

FOUNDATIONS OF ESG INVESTING

A case study ON THE FINANCIAL RELEVANCE OF ESG FACTORS in Emerging
Markets INVESTING

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AGENDA

- 'Foundations of ESG Investing' Research Series
- Case Study: Financial Relevance of ESG in Emerging Markets
- What's Next?

INTRODUCING MSCI ESG RESEARCH

185+

ESG analysts¹
(325+ FTE)

1200+

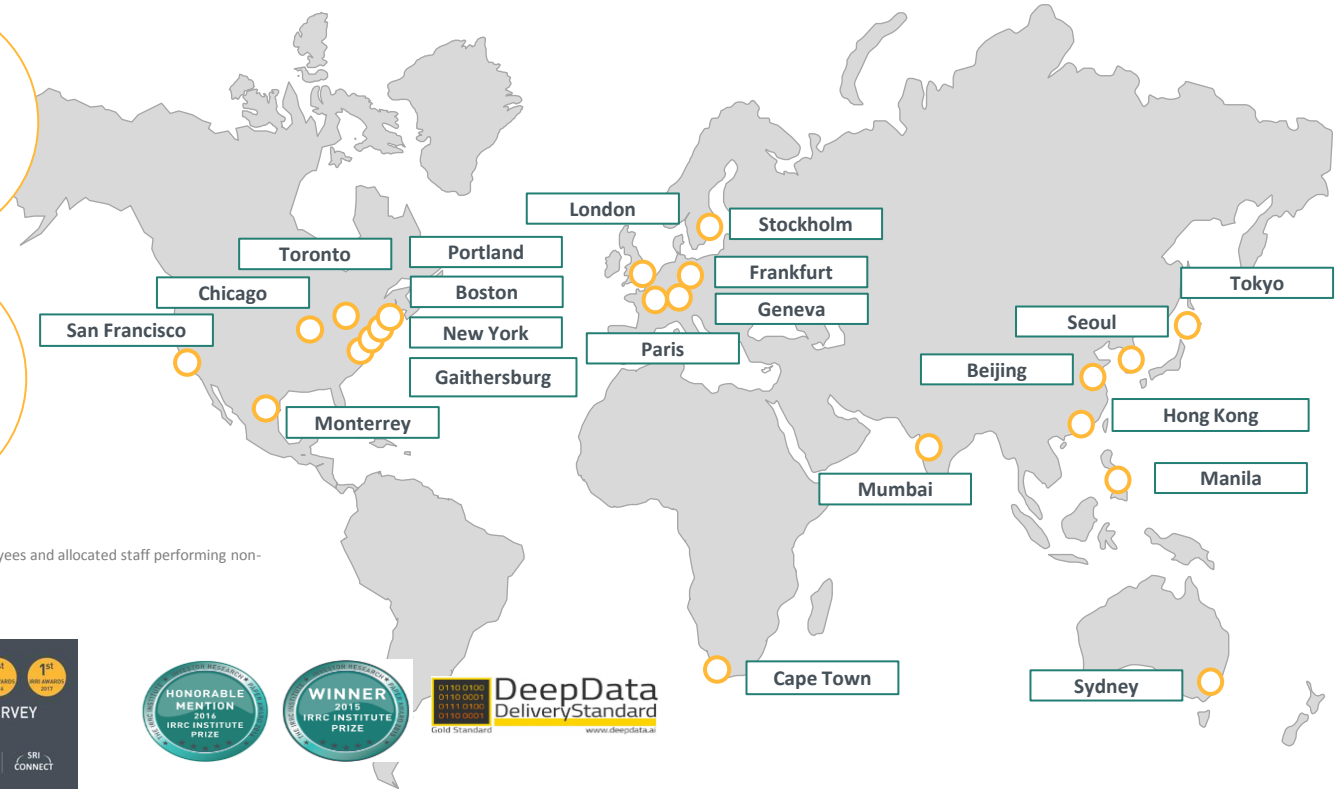
clients

46 TOP
of 50

Global asset
managers²

900+

ESG equity & fixed
income indices use
MSCI ESG Research
ratings and data



¹ Source: MSCI ESG Research as of April 2018. Includes full time employees and allocated staff performing non-investment advisory tasks.

² Based on latest P&I AUM data and MSCI clients as of December 2017

INDEPENDENT RESEARCH
IN RESPONSIBLE
INVESTMENT (IRRI) SURVEY

MSCI voted Best firm for SRI Research,
Corporate Governance Research and
Indexes for the third consecutive year



IRRI SURVEY



CURRENT STATUS OF ESG INVESTING

Key findings from industry surveys* on ESG investing:

Key drivers for adoption of ESG

- Pressure from asset owner and beneficiaries
- Wish to lengthen investment horizon

Key benefits of ESG adoption

- Survey participants expect better risk adjusted returns and
- Improve brand and reputation

Most popular methods

- Negative screening
- ESG integration into portfolio management

Key barriers to ESG investing

- Lack of industry standards for ESG disclosure and ESG rating
- Lack of experienced staff
- Lack of suitable investment solutions

Status quo of ESG investing

- Currently most AOs are only partially integrating ESG
- Approaches are fragmented across allocations
- AO lack consistent framework for ESG integration

FOUNDATIONS OF ESG INVESTMENT



FOUNDATIONS OF ESG INVESTING – PART 1

How ESG Affects Equity Valuation, Risk and Performance



FOUNDATIONS OF ESG INVESTING – PART 2

Integrating ESG into Benchmarks



FOUNDATIONS OF ESG INVESTING – PART 3

Integrating ESG into Passive Institutional Portfolios



FOUNDATIONS OF ESG INVESTING – PART 4

Integrating ESG into Factor Strategies and Active

RESEARCH OBJECTIVES

Step 1:

Fundamental research

- Establish fundamental channels from ESG to financial values
- Elaborate what dependencies we can expect
- Mitigate risk of 'correlation mining'

Step 2:

Empirical validation

- Validate dependencies using empirical analysis for each channel
- Differentiate between correlation and causality

Step 3:

Conclusions for investors

- Highlight areas of asset management where ESG integration can add value
- Derive methodology recommendations for ESG integration

INTEGRATING ESG INTO PASSIVE INSTITUTIONAL PORTFOLIOS

Passive ESG mandates

- May be built by tracking ESG indexes
- May follow the same regional break-down as standard benchmarks:



ESG BENCHMARK DESIGN

BROAD BENCHMARKS

ACWI

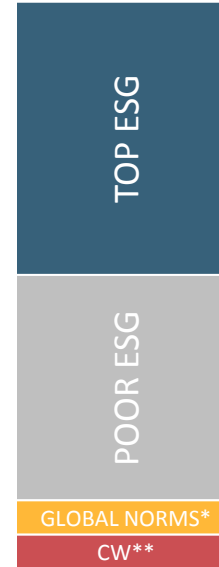


ESG BENCHMARKS

ACWI ESG
UNIVERSAL



ACWI ESG
LEADERS



*Global Norms = Exclusion of companies involved in very serious violations of international norms represented in numerous widely accepted global conventions, including the Universal Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact

** CW = Exclusion of companies involved in Controversial Weapons

INTEGRATING ESG INTO PASSIVE INSTITUTIONAL PORTFOLIOS

GLOBAL AND REGIONAL MANDATES

Historical Regional performance comparison: World ex USA, USA and Emerging Markets

	MSCI EM	MSCI EM ESG Leaders	MSCI World ex USA	MSCI World ex USA ESG Leaders	MSCI USA	MSCI USA ESG Leaders
Total Return (%)	5.3	9.3	8.2	8.8	16.0	14.8
Total Risk (%)	17.2	16.1	14.1	13.7	11.1	11.0
Return/Risk	0.31	0.58	0.58	0.64	1.44	1.35
Sharpe Ratio	0.29	0.56	0.56	0.62	1.41	1.32
Active Return (%)	0.0	4.0	0.0	0.7	0.0	-1.2
Tracking Error (%)	0.0	2.9	0.0	1.1	0.0	1.5
Information Ratio	NaN	1.37	NaN	0.59	NaN	-0.78
Historical Beta	1.00	0.92	1.00	0.97	1.00	0.98
No of Stocks	825	338	1020	472	612	332
Turnover(%)	4.6	6.2	1.7	6.9	1.8	8.1
Price To Book	1.6	2.0	1.6	1.7	2.6	2.8
Price to Earnings	13.1	14.8	16.3	16.3	18.0	18.9
Dividend Yield (%)	2.6	2.6	3.2	3.3	2.0	2.0

- Reduced risks
- Outperformance except in USA

- Higher valuations
- Higher turn-over

Period: August 31, 2010 to December 31, 2017.

Historical data for example purposes only. Past performance is not indicative of future results, which may differ materially.

POLLING QUESTION #1

QUESTION:

Do you think ESG considerations should be
MORE RELEVANT or **LESS RELEVANT** for investing in Emerging Market equities?

RESPONSE CHOICES:

- **MORE RELEVANT**
- **LESS RELEVANT**

“DO YOU THINK ESG CONSIDERATIONS SHOULD BE MORE RELEVANT OR LESS RELEVANT FOR INVESTING IN EMERGING MARKET EQUITIES?”

LESS RELEVANT

No disclosure, not enough DATA

No awareness, POOR PERFORMANCE

Can you make any meaningful
DIFFERENTIATION?

MORE RELEVANT

GOVERNANCE matters more

‘BLOW UPS’ happen more

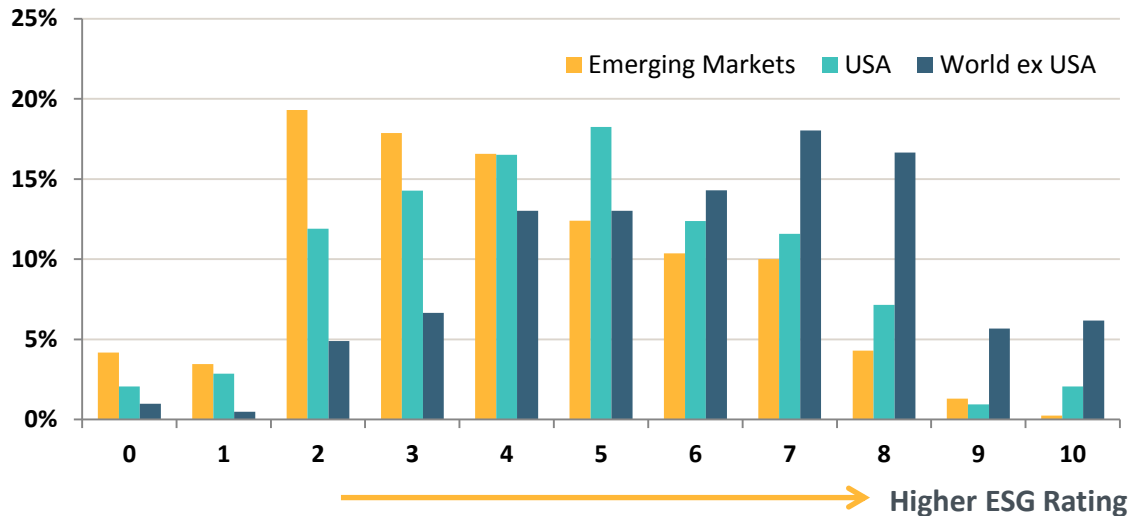
Can ESG provide **DOWNSIDE
PROTECTION?**

ESG RATINGS BY REGION

ESG characteristics differ significantly across regions:

- Europe is leading
- Emerging Markets are lagging

Distribution of Industry-Adjusted ESG Scores for Three Sub-regions



MSCI ESG RATING METHODOLOGY



PERFORMANCE IN LIVETRACK (MAY 2013 – MARCH 2018)

Key Metrics

	MSCI EM (Emerging Markets) Index	MSCI EM (Emerging Markets) ESG Leaders Index
Total Return* (%)	5.9	9.0
Total Risk (%)	15.2	14.5
Return/Risk	0.39	0.62
Sharpe Ratio	0.36	0.59
Active Return (%)	0.0	3.1
Tracking Error (%)	0.0	2.8
Information Ratio	NaN	1.10
Historical Beta	1.00	0.94
No of Stocks***	833	373
Turnover** (%)	4.9	7.1
Price To Book***	1.5	1.9
Price to Earnings***	13.6	15.5
Dividend Yield*** (%)	2.6	2.5

Period: 31-May-2013 to 30-Mar-2018

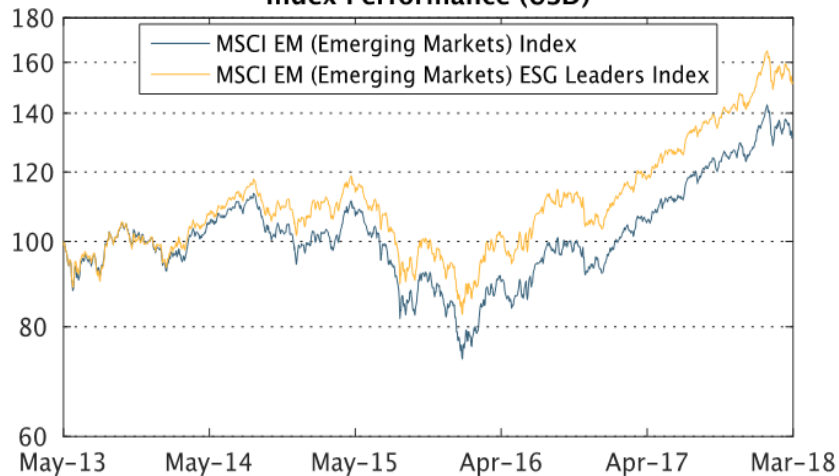
* Gross returns annualized in USD

** Annualized one-way index turnover over index reviews

*** Monthly averages

The definitions of all statistical parameters are available in the Appendix

Index Performance (USD)

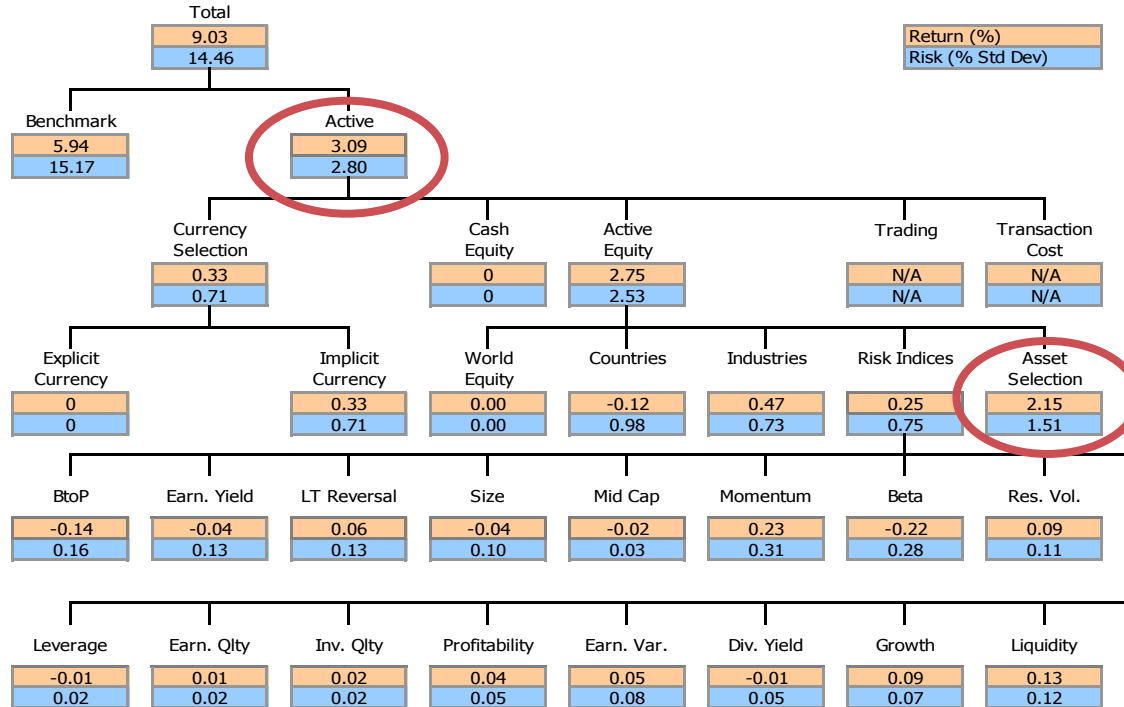


PERFORMANCE ATTRIBUTION

Index:
Period:

MSCI EM (Emerging Markets) ESG Leaders Index
31-May-2013 to 30-Mar-2018

Annualized Gross Returns



POLLING QUESTION #2

QUESTION:

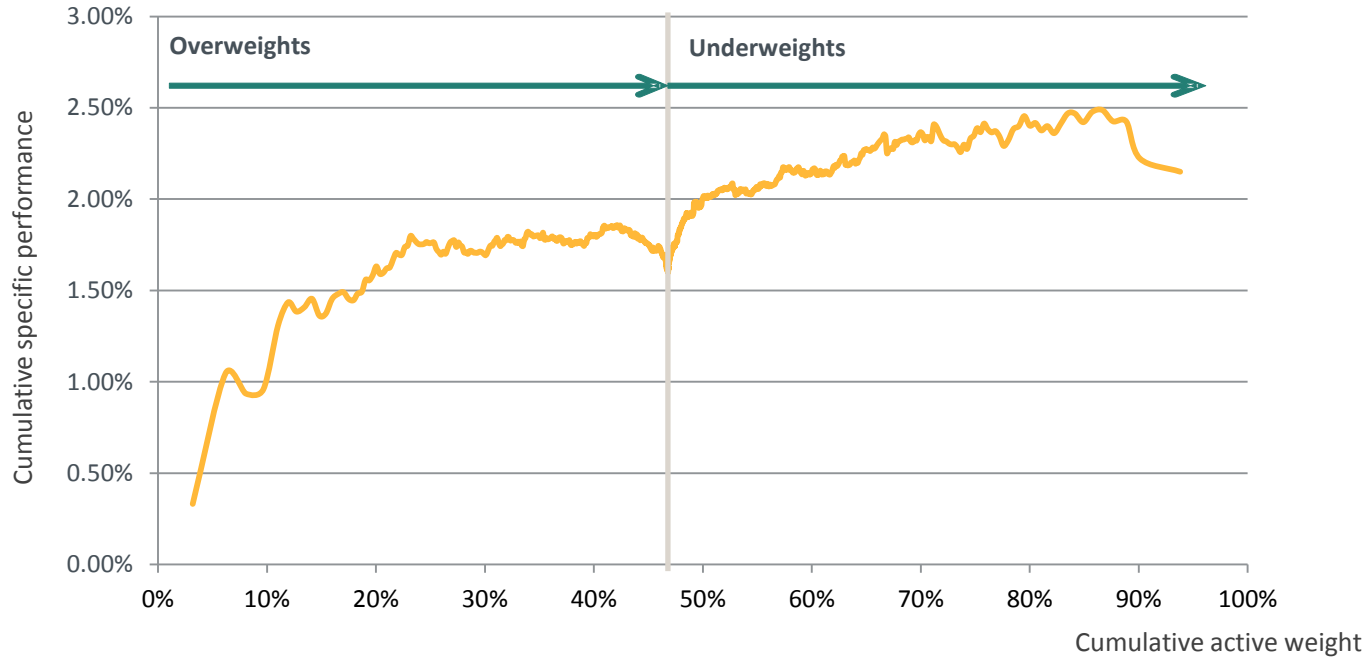
Has the outperformance of the MSCI Emerging Markets ESG Leaders Index come mostly from...

RESPONSE CHOICES:

- Avoiding the 'bad' stocks
- Selecting the 'good' stocks

CONTRIBUTION FROM UNDERWEIGHTS V OVERWEIGHTS

Both Overweights and Underweights Aided Performance of MSCI EM ESG Leaders Index



TOP CONTRIBUTORS ALWAYS EXCLUDED OR ALWAYS INCLUDED IN MSCI EMERGING MARKETS ESG LEADERS INDEX SINCE INCEPTION

ALWAYS IN

COUNTRY	INDUSTRY	COMPANY	Avg Active Weight	Annualized Net Specific Contribution
China	Software & Svc	TENCENT HOLDINGS LTD	3.01%	0.71%
Taiwan	Semiconductors	TAIWAN SEMICONDUCTOR	3.19%	0.33%
Brazil	Banks	ITAU UNIBANCO HOLDING SA	0.92%	0.13%
Indonesia	Banks	BANK CENTRAL ASIA TBK PT	0.34%	0.07%
Indonesia	Banks	BANK RAKYAT INDONESIA (PERSERO) TBK PT	0.26%	0.05%
South Africa	Di Financials	FIRSTRAND LTD	0.32%	0.05%
Brazil	Banks	BANCO BRADESCO SA	0.70%	0.05%
Russia	Oil & Gas E&P	NOVATEK PAO	0.27%	0.04%

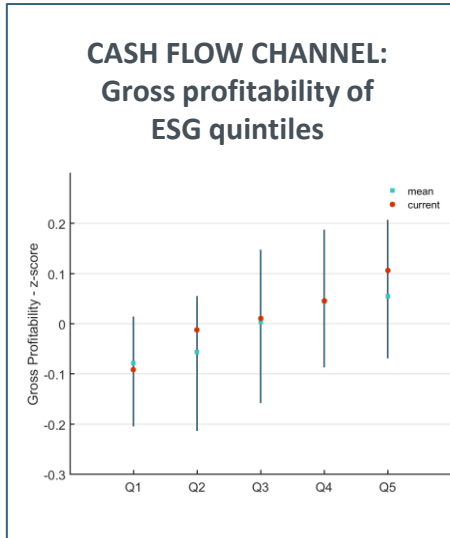
NEVER IN

COUNTRY	INDUSTRY	COMPANY	Average Active Weight	Annualized Net Specific Contribution
China	Integ Oil & Gas	PETROCHINA CO	-0.49%	0.06%
Russia	Integ Oil & Gas	GAZPROM PAO	-0.82%	0.06%
China	Oil & Gas E& P	CNOOC LTD	-0.64%	0.06%
China	Software & Svc	BAIDU INC	-0.50%	0.06%
South Korea	Automobiles	HYUNDAI MOTOR CO	-0.62%	0.05%
Russia	Retail - Food & Staples	MAGNIT PAO	-0.32%	0.05%

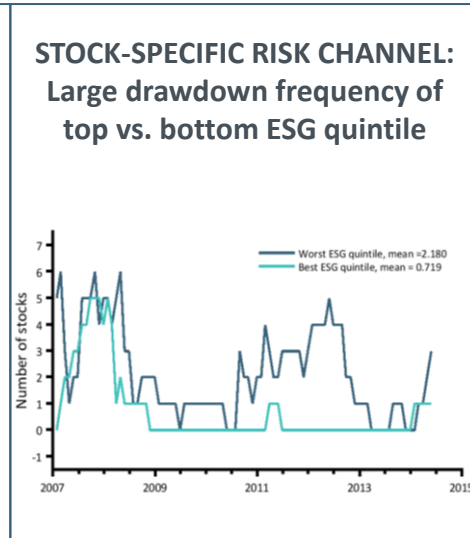
FOUNDATIONS OF ESG INVESTING PART 1: MSCI WORLD JANUARY 2007 – MAY 2017

We identified three fundamental channels from ESG to financial value.
Higher ESG profile was associated with:

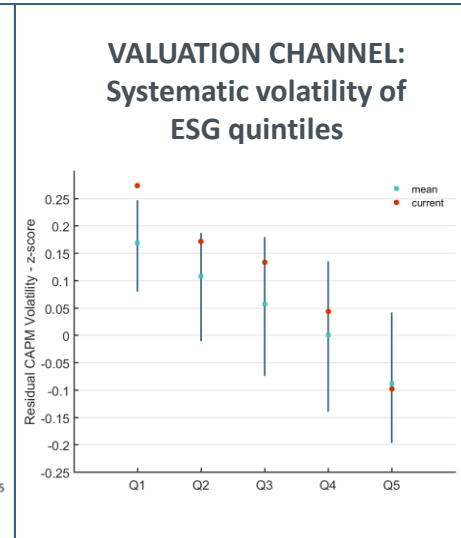
1. Higher profitability



2. Lower tail risk



3. Lower systematic risk

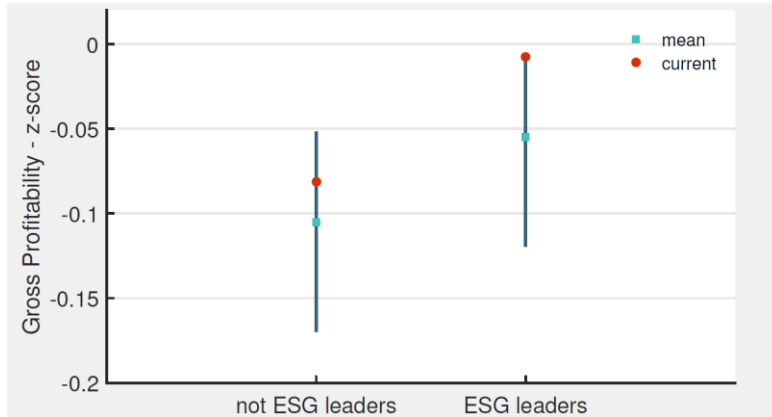


CASH FLOW CHANNEL

Cash-flow channel



Gross Profitability (z-score) Comparison*



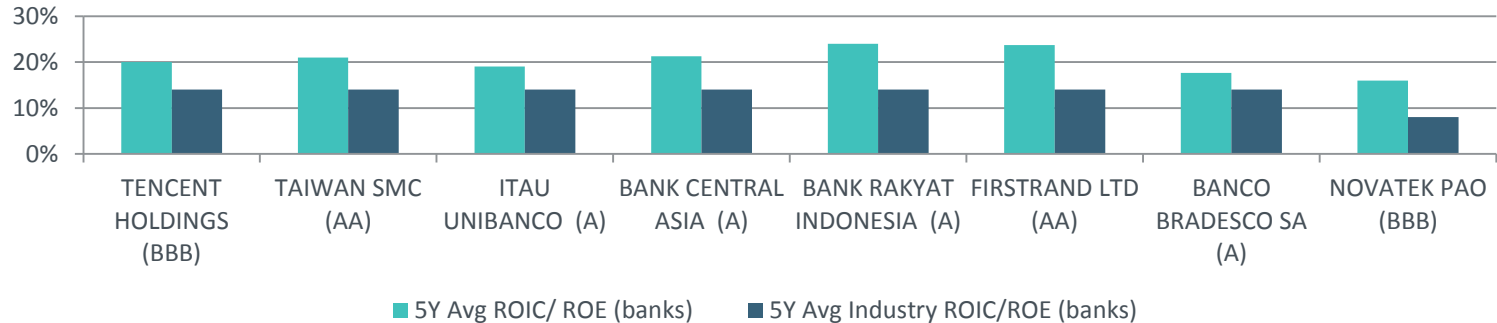
Profitability of MSCI EM ESG Leaders

v Rest of MSCI ACWI

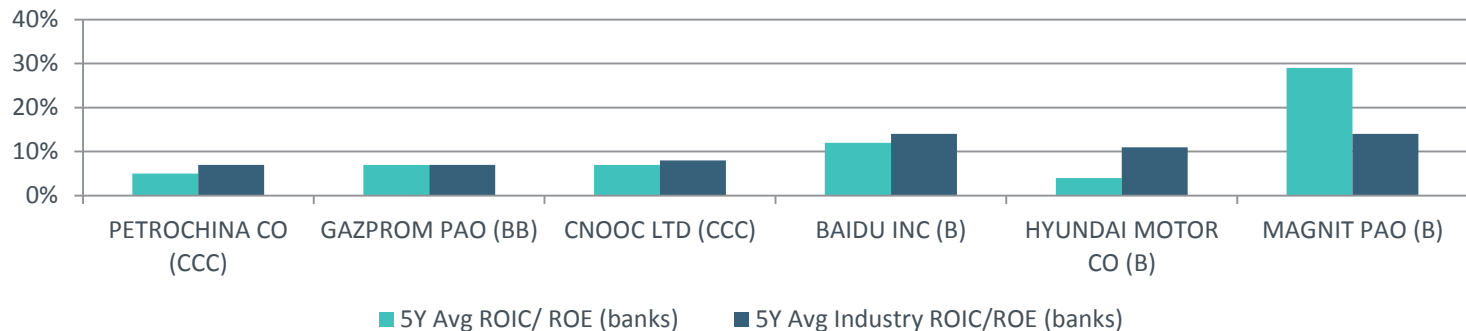
(MSCI Emerging Markets Index May 2013– March 2018)

TOP CONTRIBUTORS ALWAYS OR NEVER INCLUDED IN MSCI EMERGING MARKETS ESG LEADERS INDEX SINCE INCEPTION

Top Contributors (always included) vs Industry Returns %

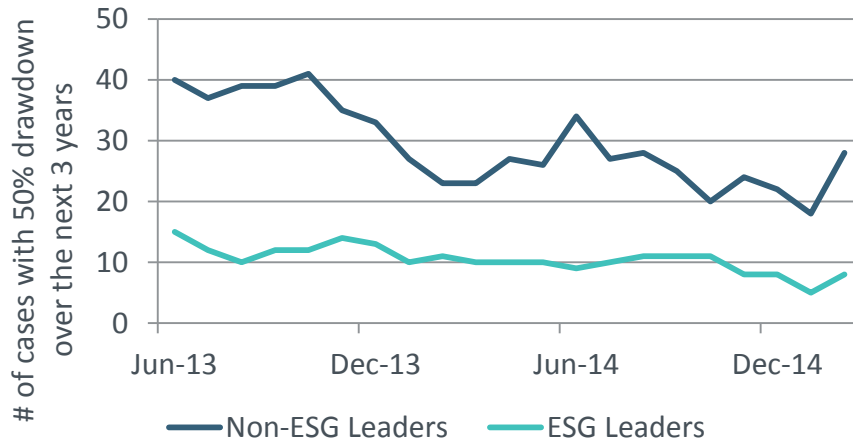


Top Contributors (always excluded) vs Industry Returns %



STOCK-SPECIFIC RISK CHANNEL

Stock-specific risk channel



Incident Frequency of MSCI EM ESG Leaders v. Rest of MSCI EM Index constituents (MSCI Emerging Markets Index constituents May 2013 – March 2018)

SYSTEMATIC RISK CHANNEL

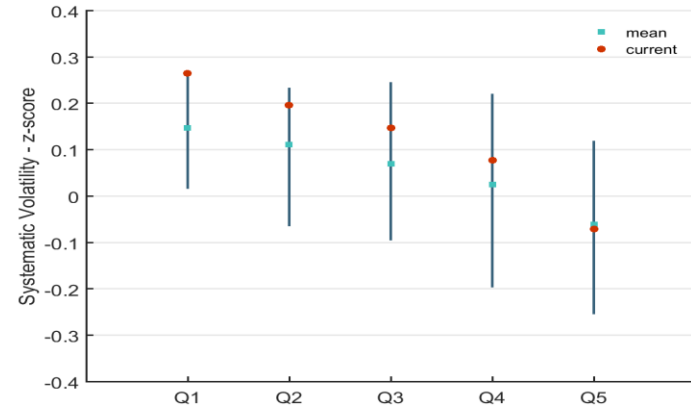
Valuation channel



Economic rationale:

1. High ESG rating companies are less vulnerable to systematic market risks such as commodity prices or changes in regulation.
2. Lower systematic risk means investors demand a lower required rate of return = cost of capital.
3. Lower cost of capital leads to higher valuation.

Systematic volatility of ESG quintiles

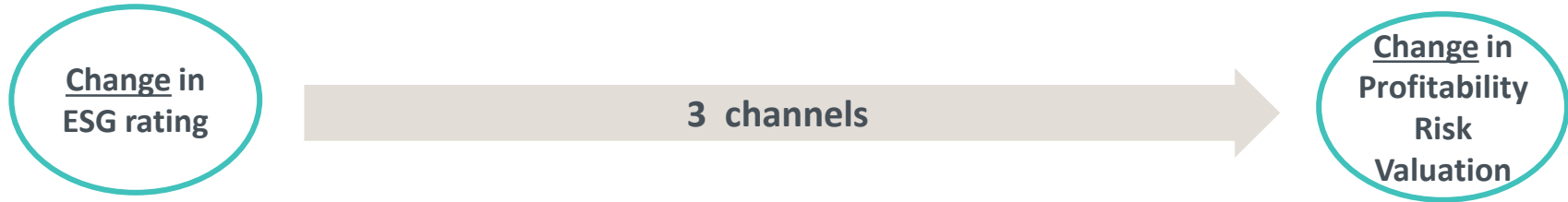


DERIVED CHANNEL: ESG MOMENTUM

From the static relationship



We derive the dynamic relationship

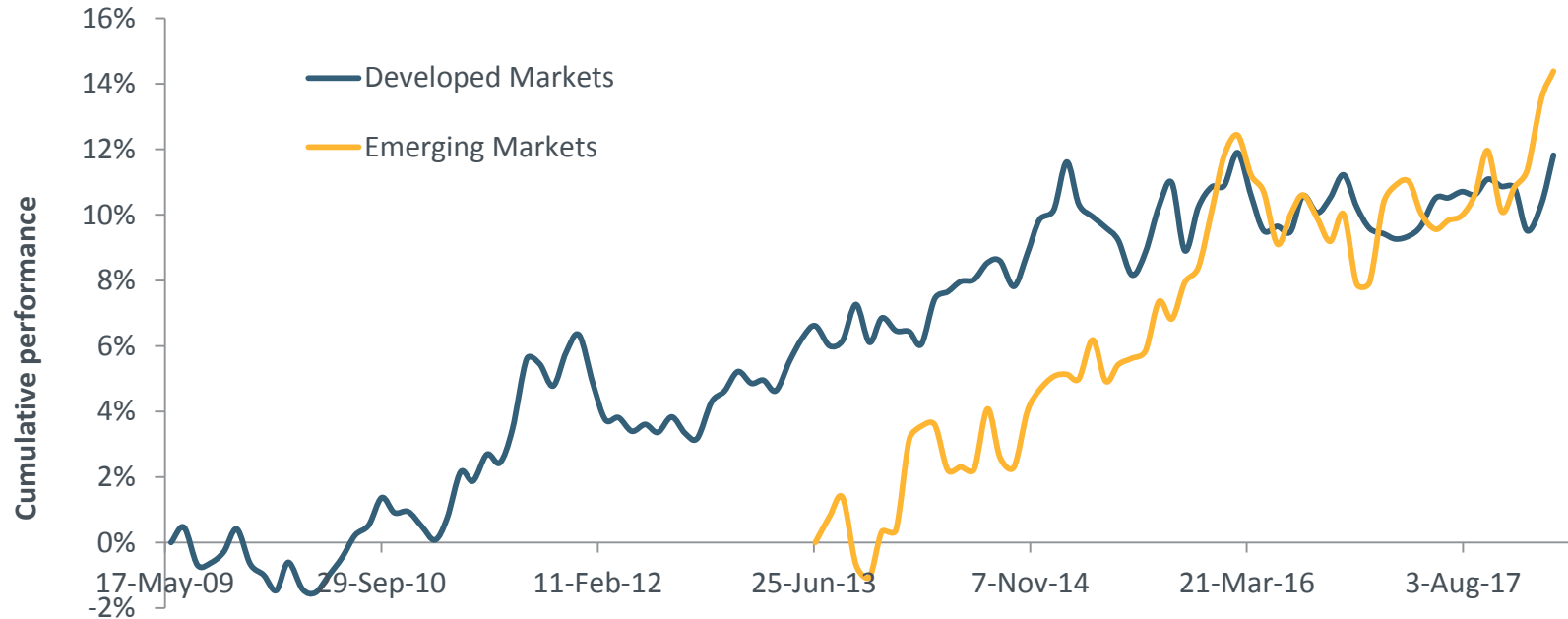


ESG Momentum (= change in ESG rating)

- Was verified by empirical analysis
- Is an indication for causality in the three transmission channels
- Was found to be a performance driver in empirical analysis

DERIVED CHANNEL: ESG MOMENTUM

Financial performance of ESG momentum: Top versus bottom quintile



THIRD STEP: CONCLUSIONS FOR INVESTORS

1. **MSCI ESG Ratings** have shown a **financially material impact** on valuation, profitability and risk and therefore need to be reflected in financial analysis as well as portfolio construction.
2. **MSCI ESG Ratings** and **MSCI ESG ratings trend** (ESG momentum) have both been financially material indicators and can be used for portfolio or index construction.
3. **ESG integration** into portfolio management requires a **long-term horizon**
4. **Financial materiality** of ESG ratings may be used for **validating** and comparing ESG rating models

FOUNDATIONS OF ESG INVESTMENT



FOUNDATIONS OF ESG INVESTING – PART 1

How ESG Affects Equity Valuation, Risk and Performance



FOUNDATIONS OF ESG INVESTING – PART 2

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FOUNDATIONS OF ESG INVESTING – PART 4

Integrating ESG into Factor Strategies and Active

FOUNDATIONS OF ESG INVESTING - CONCLUSIONS

- **ESG ratings** have shown to be effective in reducing portfolio risk
- **ESG Momentum** has shown positive performance contribution

ESG Signal

Methods that have been effective for integrating ESG:

- **Best-in-class** selection
- **ESG-weight** tilt
- **Combining ESG and ESG Momentum**

Portfolio Construction Methods

- Financial analysis and stock selection
- Risk management & early warning processes
- Risk reporting
- Active ownership

Additional areas of ESG integration

Challenges & Trade-offs

Manage **ESG-factor trade-off** by

- Using optimization
- Factor-Neutralizing ESG scores
- Use of ESG Momentum

APPENDIX

CURRENT STATUS OF ESG IN ACTIVE MANAGEMENT

Key findings from assessing holdings data of active funds:

Fund universe

- Global active funds in MSCI Peer Analytics platform
- Minimum of 10 years track record
- Excludes ETFs and index trackers
- Total: Over 1'100 funds

Status of ESG integration

- Fairly small differences in average level of ESG across funds
- No up or down trend in ESG integration over past 10 years
- Slightly higher levels of ESG in funds labelled ESG or SI
- No visible integration of ESG momentum

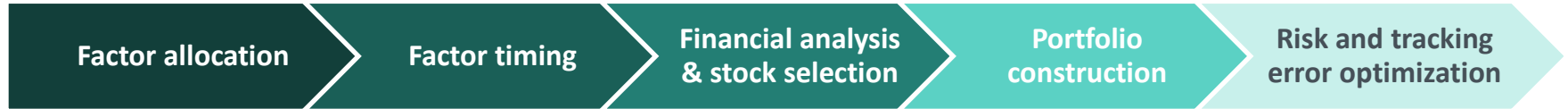
Financial findings

- No visible link between level of ESG and risk and performance
- Most funds use active factor allocations to generate alpha
- Significant differences in track record (alpha) across funds

ESG INTEGRATION INTO ACTIVE MANAGEMENT

Challenges:

- ESG integration should not impair effectiveness of active portfolio construction processes:



Opportunities:

- Combine ESG with factors efficiently ➤ **improve risk adjusted returns**
- Integration into financial analysis ➤ **improve stock selection**
- Integration into stock selection ➤ **mitigate tail risks**
- Use ESG momentum as allocation signal ➤ **additional outperformance**

ESG INTEGRATION INTO ACTIVE FUNDS - CONCLUSIONS

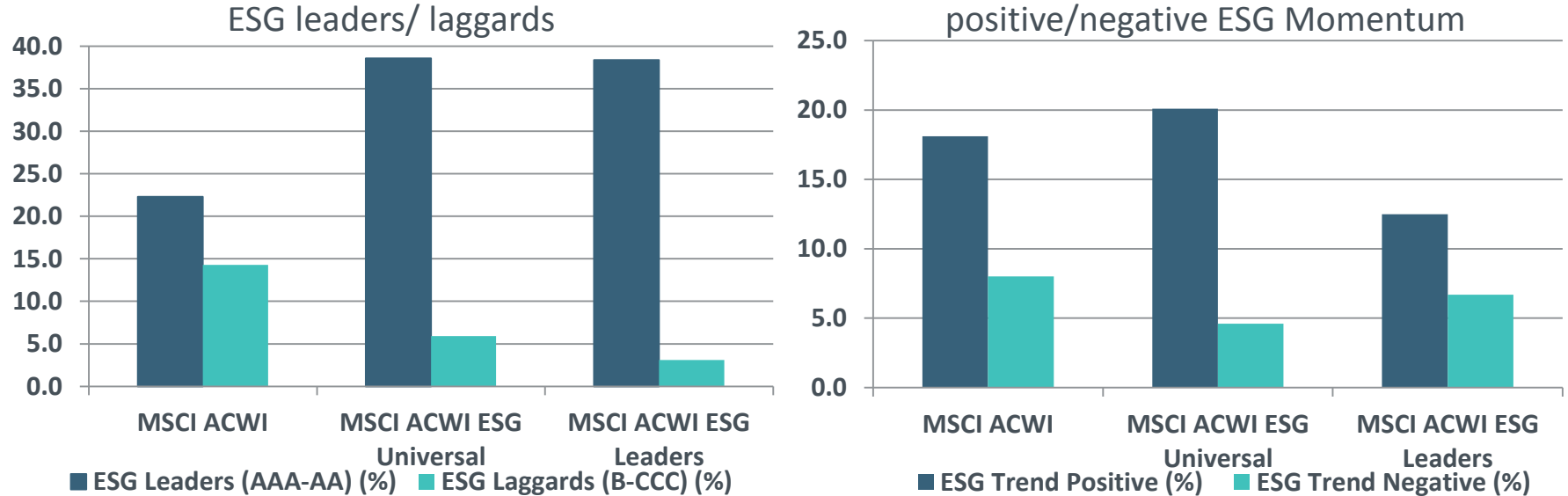
1. Overlay approach shows visible improvement in risk adjusted returns
2. Improvements are independent of how active managers are
3. Overlay approach is simple, transparent and straight-forward
4. However, full integration of ESG may go well beyond an overlay approach:
 - Use **optimization approach** to manage factor-ESG trade-offs
 - Integrate ESG **into financial analysis** and **stock selection**
 - Integrate ESG into **risk management** and early warning processes
 - Use **active ownership** as additional risk and performance management approach
5. Note these are simulated results using past performance over a specified period and are not indicative of live or future results.

TYPICAL ESG INTEGRATION INTO BENCHMARKS



ESG RISK EXPOSURE: STOCK SPECIFIC RISKS

Index exposure to

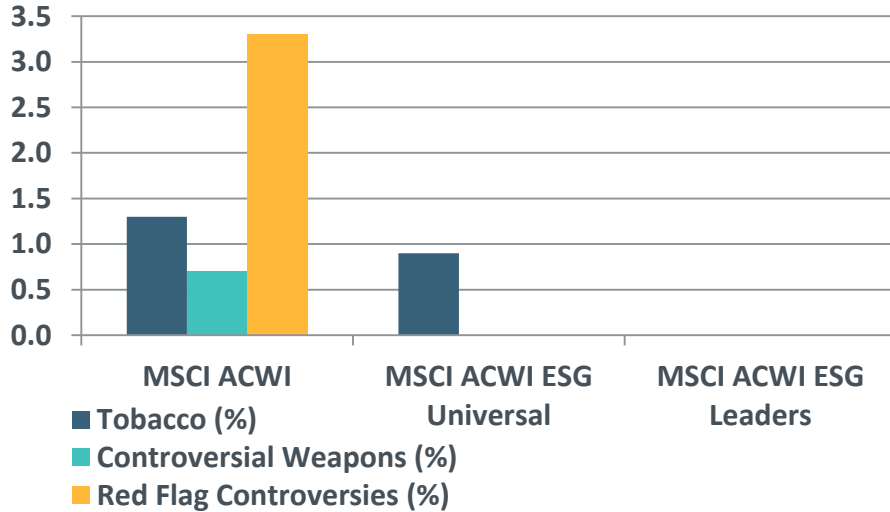


As of Dec. 31, 2017. Historical data for example purposes only. Past performance is not indicative of future results, which may differ materially.

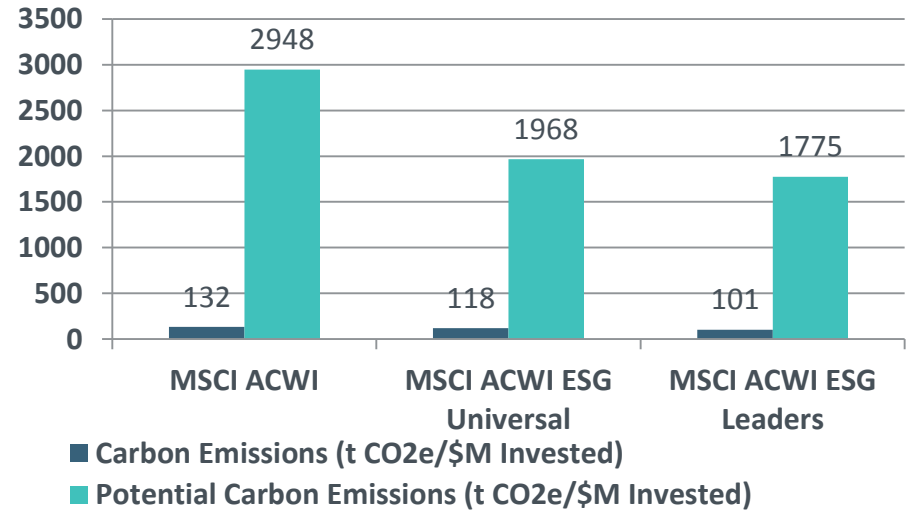
ESG indexes have historically reduced exposure to ESG laggards and ESG downgrades

ESG RISK EXPOSURE: SYSTEMIC AND SOCIAL RISKS

Index exposure to
social risks



Index exposure to
carbon risks



As of Dec. 31, 2017. Historical data for example purposes only. Past performance is not indicative of future results, which may differ materially.

ESG indexes have historically reduced exposure to social risks and carbon emissions

ESG POLICY BENCHMARKS - CONCLUSIONS

1. When integrating ESG into a policy benchmark, investors may wish to consider a potential **trade-off** between the level of ESG integration on one hand and the level of diversification and opportunity set on the other hand
2. MSCI ACWI ESG Leaders and MSCI ACWI ESG Universal represent **two different options on this trade-off line** – the former showed a stronger ESG integration, the latter a higher level of diversification and opportunity set
3. Both MSCI ACWI ESG Leaders and MSCI ACWI ESG Universal are designed to be **replicable** in terms of number of components, liquidity and turn-over
4. Both indexes have historically captured the **opportunity set** of the respective market and have maintained the sector, size and style opportunities of the parent benchmark
5. Both indexes **address ESG risks** in the selection / weighting of index constituents

INSTITUTIONAL ADOPTION OF ESG BENCHMARKS

2014 2015 2016 2017

UK EAPF

\$400m

MSCI World
Low Carbon
Target

CalSTRS

\$2.5bn

committed to
MSCI ACWI
Low Carbon
Target Index

Taiwan

BLF

\$2.4bn

allocation to
MSCI ACWI ESG
Factor Mix

GPIF

use of ESG
benchmarks for
domestic equity
allocations

NZ Super

40% of passive
equity
portfolio now
'low carbon'

AP4

Targets
allocating
**entire equity
portfolio** to
low carbon
benchmarks
by 2020

AMF

MSCI ACWI
ESG global
equity
**policy
benchmark**

Illmarinen

\$5.9 bn

allocated to
benchmark using
MSCI ESG Ratings

Swiss Re

ESG benchmarks
for **\$130bn** in
active listed equity
+ credit

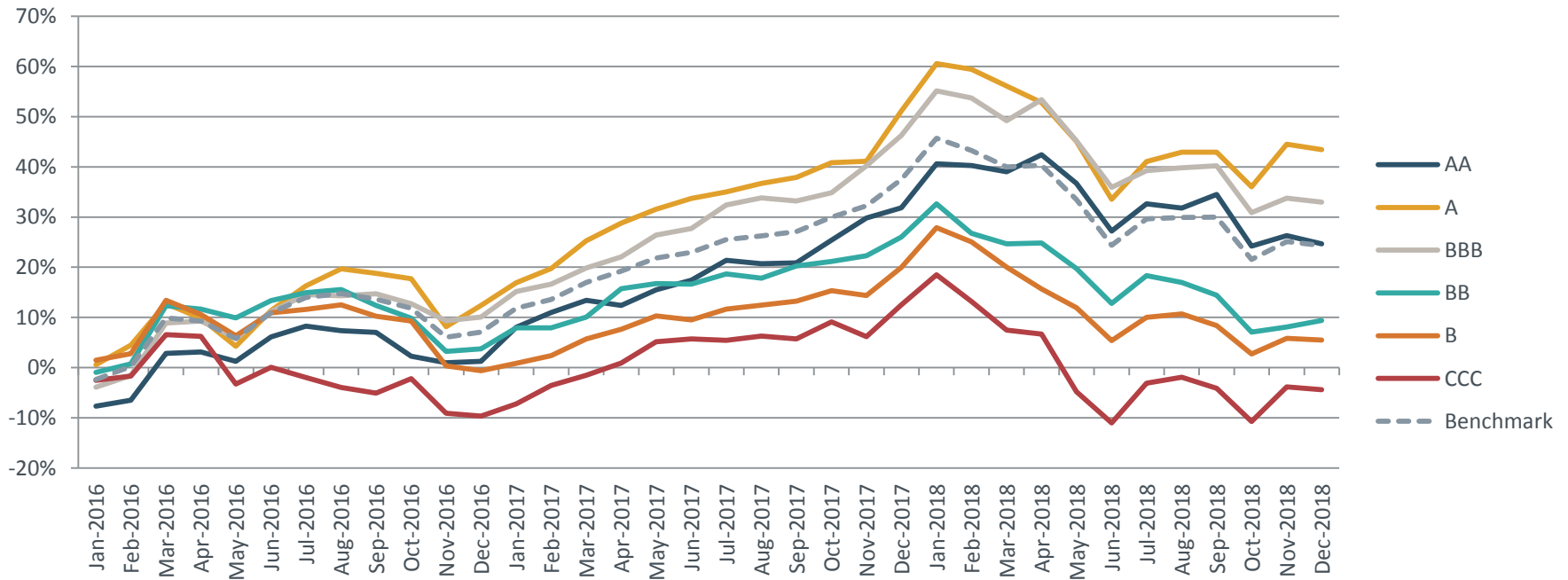
**EPF of
Malaysia**

\$5bn
MSCI Custom
Ethical Index

APPENDIX 2 – ASEAN MARKETS

ASEAN – CUMULATIVE RETURN BY RATING

Cumulative Total Return (CW)



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