

IS ESG A DISTINCT ELEMENT OF RISK?

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Topics

- Responsible Investment - Confirming the null hypothesis
- ESG 1.0 – Problematic exceptions
- ESG 2.0 – Big investors can't hide
- References
- Appendix: Prizes for strong ESG research

Responsible investment

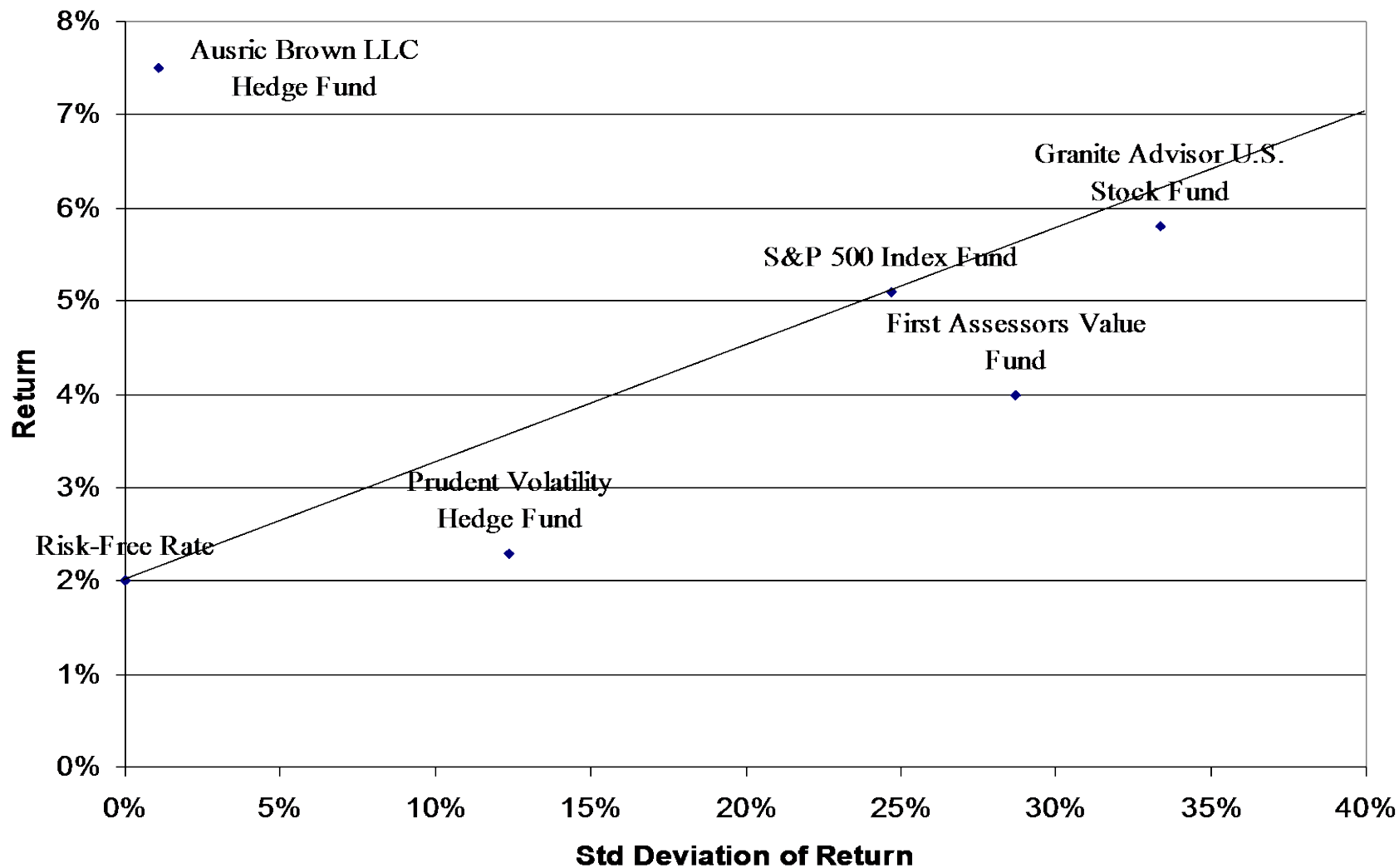
Confirming the null hypothesis

The null hypothesis

It doesn't matter, conventional investment factors run the show.

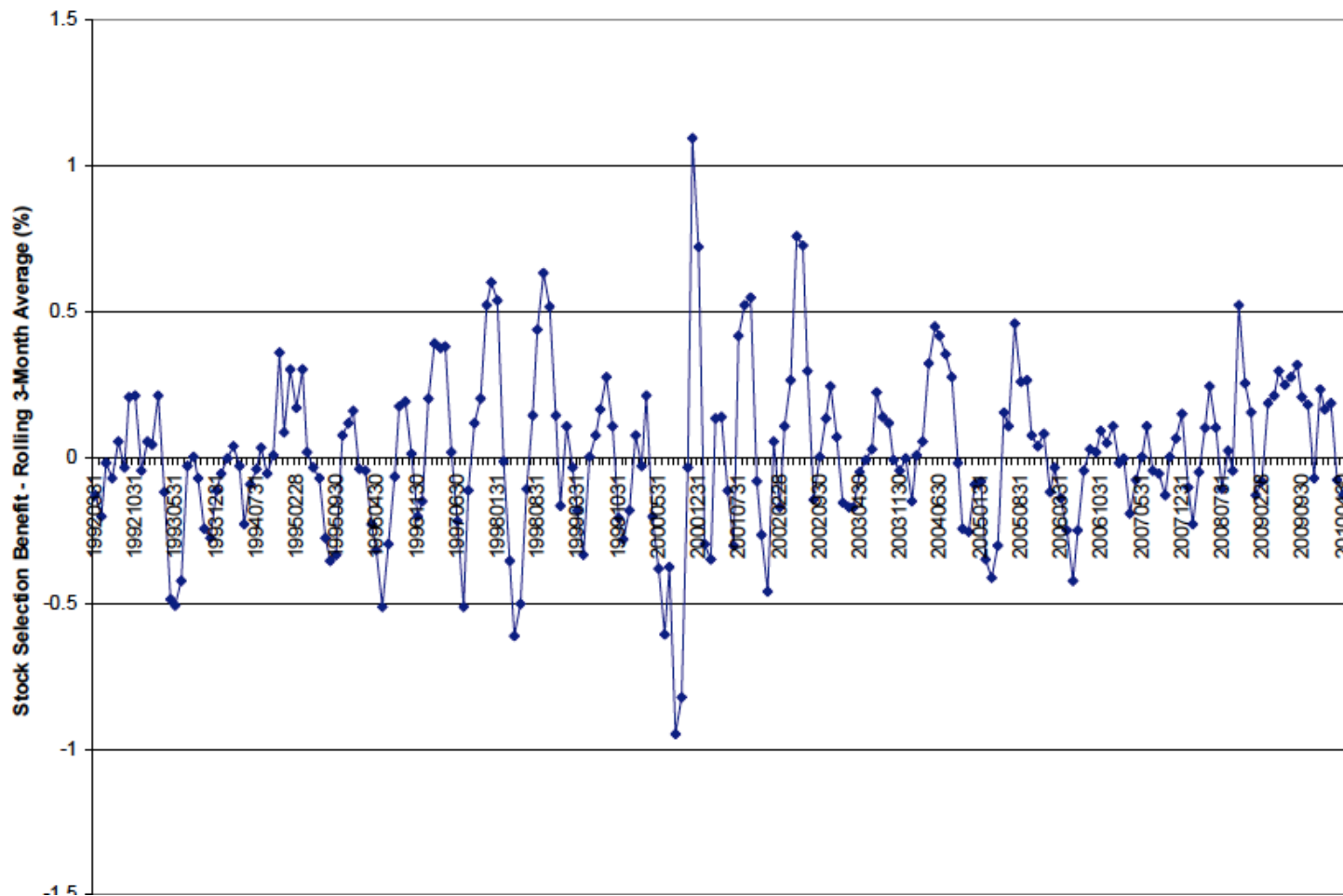
- ✓ Implicit in this is the assumption that ESG-motivated exclusions will create essentially *random* differences between the portfolio and the benchmark.

Let's not throw away basic risk models



Performance of a North American responsible index net of factors

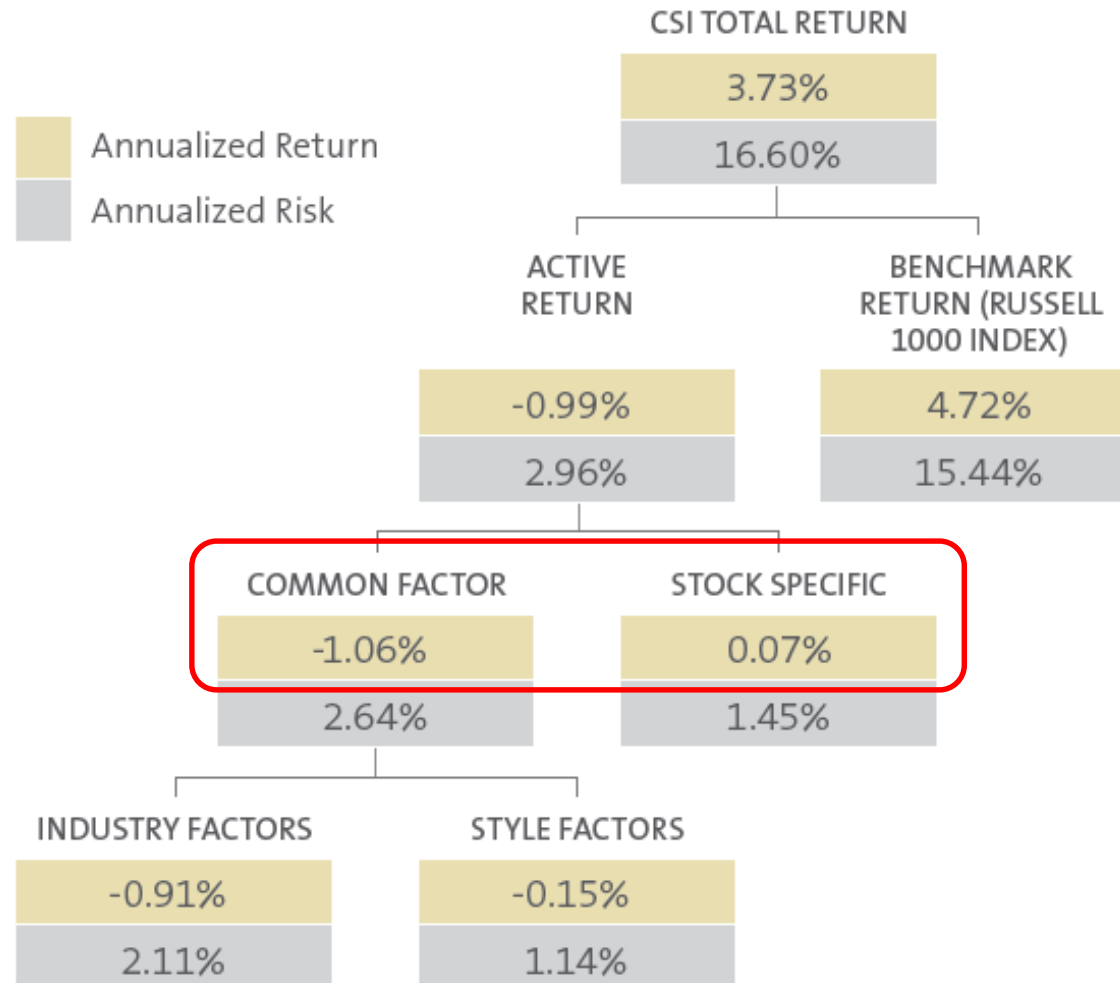
**EXHIBIT #3 –
Stock Selection Impact After Adjusting for Factors, 1992-2010**



Source: Kurtz and Dibartolomeo, 2011

Different index, different time period, same result

FIGURE 3: CALVERT SOCIAL INDEX FACTOR-BASED PERFORMANCE ATTRIBUTION (JUNE 2000 TO DECEMBER 2014)



Source: MSCI BARRA, Calvert Research

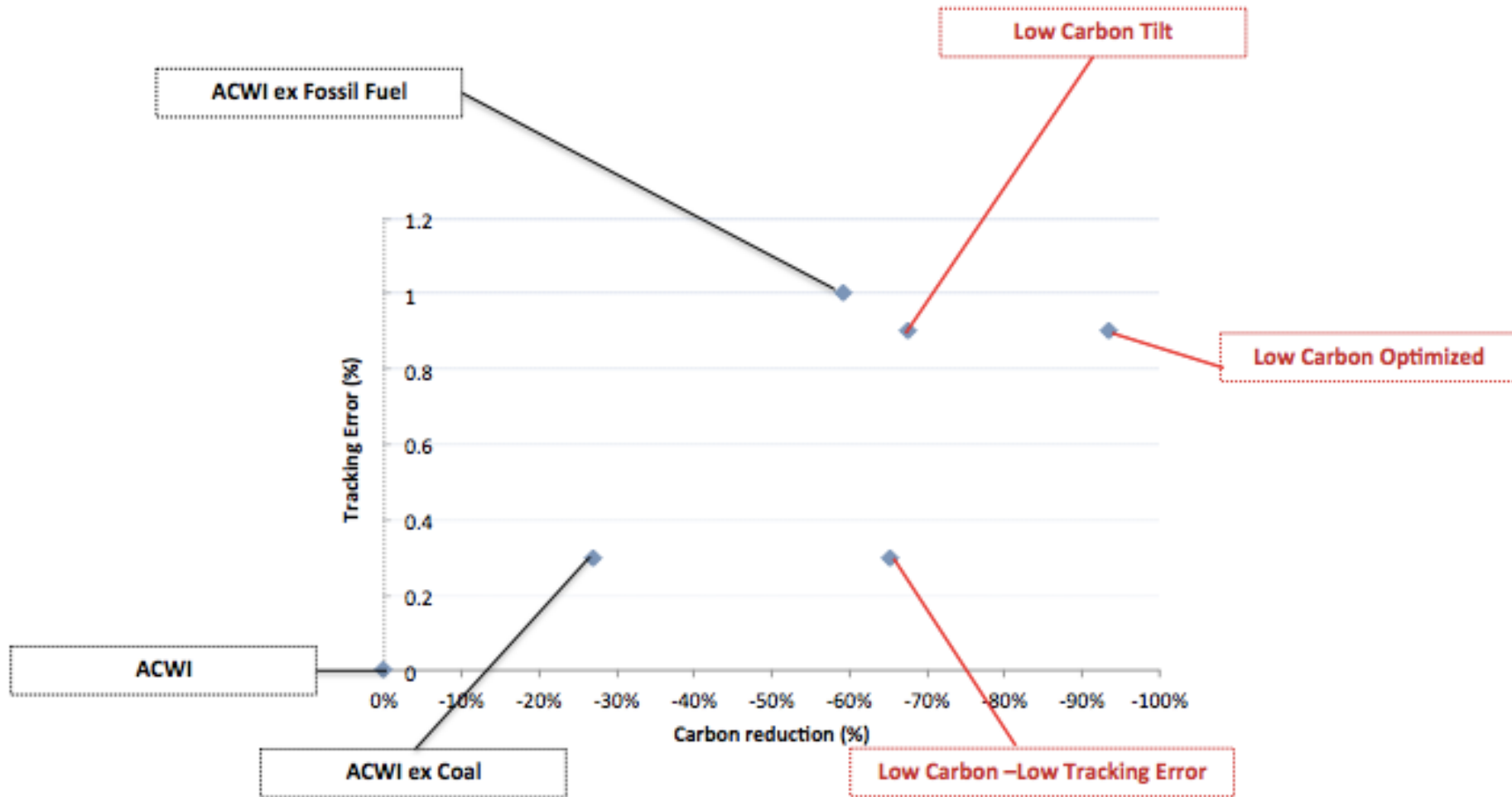
Source: Trunow and Lindner (2014)

Don't constraints have a cost? Maybe, but...

“ [I]t seems safe to say that an ethics screen which reduced available securities from about 8,000 to about 4,000 would have to be quite strange to make it impossible to select a reasonably liquid, well diversified portfolio with returns comparable to those usually finds in portfolio of well-established companies with similar levels of portfolio volatility.

The empirical companion piece to this paper reports that, indeed, efficient portfolios from the 4,000+ names of the ethically screened universe lose little in efficiency as compared to those from the full, 8,000+ name universe. ”

Optimization can be helpful for modern problems



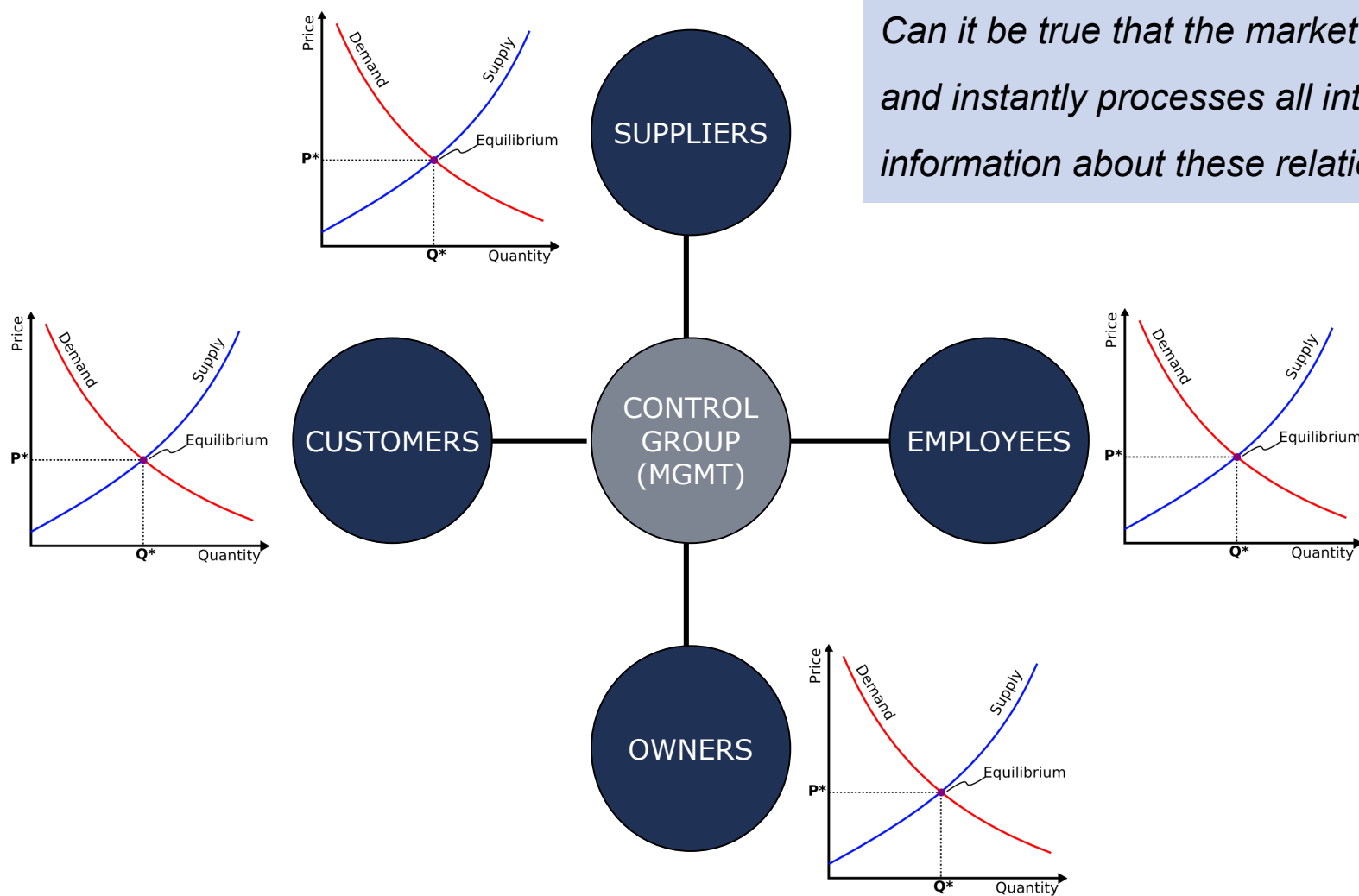
Source: MSCI

Source: Rao and Brinkman(2014)

ESG 1.0

Problematic exceptions

Case for fundamental relevance of ESG factors



Project to identify, codify ESG factors with fundamental relevance



SASB Materiality Map™

SASB's Materiality Map identifies likely material sustainability issues on an industry-by-industry basis. This map serves as a snapshot of likely material sustainability issues at the time of our initial analysis and may be subject to change as issues and industries are ever-evolving. Click on a highlighted cell at the sector-level and then on any highlighted cell at the industry-level to see suggested accounting metrics and additional information for each issue.

ISSUES

Environment

- GHG emissions
- Air quality
- Energy management
- Fuel management
- Water and wastewater management
- Waste and hazardous materials management
- Biodiversity impacts

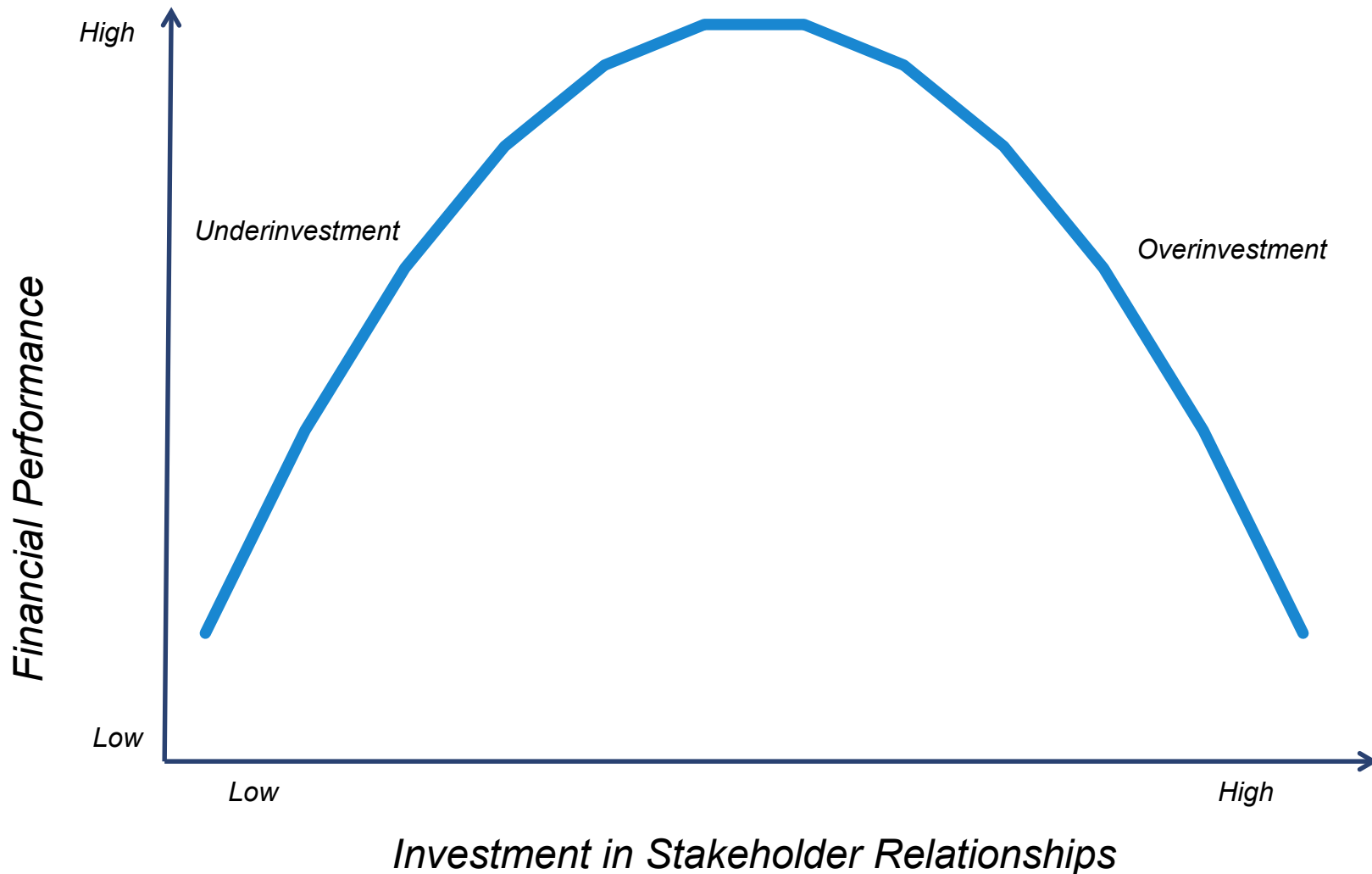
Social Capital

- Human rights and community relations
- Access and affordability
- Customer welfare

Health Care							
Biotechnology	Pharmaceuticals	Medical Equipment and Supplies	Health Care Delivery	Health Care Distribution	Managed Care	Biotechnology	

Source: Sustainability Accounting Standards Board

There's a right amount to invest in stakeholder relationships



Implications of Kim and Statman

Simplistic research questions, e.g., 'are environmental policies good?' are difficult to answer categorically because there are ditches on both sides of the road.

The right question (I think) is whether a firm is underinvesting, overinvesting, or investing the right amount in key stakeholder relationships.

The next question is whether the market is assessing this information correctly.

Strong evidence of fundamental effects, market underreaction

[C]onsistent with human capital-centered theories of the firm, employee satisfaction is positively correlated with shareholder returns... A meaningful proportion of the abnormal returns can be explained by [positive] earnings surprises.

The sample period is April 1984–December 2009.

	Excess returns over		
	Risk-free	Industry	Characteristics
<i>Panel A: Equal-weighted</i>			
α	0.31 (3.34)***	0.20 (2.76)***	0.24 (2.94)***
β_{MKT}	1.08 (41.01)***	0.06 (3.55)***	0.09 (3.69)***
β_{HML}	0.03 (0.70)	0.09 (3.22)***	0.01 (0.45)
β_{SMB}	0.17 (3.66)***	0.15 (5.70)***	0.05 (1.39)
β_{MOM}	-0.15 (-6.36)***	-0.07 (-3.39)***	-0.09 (-4.80)***
<i>Panel B: Value-weighted</i>			
α	0.29 (2.59)***	0.17 (2.28)**	0.15 (2.15)**
β_{MKT}	1.00 (35.68)***	-0.04 (-0.18)	0.01 (0.59)
β_{HML}	-0.37 (-7.64)***	-0.03 (-0.76)	-0.11 (-3.32)***
β_{SMB}	-0.17 (-3.64)***	-0.21 (-6.63)***	-0.03 (-0.88)
β_{MOM}	-0.06 (-1.78)*	-0.02 (-0.81)	-0.04 (-2.11)**
# obs	309	309	309

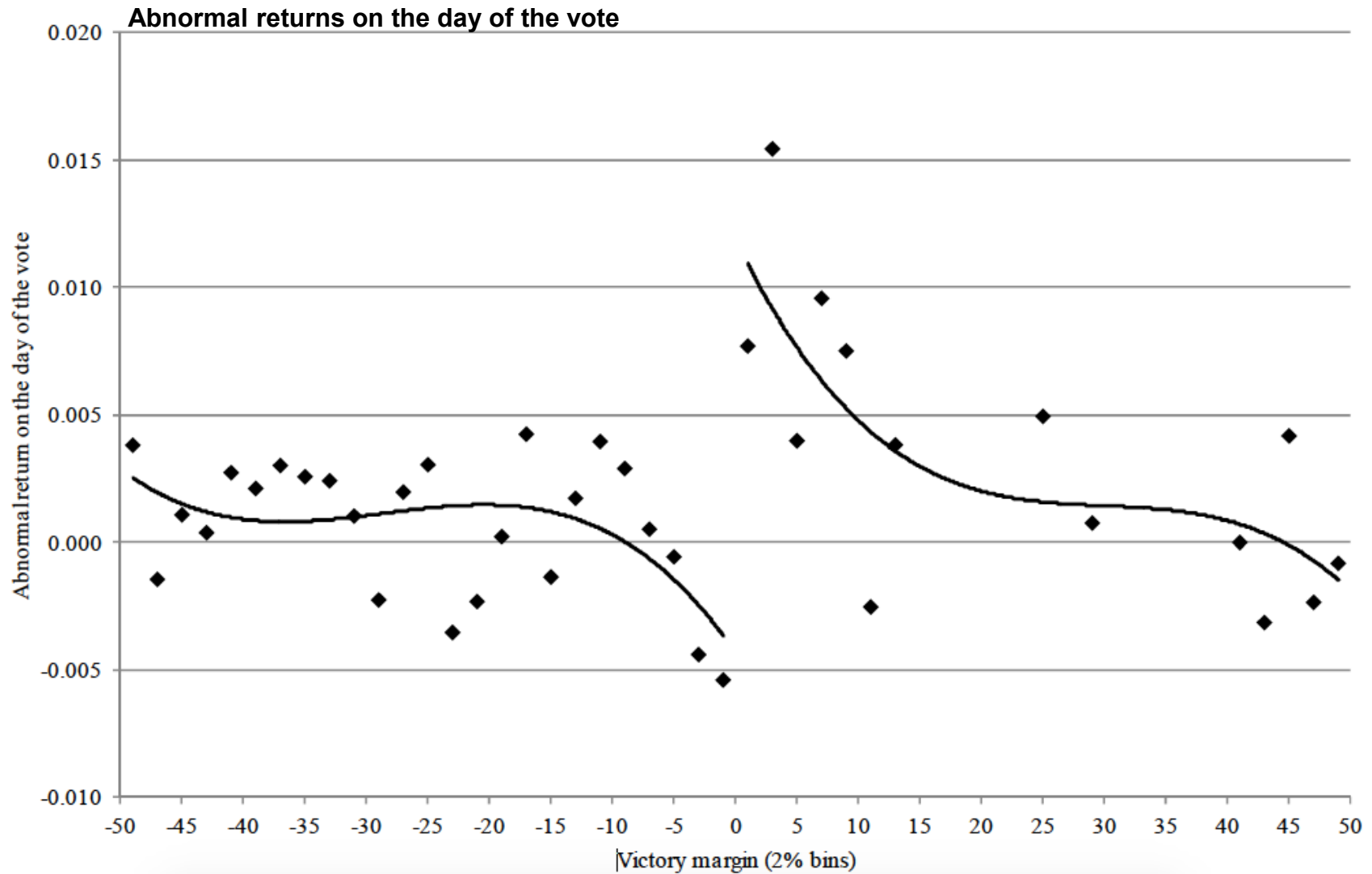
*: Significant at the 10% level; **: Significant at the 5% level; ***: Significant at the 1% level.

Source: Edmans (2011)

Mini-literature on human capital

- *Edmans (2011) – U.S. ‘Best Companies to Work For’ outperform due to higher propensity for earnings surprise.*
- *Flammer (2013) – When shareholders narrowly approve resolutions on human capital and diversity, stocks go up and fundamentals improve.*
- *Edmans (2015) - ‘Best Companies to Work For’ outperform globally, with a few puzzling national exceptions (e.g., Germany).*

Stock reaction to passage of narrow-margin ESG resolutions



Source: *Flammer (2015)* – see also *Dimson, Karakas, and Li (2015)*

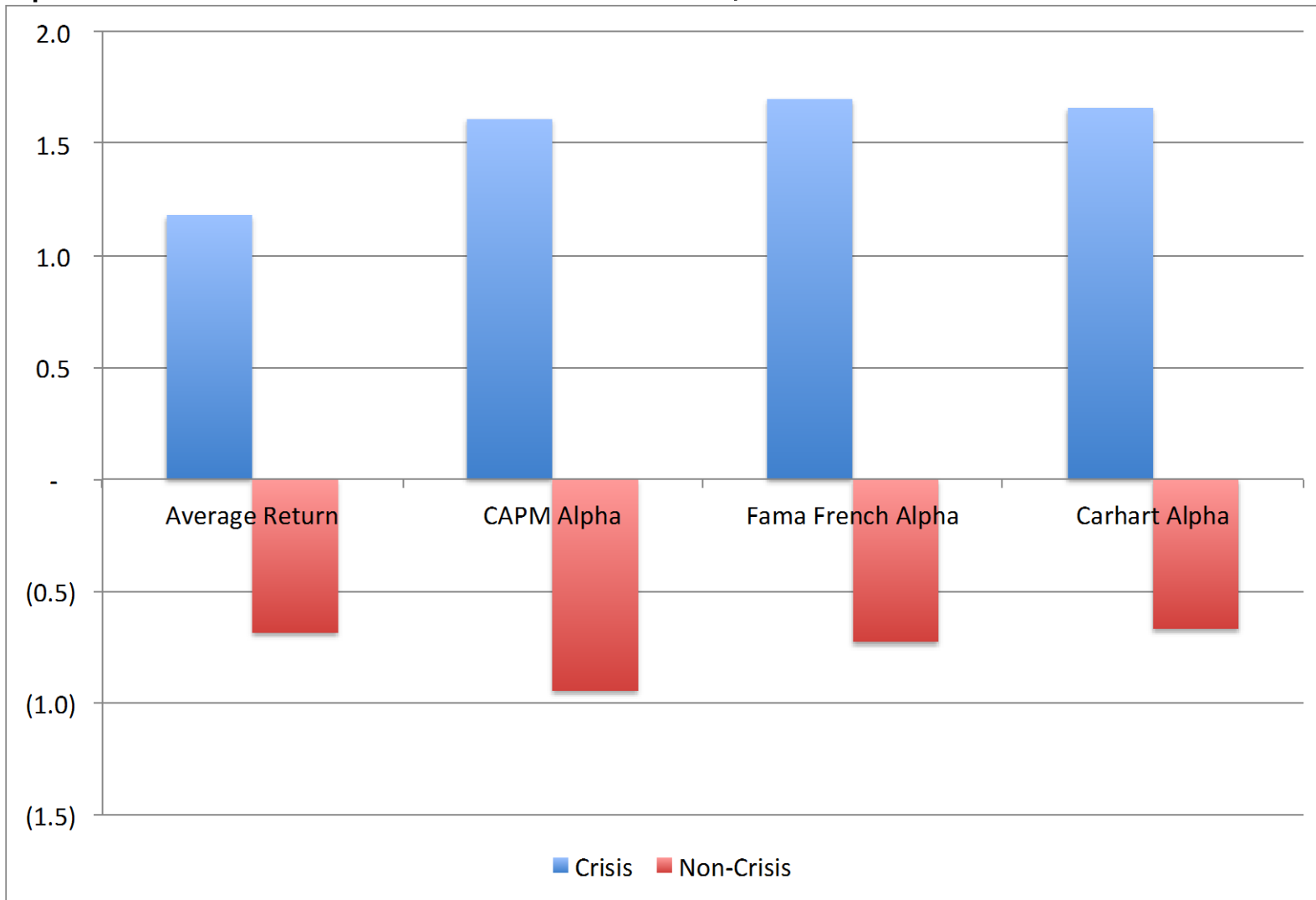
ESG alpha is heavily marketed but not well-documented



Source: bigcharts.com

Is there a quality factor hiding here somewhere?

Alpha of SRI funds vs. matched conventional funds, 2000-2012



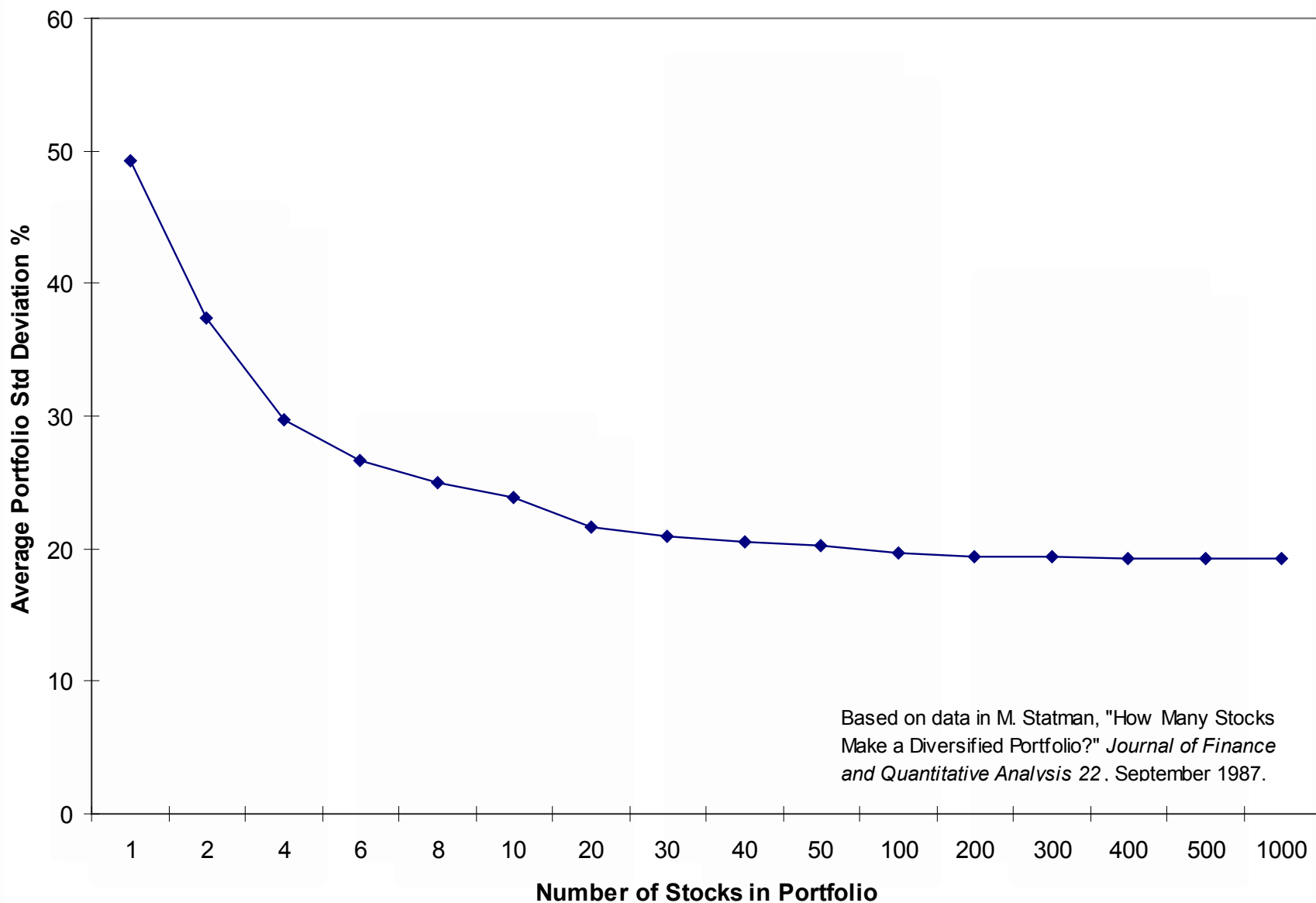
Two new papers find connection between ESG and business moats

- Hale (2017) finds companies with high Morningstar Globe (sustainability) ratings tend to have wider business moats as measured by Morningstar moat rating.
- Kurtz (2016) finds companies included in North American social indexes tend to have wider business moats as measured by Morningstar moat rating.

ESG 2.0

Systematic and systemic risk

Institutions generally don't care about firm-level effects



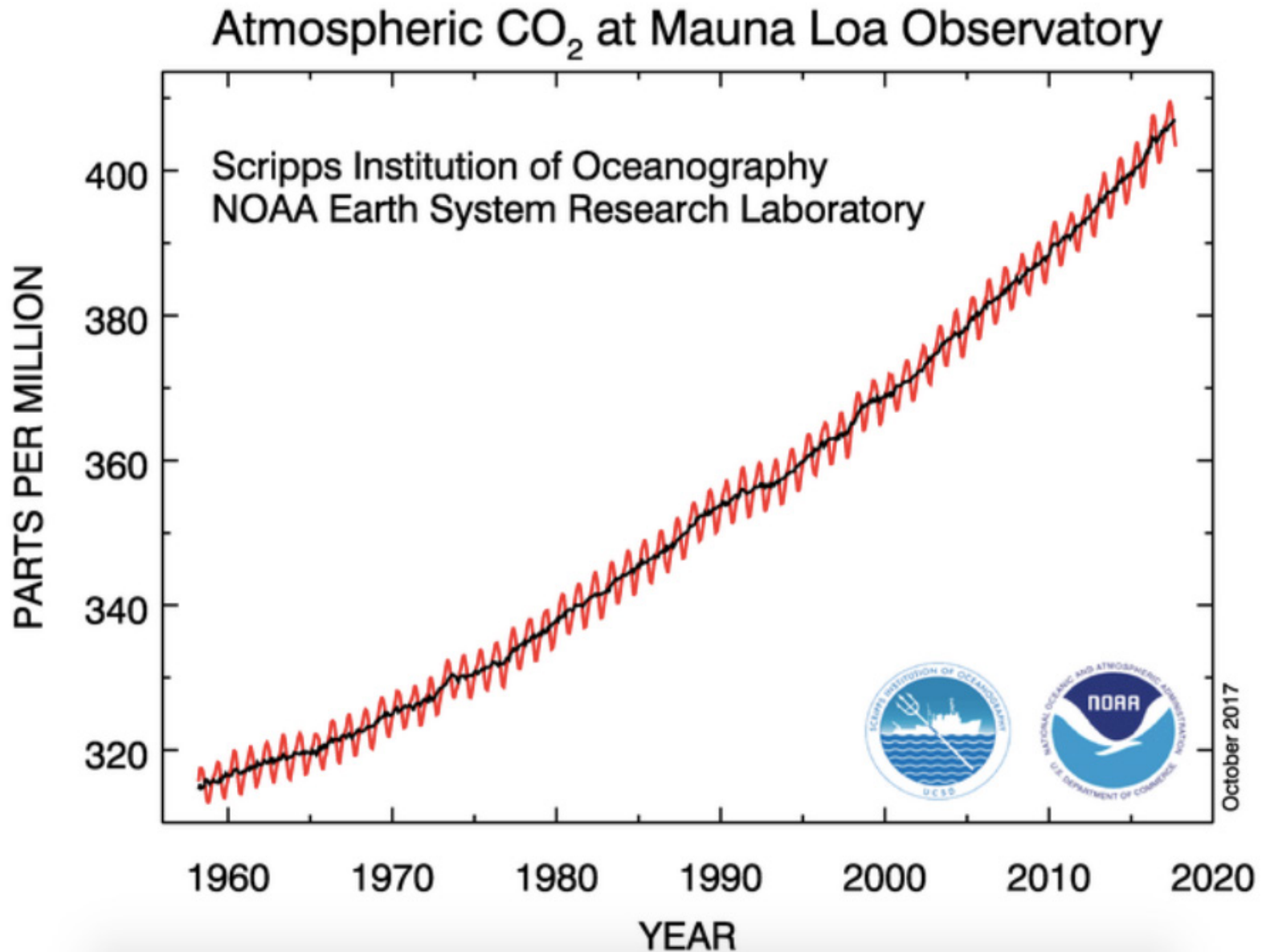
Too big to hide

“ At \$307 billion we can't hide if there is systemic risk.
But we are not only huge in size, we are long term to
the point of being virtually permanent.

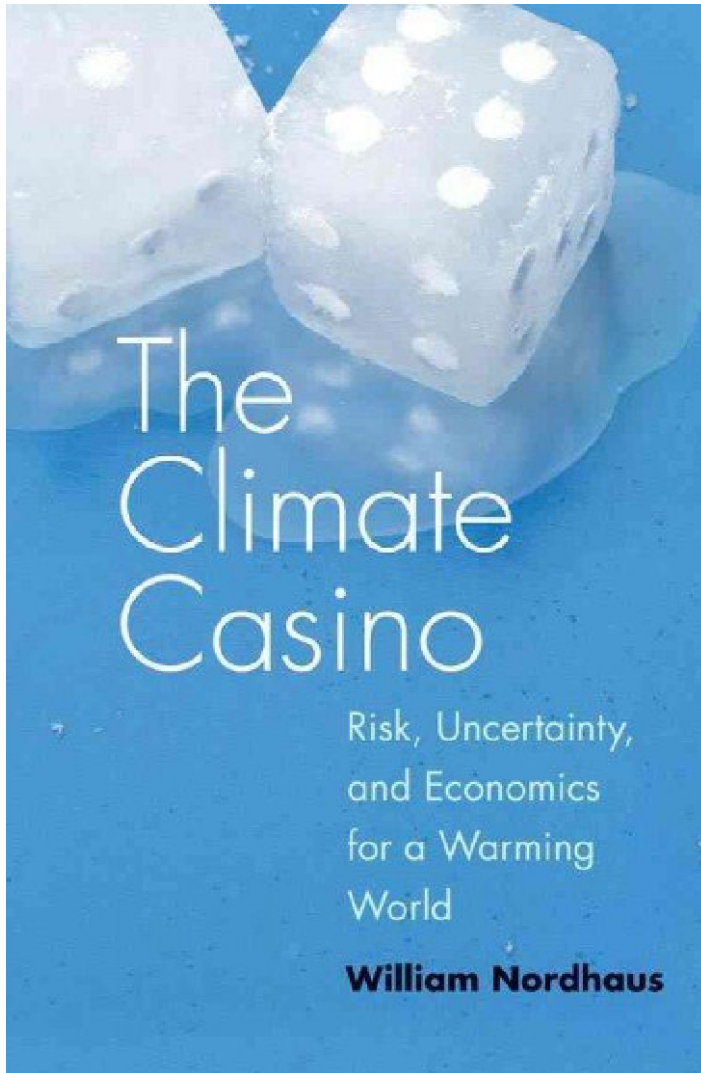
”

- Anne Simpson, CalPERS

Aspects of climate risk



Temperatures rise



The basic relationship is “stunning in its simplicity”: global temperatures rise as relative carbon concentration in the atmosphere increases, about 3° C for each doubling of CO₂ concentration.

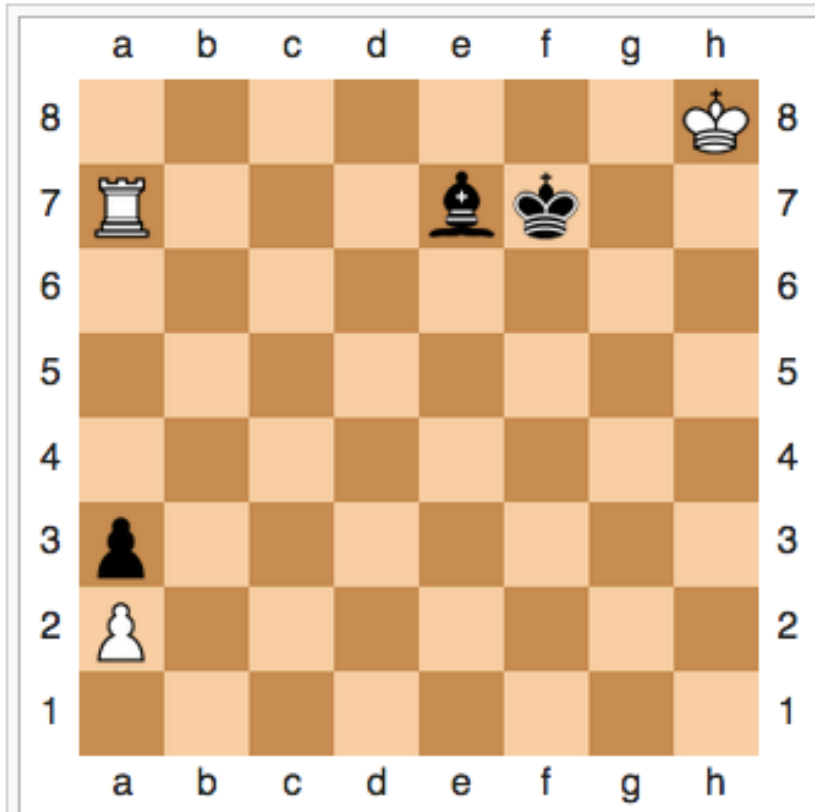
Uncertainty also rises

“ [W]e are entering the Climate Casino. By this, I mean that economic growth is producing unintended but perilous changes in the climate and earth systems. These changes will lead to unforeseeable and probably dangerous consequences. We are rolling the climatic dice...

”

- William Nordhaus

Example: moving from uncertainty to certainty



An example of the KRP(a2)KBP(a3) endgame. White mates in 72 moves, starting with 1.Kh7! Other White moves draw.

This chess position has been exhaustively analyzed. The computer wins automatically from here because it has exact instructions as to the winning procedure.

It will therefore make any combination to get to this position - even if its moves appear to be irrational (e.g., trading a queen for a pawn) - because it is moving from a risky (albeit highly advantageous) position to a risk-free win.

The current situation with climate risk is the opposite of this.

Aspects of climate risk

Backtests are of little use in assessing climate risk – we will only do this once in our lifetimes, and there is no good historical precedent for what is occurring.

- **Greater Uncertainty**
 - ✓ Higher carbon concentrations in the atmosphere increase uncertainty about long-term outcomes. Uncertainty is the classical definition of financial risk.
- **Threshold illusion**
 - ✓ The system's ability to absorb carbon pollution is a depleting finite resource. There is potential for a sudden negative outcome from an environment that seems manageable (like a dam overflowing).
- **Time compression**
 - ✓ Some analysts (e.g., Nordhaus) emphasize that the effects are mostly gradual, but Letterman, per the threshold argument is concerned about the cascade of bad outcomes if we get a series of negative events in a short time.
- **Precautionary Principle**
 - ✓ 'Steer away from trouble' even if outcome uncertain and magnitude unknown. If it's potentially very bad, avoid it!

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Appendix

Prizes for strong ESG research

✧ FIR-PRI European Research Awards

<http://www.fir-pri-awards.org>

✧ Investment for Impact Research Prize

<http://responsiblebusiness.haas.berkeley.edu/research/investment-impact-research-prize.html>

✧ IRRC Investor Research Competition

<https://irrcinstitute.org/annual-award/>

✧ Moskowitz Prize, UC Berkeley

<https://responsiblebusiness.haas.berkeley.edu/research/moskowitz-research-prize.html>