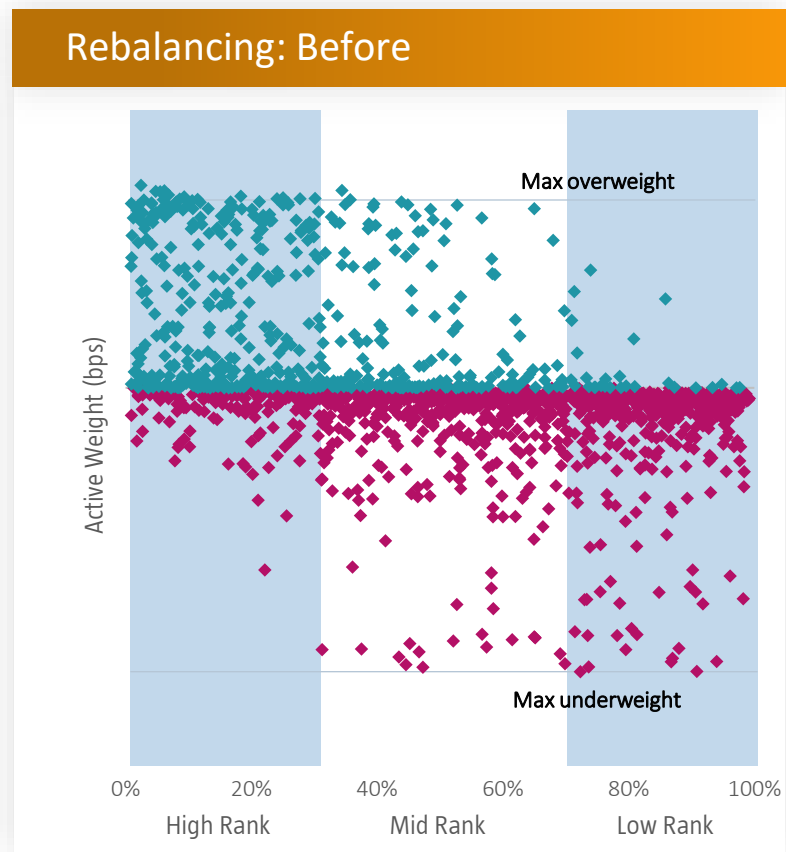
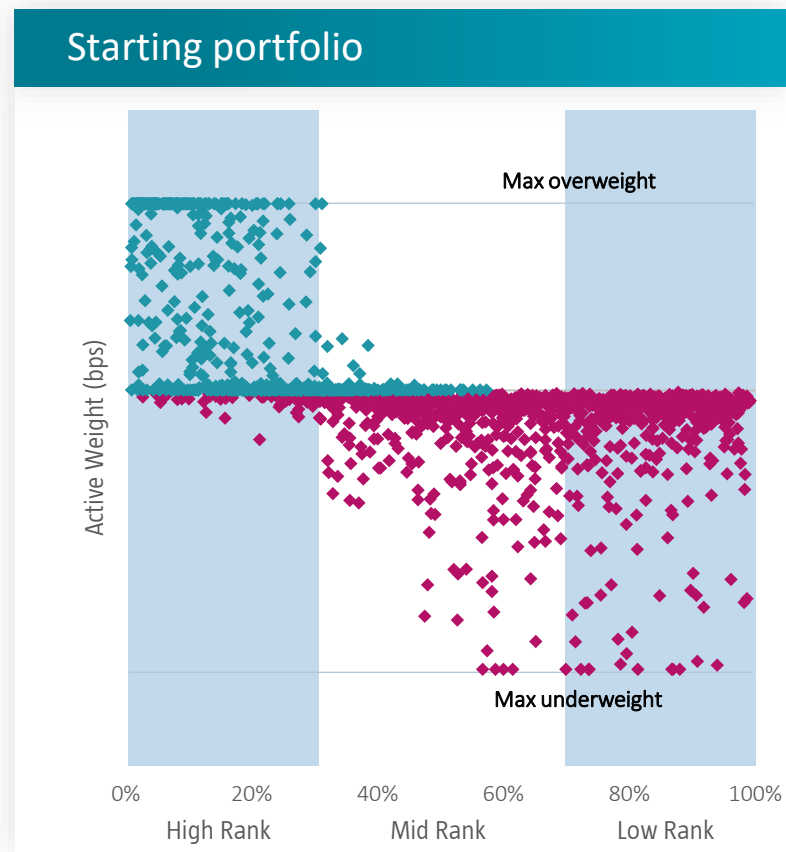
Example of scoring & ranking of constituents

Emerging markets

			Value	Quality	Momentum	Analyst revisions	Short-term timing	
								
			Price/Book	Share issuance	Momentum	Change in estimates	Reversal	Rank 0-100%
Vipshop Holdings Ltd ADR	China	Consumer Discretionary	0.66	17%	66%	79%	0%	0.7%
Hisense Home Appliances Group Co Ltd	China	Consumer Discretionary	0.63	2%	50%	52%	9%	0.8%
Indian Bank	India	Financials	1.47	4%	63%	49%	4%	0.9%
Micro-Star International Co Ltd	Taiwan	Information Technology	0.33	4%	33%	85%	1%	0.9%
Hyundai Marine & Fire Insurance Co Ltd	South Korea	Financials	3.02	7%	10%	63%	1%	0.9%
Huaxia Bank Co Ltd	China	Financials	2.88	3%	5%	33%	3%	1.0%
Zhejiang Expressway Co Ltd	China	Industrials	1.41	7%	-1%	65%	11%	1.0%
NCC Ltd/India	India	Industrials	0.86	2%	87%	37%	10%	1.2%
Compal Electronics Inc	Taiwan	Information Technology	0.93	5%	11%	34%	5%	1.3%
DB Insurance Co Ltd	South Korea	Financials	2.90	7%	32%	44%	8%	1.3%
Chunbo Co Ltd	South Korea	Materials	0.18	0%	6%	-54%	96%	98.7%
Century Iron & Steel Industrial Co Ltd	TW	Materials	0.27	0%	-4%	-41%	91%	98.8%
Atul Ltd	India	Materials	0.23	1%	-22%	-87%	90%	99.0%
China Huarong Asset Management Co Ltd	China	Financials	0.97	-21%	29%	-3%	91%	99.0%
Hoshine Silicon Industry Co Ltd	China	Materials	0.40	-7%	-15%	-66%	88%	99.0%
Kakao Games Corp	South Korea	Communication Services	0.53	-5%	-18%	-65%	99%	99.0%
Medigen Vaccine Biologics Corp	Taiwan	Healthcare	0.24	-2%	-58%	0%	99%	99.1%
ReNew Energy Global PLC	India	Utilities	0.55	-17%	-17%	-56%	99%	99.1%
Chifeng Jilong Gold Mining Co Ltd	China	Materials	0.20	0%	-1%	-52%	94%	99.1%
Seres Group Co Ltd	China	Consumer Discretionary	0.28	-5%	-50%	-48%	94%	99.2%

Source: Robeco – as of May 2023. This is not a buy, sell or hold recommendation for any particular security. The information shown is only available for one-on-one presentations and for illustrative purposes only. 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 low rank indicates an attractive stock.

Portfolio construction process



Source: Robeco. The left-hand side chart shows a conceptual Robeco Core Quant Enhanced Indexing portfolio. The center and right-hand side charts represent a conceptual Robeco Core Quant Enhanced portfolio before and after the monthly rebalancing. The information shown above is for illustrative purposes only.

Active investing through lots of small overweight/underweight positions (example)



Source: Robeco. As of September 2023. 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. For illustrative purposes only.

Stock example: SK Hynix from an anecdotal perspective

The Korean chipmaker has been on the rise as it is seen as an AI-winner



SK Hynix Plans \$14.6 Billion Chip Expansion to Meet AI Demand

Yoolim Lee, Bloomberg News



Nvidia supplier SK Hynix says HBM chips almost sold out for 2025

By Joyce Lee and Heekyong Yang

May 2, 2024 8:05 AM GMT+2 · Updated a month ago



Bloomberg

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SK Hynix Tops \$100 Billion in Market Value on AI-Powered Rally

- Key Nvidia supplier's shares have doubled in the past year
- South Korea's second-largest stock has outpaced No. 1 Samsung

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The AI Race: Why AI Is So Expensive DOJ Scrutiny Chip Arms Race Startups to Watch

Technology

SK Hynix Invests \$1 Billion in Key AI Memory Chip Technology

- Korean chipmaker sees packaging as key to meeting AI demand
- 3D semiconductor expert Lee paved the way for HBM leadership

AI Memory Boom Propels SK Hynix's Fastest Sales Growth Since 2010

- High-end memory, NAND rebound help chipmaker log record growth
- Firm is boosting AI chip supply, seeks clients beyond Nvidia

Please note that this example is only an illustrative representation for explanatory purposes.

What does our model say about SK Hynix?



ROBECO

Additional keys of success for Robeco Quant

Close collaboration with fundamental teams

Collaboration leading to tangible results

- > Robeco is an early proponent of quant investing – first stock selection model in 1994 and first live strategy in 2004
- > Robeco Quant investing has its roots within the Fundamental team, and while all ideas start with an economic rationale, they are supported by empirical evidence and practical investment experience
- > **Close cooperation continues to this day**, where valuable insights may lead to **higher alpha**



Every basis point counts

- > Company events with potential portfolio impact may be detected at earlier stages by our Fundamental equity team, facilitating a timely intervention over the portfolio management process, where the model is blind, our human overview **reduces risk and costs**



Additional keys of success for Robeco Quant

Integrating sustainability

High degree of portfolio client customization

- > Facilitating the **co-creation of portfolios with clients**
- > Capability to **craft and tailor solutions** so that they cater to client-specific financial and sustainability considerations
- > Customization: preferred objective, universe, carve-outs, tracking error level & sustainability integration

The screenshot shows the Robeco Quant Solutions interface. At the top, it says 'ROBECO The Investment Engineers' and 'Robeco Quant Solutions'. Below this is a 'Select index' section with tabs for 'Main', 'Developed', 'Emerging', 'Global', 'Sustainable', and 'Thematic'. The 'Main' tab is selected, and the 'Index' dropdown is set to 'MSCI World'. A 'Show details' button is below. The 'Select enhancements' section has four tabs: 'Excess return', 'Excess return & ESG', 'Max ESG', and 'ESG MinRisk'. The 'Excess return' tab is selected, showing 'Low risk', 'Value', 'Quality', and 'Momentum' options. Below these is a 'Risk budget' dropdown set to 'Enhanced - TE: 1.0%'.

Allowing for bespoke sustainability integration

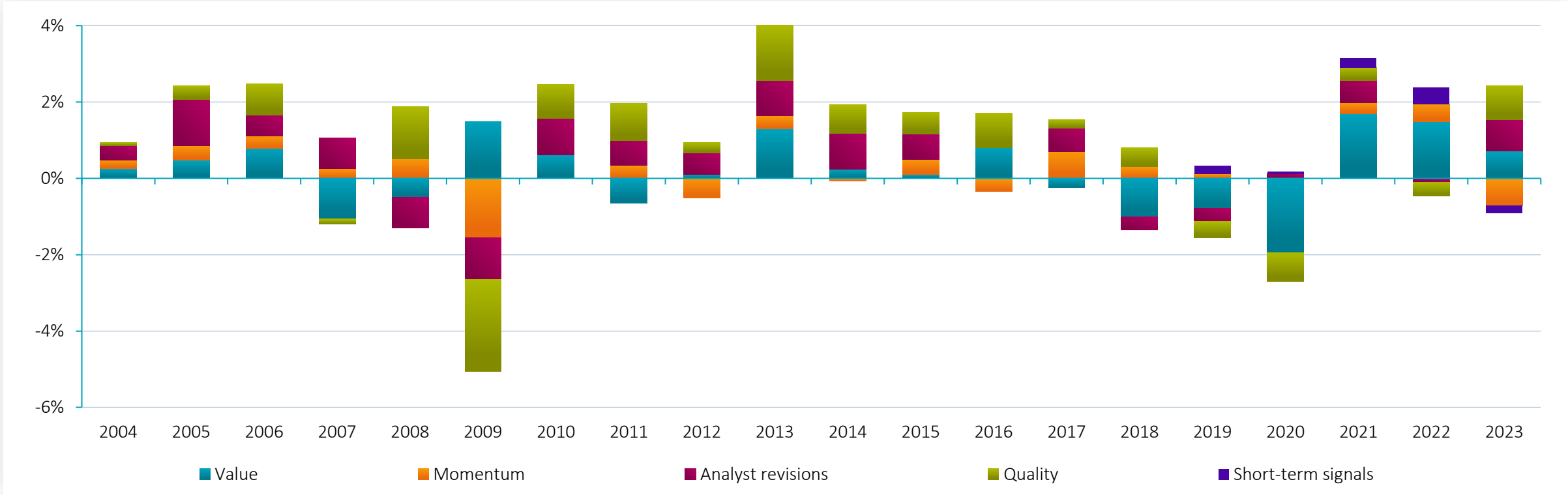
- > Over 20 years of experience managing sustainable portfolios allows us for:
- > **Integration of multiple dimensions of sustainability** (ESG & SDG improvements, CO2 footprints reduction, client-specific exclusions, voting and engagement) available across all strategies
- > Fund sustainability-variants
Robeco Global Developed Sustainable Enhanced Indexing Equities & Robeco EM Sustainable Enhanced Index Equities

The screenshot shows the Robeco Sustainability integration interface. It has a 'Sustainability' header with 'SI Inside' and 'SI Focus' tabs. The 'SI Focus' tab is selected. Below this is an 'Exclusions' section with a dropdown set to 'SI Focus'. An 'ESG Risk Ratings' slider is shown, ranging from 'Off' to '50', with a marker at '10% better than BM'. Below this is an 'SDG strategy' dropdown set to 'Exclude Poor SDG'. A 'Footprint' section shows a dropdown set to 'SI Focus: 30% Cb / 20% Wt / 20% Ws'. At the bottom, there are input fields for 'CO2 (%)' (set to 30), 'Water (%)' (set to 20), and 'Waste (%)' (set to 20), each with a corresponding 'CO2 limit' button.

Robeco Developed Enhanced Indexing

Strong 20 yrs. of track record. Balanced exposure with maximum factor diversification

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
DM Enhanced Indexing	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓

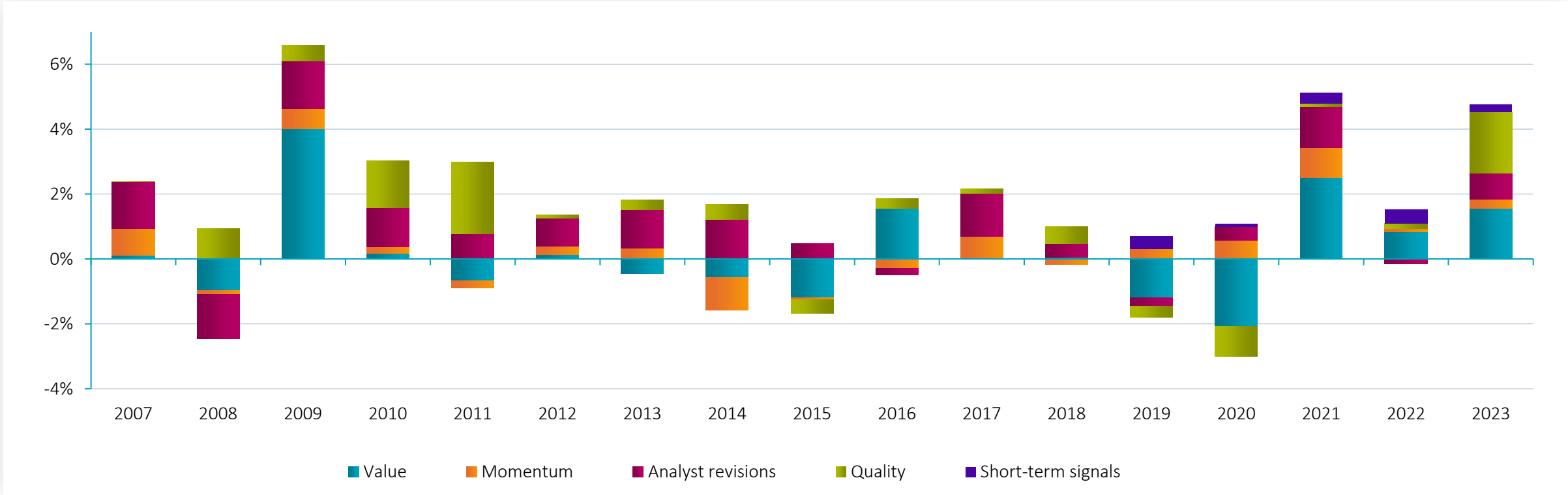


Source: Robeco, MSCI. The figure shows excess portfolio returns versus the market index. Excess return is the sum of the allocation effect and the stock selection contribution, excluding cash & other. The excess return is fully attributed to four underlying Robeco factors value, momentum, revisions and quality as explained in the white paper 'Factor Performance Attribution'. April 2016. Based on gross asset value of the Robeco QI Institutional Emerging Markets Enhanced Index Equities Fund. The value of your investments may fluctuate. Benchmark figures include net dividends reinvested. All figures are in EUR. Results obtained in the past are no guarantee for the future

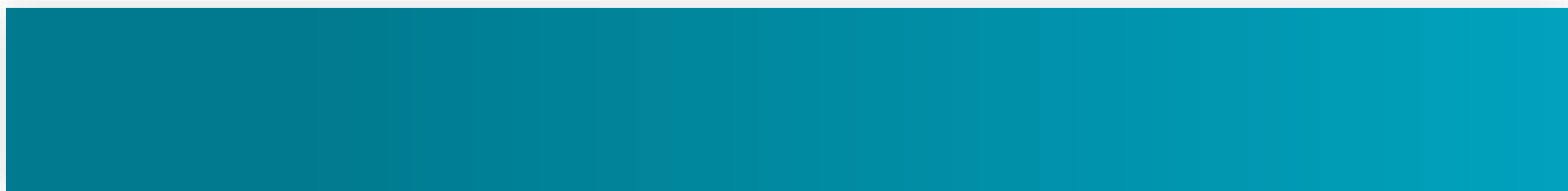
Robeco Emerging Enhanced Indexing

Strong +15 yrs. of track record. Balanced exposure with maximum factor diversification

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
EM Enhanced Indexing	-	-	-	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓	✓



Source: Robeco, MSCI. The figure shows excess portfolio returns versus the market index. Excess return is the sum of the allocation effect and the stock selection contribution, excluding cash & other. The excess return is fully attributed to four underlying Robeco factors value, momentum, revisions and quality as explained in the white paper 'Factor Performance Attribution'. April 2016. Based on gross asset value of the Robeco QI Institutional Emerging Markets Enhanced Index Equities Fund. The value of your investments may fluctuate. Benchmark figures include net dividends reinvested. All figures are in EUR. Results obtained in the past are no guarantee for the future



Track record

Robeco Composite Quant Developed Markets Equities (in EUR)

Annualized performance						31 July 2024
	YTD	1 Year	3 Years	5 Years	10 Years	Nov 04
Robeco Composite Quant Developed Markets Equities	17.26%	23.19%	11.91%	13.34%	12.52%	10.13%
MSCI World Index	16.08%	20.57%	10.16%	12.70%	11.88%	9.22%
Relative performance	1.18%	2.61%	1.75%	0.65%	0.64%	0.91%
Tracking error		1.23%	1.25%	1.52%	1.23%	1.17%
Information ratio		2.12	1.41	0.42	0.52	0.78

Calendar year performance						
	2023	2022	2021	2020	2019	2018
Robeco Composite Quant Developed Markets Equities	20.91%	-11.29%	34.49%	2.87%	28.20%	-4.48%
MSCI World Index	19.60%	-12.78%	31.07%	6.33%	30.02%	-4.11%
Relative performance	1.31%	1.49%	3.42%	-3.46%	-1.82%	-0.37%

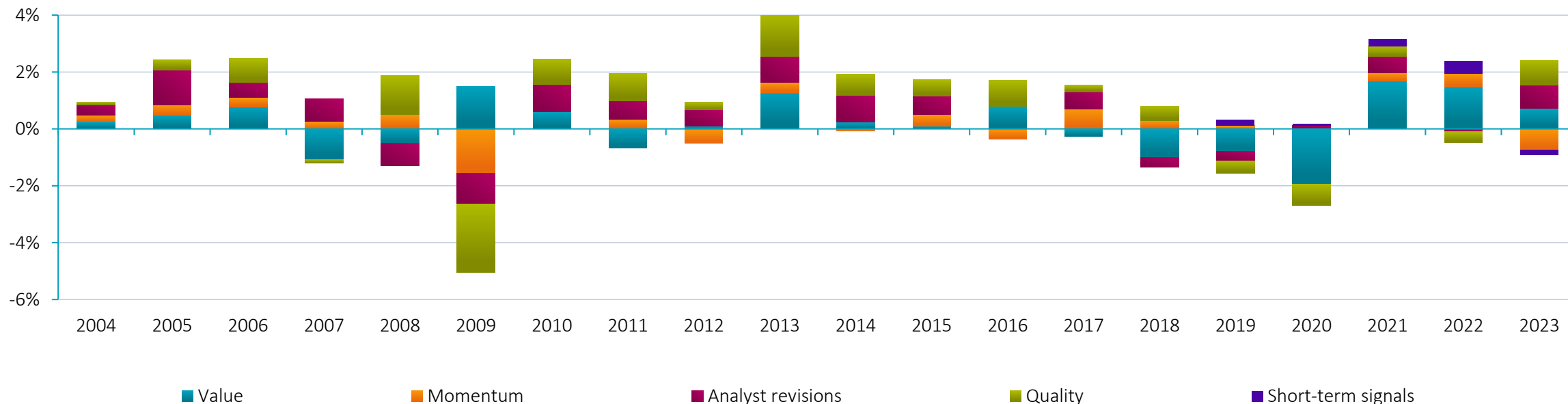
The currency in which the past performance is displayed may differ from the currency of your country of residence. Due to exchange rate fluctuations the performance shown may increase or decrease if converted into your local currency. Periods shorter than one year are not annualized. The value of your investments may fluctuate. Past performance is no guarantee of future results. Returns gross of fees, based on gross asset value. In reality costs (such as management fees and other costs) are charged. These have a negative effect on the returns shown.

Source: Robeco, MSCI. Portfolio: Robeco Composite Quant Developed Markets Equities. Index: MSCI World Index (net dividends reinvested). All figures in EUR. Data end of 31 July 2024. Portfolios in the composite are based globally and can have different tax implications which may impact performance figures such as annual returns and information ratios. The Enhanced Indexing strategies aim for an information of 1 without taking tax implications into account.

Factor Attributions

Robeco Global Developed Enhanced Indexing Equities

Excess return and factor attribution: Global Developed Enhanced Indexing Strategy



31 December 2023	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Global Developed Enhanced Indexing**	2.7%	28.6%	9.9%	-1.8%	-37.1%	22.4%	22.0%	-1.1%	14.5%	25.2%	21.3%	12.1%	12.2%	8.9%	-4.5%	28.2%	2.9%	34.5%	-11.3%	20.9%
MSCI World Index	2.3%	26.2%	7.4%	-1.7%	-37.6%	25.9%	19.5%	-2.4%	14.0%	21.2%	19.5%	10.4%	10.7%	7.5%	-4.1%	30.0%	6.3%	31.1%	-12.8%	19.6%
Positive excess return	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓

Source: Robeco, MSCI. The figure shows excess portfolio returns versus the market index. Excess return is the sum of the allocation effect and the stock selection contribution, excluding cash & other. The excess return is fully attributed to four underlying Robeco factors value, momentum, revisions and quality as explained in the white paper 'Factor Performance Attribution'. April 2016. *Monthly data since inception September-04. gross of fees, based on gross asset value of the **Robeco QI Institutional Global Developed Enhanced Indexing Equities Fund. Portfolios in the composite are based globally and can have different tax implications which may impact performance figures such as annual returns and information ratios. The Enhanced Indexing strategies aim for an information ratio of 1 without taking tax implications into account. The value of your investments may fluctuate. All figures are in EUR. Benchmark figures include net dividends reinvested. Results obtained in the past are no guarantee for the future.

Track record

Robeco Composite Emerging Enhanced (in EUR)

Annualized performance						31 July 2024
	YTD	1 Year	3 Years	5 Years	10 Years	Jul 07
Robeco Composite Emerging Enhanced	13.22%	13.84%	4.15%	6.88%	6.56%	5.80%
MSCI Emerging Markets Index*	10.05%	8.28%	0.27%	4.00%	4.83%	3.89%
Relative performance	3.16%	5.56%	3.87%	2.88%	1.73%	1.91%
Tracking error		1.86%	1.63%	1.62%	1.36%	1.43%
Information ratio		2.99	2.38	1.78	1.27	1.34

Calendar year performance						
	2023	2022	2021	2020	2019	2018
Robeco Composite Emerging Enhanced	11.15%	-12.95%	10.04%	7.25%	20.55%	-9.46%
MSCI Emerging Markets Index*	6.11%	-14.85%	4.86%	8.54%	20.61%	-10.27%
Relative performance	5.04%	1.90%	5.18%	-1.29%	-0.07%	0.81%

The currency in which the past performance is displayed may differ from the currency of your country of residence.

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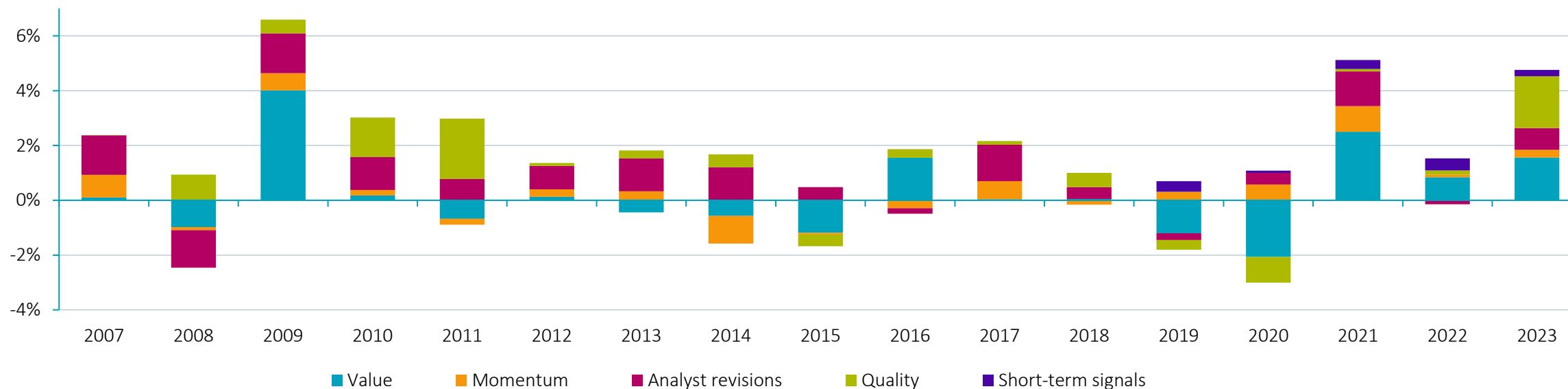
Returns gross of fees, based on gross asset value. In reality costs (such as management fees and other costs) are charged. These have a negative effect on the returns shown.

Source: Robeco, MSCI. Portfolio: Robeco Composite Emerging Enhanced. Index: MSCI Emerging Markets Index* (net dividends reinvested). All figures in EUR. Data end of 31 July 2024. * As of 1 January 2008, the benchmark changed from S&P/IFC EM Regional Investable Composite (Net dividends reinvested) to the MSCI Emerging Markets index (Net dividends reinvested).

Factor Attributions

Robeco Emerging Markets Enhanced Indexing Equities

Excess return and factor attribution: Emerging Markets Enhanced Indexing Strategy



31 December 2023	2007*	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Emerging Markets Enhanced Indexing	11.1%	-51.7%	84.4%	31.0%	-14.1%	17.8%	-5.7%	11.8%	-6.1%	16.3%	22.9%	-9.5%	20.5%	7.2%	10.0%	-13.0%	11.2%
MSCI Emerging Markets Index	8.8%	-50.9%	72.9%	27.1%	-15.7%	16.4%	-6.8%	11.4%	-5.2%	14.5%	20.6%	-10.3%	20.6%	8.5%	4.9%	-14.9%	6.1%
Positive excess return	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓	✓

Source: Robeco, MSCI. The figure shows excess portfolio returns versus the market index. Excess return is the sum of the allocation effect and the stock selection contribution, excluding cash & other. The excess return is fully attributed to four underlying Robeco factors value, momentum, revisions and quality as explained in the white paper 'Factor Performance Attribution'. April 2016. *Monthly data since inception in June 2007 up to and including December 2007, gross of fees, based on the gross asset value of the Robeco QI Institutional Emerging Markets Enhanced Index Equities Fund, and starting from January 2008, gross of fees, based on the gross asset value of the Robeco Composite Emerging Enhanced Indexing Equities. The value of your investments may fluctuate. Benchmark figures include net dividends reinvested. All figures are in EUR. Results obtained in the past are no guarantee for the future.