Greening of Corporate Governance: Wealth Effects of Sustainability Officer Hiring

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Abstract

Purpose: This study reports on the impact that the hiring of sustainability officers by firms has on their shareholders' wealth.

Design/methodology: We searched Lexis/Nexus for all news accounts till January 2010 using the search words that include "green officer", "sustainability officers". We further restricted our sample by the availability of data in CRSP. Our screening resulted in the final sample of 13 firms for which hiring of sustainability officers was reported in the press – the event of interest for our study.

We use the most commonly employed event-study methodology based on "Eventus®" software and CRSP data provided by Wharton Research Data Services (WRDS)) to generate average abnormal returns (AR) and the cumulative abnormal returns (CAR) metric over multiple trading days and trading intervals. Next, using AR and CAR, we tested the stock price reaction of sample firms around the time when sustainability office hiring was made public.

Findings: Our stock market tests of AR and CAR show a significantly positive effect (consistent with the hypotheses) on the wealth of shareholders of firms around the time of announcement of hiring of a sustainability officer. These results are consistent with our hypotheses and appear to suggest that hiring these officers by publicly traded firms is a signal to the market that the firm is serious about its sustainability plans and actions. These results also suggest that shareholders view a firm's commitment to sustainability as a sound strategic choice that will accrue benefits for the long-term.

Research limitations: We do not view a sample of 13 firms to be small enough to mitigate the results of our study. Still, some caution is warranted. Prior studies such as Suresh et al., (2007) use a smaller sample than ours. They employ event study methodology to examine the social cost of litigation using a sample of U.S. Big 3 auto makers and Japanese Big 3 automakers. A study on similar lines (using roughly similar size sample) was conducted earlier by Prince and Rubin (2002).

Originality/value: No prior evidence, based on extant literature, exists that documents the direct link between a firm's commitment to sustainability (for example, hiring of sustainability officers) and increase in its market value.

Introduction

According to *1987 Brundtland Report, Our Common Future* (World Commission on Environment and Development, 1987), the concept 'sustainability development' is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (p.8). An expanded view advocates that businesses should develop their long-term strategic values on the notion of *triple-bottom-line*. Recent research has identified a framework that suggests that beyond a concern for value-adding financial performance, firms should consider how their activities impact the social and ecological dimensions of their actions (see, for example, Savitz &Weber, 2006; Elkington, 1998). Epstein & Roy (2003) outline nine principles of sustainability performance of businesses. These principles should form the basis of firms' dealings in areas of ethics (setting ethical standards), governance (accepting fiduciary duties), transparency (providing relevant disclosures), business relationships (adopting fair-trading practices), financial returns (earning competitive returns), community involvement/community development (developing a mutually beneficial relationship), value of product and services (delivering highest value to customers), employment practices (striving for empowerment), and protection of environment (incorporating sustainable development measures).

Extant research provides mixed evidence regarding the positive relationship between sustainability development and firm performance (see more in Orlitzky, 2008; Vogel, 2005; Orlitzky et al. 2003; Margolis and Walsh, 2003). It appears that firms have begun to give serious attention to the frequently cited three-dimensional perspective: people, planet, and profit – *the triple bottom line*. The purpose of this study is to provide direct evidence that these corporate initiatives toward sustainability development are valued by market participants. The motivation of this paper stems from a recent increase in number of firms hiring sustainability officers. Most of these hiring are also associated with the creation of such a new corporate management/governance position itself. These officers have varied roles in the firms. Thus, their impact may be difficult to quantify. A direct way to test the impact of initial hiring is to determine if this event is value by investors. If a firm considers the appointment of a

sustainability officer to be relevant enough to be mentioned in the public press, then it may be relevant for shareholders as well.

Prior research shows that executive officer's hiring or firing is valued by the stock market (Ghani and Sherma, 2010;Friedman and Singh, 1989; Mian, 2001; Shen and Canella, 2003). Thus, hiring of these officers is a signal to the financial markets that the firm is serious about sustainability issues. Some samples of public disclosures are as follows:

> "Flowserve Corporation (NYSE: FLS), a leading provider of flow control products and services for the global infrastructure markets, today announced that Lars E. Rosene has been named chief sustainability officer in addition to his current role leading global communications and public affairs. In his new role as chief sustainability officer and vice president public affairs, Rosene is responsible for driving the implementation and management of the company's sustainability and social responsibility efforts, while continuing to maintain oversight of the company's internal communications, global reputation, government affairs and corporate brand management initiatives. He will continue to report to Lewis Kling, Flowserve President and Chief Executive Officer."

> "SAP AG (NYSE: SAP) today announced a long-term strategic focus on sustainability, covering both its own operations and customer solutions for more sustainable business practices. First, to help its customers with their sustainability efforts, SAP, together with TechniData AG, unveiled expanded solutions for environment, health and safety (EHS) management. In addition, to demonstrate its commitment to sustainable operations internally, SAP announced it will reduce its greenhouse gas emissions down to its year-2000 levels by the year 2020. And, moving forward, SAP announced that its sustainability efforts will be led by a newly formed cross-functional sustainability organization headed by SAP's first chief sustainability officer."

We use the most commonly employed event-study methodology to examine the stock price reaction of sample firms around the public announcement of hiring of these officers. Our stock market tests show a significantly positive effect on the wealth of shareholders of sample firms around the disclosure of hiring of sustainability officer. These strong results suggest that shareholders view a firm's commitment to sustainability as a sound strategic choice that could accrue benefits for the long-term.

We organize the rest of our paper as follows. The testable hypotheses are developed and formed in the next section. The sample selection criteria and event study methodology are presented in section three. Section four provides the empirical testing of events and discussion of results. The final section presents the conclusion of our results.

Hypothesis Development

There are only a handful of studies that investigate the association between corporate sustainability practices and changes in shareholder wealth (Tsai, 2007; Karlson and Chakarova, 2008; Cheung, 2010). The results of these studies are mixed to insignificant. Tsai (2007) analyzed the effect of price reaction of US stocks' based on their inclusions or exclusions from Dow Jones Sustainability World Index (DJSWI) for the 2002-2006 period. Tsai (2007) documents no significant price reaction for index inclusion firms, whereas he reports a significantly negative price reaction for index deletion firms. Karlson and Chakrova (2008) report no significant price effect for the full sample for both index addition and deletion of firms. Cheung (2010) examined the price reaction of stocks traded on the US stock exchanges based on their inclusion and exclusion DJSWI over the 2002 to 2008 period. Cheung failed to "find any strong evidence that announcement [of inclusion or exclusion] per se has any significant impact on stock return and risk." Our study is different from the above three in that we investigate the stock market reaction of a firm specific event that directly captures the overall change in the strategic focus of the firm – hiring of the chief sustainability officer.

According to Epstein (2008), there are four main reasons as to why firms would chose sustainability to be one of their 'core' value drivers. First, regulations concerning the environment and corporate social responsibility in North America and across Europe have significantly heightened the noncompliance cost for impacted firm. Second, a firm's high sustainability profile builds reputation among stakeholders which in turn enhance growth opportunities. Third, enhance corporate social responsibility reputation impacts both revenues and costs in a very favorable way. Fourth, a sustainability focus transforms the whole corporate culture and makes management more sensitive to the moral and societal obligations of the firm.

For the purpose of our study, we posit the belief that hiring of sustainability officers can affect the value of the firm by impacting cost of capital and future cash flows. That is, an emphasis on sustainability programs may help the firm use its resources efficiently, reduce its noncompliance costs, and improve firm's reputation among its customers, investors, and other stakeholders, thereby increasing sales and/or reducing the cost of capital. However these benefits will occur over an extended period of time. It would be difficult to attribute any actual change in

sales or cost of capital to the hiring of sustainability officer. Still, an expected increase in sales and an expected reduction in cost of capital will enhance the value of the firm. Stock prices are present value indicators of future cash flows. Any increase in expected cash in-flows and/or reduction in cost of capital will positively impact this present value thereby increasing the stock prices. If the hiring of the sustainability officers is overall positive for the firm, then the stock price reaction also will be positive. This expectation leads us to derive the following testable hypothesis:

H1a: ***Announcements of hiring of sustainability officers have a positive effect on the average security returns (AR) of the hiring firms.***

Value relevant information regarding hiring of sustainability officer should be rapidly and fully impounded in stock prices. It is fairly likely that such price impact will occur some days before the actual news release. In fact, prior evidence in financial literature supports this *information-leakage* phenomenon (see more on this in Xi & Heidle, 2004; Mac 2002). We incorporate the cumulative abnormal returns (CAR) metric in to our research design because it captures the abnormal returns changes over various trading intervals. We interpret CAR to be firms' mean deviation of returns from their normal market association. On average, we hypothesize that the CAR will be zero. The presence of a significant and positive or significant and negative non-zero CAR over various chosen event-related intervals would demonstrate that market participants had a significant wealth gain or loss. The expectation is presented below:

H1b: ***Announcements of hiring of sustainability officers have a positive effect on the average cumulative security returns (CAR) of the hiring firms.***

Sample Selection

We searched Lexis/Nexus for all news releases using the search words that include "green officer", "sustainability officers". We identified press releases which were related to the hiring of green or sustainability officers. A few samples of such news items are provided earlier in the introductory section of this paper. The first hiring announcement by a publically traded firm surfaced in the year 2004. Our search continued till it ended in February 2010. We deleted any hiring by governments and nonprofits. We also had to exclude from our sample those firms whose returns data was not available in CRSP. Our screening resulted in the final sample of 13 firms that disclosed hiring of sustainability officers – the event of interest for our study.

[Insert Table 1 About Here]

Table 1 lists sample firms and the industry affiliation based on 4-digit SIC. As shown in tabular data, about 30 percent of the firms belong to materials & Chemical industry group, about 45 percent are in the Communication & Transportation industry, and the remaining three firms represent very diverse industries (that is, software, REIT, and pumping equipment).

Methodology

In line with prior capital market research, we utilize a *standard* event-study methodology espoused by Dodd and Warner (1983) and Travalos (1987). According to them, the *market model* presents a linear relationship between the daily stock return of firm i and the returns on a market portfolio using ordinary least square regression (OLS). By using market portfolio (equally weighted or value weighted index) in the regression equation, the researcher can control for the overall stock market changes in returns of all stocks that occur concurrently but may not be related to primary test event of the study (Schwert 1981). This methodology is further elaborated in MacKinlay (1997) and is consistent with the work of others who have investigated the stock market reaction of specified value relevant events without employing a control sample. A few of the many examples include Fraser et al. (1997) on the wealth impact of interstate branching regulation; Ghani et al. on the wealth effects of the Passage of the Nutrition Labeling and Education Act of 1990 for a sample of large U.S. multinational food companies; and Madura et al. (1993) on market response to the thrift bailout, etc.

We use "Eventus®" software and CRSP data from Wharton Research Data Services (WRDS) to test hypotheses of our study. We use Eventus® to retrieve raw data and carry out analysis. We employ Eventus® user guide (Cowan, 2007) that describes in detail the methodology and the statistics employed in our paper. In the market model, the stock returns are modeled as a single index model as follows:

$$R_{it} = \alpha_i + b_i R_{mt} + \varepsilon_{it} \qquad (1)$$

Where, R_{it} is the returns of security i on day t, R_{mt} is the return on the index on day t and b_i is the sensitivity of the stock to the index.

[Inset Figure 1 About Here]

First, we use an ordinary least square regression model to estimate coefficients of the model over the estimation period. The estimation period contains the past *ex post* stock returns. As displayed in Figure 1, the estimation period chosen for our study begins 150 trading days before the event date (day 0) and ends 31 trading days before the event date (t = -150 to t = -31). As a next step, we employ the estimated model to calculate the unexpected (abnormal) returns during the prediction period (event period) for the trading days -5, 0, and +5, where day 0 is the test (event) date. For the purpose of our study, the test date is the day of the public disclosure of a sustainability officer hiring.

In order to control for information leakage before the event date, we truncate the estimation period 31 trading days prior to the event date. In order to calculate abnormal stock returns, we take the difference between the actual and expected returns from the market model for a sample of N firms as follows:

$$AR_t = \frac{1}{N}\sum_{i=1}^{n}[R_{it} - \hat{\alpha}_i - \hat{b}_i R_{mt}],\ t = -1,\ldots.+1 \qquad (2)$$

Where:

AR_t = abnormal return for period;

R_{it} = return on security i for period t;

R_{mt} = return on the value-weighted market portfolio for period t; and

$\hat{\alpha}_i$, $\hat{b}_i$ = ordinary least-squares estimates of the market-model parameters.

We calculate the average cumulative abnormal returns ($CAR_{T1,T2}$) by adding the AR_t's over different intervals that range between day -5 to day +5 or we move to a larger interval if it is necessary. We expect AR_t and $CAR_{T1,T2}$ values to be equal to zero on average.

Empirical Results

Abnormal Returns Test and Wealth Effects of Sustainability Officer Hiring

We use the sample of 13 firms, which reposted the hiring of sustainability officers, to examine the price reaction around the disclosure date. We analyze the average daily abnormal returns (AR) and the percentage of negative returns for announcement periods -5 to +5 relative to a particular event day (t = 0). We also report the cumulative average abnormal returns (CAR) and the percentage of negative cumulative average abnormal returns over various trading intervals (-5 through +5). We employ the Generalized Sign Z statistic to test whether the proportion of positive abnormal returns and cumulative abnormal returns clustered around event date are different from zero and are significant.

Abnormal Returns Test Results

[Insert Table 2, Panel A About Here]

We identified hiring of sustainability officer by firms to be the event of interest for our study. Table 2 reports the results for this event. We expect a positive reaction in the share prices of hiring firms around this event. The average abnormal returns of the firms on day 0 (event day) are positive 1.48 percent and are highly significant at the .01 level or better with Z-values of 2.789. The abnormal returns on day 0 are significantly different from zero at the 0.01 level. Also, on this same day, 85 percent of the stocks in the sample post a positive return with a p-value of .01 or better. The results indicate that investors reacted positively to the hiring of sustainability officers' news by firms. These results support our first hypothesis (H1a).

Cumulative Abnormal Returns (CAR) Test Results

[Insert Table 2, Panel B About Here]

We also examine the hiring event using CAR over different trading intervals. As shown in Table 2, Panel B, the sample firms experience significant positive CARs around various trading intervals. For example, the CARs for trading intervals (-3, 0 and -1, 0) are positive at 1.77 and 1.72 percent with a Z-values of 2.289 and 1.676, respectively. Both of these CARs are also highly significant at the .01 and .05 levels or better, respectively. In addition, for these same days, 84.62 percent and 69.23 percent of the stocks in the sample show a positive return with a p-value of .01 and .05 or better, respectively. The results suggest that news about hiring decisions by sample firms leaked prior to the announcement and had an overall positive wealth impact for

shareholders of these firms. Overall, our second hypothesis (H1b) is supported by these statistical results.

Cumulative Abnormal Returns (CAR) Event Window Chart

[Insert Figure 2 About Here]

The CAR analysis in Figure 1 shows returns movement over interval day -5 to day +5. CAR experienced a significant upward shift on day -1 and day 0 and kept its climb upward till day 1. Though, CAR dropped later but stayed at a new level and above zero affirming the results proposed in hypotheses H1a and H1b.

Conclusion

The purpose of our study is to test, in a direct way, the impact of firms' hiring decisions of sustainability officers on the wealth of shareholders. We find evidence, based on a standard event-study methodology that stock market responded significantly positively for our sample firms around the announcement of hiring of sustainability officers. These results indicate that shareholders perceive a firm's commitment to sustainability as a sound strategic choice that could reap benefits for the long-term.

A recent set of papers on sustainability takes an expanded view and advocates that businesses should streamline their strategic goals on the basis of 'triple bottom line.' The triple bottom line view is based on the premise that firms should not only be concerned about their financial performance but also how their profit maximizing efforts impact the social and ecological dimensions of their actions (see more on this in Savitz &Weber, 2006; Elkington, 1998). The hiring of sustainability officers by firms appear to be an explicit recognition of this three dimensional perspective – *the triple bottom line*.

Limitations

We do not view a sample of 13 firms to be small enough to mitigate the results of our study. Still, some caution is warranted. Prior studies such as Suresh et al., (2007) use a small sample. They employ event study methodology to examine the social cost of litigation using a

sample of U.S. Big 3 auto makers and Japanese Big 3 automakers. A study on similar lines was conducted earlier by Prince and Rubin (2002).

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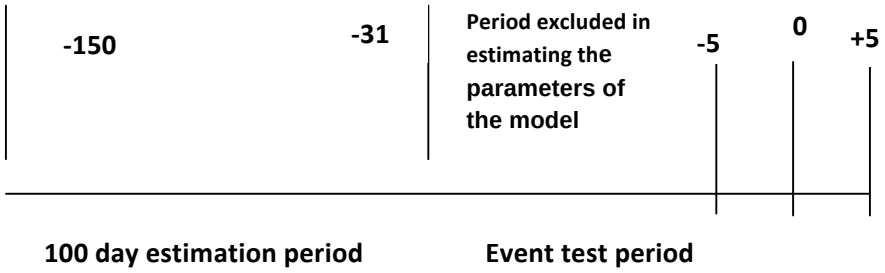
Table 1

Table contains the list of firms and dates of the first public available announcement of the hiring of Green/Sustainability officers. Date is the date of the first publically available announcement. Industry classification is determined through the SIC code.

Date	Firm	Position	Industry Classification	SIC Code
6/30/2004	Du Pont E I De Nemours & Co	Chief Sustainability Officer	Plastics Materials, Synthetic Resins,and Nonvulcanizable Elastomers	2821
5/16/2007	Dow Chemical Co	Sustainability Officer	Plastics Materials, Synthetic Resins, and Nonvulcanizable Elastomers	2821
5/20/2007	Genesys S A	Green Officer	Communications Services, Not Elsewhere Classified	4899
6/3/2007	Owens Corning New	Chief R & D And Sustainability Officer	Asphalt Paving Mixtures and Blocks	2951
11/1/2007	Regency Centers Corp	Sustainability Officer	Real Estate Investment Trusts	6798
12/13/2007	Norfolk Southern Corp	Sustainability Officer	Railroads, Line-Haul Operating	4011
4/7/2008	Covanta Holding Corp	Chief Sustainability Officer	Refuse Systems	4953
8/13/2008	Albemarle Corp	Chief Sustainability Officer	Chemicals and Chemical Preparations	2899
9/4/2008	Y R C Worldwide Inc	Chief Sustainability Officer	Trucking, Except Local	4213
11/13/2008	Siemens A G	Chief Sustainability Officer	Electric Services	4911
2/17/2009	Flowserve	Chief Sustainability Officer	Pumps and Pumping Equipment	3561
3/2/2009	SAP	Chief Sustainability Officer	Prepackaged Software	7372
5/14/2009	AT&T	Chief Sustainability Officer	Telephone Communications, Except Radiotelephone	4813

Figure 1: Event and Estimation Period around sustainability office hiring



Where: Day (0) is the day that sustainability hiring announcements become public.

Table 2

Daily Average Abnormal Returns (AR), Proportions of Positive Returns, Cumulative Average Abnormal Returns (CAR), and Proportions of Positive Returns of Firms for hiring's of Green/Sustainability Officers

Panel A: Daily Average Abnormal Returns (AR) and Proportions of Positive Returns

Event Day	AR%	Gen Sign Z	% Positive
-5	-1.28%**	-0.549	38.46%
-4	0.87%	1.12	61.54%
-3	-0.18%	0.564	53.85%
-2	0.23%	0.007	46.15%
-1	0.24%	0.564	53.85%
0	1.48%**	2.789***	84.62%***
1	0.21%	-0.549	38.46%
2	-0.87%	-0.549	38.46%
3	0.30%	0.007	46.15%
4	-0.59%	-1.106	30.77%
5	0.65%	0.564	53.85%

Panel B: Cumulative Average Abnormal Returns (CAR), and Proportions of Positive Returns

Trading Interval	CAR%	Gen Sign Z	% Positive
(-5,0)	1.36%	1.12	61.54%
(-4,0)	2.64%**	1.676	69.23%**
(-3,0)	1.77%	2.789***	84.62%***
(-2,0)	1.95%*	2.789***	84.62%***
(-1,0)	1.72%**	1.676**	69.23%**
(-1,+1)	1.94%	1.12	61.54%
(0,+5)	1.19%	1.12	61.54%

**Significant at $p \leq .05$.

***Significant at $p \leq .01$.

Figure 2

Cumulative Average Abnormal Returns (CAR): Wealth effects around event date, day 0 – the day sustainability officer hiring news become public for trading interval -5 to +5.