



FROM INVESTMENT THEORY TO PRACTICE

David Blitz, PhD
Head of Quantitative Research

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

- Albert Einstein

TOPICS

Quick Overview

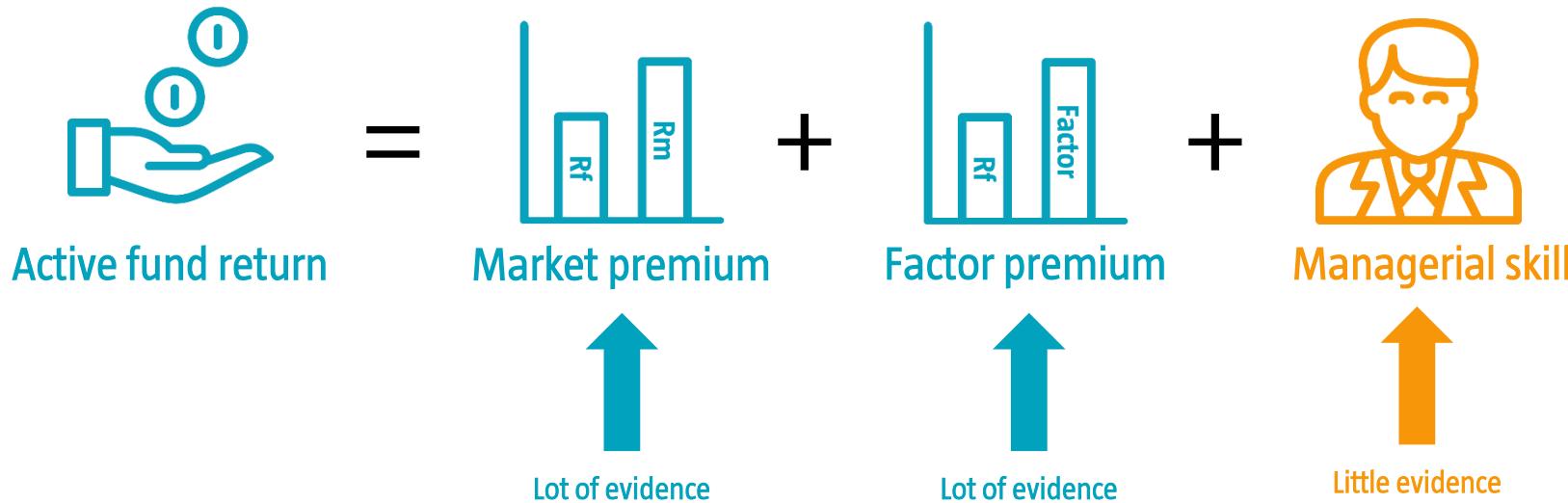
- A. A critical look at passive investing**
(and why a factor-based investment approach is better)

- B. A critical look at generic factor strategies**
(and why enhanced factor strategies are better)

PASSIVE INVESTING

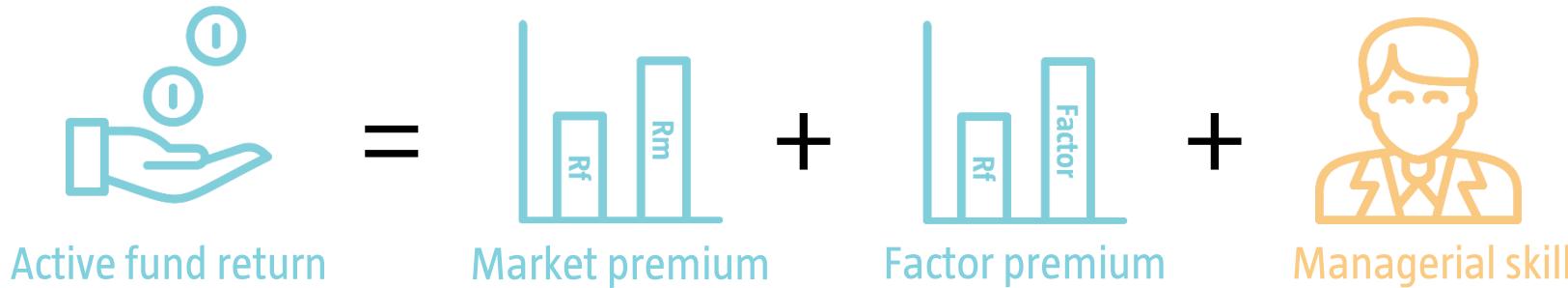
Passive investing ignores factor premiums

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



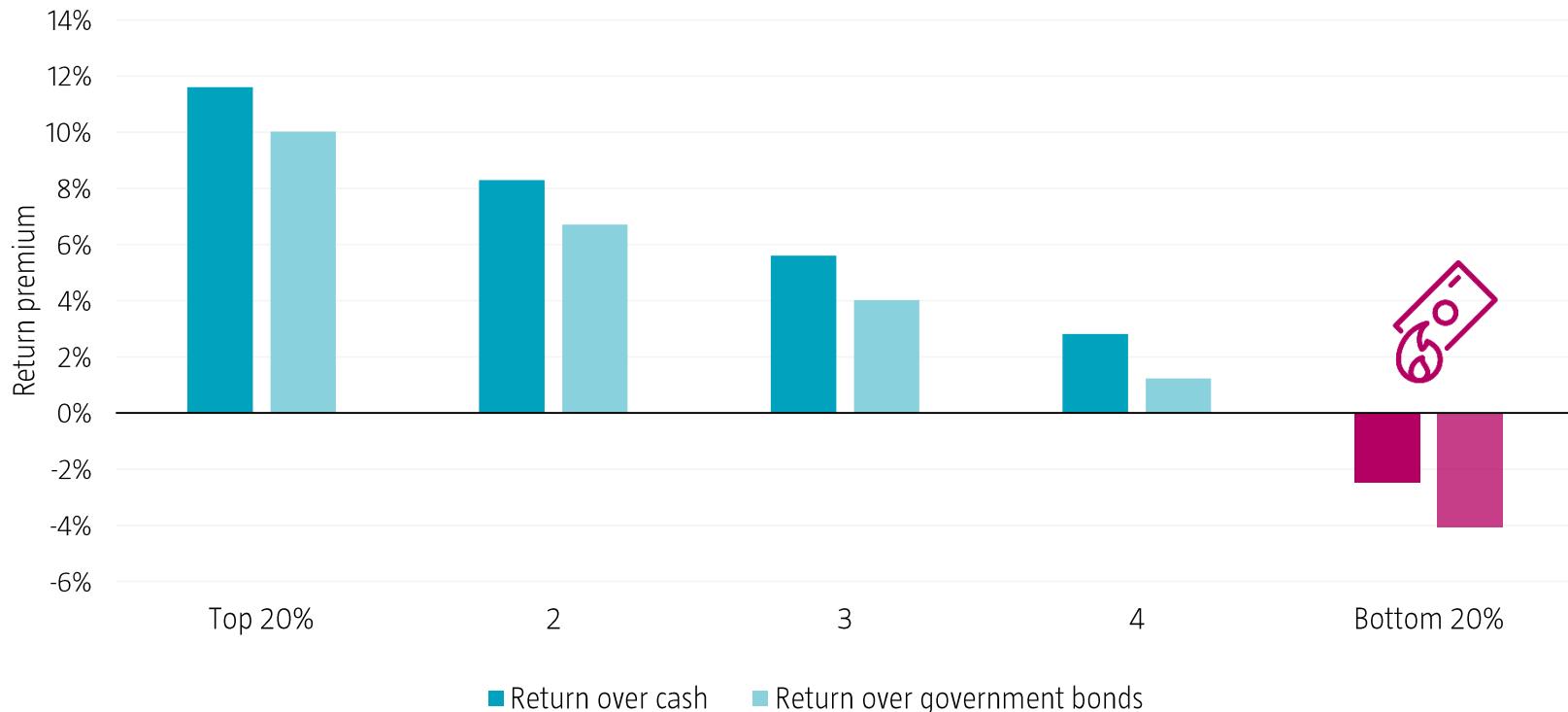
S. Schaefer

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...



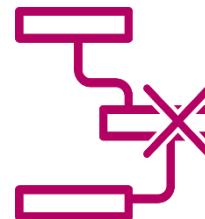
Unrewarded Risks

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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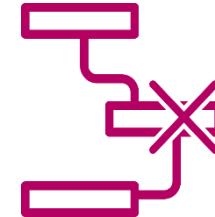
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Our enhanced factor strategies address these concerns

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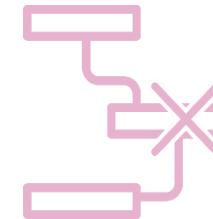
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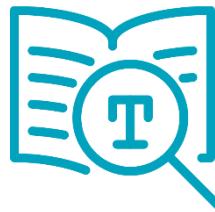
GENERIC VALUE STRATEGIES

Value investing works, but why?



Academics

Value Premium is compensation for investing in distressed stocks



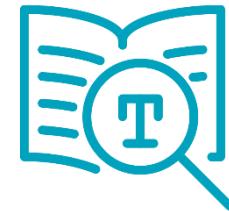
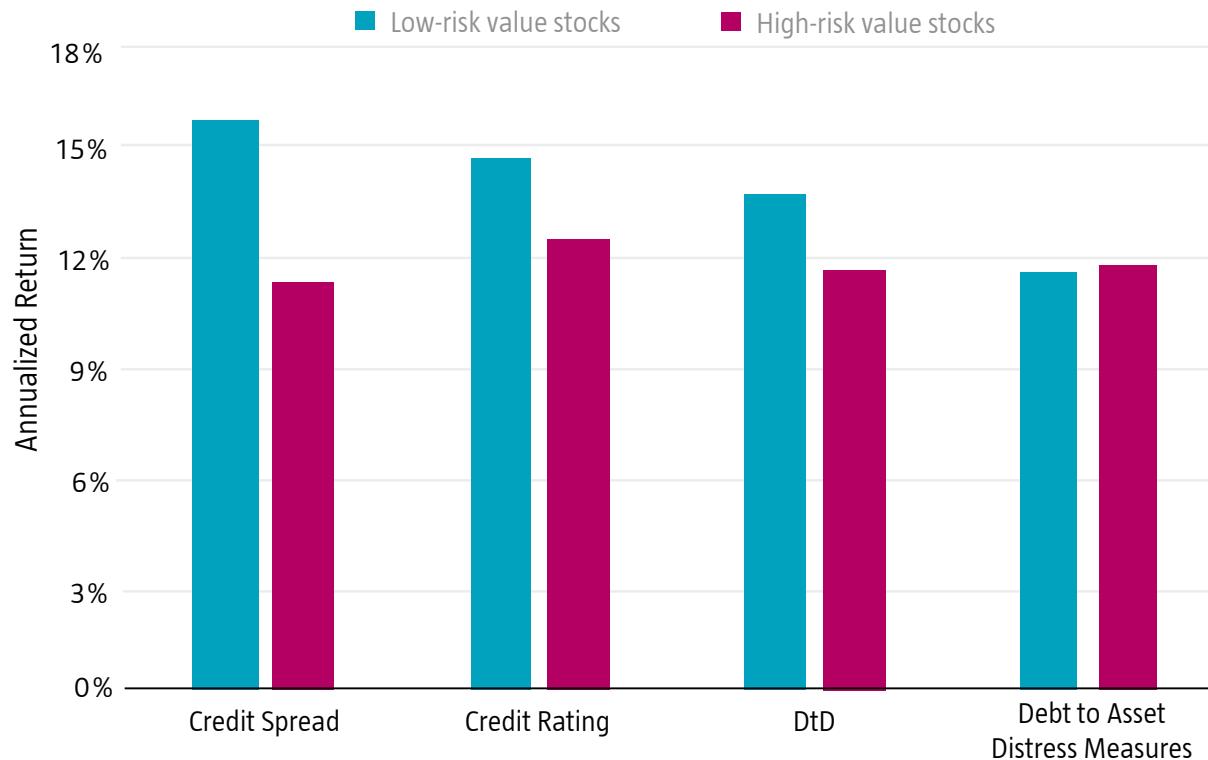
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Distressed value stocks have lower returns than safe ones

GENERIC VALUE STRATEGIES

Generic value strategies buy stocks with high bankruptcy risk

Example: relation between return, value, and distress risk



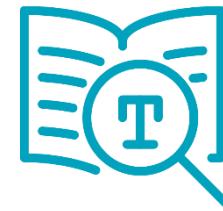
Robeco Research

Distressed value stocks have lower returns than safe ones

GENERIC VALUE STRATEGIES

Generic value strategies buy stocks with high bankruptcy risk

Example: relation between excess return and distress risk

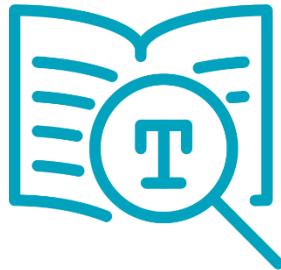


Robeco Research

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



Robeco Value

Avoid companies with substantial downside risk

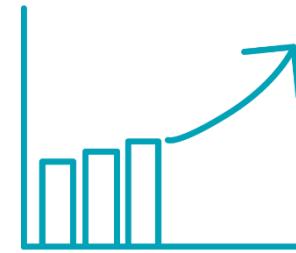
GENERIC MOMENTUM STRATEGY

How to harvest the momentum premium without suffering big losses?



Generic Momentum

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



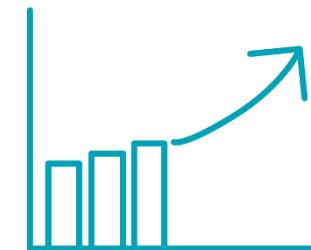
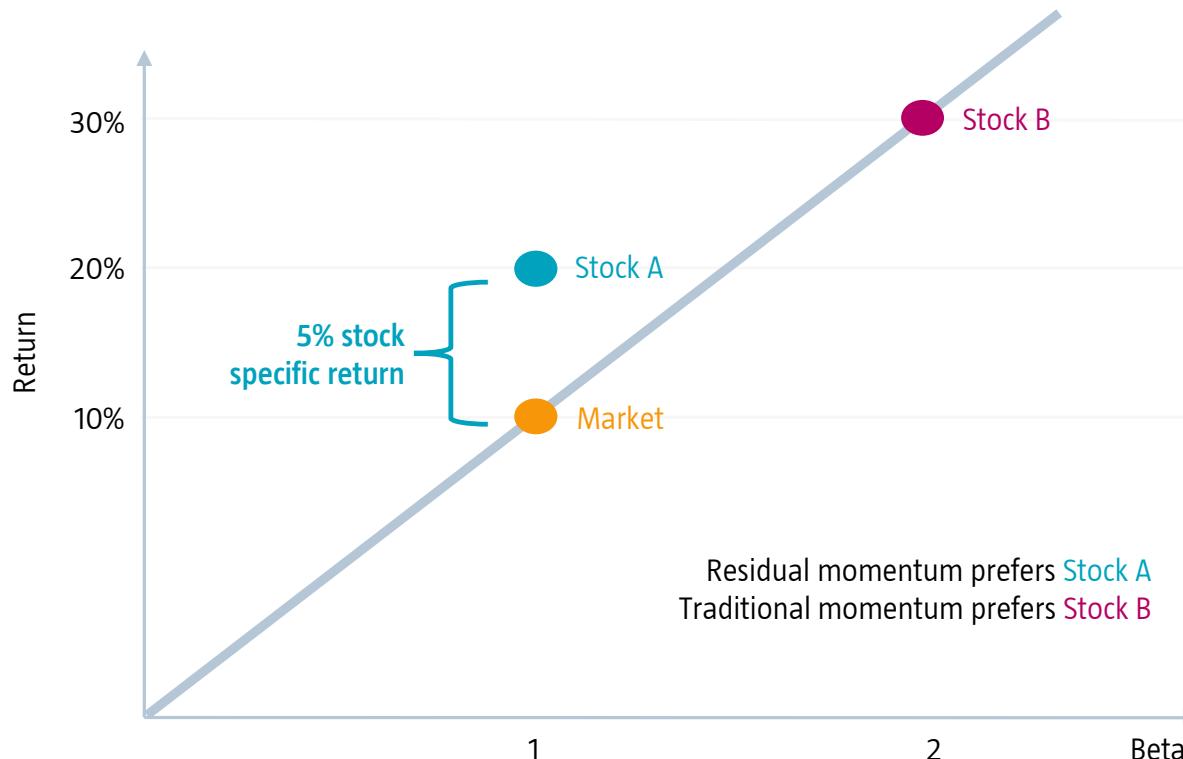
Robeco Momentum

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

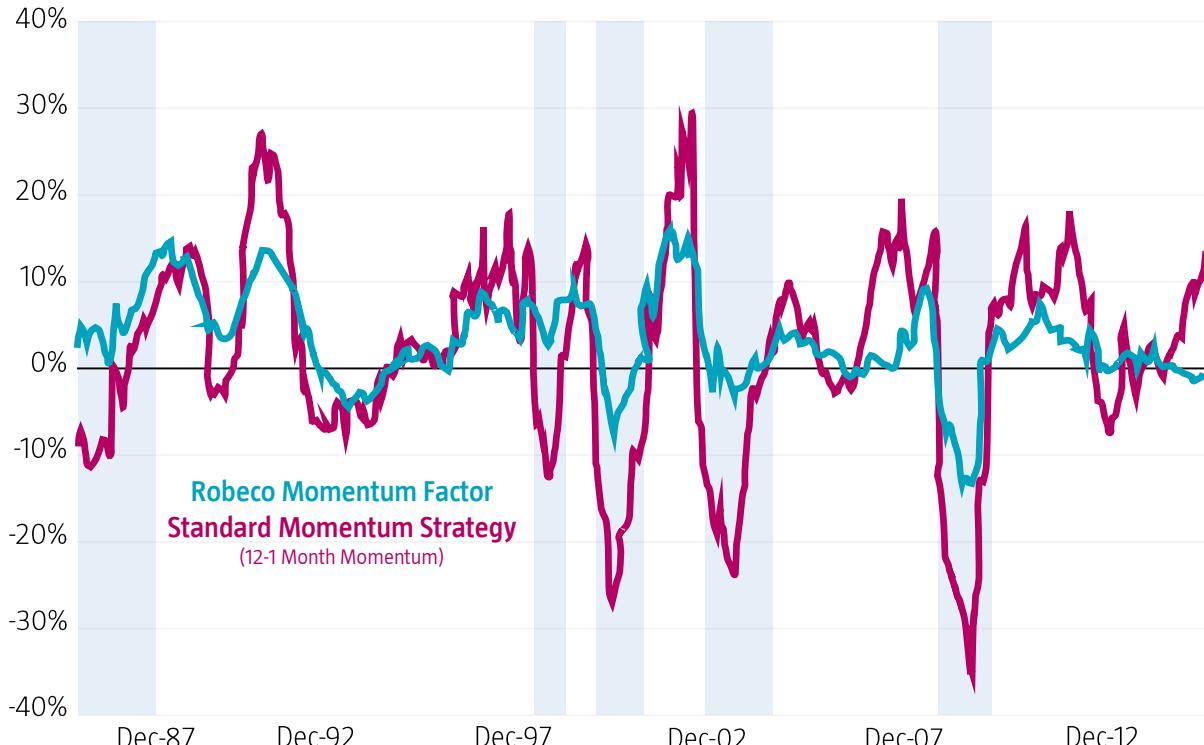


Strip out unrewarded momentum risks

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Generic momentum strategies can suffer huge losses

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



Source: Blitz, Huij & Martens, "Residual momentum", Journal of Empirical Finance, 2011

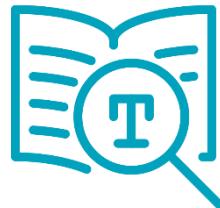


Robeco Momentum

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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Academic Research

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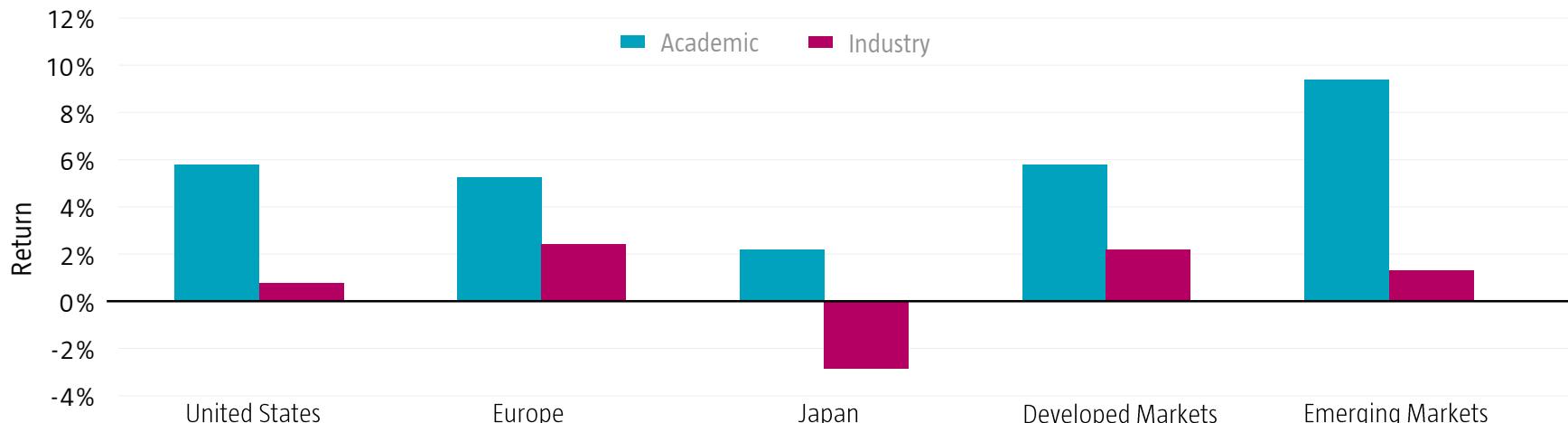
Body of evidence*



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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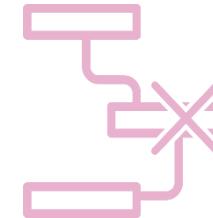
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Suboptimal methodologies

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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

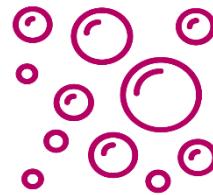


When single-factor indices are combined,
they partly **neutralize** each other



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

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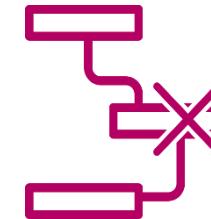
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LOW ACTIVE SHARE

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

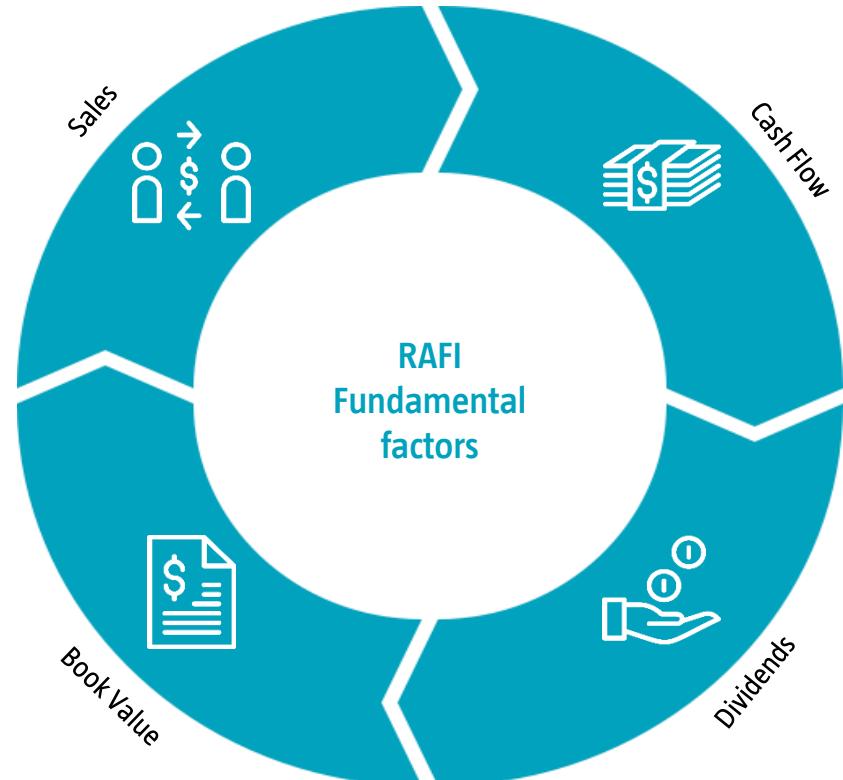
Likely not the best way to get value exposure because:

Value exposure is low

Cost is relatively expensive

Not suitable to combine with other factors

Invests in stocks with poor value features

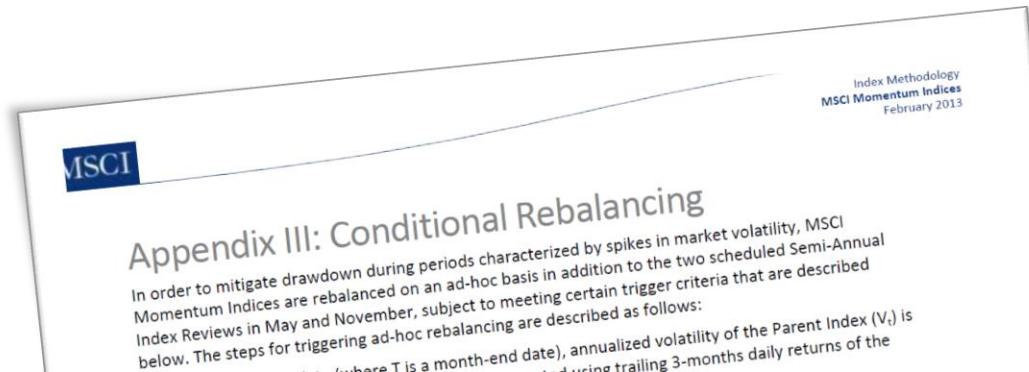


CONDITIONAL REBALANCING

MSCI Momentum index a has dubious special ad-hoc rule

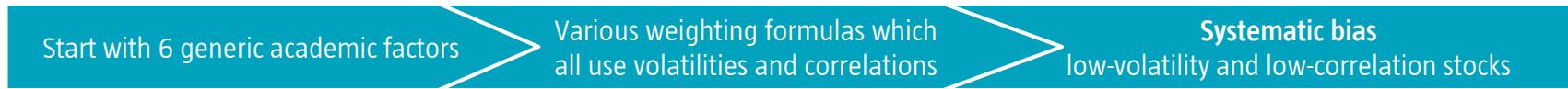
Ad-hoc 'conditional rebalancing' rule

Historically kicks in only once, conveniently just when needed



SCIBETA INDICES

SciBeta indices are heavily influenced by weighting formulas



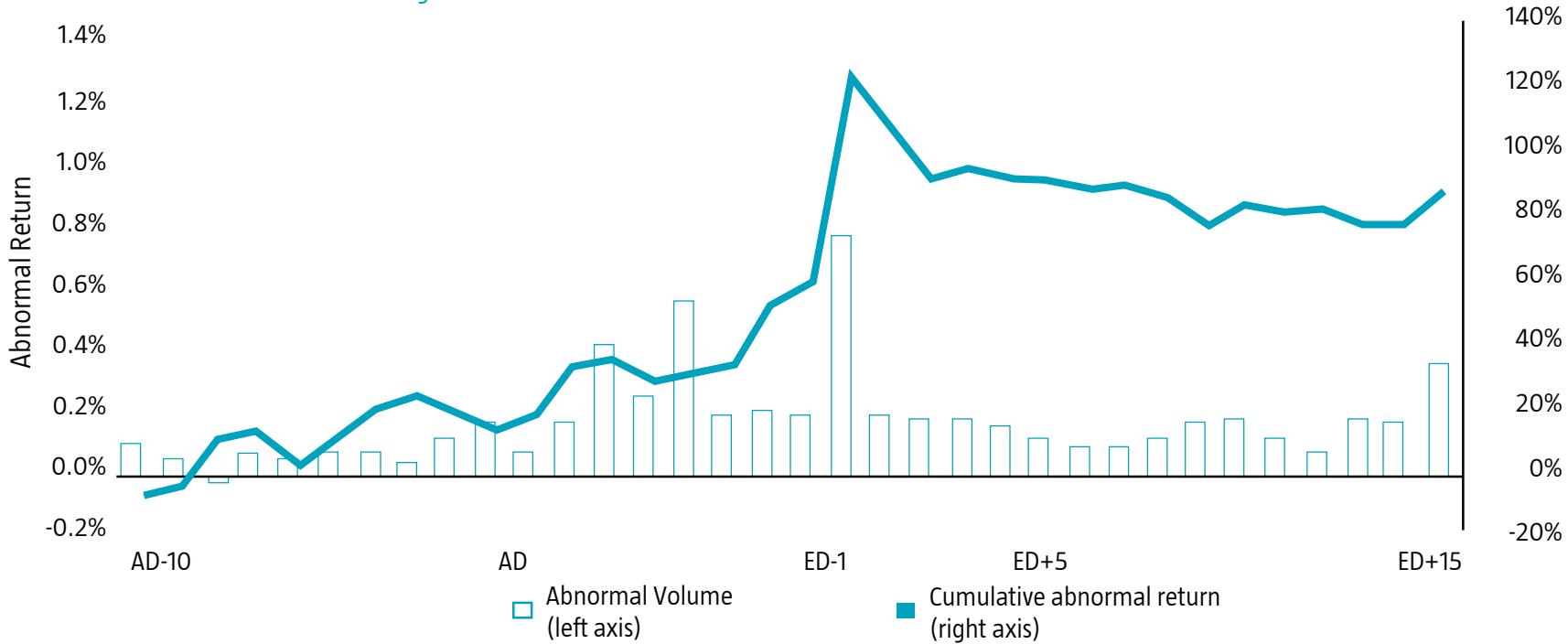
Strategy	Objective	Unconstrained Closed-Form Solution	Required Parameter(s)	Optimality Conditions
Maximum Deconcentration	Maximise effective number of stocks	$w^* = \frac{1}{N} \mathbb{I}$	None	$\mu_i = \mu \forall i$ $\sigma_i = \sigma \forall i$ $\rho_{ij} = \rho \forall i, j$
Diversified Risk Weighted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