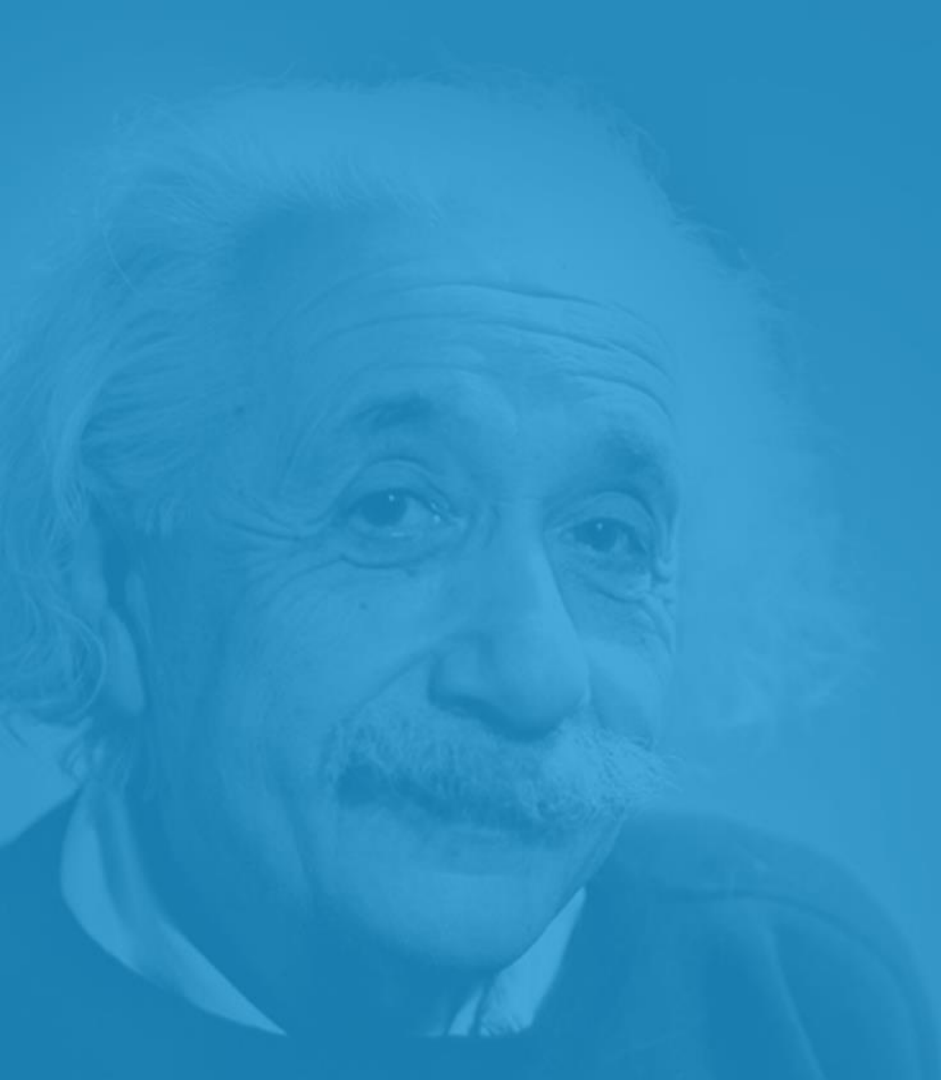




# FROM INVESTMENT THEORY TO PRACTICE

David Blitz, PhD  
Head of Quantitative Research

For Professional Investors only



*"In theory, theory and  
practice are the same. In  
practice,  
they are not."*

*- Albert Einstein*

# TOPICS

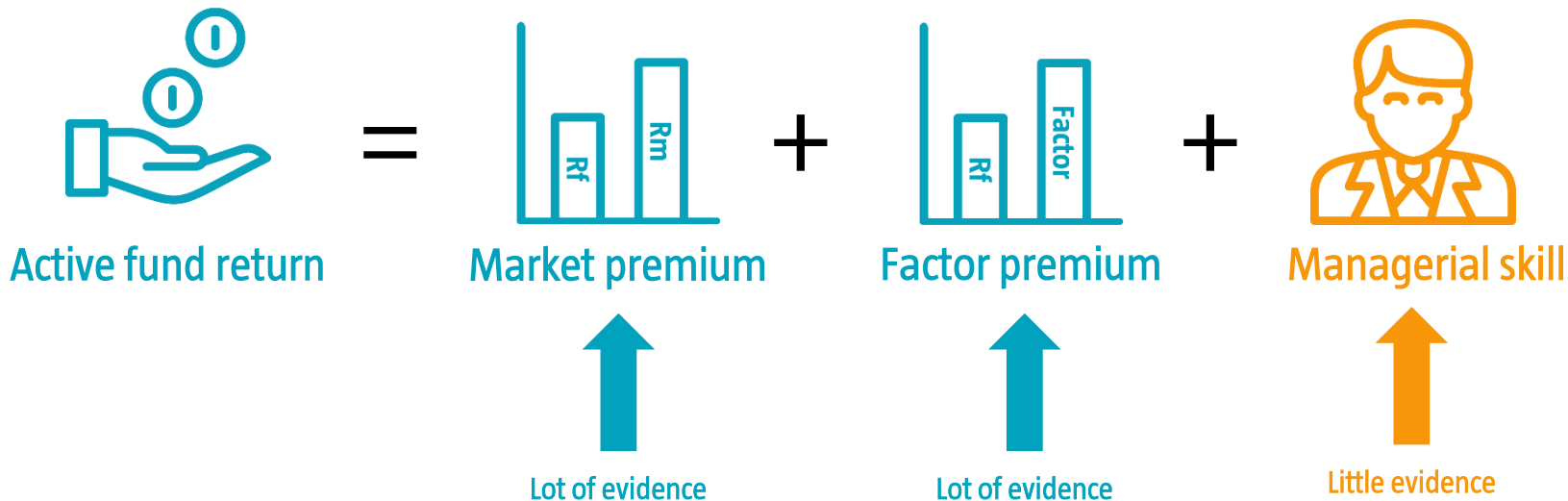
## Quick Overview

- A. **A critical look at passive investing**  
(and why a factor-based investment approach is better)
- B. **A critical look at generic factor strategies**  
(and why enhanced factor strategies are better)

# PASSIVE INVESTING

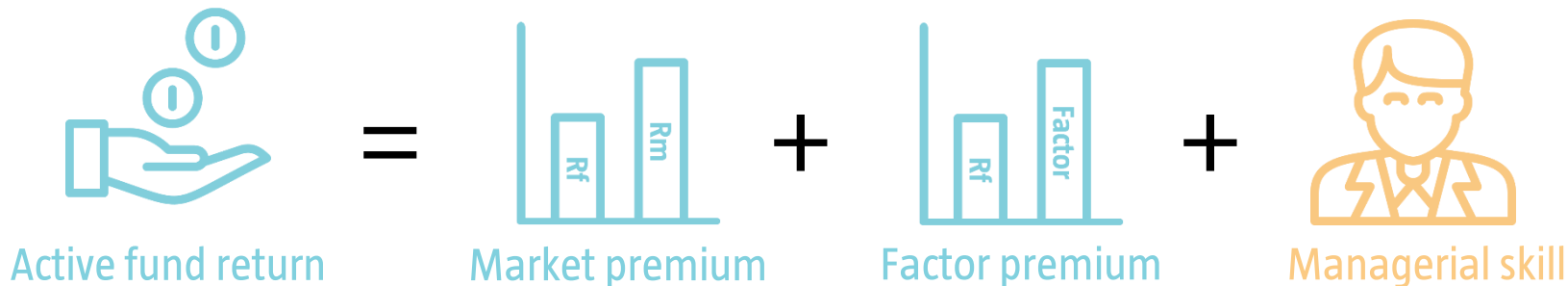
## Passive investing ignores factor premiums

Literature really shows that active funds do not add value if you adjust their performance for the part that can be attributed to explicit or implicit exposures towards established factor premiums.



# PASSIVE INVESTING

Passive investing ignores factor premiums



**DON'T invest passively and ignore factor premiums!**

# NORWEGIAN RESERVE FUND

2009 Case Study: Strategic exposure to factor premiums

Long term investors *should* seek  
strategic exposure to factor premiums



A. Ang

Columbia  
Business School



W. N. Goetzmann

Yale School of  
Management



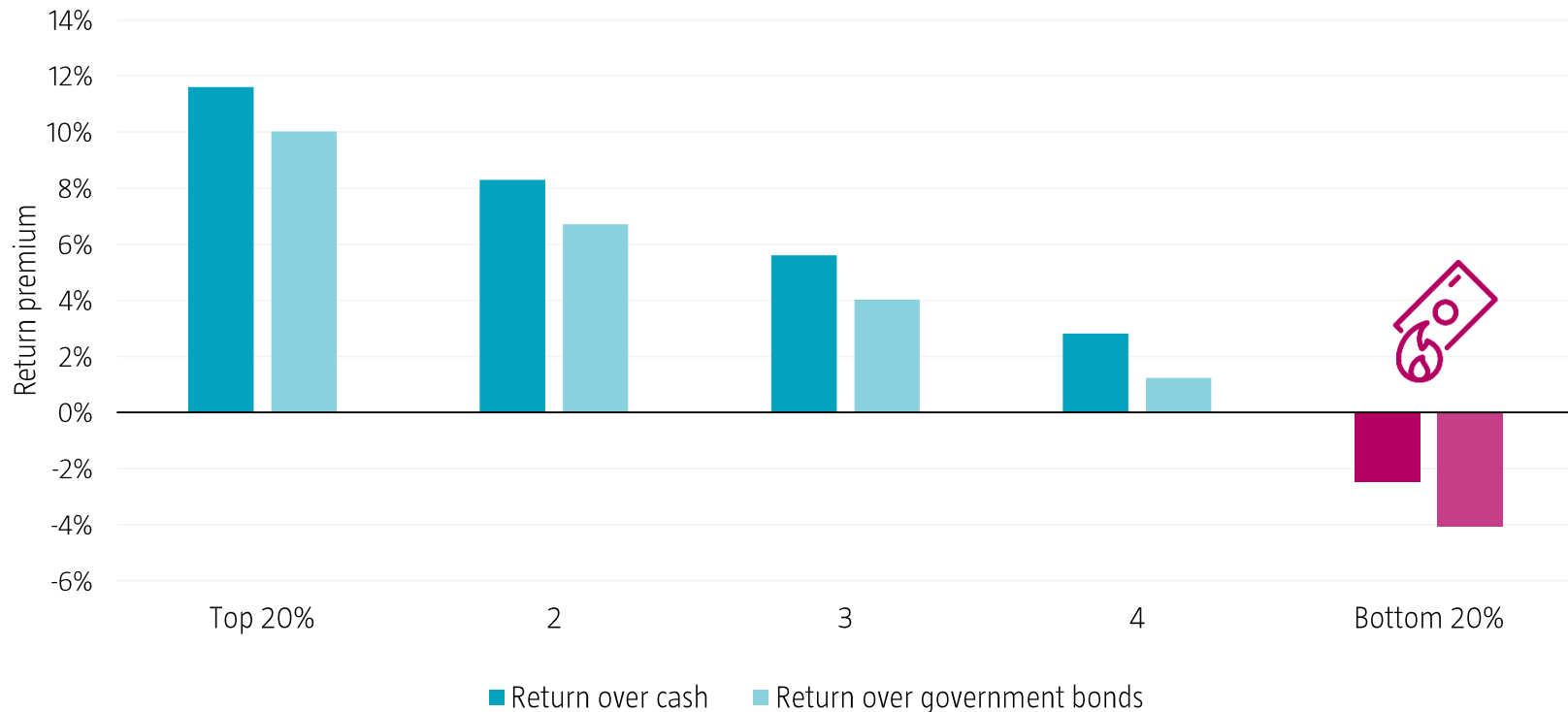
S. Schaefer

London  
Business School

# NEGATIVE PREMIUM

## Passive investing even costs money

Model which ranks stocks on simple value, momentum, quality and low-risk variables indicates at least 20% of stocks have a **negative** return premium



# GENERIC FACTOR STRATEGIES

Preferable over passive, however...



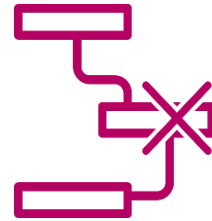
## Unrewarded Risks

Generic factor strategies contain unrewarded risks



## Conflicting Factors

Generic factor strategies often go against other factors



## Suboptimal Methodologies

Generic factor strategies have suboptimal methodologies



# GENERIC FACTOR STRATEGIES

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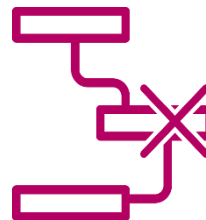
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Our enhanced factor strategies address these concerns

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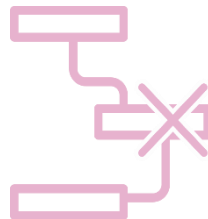
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# GENERIC VALUE STRATEGIES

Value investing works, but why?



## Academics

Value Premium is compensation  
for investing in distressed stocks



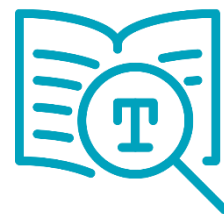
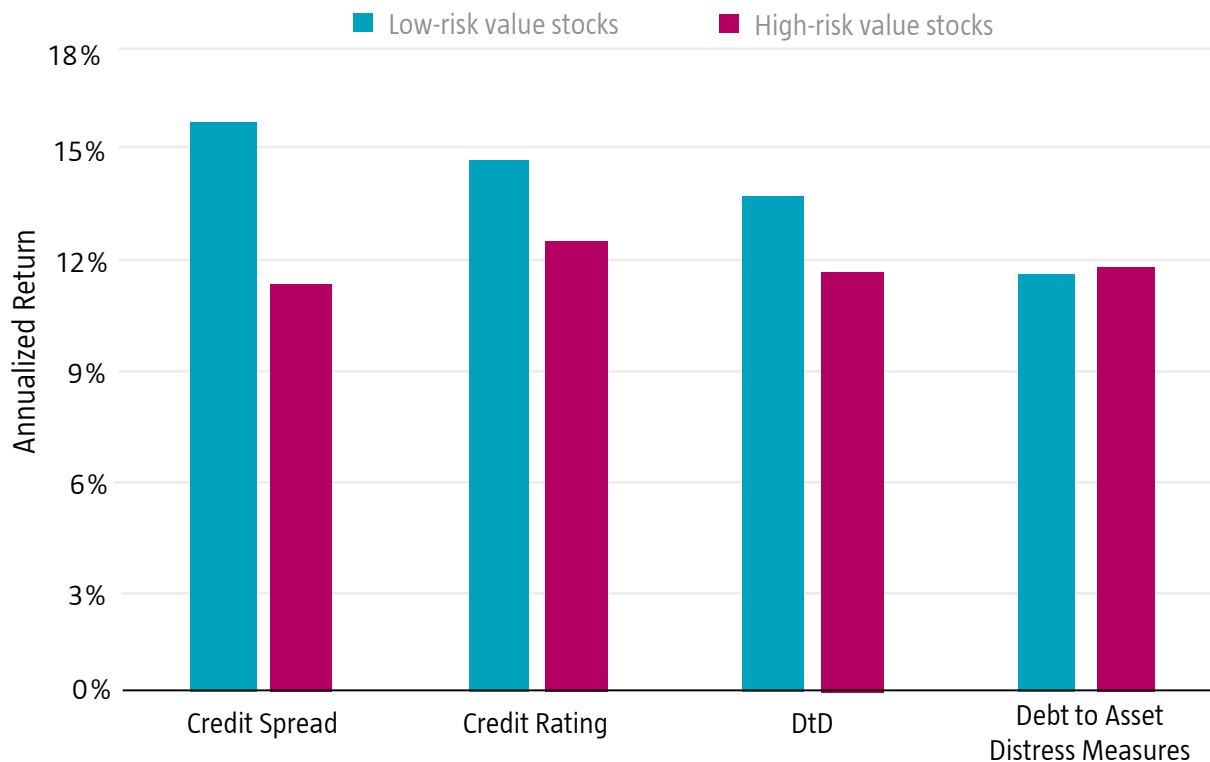
## Robeco Research

Distressed value stocks have  
lower returns than safe ones

# GENERIC VALUE STRATEGIES

Generic value strategies buy stocks with high bankruptcy risk

Example: relation between return, value, and distress risk



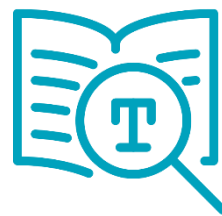
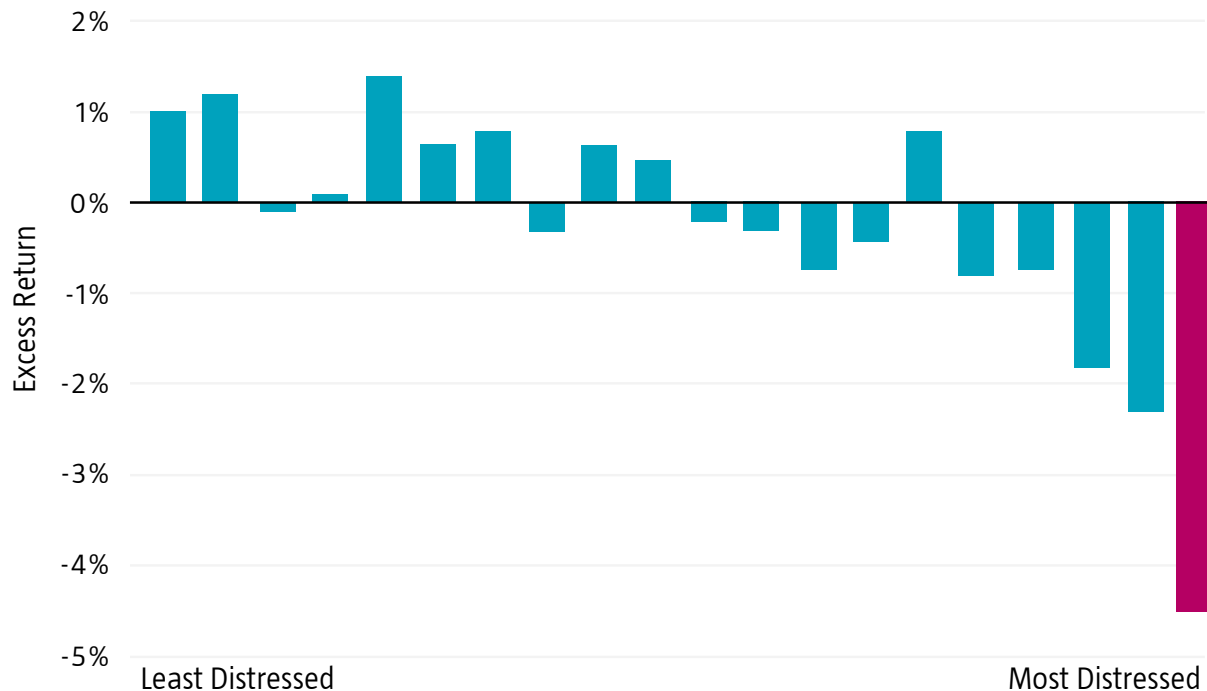
**Robeco Research**

Distressed value stocks have  
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# GENERIC VALUE STRATEGIES

Generic value strategies buy stocks with high bankruptcy risk

Example: relation between excess return and distress risk



**Robeco Research**

Distressed value stocks have  
lower returns than safe ones

# ROBECO VALUE STRATEGY

Avoids the pitfalls of the generic approach



## Robeco Research

Distressed value stocks have  
lower returns than safe ones

Application



## Robeco Value

Avoid companies with  
substantial downside risk

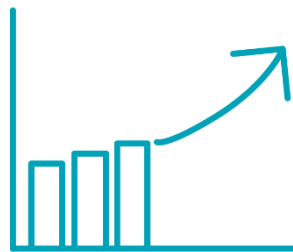
# GENERIC MOMENTUM STRATEGY

How to harvest the momentum premium without suffering big losses?



## Generic Momentum

Exposed to other risk factors  
(beta, size, value)



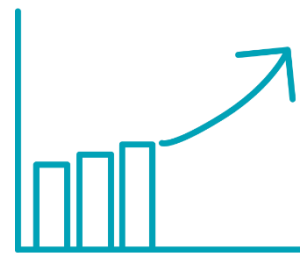
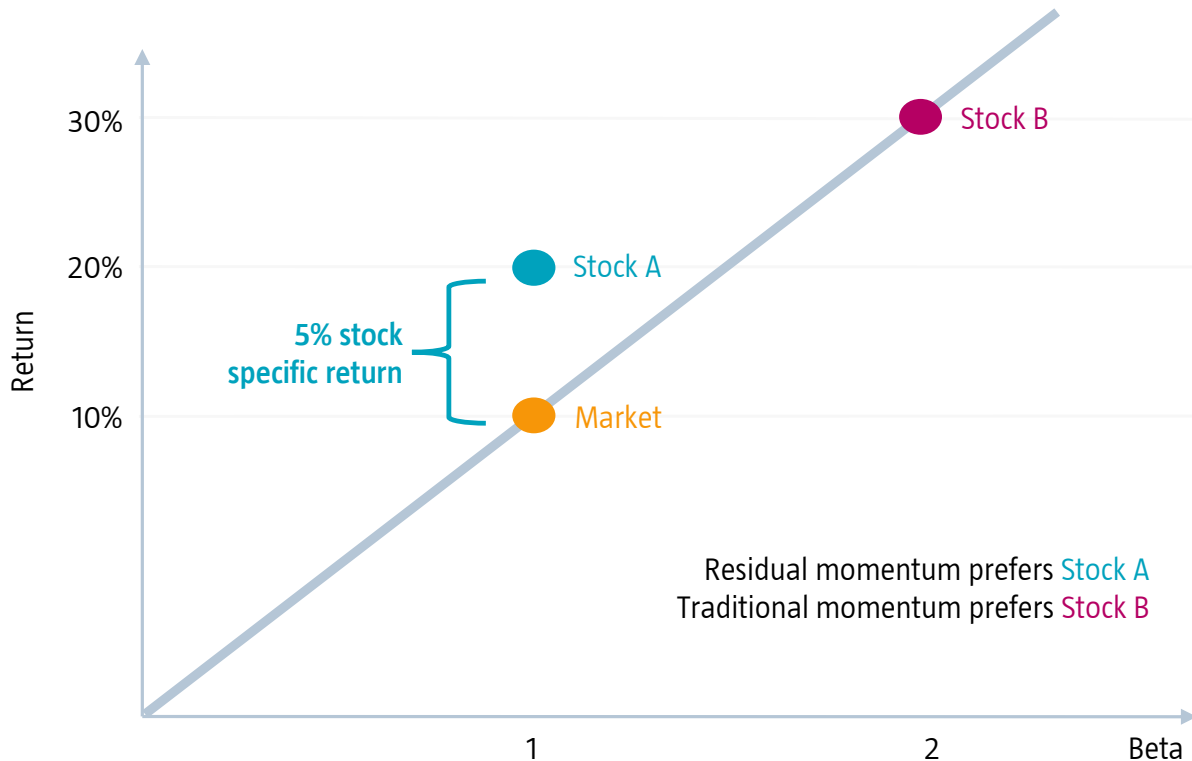
## Robeco Momentum

Strip out unrewarded  
momentum risks

# GENERIC MOMENTUM STRATEGY

Generic momentum strategies can suffer huge losses

Example: Residual Momentum uses stock specific returns instead of total returns



Robeco Momentum

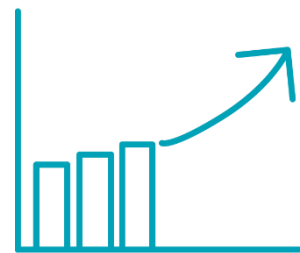
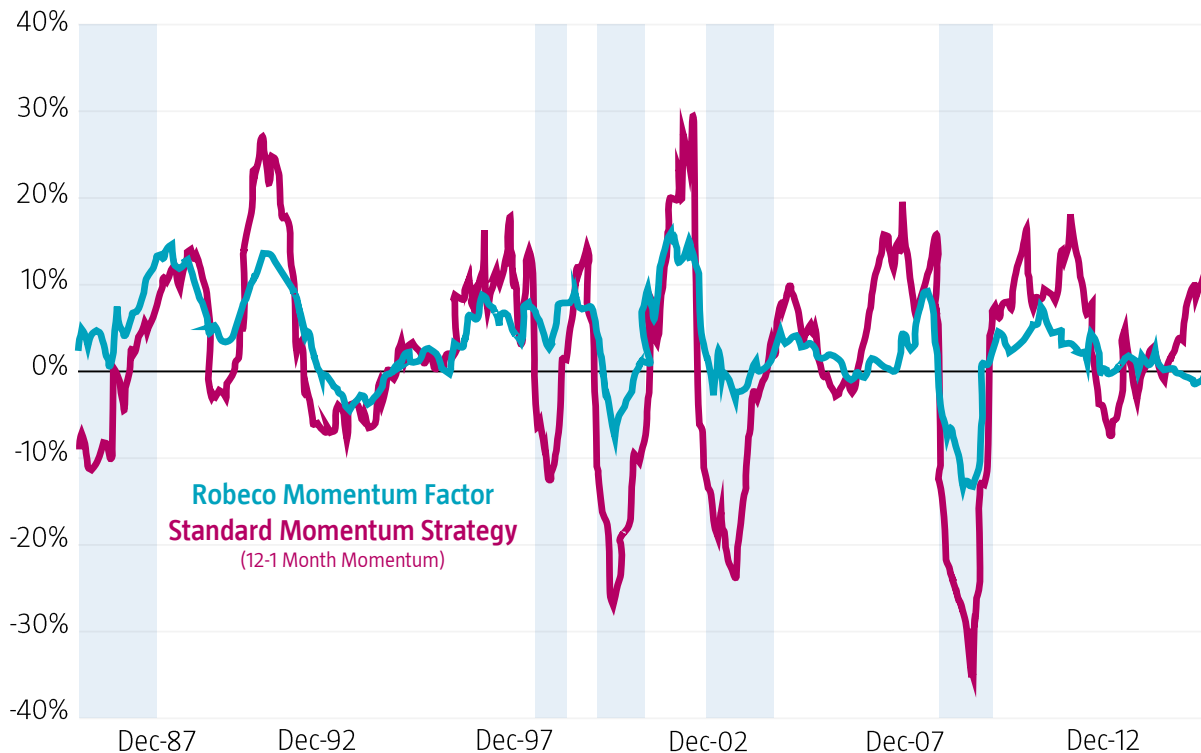
Strip out unrewarded momentum risks



# GENERIC MOMENTUM STRATEGY

Generic momentum strategies can suffer huge losses

Example: 1-Year Rolling Returns Momentum Basket 1986 - 2015



**Robeco Momentum**

Strip out unrewarded  
momentum risks

# INEFFECTIVE QUALITY FACTORS

Quality indices use ineffective quality factors



## Academic Research

Asset growth, net stock issuance,  
accruals, gross profitability

**Body of evidence\***



## Industry Quality Factors

ROE, margins, ROE growth,  
leverage, earnings variability

**Much less effective**

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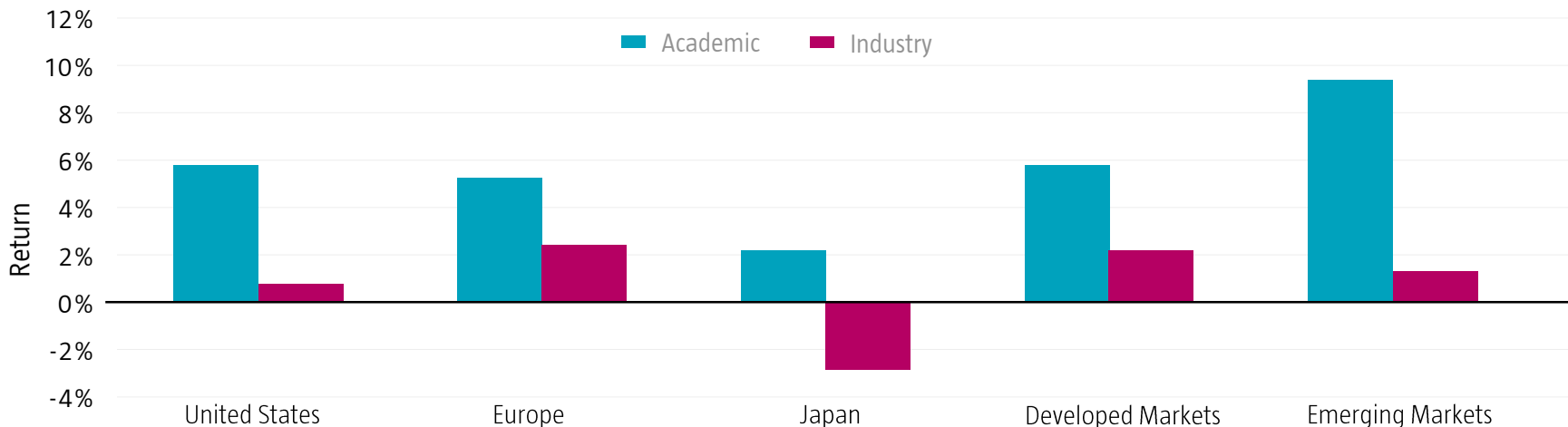
Body of evidence\*



## Industry Quality Factors

ROE, margins, ROE growth,  
leverage, earnings variability

Much less effective



\*Coopers et al, 2008; Pontiff and Woodgate 2008; Sloan, 1996; Novv-Marx, 2013

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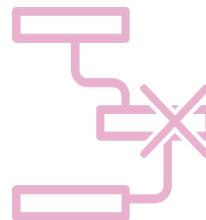
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# INCOMPATIBLE FACTORS

Generic factor strategies often work against other factors



When single-factor indices are combined,  
they partly **neutralize** each other

# INCOMPATIBLE FACTORS

Generic factor strategies often work against other factors

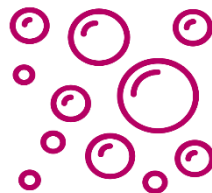


When single-factor indices are combined, they partly **neutralize** each other



## Value Traps

Value Indices tend to buy stocks with poor momentum and poor financial quality



## Bubbles

Momentum indices tend to buy stocks with high valuations and ignore financial quality



## Ignore Momentum

Quality Indices also tend to buy expensive stocks and ignore momentum

# GENERIC FACTOR STRATEGIES

Preferable over passive, however...



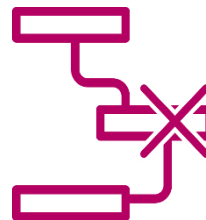
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# LOW ACTIVE SHARE

Fundamental indices have low active share

## Fundamentally weighted indices:

Set stock weight proportional to fundamental value instead of market value

Source of alpha is classic value exposure

*Examples: FTSE/RAFI, MSCI Value Weighted*

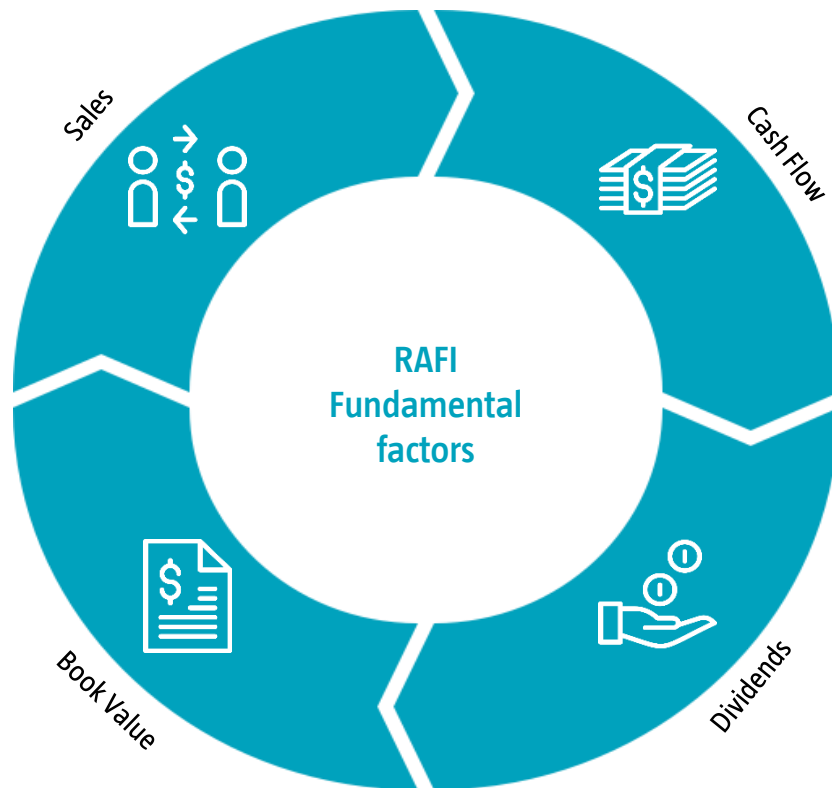
## Likely not the best way to get value exposure because:

Value exposure is low

Cost is relatively expensive

Not suitable to combine with other factors

Invests in stocks with poor value features



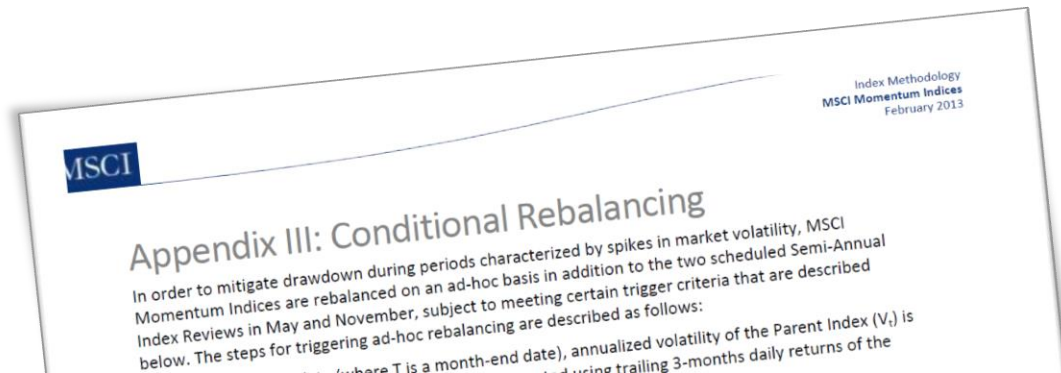


# CONDITIONAL REBALANCING

MSCI Momentum index has a dubious special ad-hoc rule

## Ad-hoc 'conditional rebalancing' rule

Historically kicks in only once, conveniently just when needed



# SCIBETA INDICES

SciBeta indices are heavily influenced by weighting formulas

Start with 6 generic academic factors

Various weighting formulas which all use volatilities and correlations

Systematic bias  
low-volatility and low-correlation stocks

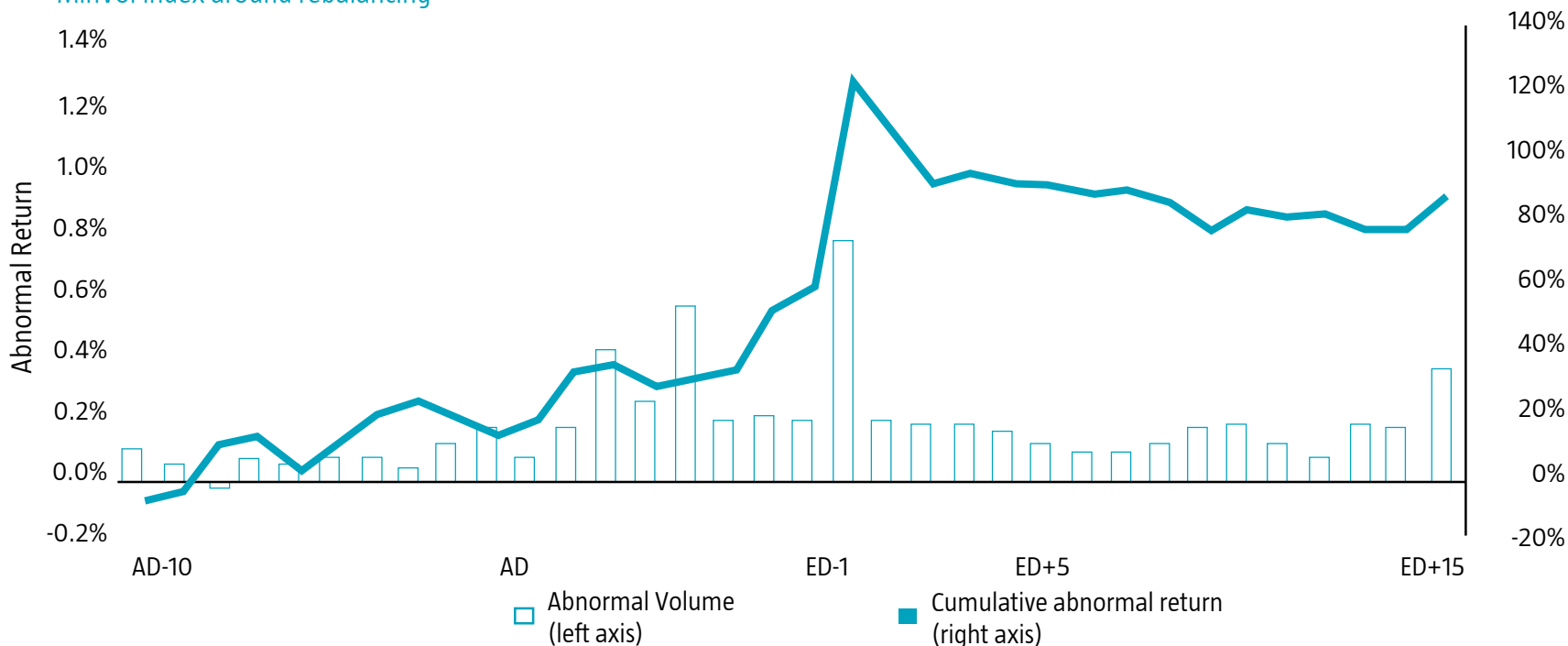
Strategy	Objective	Unconstrained Closed-Form Solution	Required Parameter(s)	Optimality Conditions
Maximum Deconcentration	Maximise effective number of stocks	$w^* = \frac{1}{N} \mathbb{I}$	None	$\mu_i = \mu \forall i$ $\sigma_i = \sigma \forall i$ $\rho_{ij} = \rho \forall i$
Diversified Risk Weighted	Equalise risk contributions under "Constant Correlation" assumption	$w^* = \frac{diag(\sigma^{-1})}{\mathbb{I}' diag(\sigma^{-1})}$	$\sigma_i$	$\lambda_i = \lambda \forall i$ $\rho_{ij} = \rho \forall i$
Maximum Decorrelation	Minimise the portfolio volatility under the assumption of identical volatility across all stocks	$w^* = \frac{\Omega^{-1} \mathbb{I}}{\mathbb{I}' \Omega^{-1} \mathbb{I}}$	$\rho_{ij}$	$\mu_i = \mu \forall i$ $\sigma_i = \sigma \forall i$
Efficient Minimum Volatility	Minimise portfolio volatility	$w^* = \frac{\sum^{-1} \mathbb{I}}{\mathbb{I}' \sum^{-1} \mathbb{I}}$	$\sigma_i, \rho_{ij}$	$\mu_i = \mu \forall i$
Efficient Maximum Sharpe Ratio	Maximise portfolio Sharpe ratio	$w^* = \frac{\sum^{-1} \mu}{\mathbb{I}' \sum^{-1} \mu}$	$\mu_i, \sigma_i, \rho_{ij}$	Optimal by construction

# INDEX ARBITRAGE

## Factor indices are vulnerable to arbitrage

Event study: Abnormal volume and returns of MSCI

MinVol index around rebalancing



Source: Joop Huij and Georgi Kyosev, "Price Response to Factor Index Additions and Deletions", Working paper, 2016.

Results are calculated for MSCI Minimum Volatility USD indexes, returns are in USD. Volatility indexes during Sep-2010 – Dec-2015. AD is announcement day, ED is effective day

# CONCLUSION

## Quick Overview

Passive investing is likely to do better than a randomly chosen active fund, but....



Passive investing **ignores half a century of evidence** on which factors drive stock returns



At least 20% of all stocks have a **negative expected return premium**



Generic factor strategies are **likely to do better** than a passive approach



Enhanced factor strategies **improve upon the pitfalls** of generic factor strategies

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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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