



Supply Chain Sustainability: Understanding the Financial Impact

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Abstract

The purpose of this study is to determine if there is a differential impact on the financial performance of a company between environmental and social events.

This study uses a randomization of 66 publicly traded companies within pre-determined SIC codes, split between manufacturing and retail.

The results show statistically significant results across 6 different regression models, suggesting there is a differential impact between environmental and social events. Environmental events have a bigger effect (both positive and negative) on stock price changes than do social events.

Research Question

Is there a differential impact on the financial performance of a company between environmental and social events?



Introduction

Sustainability has taken the business world by storm in the past decade with more and more organizations addressing sustainable initiatives. Historically, being sustainable was seen as a burden on companies and something that was done only if additional resources were available. Yet recent research suggests that being sustainable can lower operational costs and reduce business risks, all while being a better neighbor to society (Hubbard, 2009).

Research has focused primarily on what Supply Chain Sustainability means, and the associated benefits or costs. Another major stream of research has addressed how the reputation and social responsibility of a company can help in competitive differentiation increased performance.

The current research addresses the differential impacts of environmental sustainability vs social sustainability, which has been ignored in the literature to-date.

Methods/Analysis

The research employed secondary data: Standard Industrial Classification (SIC) codes were selected on Bloomberg based on CPG style goods, food services and producers, and apparel retailers. The database was constructed utilizing Wharton Research Data Services as the source for the independent variables, which came from the MSCI ESG KLD Social Index, an annual data set of positive and negative environmental, social, and governance corporate indicators applied to a universe of publicly traded companies. The financial data (dependent variables) was pulled using a Bloomberg Terminal provided by the financial data vendor Bloomberg L.P, which enables users to monitor and analyze historic and current financial market data.

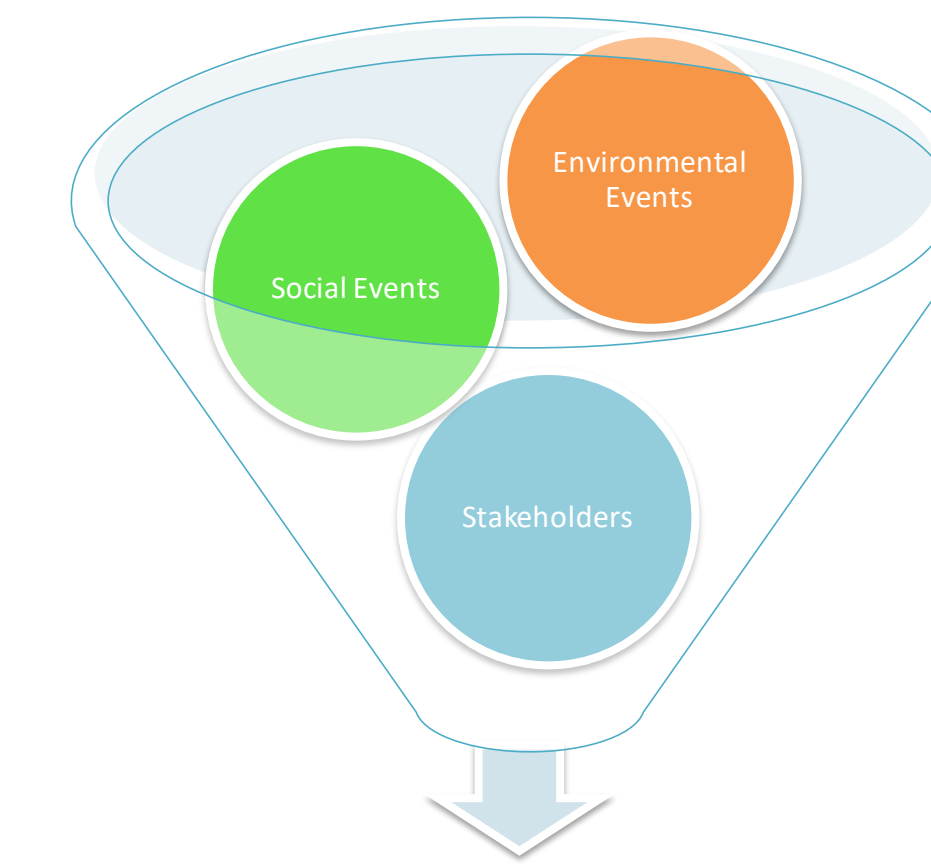
Six regression models were run via STATA for the overall model:

$$\begin{aligned} \text{Stock Change} = & B1ROE + B2ProfitMargin + B3ROS + B4Soc_Str + B5Env_Str \\ & + B6Soc_Weak + B7Env_Weak + B8Industry==1 + B9Industry==2 + \\ & B10Sum_Soc + B11Sum_Env + B12Avg_Soc + B13Avg_Env \end{aligned}$$

Dependent Variable: Change in Stock Price (%)

Independent Variables: Positive & Negative Social and Environmental Events

Controls: Increase in Profit Margin (%), Return on Equity, Return on Sales



Triple-Bottom Line

Conclusion

When considering the set of analyses holistically, results suggest that environmental events have a bigger impact than social events. This finding is important for supply chain researchers to build in to their future research endeavors.

The implications of these findings can also be substantial for supply chain managers, in terms of developing sustainability strategy and managing/mitigating sustainability-related risks. This can help on a strategic level as well as on a financial level to quantify the risk or reward from sustainability initiatives. Supply chain managers will be able to increase visibility in their decision making, and communicate supply chain sustainability benefits and risks more fully with upper level management.

Further Research

1. A larger data set could greatly increase the significance and explanatory power of the differential impact of environmental vs social initiatives.
2. A longitudinal approach to the analysis could demonstrate time-lagged effects of both environmental and social initiatives.
3. Expanding into more industries would enable insights across industrial sectors.
4. Monthly or weekly views of event occurrences would provide more insight into short term price changes.

Key References

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Results



Regression Variables Output

Industry	Regression	Variable	Coef.	P-val	R-squared
	1	Env_Str	0.0675	0.000	0.1237
	1	Env_weak	-0.0999	0.000	0.1237
	2	Env_Str	0.0507	0.000	0.0837
	3	Env_Str	0.0603	0.000	0.1213
	3	Env_weak	-0.1102	0.000	0.1213
	4	Env_weak	-0.1052	0.000	0.0690
Retail	6	Env_str	0.2111	0.0000	0.1237
Mfging	6	Env_weak	-0.0431	0.0390	0.1237
Retail	6	Env_weak	-0.0688	0.0090	0.1237

Regression Variables Output

Industry	Regression	Variable	Coef.	P-val	R-squared
	2	Soc_weak	-0.055	0.0020	0.0837
	4	Soc_Str	0.018	0.0330	0.0690
	5	Soc_weak	-0.058	0.0020	0.0421
Mfging	6	Soc_Str	0.001	0.9440	0.1237
Retail	6	Soc_Str	0.031	0.0570	0.1237
Mfging	6	Soc_weak	-0.064	0.0150	0.1237
Retail	6	Soc_weak	-0.154	0.0000	0.1237

Results

Results suggest the existence of a differential impact between environmental and social events. In all regressions run environmental strengths and weaknesses both resulted in a higher positive or negative effect on a firm's stock price. This means that environmental events have more impact on a firm's stock price than do social events.

The analysis also showed that environmental events had a greater effect on retailers than on manufacturers. Thus, retailers were more affected by a positive or negative environmental event.