

ESG Factors & Risk-Adjusted Performance: A New Quantitative Model

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Published 4 Oct 2016, Journal of Sustainable Finance & Investment

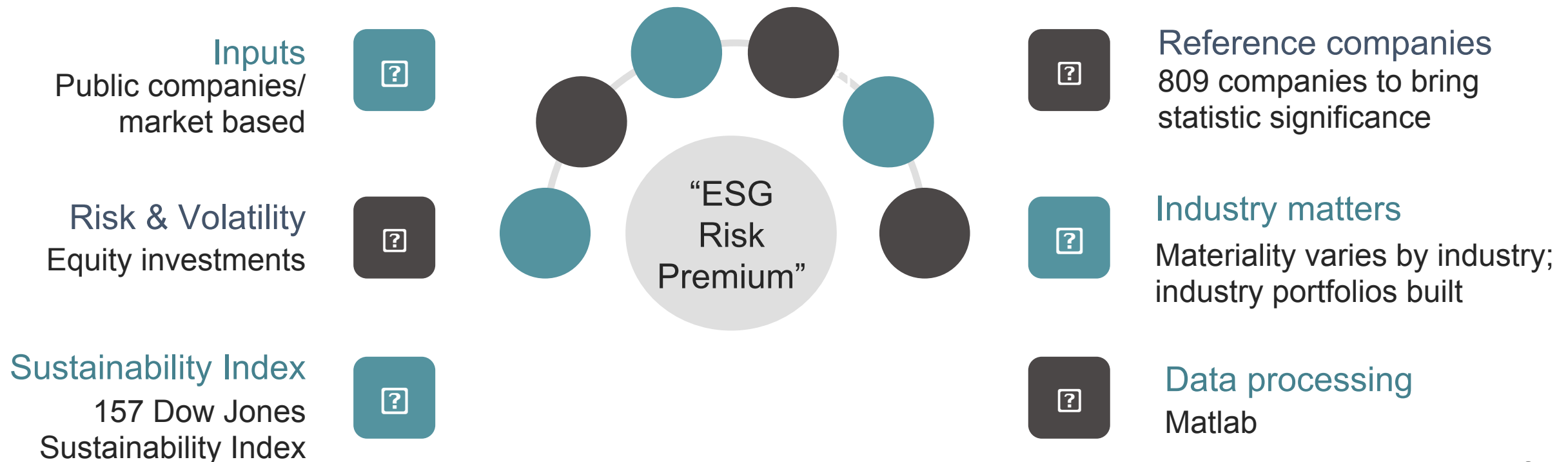
ISSN: 2043-0795 (Print) 2043-0809 (Online)

Journal homepage: <http://www.tandfonline.com/loi/tsfi20>

The ESG Risk-Premium Model

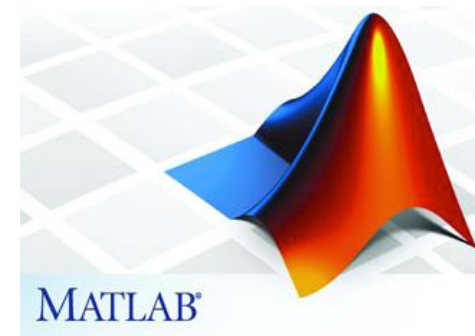
It is common sense: You're **LESS VULNERABLE** in the long run if you do the right things.

- Most Basic Financial Equation: Risk & Return
- Are ESG and Risk Related? There is 'hidden' value in ESG if risk reduction is uncovered
- Evidence Based
- Geographically Global

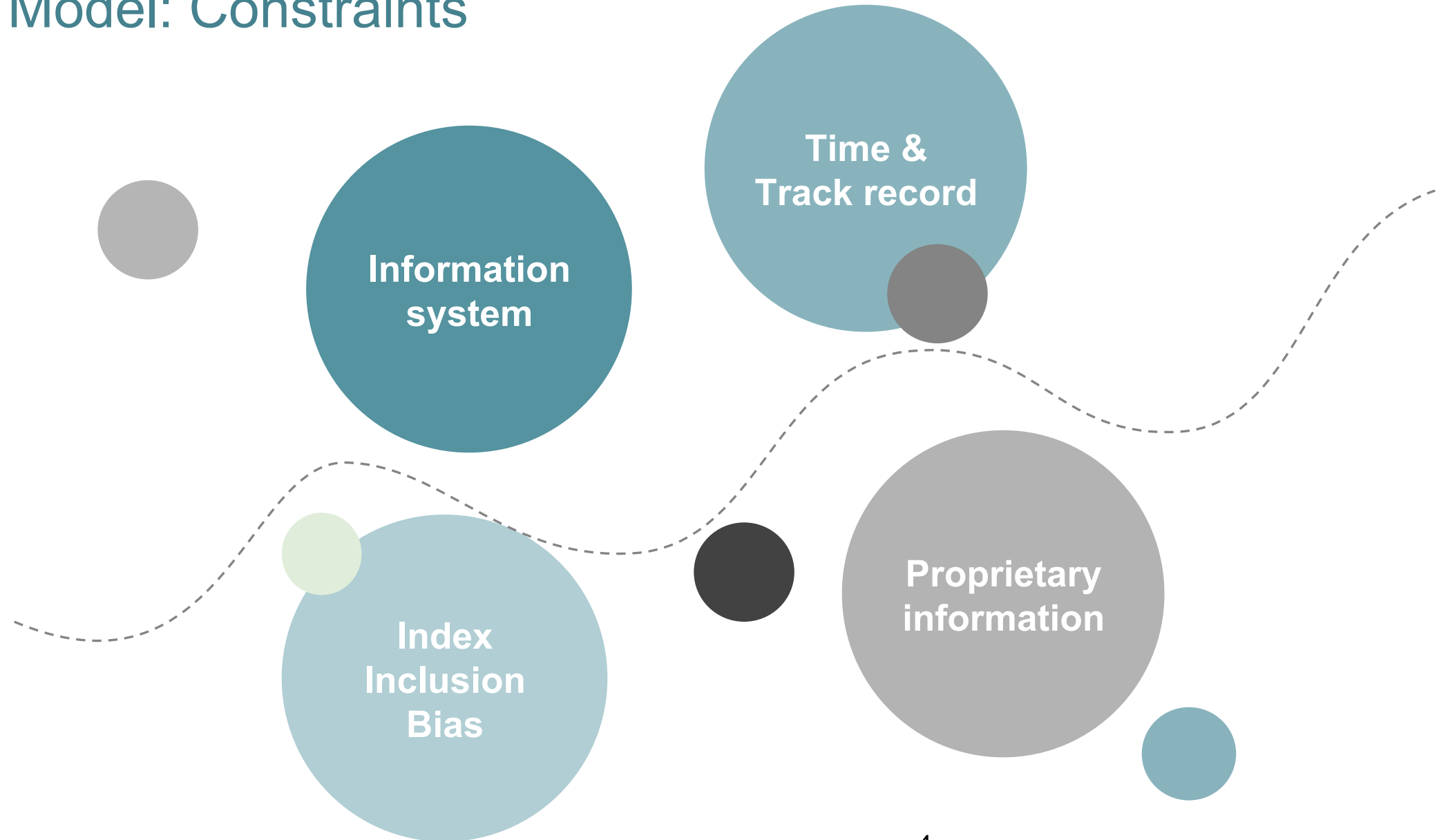


ESG Methodology: Process

	# of ESG companies	# of Ref companies
1. MATERIALS	17	77
2. ENERGY	14	63
3. AUTOMOBILES & PARTS	10	85
4. CONSUMER DURABLES & APPAREL	9	71
5. FOOD & BEVERAGE	14	78
6. BANKS & FINANCIAL INSTITUTIONS	15	84
7. INSURANCE	15	73
8. HEALTHCARE/PHARMA	15	75
9. CAPITAL GOODS	15	77
10. TRANSPORTATION	15	82
11. TECHNOLOGY	15	75
12. UTILITIES	13	79
Total	167	919



The Model: Constraints



Results: Annualized Volatility

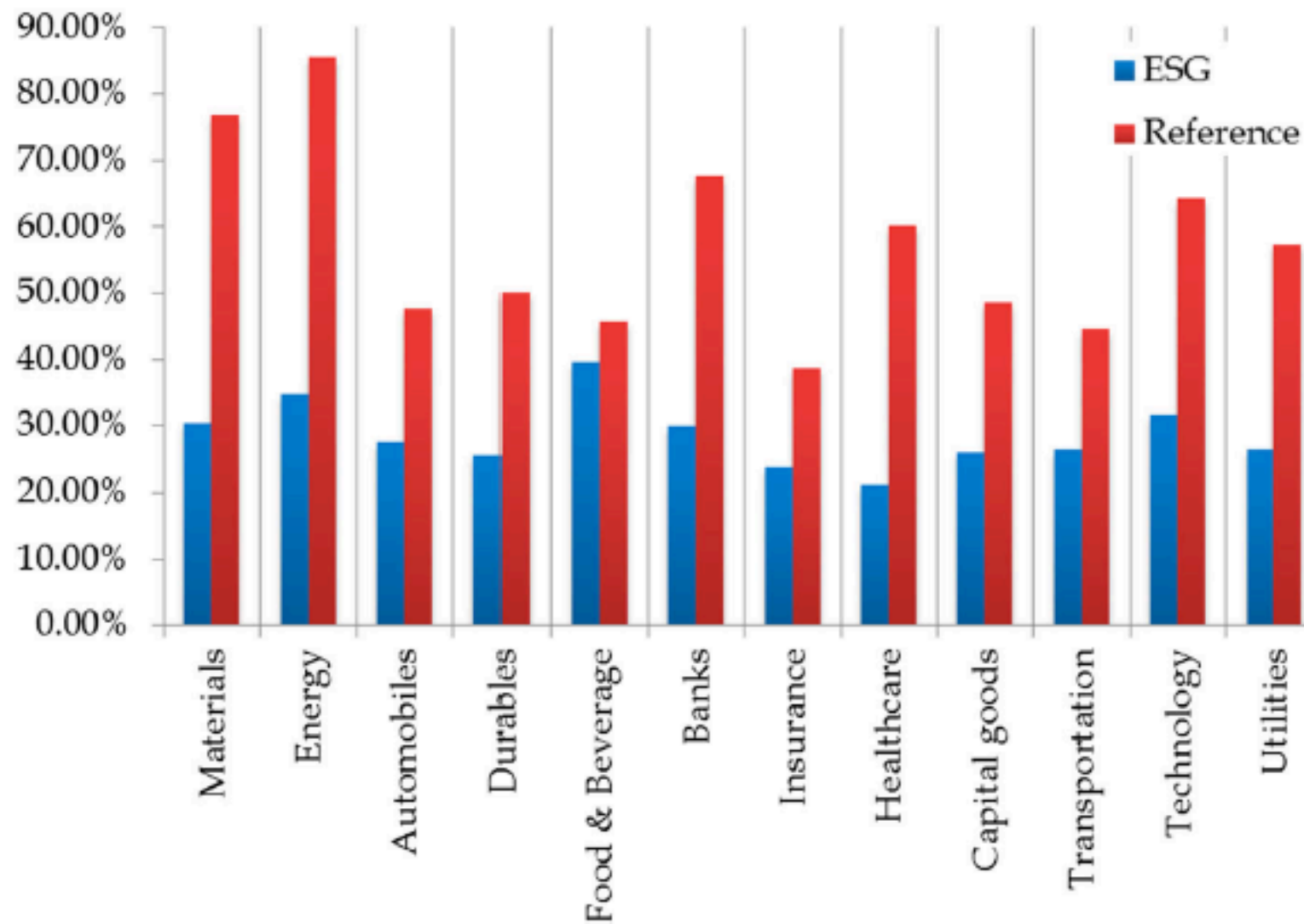


Figure 1. Annualized volatility comparison between ESG and reference companies.

Results: Annualized Return

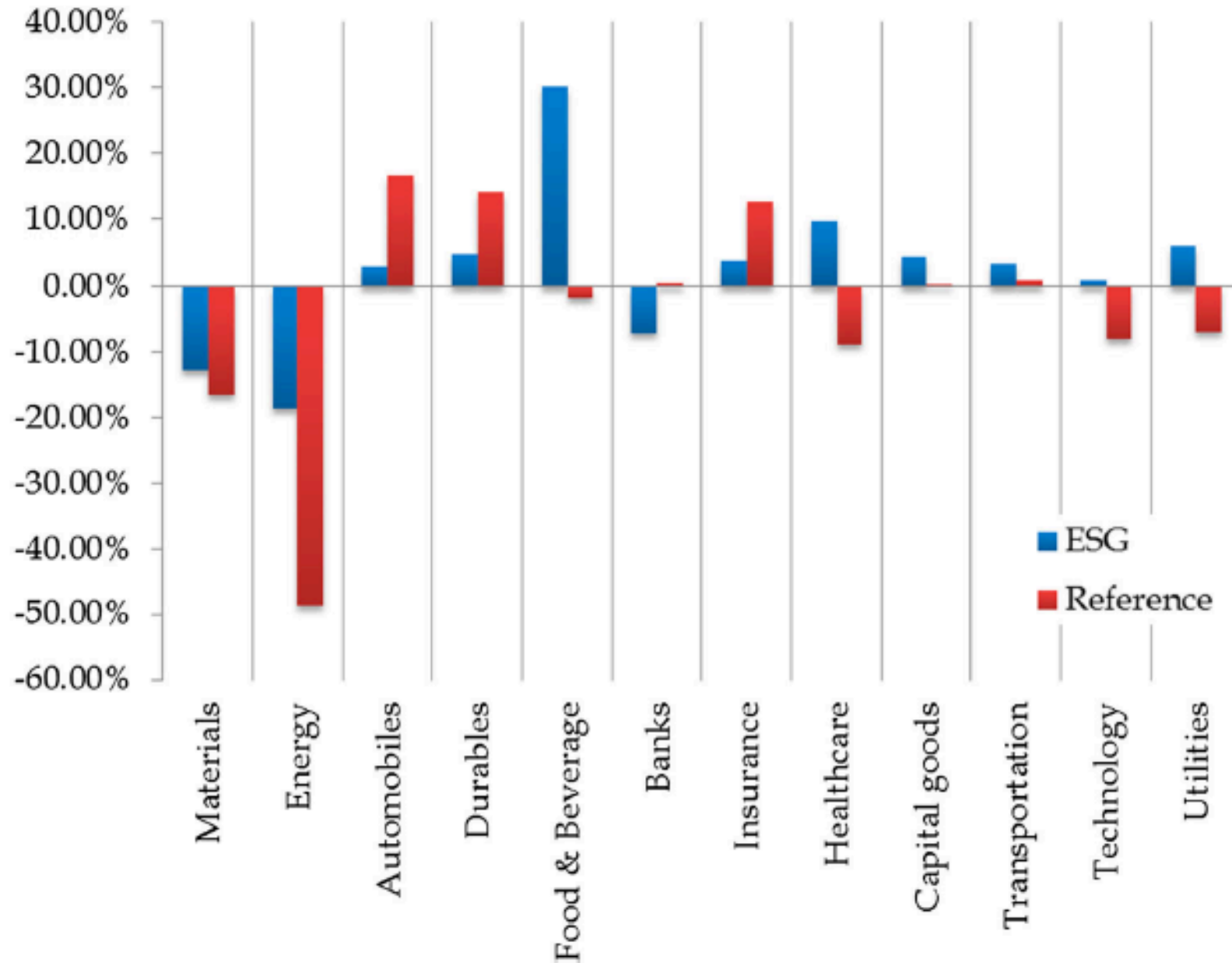


Figure 2. Annualized return comparison between ESG and reference companies.

Results: Sharpe & Treynor Ratios

#	Industry	ESG				Reference			
		Expected Returns	Volatility	Sharpe	Treynor	Expected Returns	Volatility	Sharpe	Treynor
1	Materials	-12.85%	30.30%	-31.91%	127.84%	-16.53%	76.73%	-20.35%	27.78%
2	Energy	-18.66%	34.77%	-44.38%	-11.11%	-48.58%	85.52%	-72.80%	-63.20%
3	Automobiles	3.05%	27.56%	9.42%	-0.52%	16.66%	47.68%	39.40%	82.28%
4	Durables	4.87%	25.55%	24.97%	8.90%	14.03%	50.09%	23.45%	45.51%
5	Food & Beverage	30.14%	39.50%	27.82%	71.14%	-1.70%	45.60%	22.62%	21.58%
6	Banks	-7.25%	29.80%	-15.96%	-2.92%	0.55%	67.63%	3.48%	24.03%
7	Insurance	3.96%	23.78%	26.34%	-1.81%	12.65%	38.67%	24.11%	-4.98%
8	Healthcare	9.67%	21.12%	57.13%	24.90%	-8.89%	60.03%	1.67%	8.62%
9	Capital goods	4.45%	25.99%	19.94%	5.80%	0.36%	48.53%	-0.34%	-10.84%
10	Transportation	3.48%	26.33%	25.38%	9.07%	0.93%	44.56%	9.24%	1.98%
11	Technology	1.02%	31.66%	4.89%	1.24%	-7.97%	64.35%	-2.13%	-30.75%
12	Utilities	6.15%	26.32%	43.23%	31.37%	-6.88%	57.31%	26.45%	20.21%

Figure 3. Summary of detailed model results.

Conclusion

