



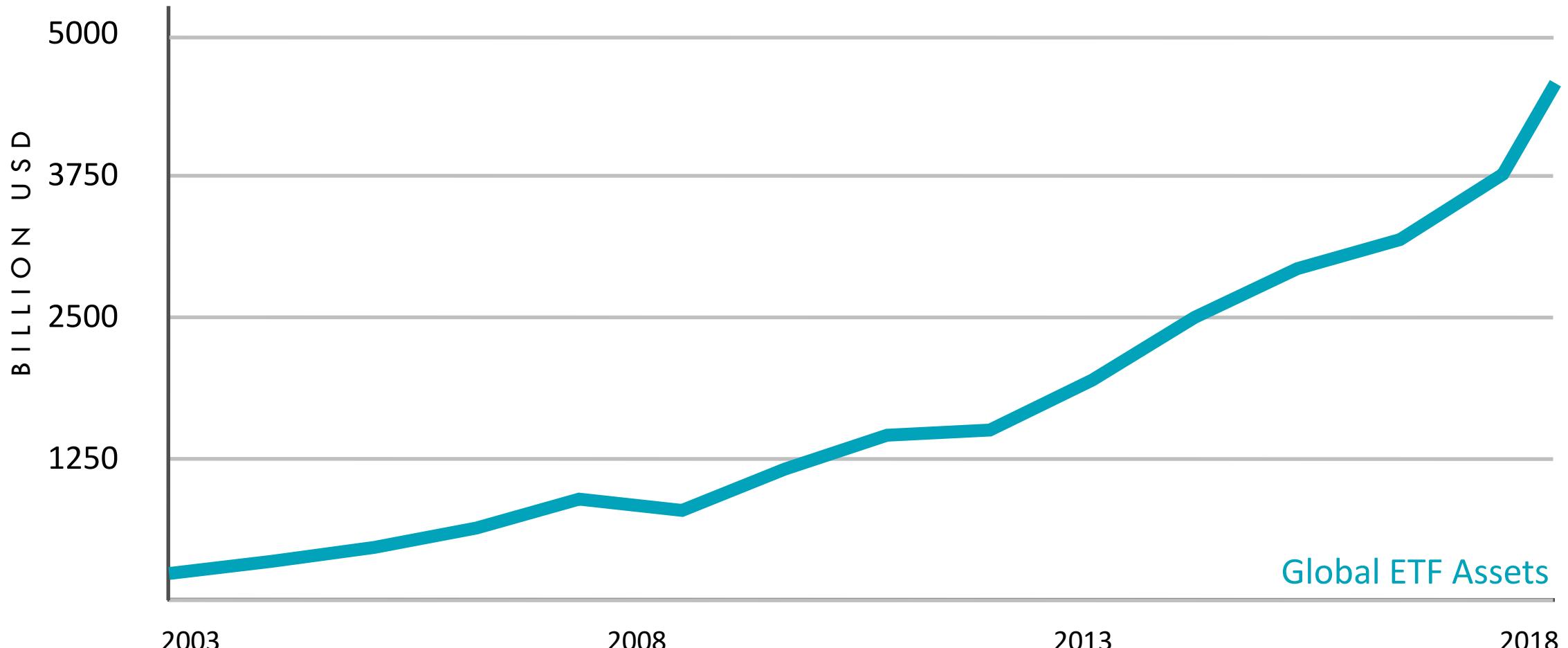
BEYOND THE PITFALLS OF PASSIVE INVESTING ENHANCED INDEXING

Wilma de Groot, PhD, CFA
Head Core Quant Equities

For Professional Investors only

Passive Investing

Global ETF Assets



Passive Investing

How it works

MSCI World

APPLE
MICROSOFT
AMAZON
FACEBOOK
JPMORGAN CHASE & CO
JOHNSON & JOHNSON
ALPHABET
BANK OF AMERICA
EXXON MOBIL
...

Passive Investing

How it works

MSCI World

APPLE
MICROSOFT
AMAZON
FACEBOOK
JPMORGAN CHASE & CO
JOHNSON & JOHNSON
ALPHABET
BANK OF AMERICA
EXXON MOBIL
...

Index tracker

APPLE
MICROSOFT
AMAZON
FACEBOOK
JPMORGAN CHASE & CO
JOHNSON & JOHNSON
ALPHABET
BANK OF AMERICA
EXXON MOBIL
...

Passive Investing

Advantages



Broad market exposure



Diversified portfolio



Predictable characteristics

Indextracker

APPLE
MICROSOFT
AMAZON
FACEBOOK
JPMORGAN CHASE & CO
JOHNSON & JOHNSON
ALPHABET
BANK OF AMERICA
EXXON MOBIL
...

1. Passive Vehicles Underperform

Tools **ETF Screener** ▾ Basic ETF Screener

ETF Screener 2064 Results Found out of 2064 **Add Criteria** **Categories**

▶ My Screen ▶ Morningstar Screen Save Save As Clear

Criteria # of ETFs found Range How are the funds distributed?

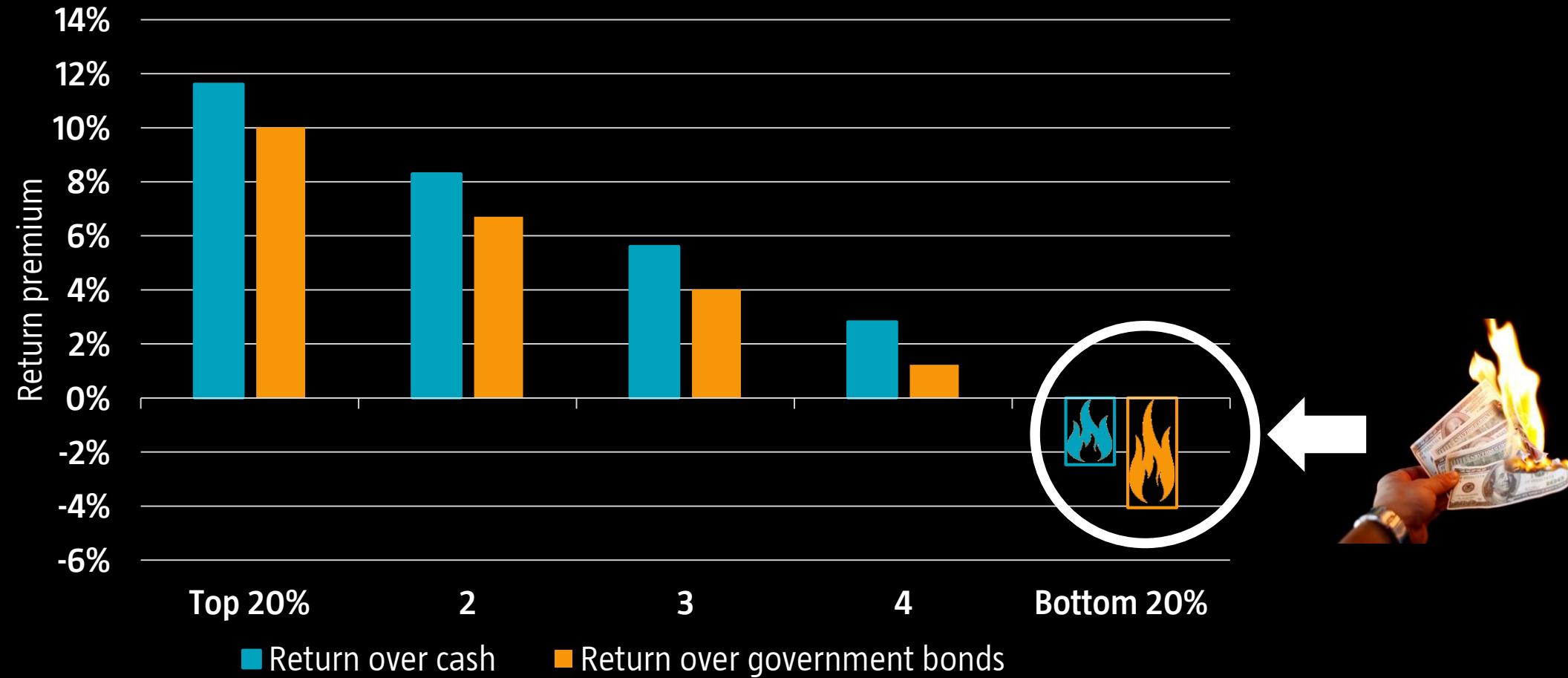
Technology (45) Utilities (12) Large Blend (138) Large Growth (41) Large Value (76) Leveraged Net Long (0) Mid-Cap Blend (38)

Select All + Add to My Portfolio 2064 Results Found out of 2064

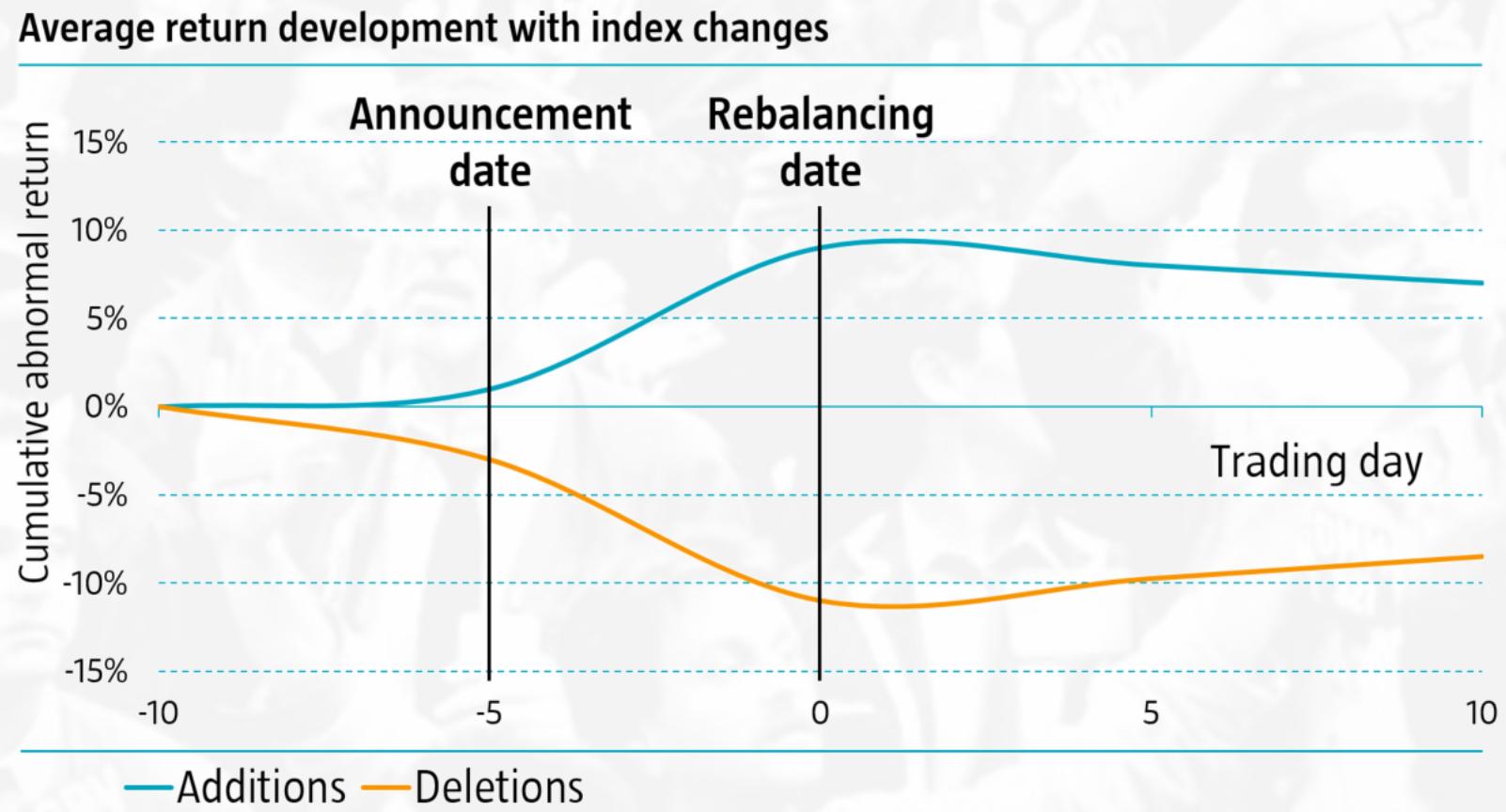
ETF Name	Symbol	Category	Expense Ratio (%)	Market Return YTD	Market Return 1-Year
<input type="checkbox"/> AdvisorShares Dorsey Wright ADR ETF	AADR	Foreign Large Growth	1.25	43.02	41.58
<input type="checkbox"/> iShares MSCI All Country Asia ex Jpn ETF	AAXJ	Pacific/Asia ex-Japan Stk	0.70	39.20	32.73
<input type="checkbox"/> SPDR® MSCI ACWI IMI ETF	ACIM	World Large Stock	0.25	18.80	25.09
<input type="checkbox"/> iShares Edge MSCI Multifactor Global ETF	ACWF	World Large Stock	0.36	25.51	28.62
<input type="checkbox"/> iShares MSCI ACWI ETF	ACWI	World Large Stock	0.32	20.52	25.85
<input type="checkbox"/> iShares Edge MSCI Min Vol Global ETF	ACWV	World Large Stock	0.20	15.00	15.50
<input type="checkbox"/> iShares MSCI ACWI ex US ETF	ACWX	Foreign Large Blend	0.32	24.84	26.15
<input type="checkbox"/> BLDRS Asia 50 ADR ETF	ADRA	Diversified Pacific/Asia	0.30	27.35	24.76
<input type="checkbox"/> BLDRS Developed Markets 100 ADR ETF	ADRD	Foreign Large Value	0.30	18.53	24.00
<input type="checkbox"/> BLDRS Emerging Markets 50 ADR ETF	ADRE	Diversified Emerging Mkts	0.30	35.20	28.03
<input type="checkbox"/> BLDRS Europe Select ADR ETF	ADRU	Europe Stock	0.30	20.38	25.54
<input type="checkbox"/> DB Agriculture Short ETN	ADZ	Trading--Inverse Commodities	0.75	8.19	8.19
<input type="checkbox"/> VanEck Vectors Africa ETF	AFK	Miscellaneous Region	0.78	20.57	20.05

Source: Morningstar as of November 3, 2017 – Illustration has been modified for this presentation

2. Allocates To Stocks With A Negative Return



3. The Hidden Cost Of Index Arbitrage



Source: Petajisto (2011), The Index Premium and Its Hidden Cost for Index Funds, Journal of Empirical Finance, 2011, 18(2):271-288

4. No ESG Integration



5. Corporate Governance



Passive Investing

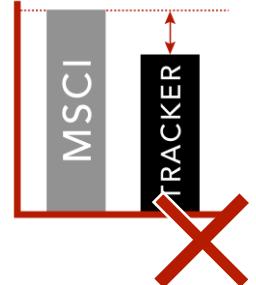
Index tracker

APPLE
MICROSOFT
AMAZON
EXXON MOBIL
JOHNSON & JOHNSON
JPMORGAN CHASE
FACEBOOK
WELLS FARGO
GENERAL ELECTRIC
...

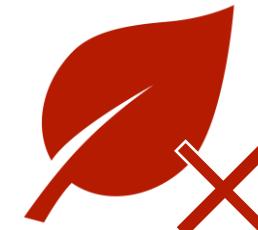
Performance lags index after costs



No academic insights



Prone to index arbitrage



No sustainability



Corporate governance is at risk

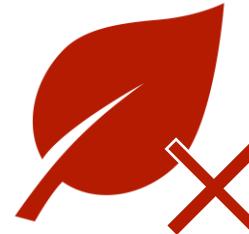


Enhanced Indexing

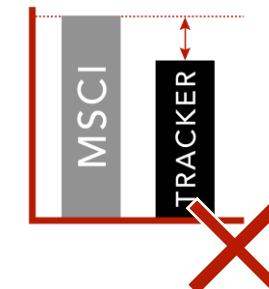
Features



RISK
RETURN



INDEX TRACKER

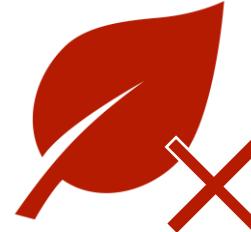


Enhanced Indexing

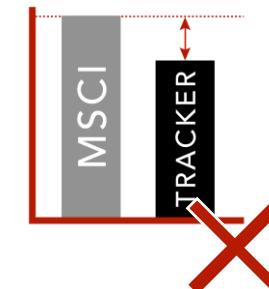
Features



RISK
RETURN



OUR CHALLENGE



Enhanced Indexing

Features



RISK
RETURN



OUR CHALLENGE



Enhanced Indexing

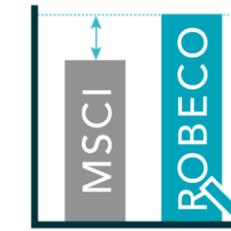
Features



RISK
RETURN



ROBECO
ENHANCED INDEXING



Enhanced Indexing

Explained

MSCI World

APPLE
MICROSOFT
AMAZON
FACEBOOK
JPMORGAN CHASE & CO
JOHNSON & JOHNSON
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EXXON MOBIL
...

Index tracker

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EXXON MOBIL
...

Enhanced Indexing

Explained

MSCI World

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ALPHABET
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EXXON MOBIL
...

Enhanced Indexing

Research and Experience

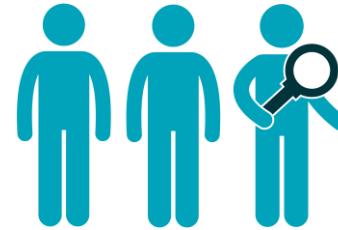


SINCE

1977

Academic research

ROBECO



SINCE

1994

Robeco quant research

ROBECO



SINCE

2002

Robeco quant equity portfolios

Enhanced Indexing

Value Investing

Value characteristics

Value stocks
provide better returns

VALUATION
BOOK / PRICE

QUALITY
SHARE BUYBACKS

Enhanced Indexing

Momentum Investing

Value characteristics

Value stocks
provide better returns

VALUATION
BOOK / PRICE

QUALITY
SHARE BUYBACKS

Momentum characteristics

Momentum stocks
provide better returns

MOMENTUM
PRICE TRENDS

ANALYSTS
REVISIONS

Enhanced Indexing

Ranking the stocks

Scoring and Ranking

VALUATION
BOOK / PRICE

QUALITY
SHARE BUYBACKS

MOMENTUM
PRICE TRENDS

ANALYSTS
REVISIONS

+

+

+

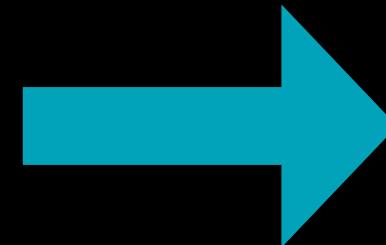
HOW TO BUILD AN ENHANCED INDEX STRATEGY?

1600

Stocks in MSCI World

1600

MSCI World



VALUE
CHARACTERISTICS

MOMENTUM
CHARACTERISTICS

1600
Stocks

VALUE
CHARACTERISTICS

MOMENTUM
CHARACTERISTICS

	Book / Price	...	Share Buybacks	Price Trends	...	Analyst Revisions
Randstad NV	0.42	...	-1%	-18%	...	-17%
Loews Corp	1.31	...	10%	20%	...	-24%
Mitsubishi Corp	1.71	...	2%	4%	...	9%
Altice NV	0.15	...	-10%	-21%	...	-24%
NN Group NV	2.21	...	3%	9%	...	47%
Netflix Inc	0.05	...	-1%	-1%	...	-5%

1600
Stocks

VALUE
CHARACTERISTICS

Book /
Price

...

Share
Buybacks

MOMENTUM
CHARACTERISTICS

Price
Trends

...

Analyst
Revisions

RANK

1600
Stocks

VALUE
CHARACTERISTICS

MOMENTUM
CHARACTERISTICS

RANK

Book / Price	...	Share Buybacks	Price Trends	...	Analyst Revisions
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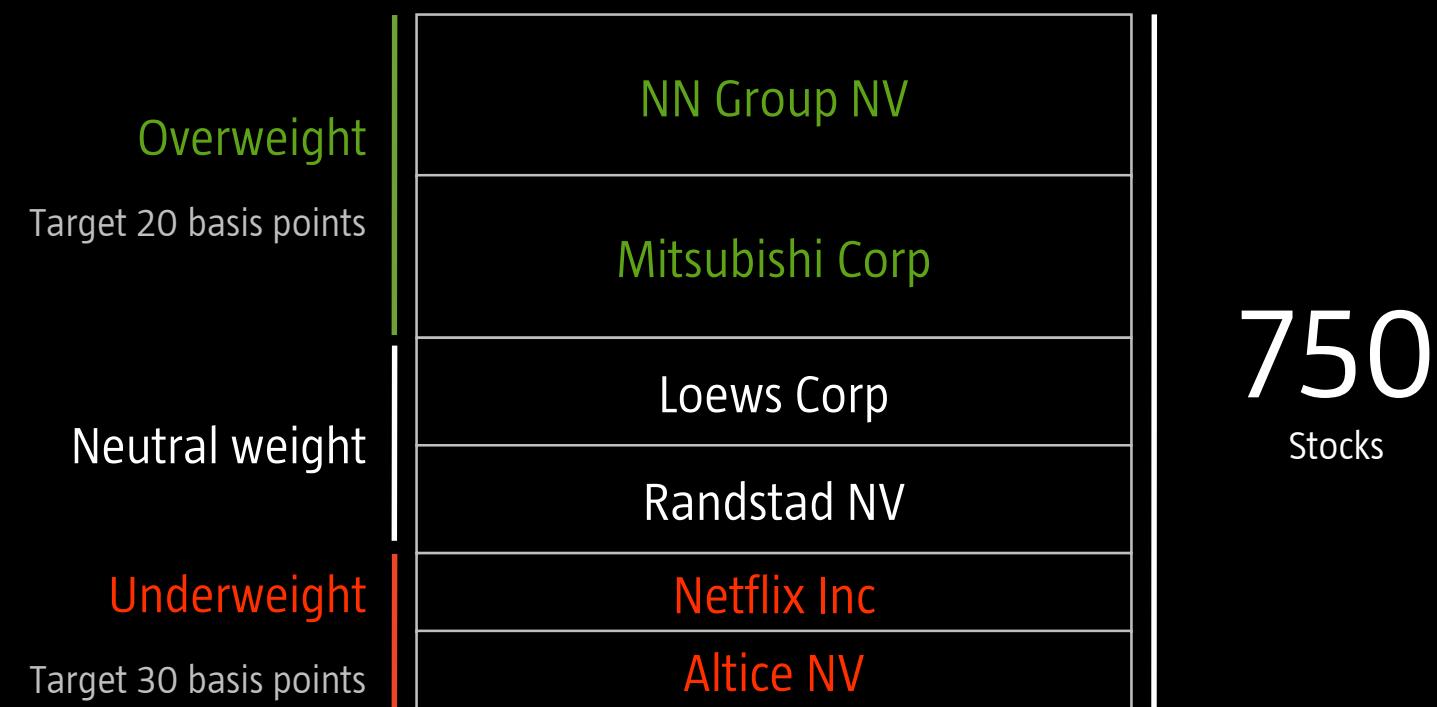
Highest rated stocks

NN Group NV	2.21	...	3%	9%	...	47%	1.0%
Mitsubishi Corp	1.71	...	2%	4%	...	9%	5.6%
Loews Corp	1.31	...	10%	20%	...	-24%	9.9%

Lowest rated stocks

Randstad NV	0.42	...	-1%	-18%	...	-17%	87.8%
Netflix Inc	0.05	...	-1%	-1%	...	-5%	91.8%
Altice NV	0.15	...	-10%	-21%	...	-24%	97.0%

ENHANCED INDEXING



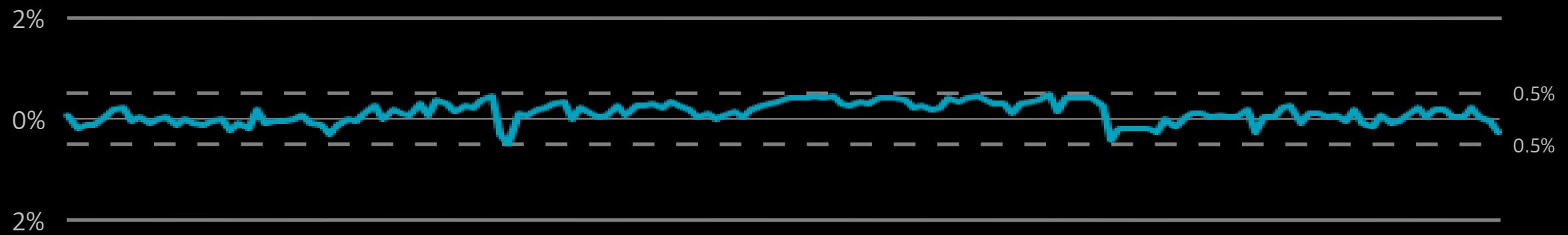
RANKING A STOCK

Suggestions?

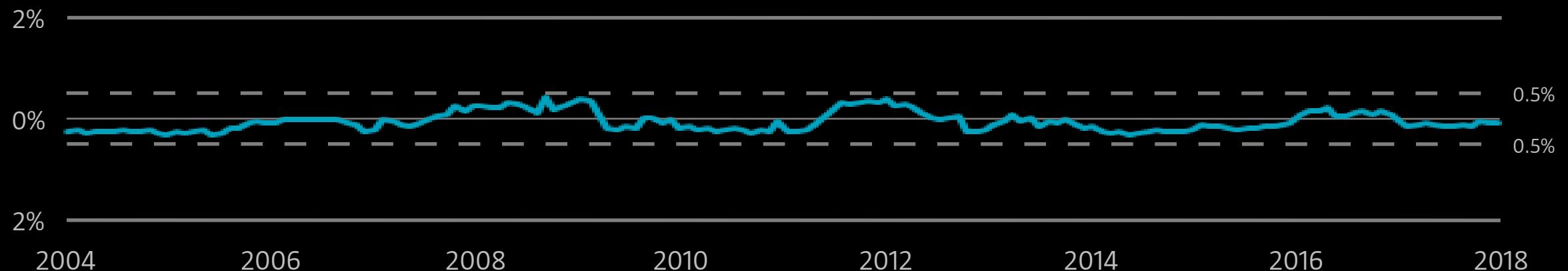
Index Deviations

Per Country

United States



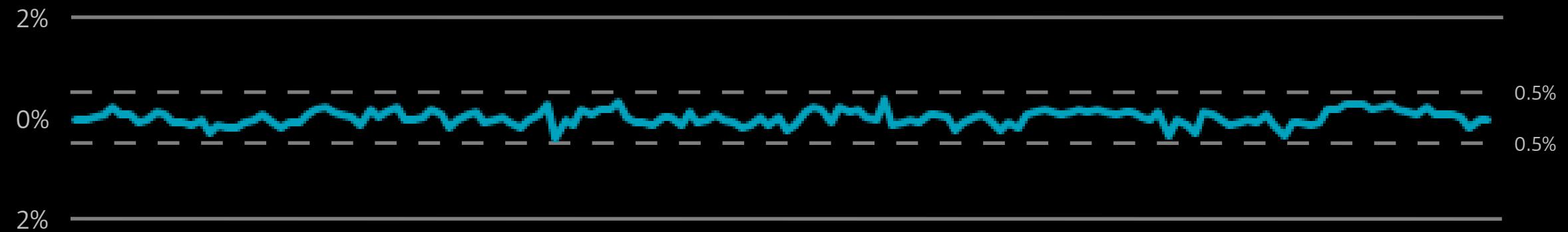
United Kingdom



Index Deviations

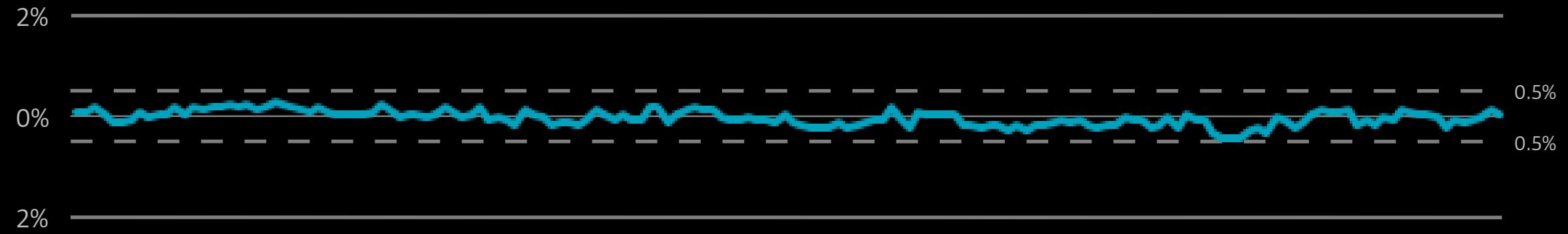
Per Country

Financials



Per Sector

Information Technology



2004

2006

2008

2010

2012

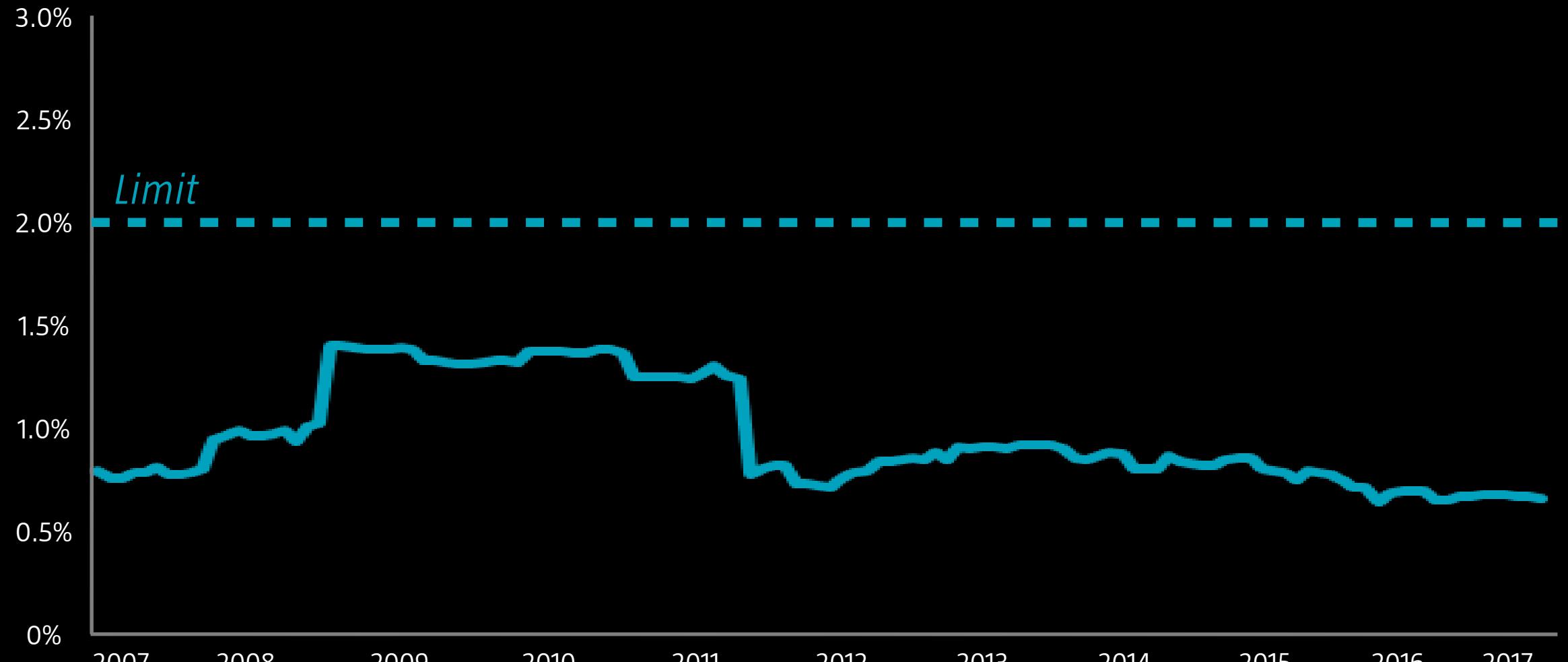
2014

2016

2018

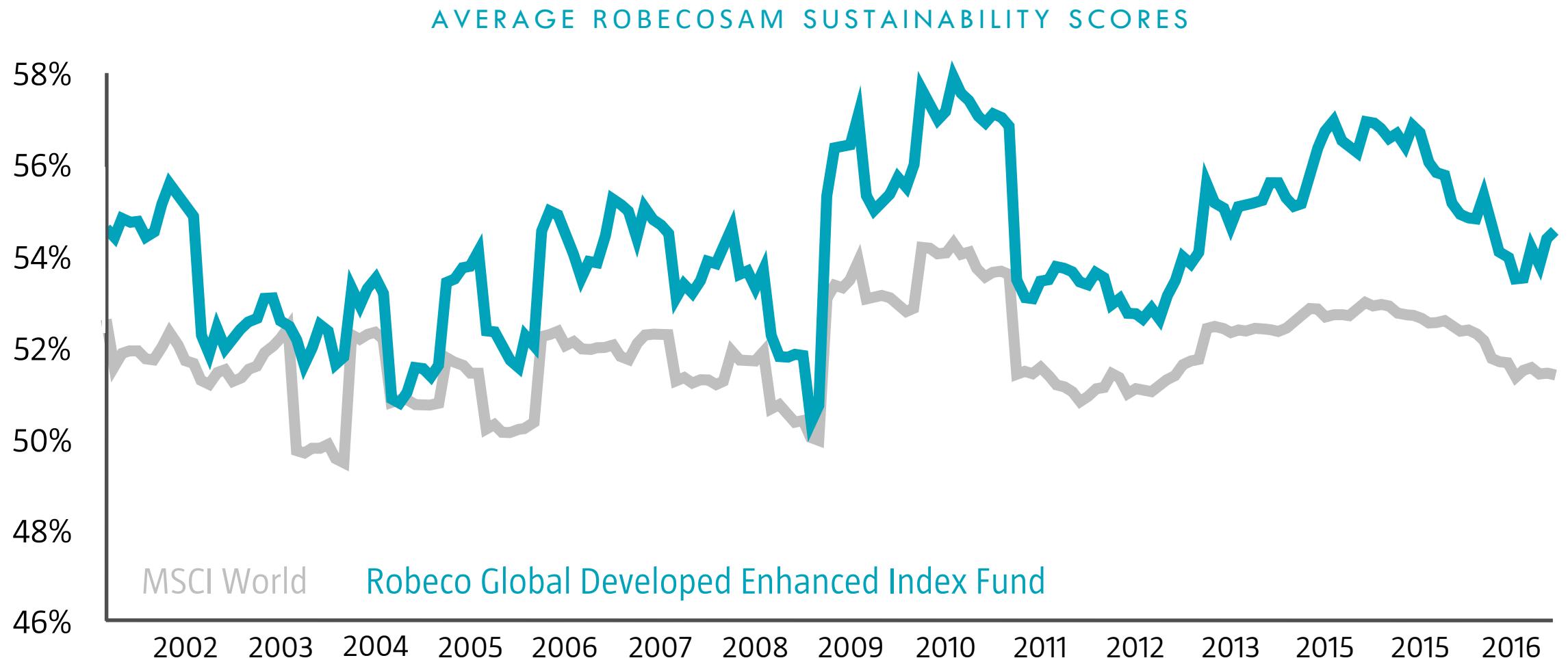
Tracking Error

Development 2007 - 2017



Sustainability

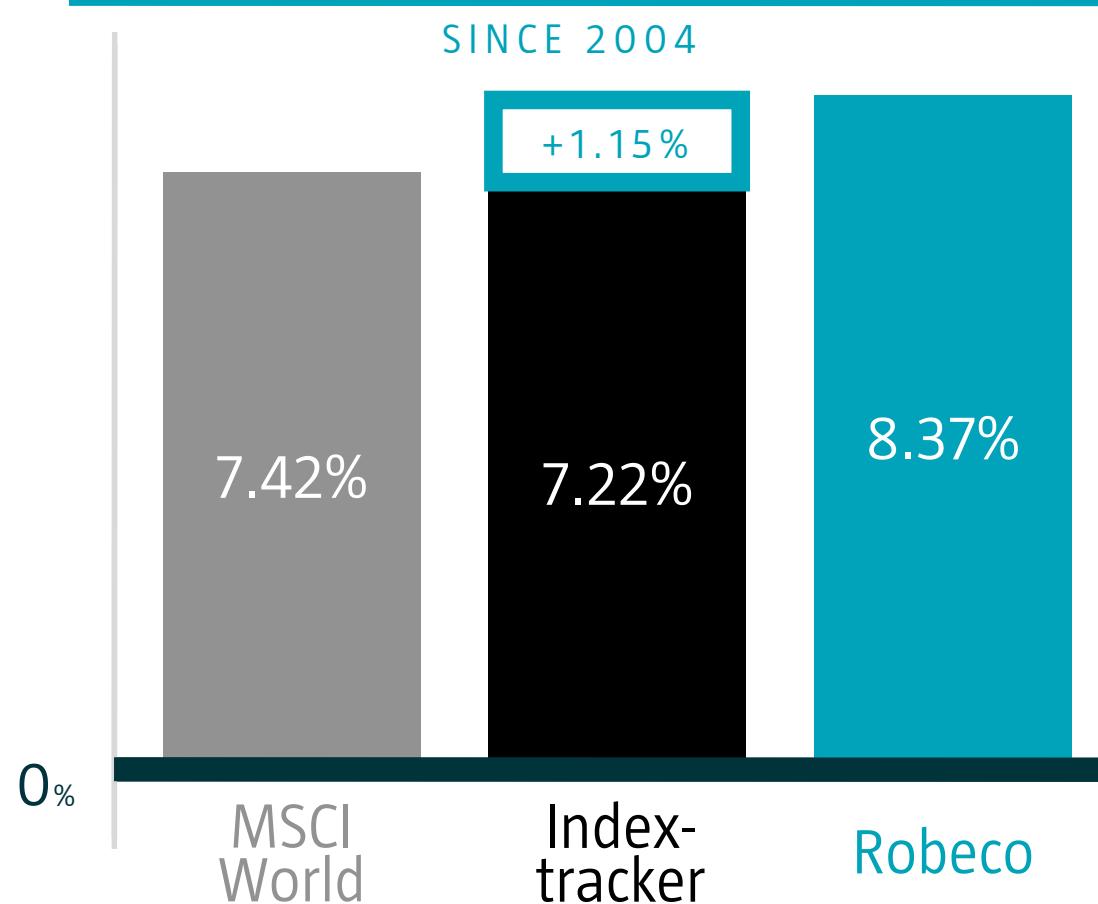
Better sustainability profile



Net Returns After Costs

March 2018

Global Developed Markets

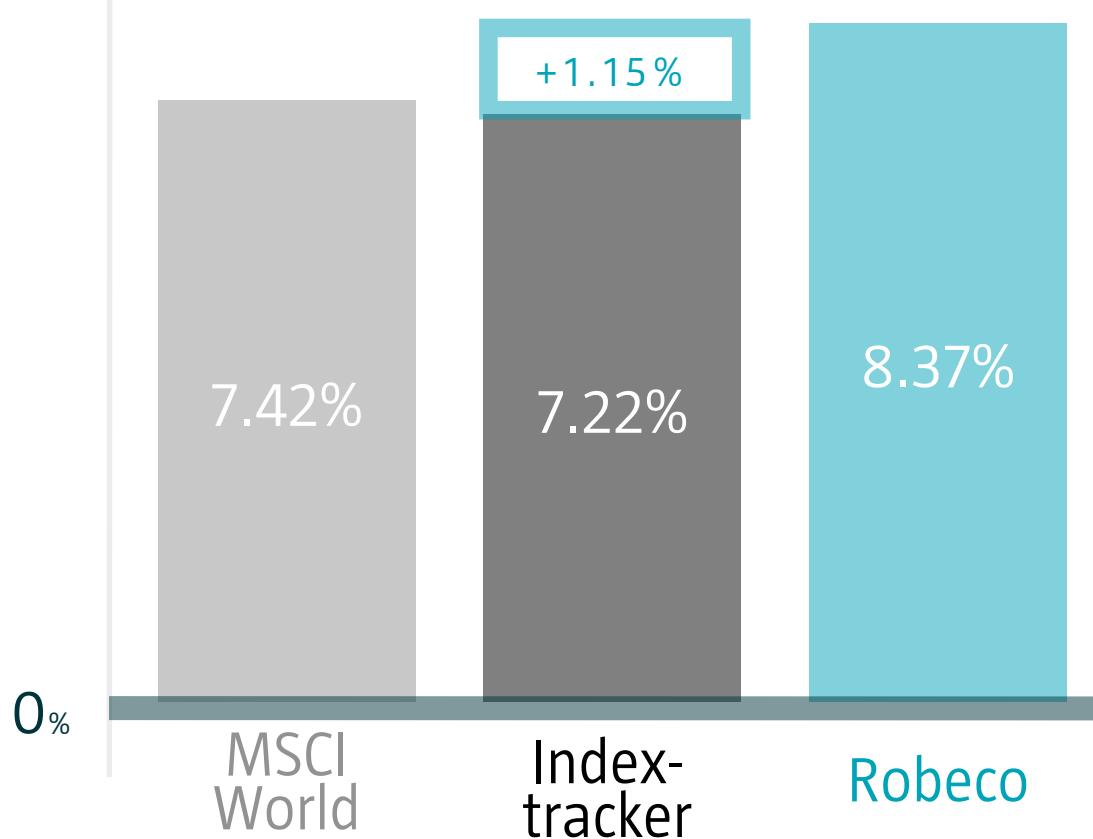


The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future.

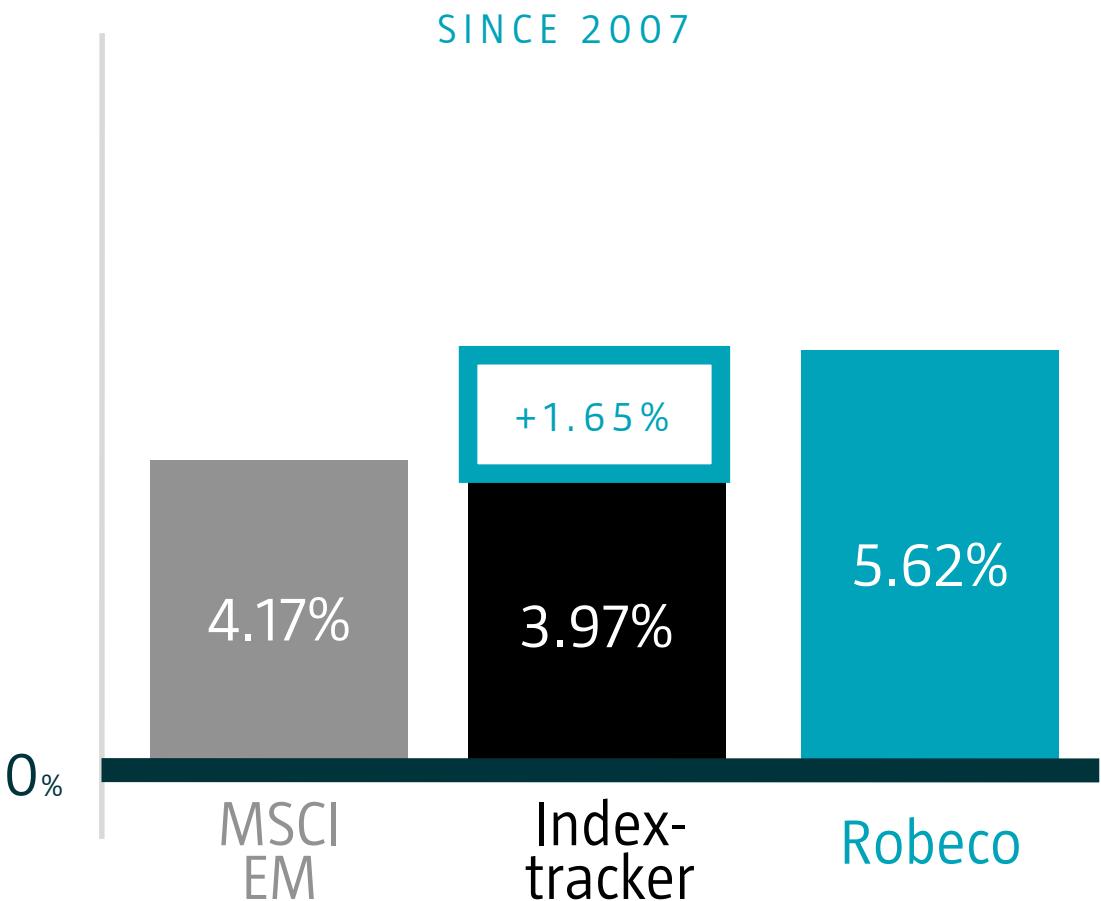
Net Returns After Costs

March 2018

Global Developed Markets



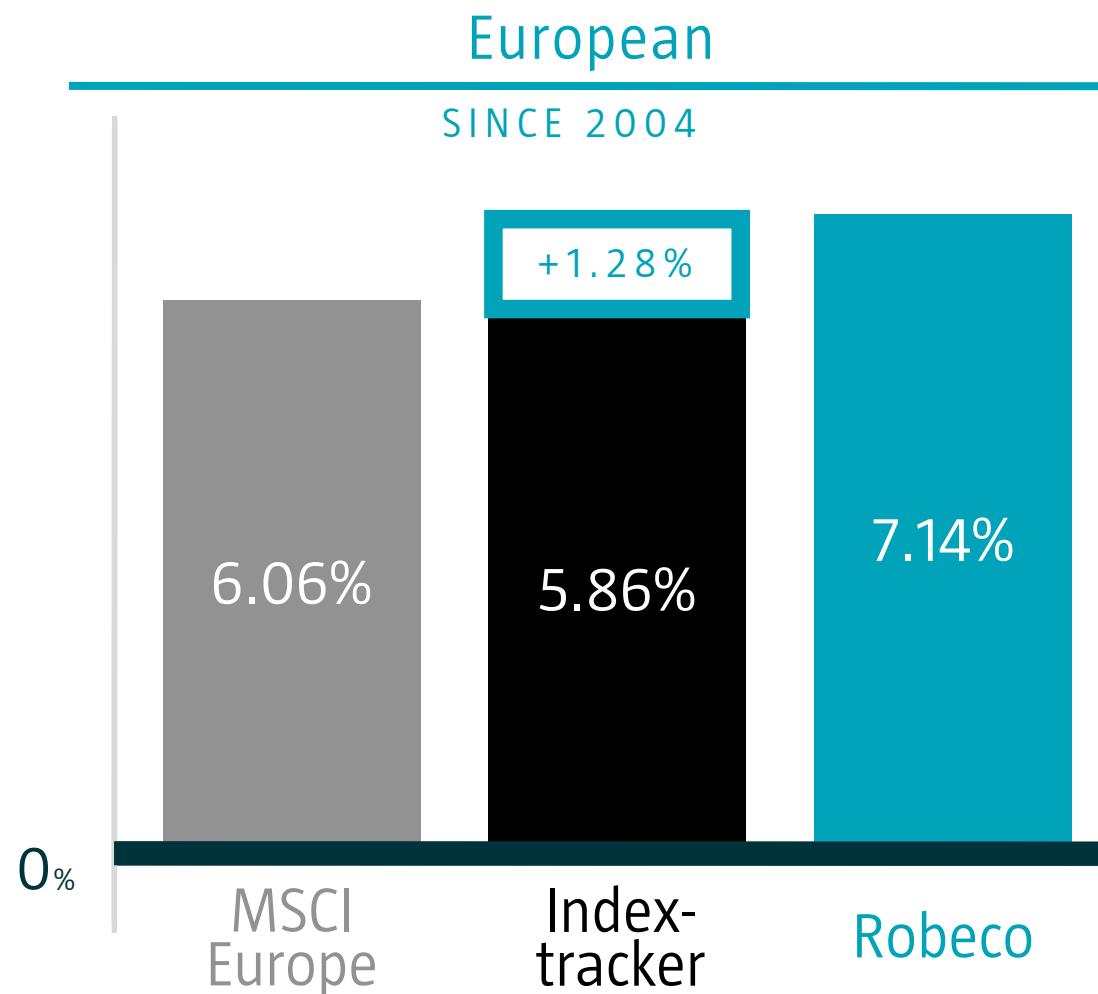
Emerging Markets



The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future.

Net Returns After Costs

March 2018

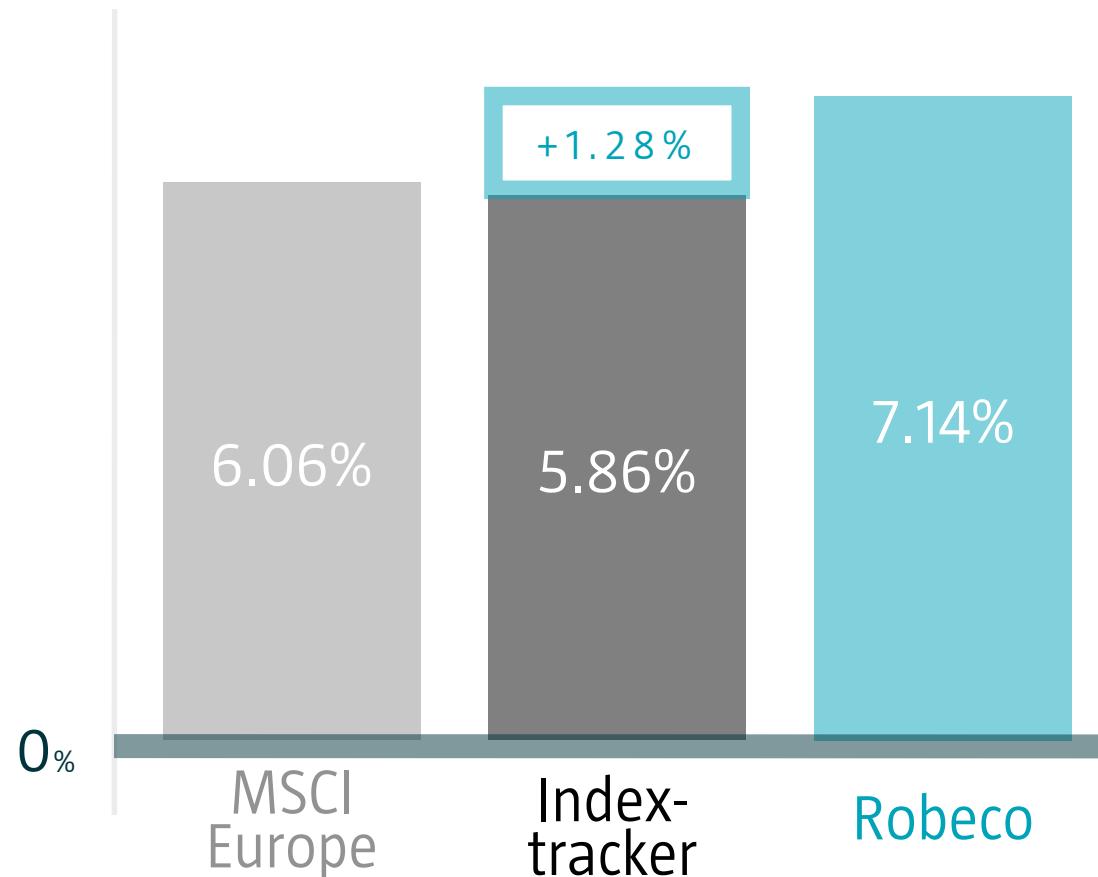


The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future.

Net Returns After Costs

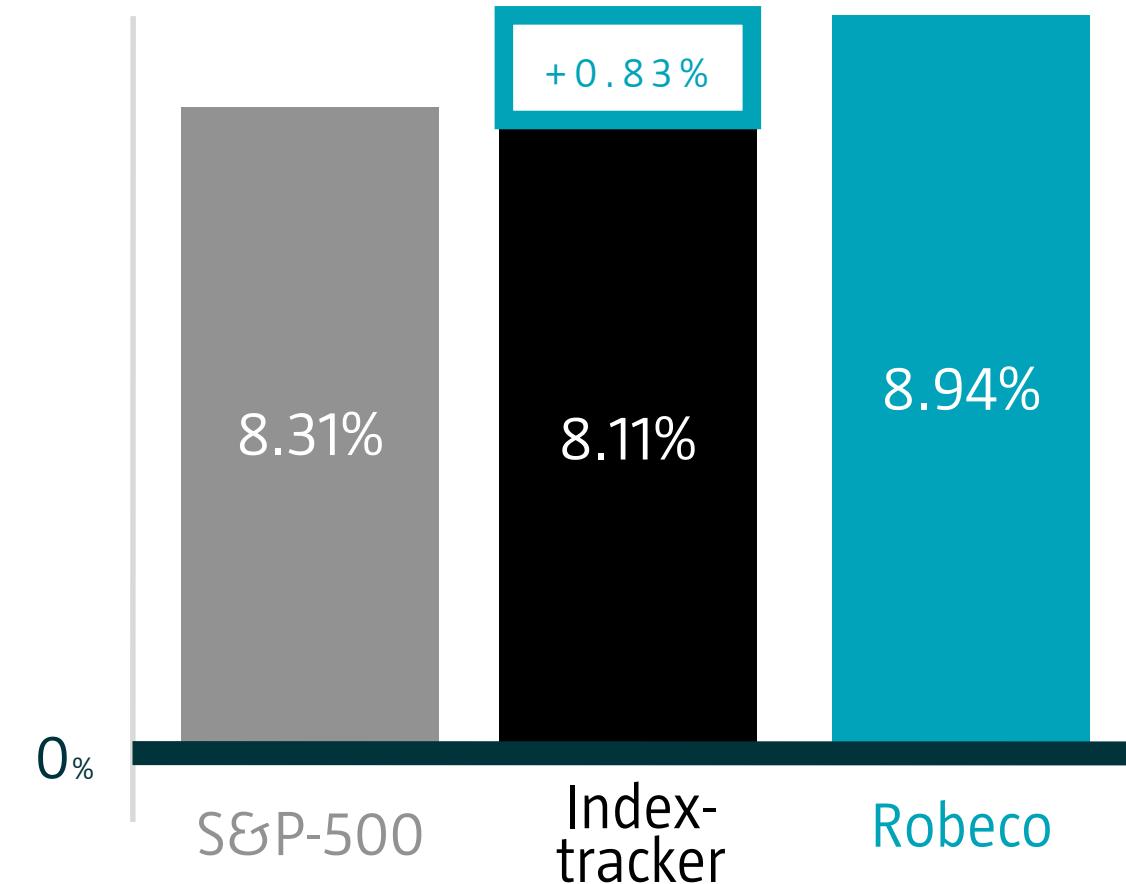
March 2018

European



US

SINCE 2004



The value of your investments may fluctuate. Results obtained in the past are no guarantee for the future.

Enhanced Indexing

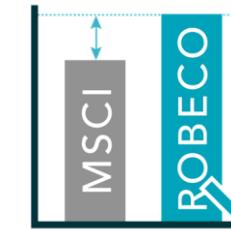
Overview



RISK
RETURN



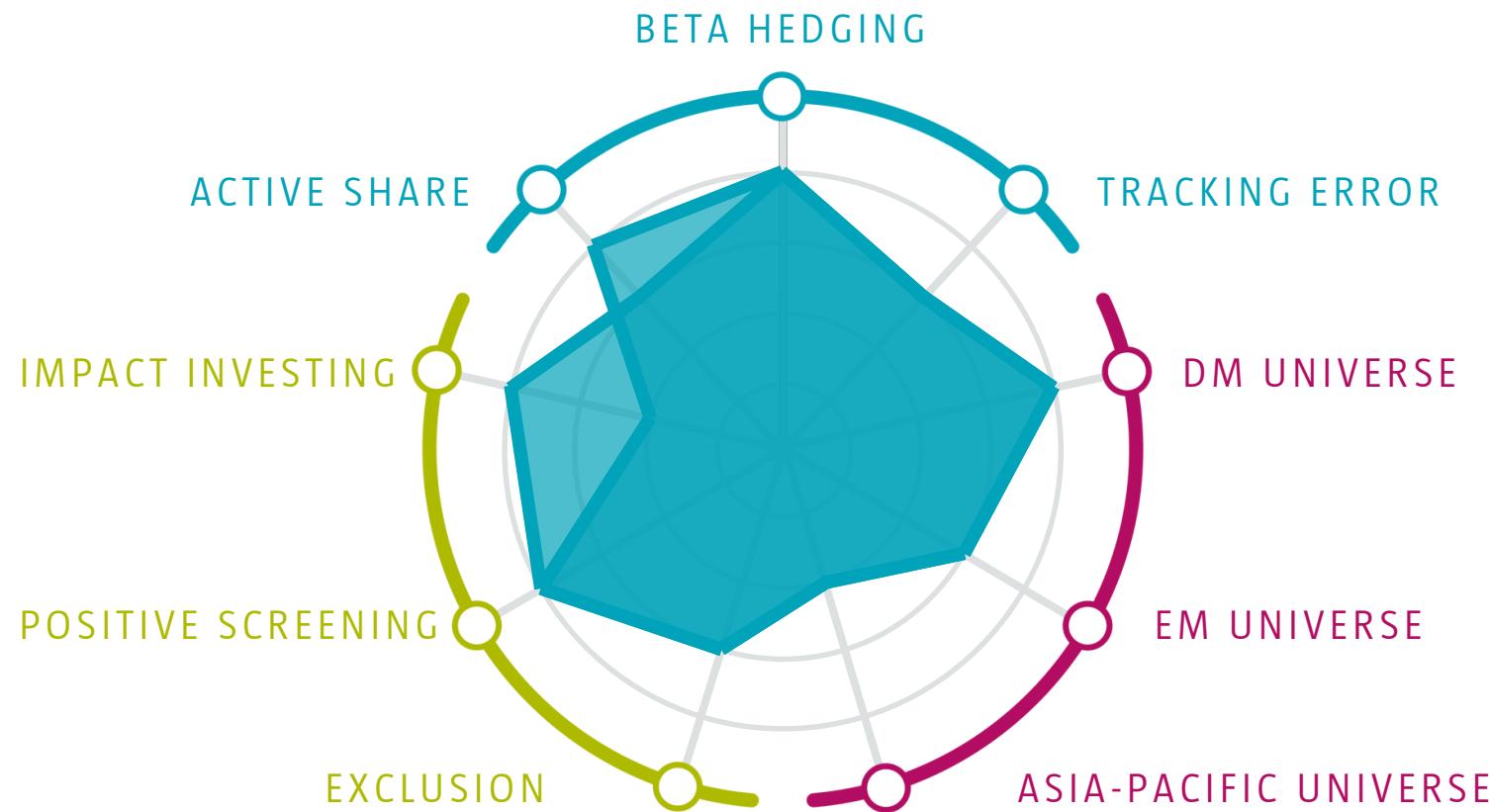
ROBECO
ENHANCED INDEXING



Tailor-made Solutions

Possibilities

RISK & RETURN

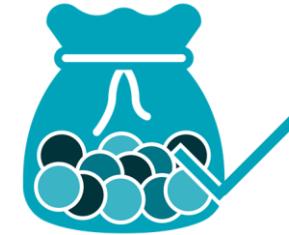


SUSTAINABILITY

INVESTMENT UNIVERSE

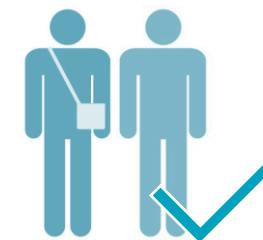
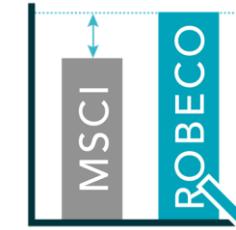
Sustainable Enhanced Indexing

Overview



RISK
RETURN

**ROBECO SUSTAINABLE
ENHANCED INDEXING**



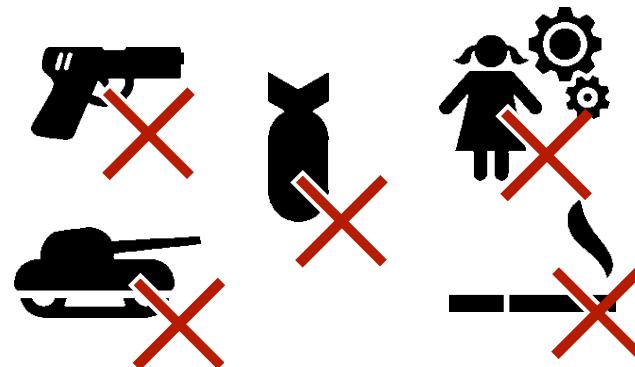
Sustainable Enhanced Indexing

Overview



No investments in:

CONTROVERSIAL
COMPANIES



Impact investing:

20 % LOWER FOOTPRINT

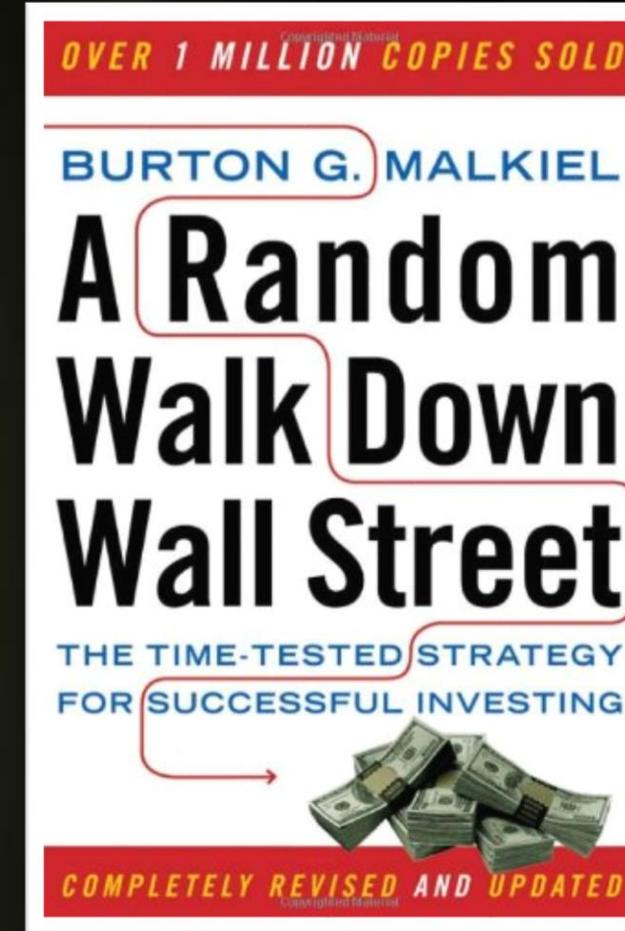


Portfolio ESG score

IMPROVEMENT:

+30%





Burton Malkiel (1973)

"Blindfolded monkeys do just as well as the experts"

Served on the board of passive manager **Vanguard** for 27 years

A close-up, slightly low-angle portrait of Burton Malkiel, an elderly man with a receding hairline, wearing a dark suit, light blue shirt, and a red patterned tie. He is looking directly at the camera with a neutral expression.

“An Index-Fund Evangelist Is Straying From His Gospel”

The New York Times – 22 June 2017

Now, at age 84, advocates an approach called “Advanced Indexing”, a smart beta strategy that **“aims to exploit market inefficiencies and beat the passive approach”**

Burton Malkiel (1973)

“Blindfolded monkeys do just as well as the experts”

Served on the board of passive manager **Vanguard** for 27 years

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Unless otherwise specified the prices used for the performance figures of the Luxembourg-based Funds are the end-of-month transaction prices net of fees up to 4 August 2010. From 4 August 2010, the transaction prices net of fees will be those of the first business day of the month. Return figures versus the benchmark show the investment management result before management and/or performance fees; the Fund returns are with dividends reinvested and based on net asset values with prices and exchange rates of the valuation moment of the benchmark. Please refer to the prospectus of the Funds for further details.

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Any decision to subscribe for interests in the Fund must be made solely on the basis of information contained in the prospectus which information may be different from the information contained in this document. The information contained in this document is qualified in its entirety by reference to the prospectus, and this document should, at all times, be read in conjunction with the prospectus. The prospectus and the Key Investor Information Document for the Robeco Funds can all be obtained free of charge at www.robeco.com.

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