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Market Response to Corporate Social Responsibility Rankings

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Honors Senior Project

Market Response to Corporate Social Responsibility Rankings

Abstract

There have been many opinions on corporate social responsibility (CSR) and whether it has a positive impact on a company's financial status. External pressures are certainly present to encourage these behaviors, but the bottom-line impact is still much debated. By examining the long-term abnormal returns of companies before and after being listed in Forbes' article titled "America's 100 Best Corporate Citizens" we are able to understand whether being a socially responsible company results in better stock market returns. We also measured the effect the rankings had on riskiness. We found that in the long-term, companies in the rankings have significantly lower abnormal returns when compared to the market as a whole.

1. Introduction

There have been many opinions on corporate social responsibility (CSR) and whether it has a positive impact on a company's financial status. External pressures are certainly present to encourage these behaviors, but the bottom-line impact is still much debated. To examine this studies have been done comparing socially responsible indices to the rest of the market and studying the effects of their entrance and exit into

and out of the index, measured returns after publications of CSR reports by companies, and measured the effects of CSR on the variance of the stock.

Previous studies have often found that socially responsible corporations do have some sort of financial advantage. Becchetti found that companies whose stocks were dropped from a socially responsible index, the Domini 400, experienced significant negative abnormal returns after the announcement was made (2009). Another study, done by Kato, showed that after a CSR report is published, there is a slightly positive abnormal reaction in share price a few weeks after the event (2011) which suggests that there might be different reactions to CSR depending on the length of time from the CSR event.

Other studies have looked into the effects of social responsibility on the riskiness of a company. According to Albuquerque, there is a four percent difference between the betas of a good CSR company and a bad CSR company (2015). A lower beta can help lower the cost of capital for a company in addition to helping it weather the storm during poor economic conditions. CSR measures can help make a company less risky.

In this paper we examine the abnormal returns and the riskiness of a company in the stock market based on a yearly publication of corporate social responsibility rankings. In addition to studying how a company's presence in the rankings affects returns and risk, we also examine movement within the rankings from year to year affects returns and risk. The paper will cover both short and long-term returns as a result of the CSR ranking publications. Our study is the first to examine each of the four non - diversifiable risk dimensions (market, size, value-growth or book to market ratio,

and momentum) from the Fama French model (1992). In addition, our study is the first to look at the long-term abnormal returns on the owners of the company.

2. Data

The sample of companies was found from a top 100 socially responsible companies list published on forbes.com. In the years used for this study, 2009, 2010, 2011, 2014, and 2015, Forbes used Corporate Responsibility Magazine's rankings of the top 100 socially responsible companies. The sample consists of 219 companies.

CR Magazine collects 298 data elements that fall into seven different categories to come up with their rankings for each year. The seven main categories they use are climate change, employee relations, environmental, financial, governance, human rights, and philanthropy and community support. In order for a company to be eligible for the sample, they must be part of the Russell 1000 index. In other words, they must be a fairly large company that is traded on the American stock market (CR Magazine Website).

The data on stock returns for companies in our sample is from the University of Chicago CRSP database and the data on Fama and French (1993) factors is from the Kenneth French website at Dartmouth College.

3. Methodology

For assessing the market response to CSR rankings we compute abnormal returns in accordance with the Fama-French (1993) model augmented with the momentum factor as in Carhart (1997). As per this model, the abnormal return on a

given stock for period “t” is computed as the difference between the realized return on that stock for period t minus the return expected on that stock for period t. Expected return are computed based on the Fama-French model via assuming the following return generating process,

$$R_{jt} = a_j + B_{mj}(R_{mt}) + B_{sj}(SMB_t) + B_{hj}(HML_t) + B_{uj}(UMD_t) + e_{jt}$$

Where subscript j stands for stock (of company) j and t represents time, so R_{jt} represents return on the shares of company j at time t. R_{mt} is the return on the equity market at time t (value-weighted CRSP index return), SMB_t is the return on small stocks minus the return on big stocks (small minus big), HML_t is the return on high book-to-market equity ratio stocks minus the return on low B/M equity stocks (high minus low), and UMD_t is the return on winner stocks (up stocks during the past year) minus the return on loser stocks (down stocks during the past year) and hence is Up minus Down and e_{jt} represents random error. See Fama and French (1992, 1993, 1995, 1996, 2004) and Carhart (1997) for more details about the model.

The parameters of the above model are computed by running ordinary least squares regressions using either daily data for time-period immediately surrounding the date of CSR or by using monthly data for computing long-term abnormal returns extending from 3 years before to 3 years after the date of CSR ranking. The estimation period for computing daily abnormal returns is day (-20, -271) relative to the day of CSR ranking (day 0), and the estimation period for computing long-term abnormal returns is month (-2, -37) relative to the month of CSR ranking.

For comparing changes in risk characteristics of companies pursuant to CSR ranking, we compare the risk characteristics during the 3 years before and 3 years after

the ranking (data for the month of ranking, and for the month before and after the ranking are ignored in this analysis). Here we compute the slopes, i.e., betas in the above Fama French model based on the 36 month period ending one month prior to ranking and 36 month period starting one month after the month of ranking. The betas are considered as sensitivities to the four non-diversifiable risk dimensions (market, size, book/market, and momentum) associated with stock returns. We also compare changes in the volatility of returns (standard deviation of returns), r-square values in the above regressions for computing betas, and the standard error of estimate for assessing changes in the total risk, changes in the proportion of risk that is non-diversifiable, and company-specific risk before and after the CSR ranking.

4. Findings

We found that significant differences in both abnormal returns due to the changes in CSR rankings. Abnormal returns have a statistically significant inverse relationship to the whether a company is listed in the CSR rankings. The abnormal returns varied with the amount of time before or after the announcement. We found that abnormal returns were significantly higher (+13.7%) 36 months before the announcement of a company being included on the list (see table 3). Five days before publication of the rankings, we found companies to have a -0.7% lower abnormal return (see table 1). Between three and ten days after publication of the rankings, companies experienced a positive bump in their abnormal returns of +0.9% (see table 1). When looking at the long term effects of CSR rankings, we found a significantly negative

result. 36 months after the announcement of the rankings, companies that are listed experienced -8.6% abnormal returns (see table 2).

We also found that measures of risk were significantly affected when comparing betas and volatility of a company before and after their listing in the CSR rankings. Three of the four non-diversifiable risk dimensions (size, book/market, and momentum) saw significant differences before and after publication (see table 4). Additionally, the overall volatility dropped from 33.7% to 27.1% which is a statistically significant result.

5. Conclusion

This study makes a contribution to the discussion on the financial results of corporate social responsibility by examining the stock market's reaction to changes in a publicly available listing of the top 100 socially responsible companies each year. We found that three years prior to appearing on the list, a company will be doing very well compared to the market but three after being listed, the abnormal returns are significantly lower than the market. We also found that overall; stocks become less risky after being published in the CSR rankings. These results open the door for a few additional areas of research. In the future we would like to research the reasons behind the long-term drop in abnormal returns as well as the reason for the drop in riskiness. This research shows that the financial impact of corporate social responsibility is still very much a debatable issue and is something that managers and shareholders should watch closely.

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Table 1
Announcement Period Abnormal Returns

Days	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Positive: Negative	Time- Series t-Statistic	Cross-Sec t-Statistic
(-10, +10)	0.82%	-0.16%	106 : 113	1.136	1.348
(-5, +5)	0.01%	-0.51%	96 : 123	0.017	0.023
(-3, +3)	-0.24%	-0.03%	108 : 111	-0.585	-0.710
(-1, +1)	-0.23%	-0.18%	98 : 121	-0.832	-0.809
(0,0)	0.04%	-0.17%	98 : 121	0.253	0.231
(-10, -3)	-0.02%	-0.18%	105 : 114	-0.040	-0.043
(+3, +10)	0.92%	-0.10%	107 : 112	2.066*	1.850*
(-10, -1)	-0.56%	-0.23%	105 : 114	-1.128	-1.298
(-5, -1)	-0.72%	-0.45%	92 : 127<	-2.032*	-2.219*
(+1, +3)	0.50%	0.22%	120 : 99)	1.831\$	1.801\$
(+1, +5)	0.69%	-0.06%	104 : 115	1.944\$	2.053*
(+1, +10)	1.34%	0.38%	120 : 99)	2.694**	2.716***

*, **, and *** indicate significance at the 10%, 5%, and 1% levels respectively

<, <<, <<< indicates significant difference in proportions at the 10%, 5 %, and 1% levels respectively

Table 2**Post-Announcement Cumulative Abnormal Returns**

Months	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Positive: Negative	Time-Series t-Statistic	Cross-Sec t-Statistic
(-1, -1)	-0.99%	-0.94%	98 : 121	-1.576	-2.045*
(0, 0)	0.85%	0.28%	114 : 105	1.347	1.542
(+1, +1)	-0.29%	-0.15%	107 : 111	-0.464	-0.301
(+1, +12)	-1.87%	-1.37%	106 : 112	-0.857	-0.904
(+1, +24)	-4.67%	-0.73%	107 : 111	-1.511	-1.529
(+1, +36)	-8.64%	-1.99%	104 : 114	-2.282*	-2.234*

Table 3**Pre-Announcement Cumulative Abnormal Returns**

Months	Mean Cumulative Abnormal Return	Median Cumulative Abnormal Return	Positive: Negative	Time-Series t-Statistic	Cross-Sec t-Statistic
(-36, -1)	13.66%	14.27%	138 : 81>>>	6.642***	2.926**
(-24, -1)	10.57%	6.47%	131 : 88>>	6.297***	2.393*
(-12, -1)	2.85%	1.81%	115 : 104	2.404*	0.884

Table 4**Differences in Risk Characteristics Before and After CSR Ranking in top 100**

Risk Characteristic	Before	After	Parametric p-value	Non-Parametric p-value
Volatility (%)	33.67	27.05	<0.0001	<0.0001
Idiosyncratic Volatility (%)	22.41	17.35	<0.0001	<0.0001
Market Beta	0.856	0.903	0.17	0.29
Size Beta	0.141	-0.014	0.04	0.01
M/B Beta	0.038	-0.114	0.01	0.01
Momentum Beta	-0.056	0.010	0.04	0.00
R-square	0.472	0.505	0.01	0.01