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Does Corporate Social Responsibility Reporting Lead to Less Speculative Trading?

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Abstract

I compare speculative bubble formation between a group of corporations in the S&P 500 that score high on corporate social responsibility versus the S&P 500 as a whole. I find that a portfolio of highly ranked CSR firms have a smaller sample likelihood of exhibit speculative bubbles.

Keywords: speculative bubbles, corporate social responsibility, ADF tests

1. Introduction

There have been numerous empirical studies of the effects of corporate social responsibility (CSR) practices on financial performance, capital costs, risk and the value of the firm. Surveys on the effect of CSR on corporate financial performance (Margolis & Walsh, 2003; Carroll & Shabana, 2010; Malik, 2015; Wang, Dou, & Shenghua, 2016) find mixed evidence, but ratiocinate that the conclusive effect of CSR on firm valuation is positive. Goss and Roberts (2011) identify that firms with higher CSR-related expenses and firms that score low on CSR have higher costs of borrowing, which implies that there are diminishing returns to CSR activities lowering the cost of borrowing. Plumlee et al. (2010) and El Ghoul et al. (2011) find that firms with exceptional CSR ratings also have lower equity costs. Dhaliwal et al. (2011) conclude that firms with high costs of equity that initiate more extensive CSR disclosure have lower costs of equity in years after initiating more disclosure. Concentrating solely on the environmental dimension of CSR, Chava (2014) discovers that firms with higher CSR performance have higher returns for shareholders than firms with lower environmental performance. In addition, Cheng et al. (2014), find that firms with higher CSR performance are less capital constrained in issuing new capital, and Attig et al. (2013) uncover that firms that rate high in CSR also enjoy better credit ratings.

Bouslah et al. (2013) observe that firm riskiness increases as concern about its corporate governance, employee relations, and diversity grows. Fatemi et al. (2009) discern that compared to a control group, firms in the Domini social index 400 stocks exhibit similar market risk characteristics, but lower idiosyncratic risk. Lee and Faff (2009) observe that CSR leading firms exhibit lower idiosyncratic risk and they note that idiosyncratic risk could be priced within the equity market.

With respect to valuation, it would be assumed that higher ranked corporate social responsibility practicing firms would have a lower capital cost than lower ranked CSR firms, but the results are mixed. Examining firm valuation in the 1970's, Alexander and Buchholz (1978) find that there is an insignificant relation between CSR practices and firm valuation. McGuire et al. (1988) find that CSR is not closely related to subsequent firm performance and Balabanis et al. (1998) find an inconsistent relationship between CSR practices and firm value. Konar and Cohen (2001), looking at environmental performance only, find a negative effect of environmental outcomes on firm valuation. Barnea and Rubin (2010) find that there is a positive relationship between CSR-related expenditures and the value of the firm, but the relationship becomes negative when these expenditures exceed a certain level. Servaes and Tamayo (2013) find firm CSR activities increase the firm value when occurring with high public awareness of a firm's CSR activities, while Wagner (2010) finds similar results for environmental performance.

There is a large and growing literature on the effects of CSR on financial performance. However, there is very little on whether investors use the non-financial disclosures of CSR firms in making investment decisions. Dhaliwal et al. (2012) discover that that issuing stand-alone CSR reports leads to lower forecasts errors by

financial analysts of future earnings per share. The results are robust controlling for various factors, implying that CSR reports play a complementary role to financial statements.

2. Method

While the effects of CSR on firm financial performance is well investigated, the effect of CSR on speculative trading has not yet been investigated. Determining if financial prices have been the subject of speculative bubbles is a recent strand of literature. One of the first tests for rational bubbles is inaugurated in Diba and Grossman (1988), who use a reduced form stationarity test on stock prices and observed fundamentals. More recently, new rational speculative bubble detection methodologies were developed by Phillips et al. (2011) and Phillips et al. (2015). The methodologies are based on rolling recursive Augmented Dickey-Fuller (ADF) unit root tests that detect rational bubbles in times series and also allows the date determination of bubble occurrence. These methodologies make use of the ADF unit root test (right-tail) where the null hypothesis is of a unit root in the time series and the alternative is of a mildly explosive series of processes. The four tests used in this paper, and their null and alternative hypotheses are presented in Table 1.

Under general regularity conditions, the SADF and GSADF procedures can also be used, as a date-determining method that estimates consistently the origination and termination of speculative bubbles. If the null hypothesis of a unit root is rejected by either test, one can estimate the end and start points of specific bubbles.

Table 1. The four tests and their null and alternative hypotheses

Test	Null Hypothesis	Alternative Hypothesis
ADF	Unit Root	Explosive Process
Rolling ADF (RADF)	Unit Root	Explosive Process
Supremum ADF (SADF)	Unit Root	Single periodically collapsing bubble period
Generalized Supremum ADF (GSADF)	Unit Root	Multiple periodically collapsing bubbles

The formation of speculative bubbles has long been a focus of the field of experimental economics. In a recent review of the literature, Powell and Shestakova (2016) report that the literature finds that receiving more information on dividends leads to less bubble formation.

For comparison purposes, I use the price-dividend ratios of the S&P 500 (S&P) monthly index and the Dow Jones Sustainability Index United States (DJSIUS). The S&P index is well-known in the literature. The Dow Jones Sustainability Indices (DJSI) are a family of CSR "Best-in-kind" indexes. The DJSI indices were launched in 1999 as the first global and national sustainability indexes and track the stock performance of leading companies in terms of social, economic, and environmental criteria.

The DJSIUS is made up of 134 companies selected amongst thousands in the United States. The methodology for selection uses the top 30% of eligible firms by score. The composition of the DJSIUS is reviewed annually by RobecoSAM CSA based on the total sustainability score and is rebalanced quarterly. Details of the scoring and the index construction can be found at http://www.sustainability-indices.com/index-family-overview/djsi-family-overview/index.jsp

In order to construct the price-dividend ratio for the DJSIUS, I use data for the individual stocks from Yahoo! Finance and follow the methodology for construction at https://us.spindices.com/documents/methodologies/methodology-sp-us-indices.pdf. Figure 1 illustrates the price dividend ratio for both the S&P 500 and the DJSIUS.

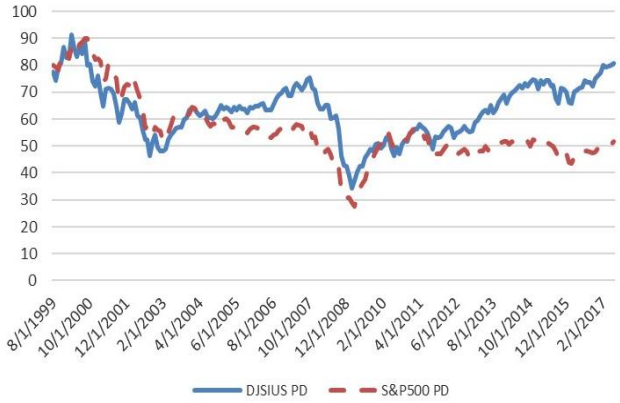

Figure 1. Price –Dividend ratios

The data extend monthly from August, 1999 to June 2017. Table 2 contains descriptive statistics of the two series.

3. Results

It can be seen in Table 2 that over the sample period the price-dividend ratio of the DJSIUS is higher on average than the S&P 500 price dividend ratio. The DJSIUS price dividend ratio also has a lower standard deviation and exhibits a more "normal" skewness and coefficient of kurtosis than the S&P 500 index price dividend ratio.

Table 2. Descriptive statistics of DJSIUS and S&P 500

	DJSIUS	S&P 500
Mean	63.632907	55.852118
Std. Dev.	10.639415	12.254588
Skewness	-0.0893472	0.9521038
Kurtosis	-0.158795	1.0686364

Table 3 exhibits the speculative bubble statistics for the two series. Also exhibited are the 90%, 95% and 99% critical values that are simulated from 1,000 replications of a wild bootstrap. The ADF statistic fails to reject the null hypothesis that both series are unit root. The Rolling ADF test finds against the null hypothesis of a unit root for both series at the 95% and 99% critical levels. The Supremum ADF test does not reject the null hypothesis for both series. The Generalized Supremum ADF test repudiates the null hypothesis for both series at the 95% critical level. Given the exclusion of the null hypothesis by the Generalized Supremum ADF test, the resulting bubble dates are identified via Figures 2 and 3 and Table 3. For the DJSIUS, the index of firms rated high in CSR activities, only one bubble is identified, a short one of one month in September 2002.

For the S&P 500 over the sample period, seven bubbles are identified. First, December 2001-Februrary 2002, then May 2002. Third, August 2002 – March 2003 and, fourth June 2006-July 2006. Then there are two multiple-year bubbles, January 2008 – January 2010 and March 2010 –April 2012, each lasting two years. The final identified bubble is October 2012- July 2013.

The dates of December 2001-February 2002 and May 2002 roughly correspond to a rally in the stock market that began after the larger correction after the end of the decade-long bull market and the September 11 attacks. The year 2002 also featured with a number of accounting scandals, when a number of corporations were forced to restate earnings.

June 2006-July 2006 corresponds with the so-called "Bernanke Panic", when Federal Reserve Chairman Ben Bernanke announced a possible rise in the federal funds rate. The rate was raised in late June, but there was wide speculation that it would be the last for some time.

The period of January 2008 – January 2010 corresponds with the Bear market of 2007-2009, when extraordinary interventions by the Government and the Federal Reserve occurred. Similar could be said of the rally of March 2010 –April 2012.

October 2012 saw a massive stock market sell-off that was followed by a rally that lasted until July of 2013.

Table 3. Speculative bubble detection statistics and critical values

	DJSIUS	S&P 500
ADF -stat	-1.736699	-2.008619
99%	0.178751	-0.163092
95%	-0.473475	-0.600682
90%	-0.770636	-0.931990
RADF -stat	2.125599	2.171342
99%	0.251210	0.688049
95%	-0.372171	-0.246251
90%	-0.774793	-0.586520
SADF -stat	-0.075700	0.363408
99%	1.447986	2.102938
95%	0.574236	1.187351
90%	0.296572	0.875560
GSADF -stat	2.367389	2.654289
99%	2.343374	3.279346
95%	1.518367	2.359443
90%	1.145734	1.768229

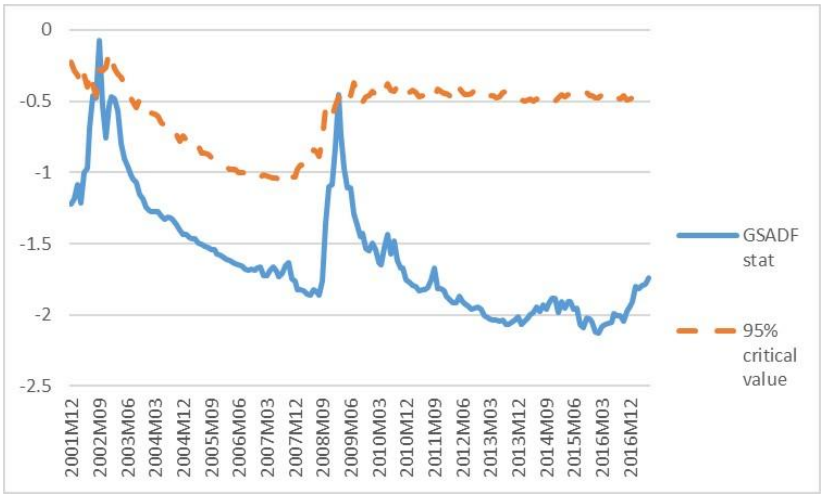

Figure 2. DJSIUS GSADF statistics and bootstrapped 95% critical values

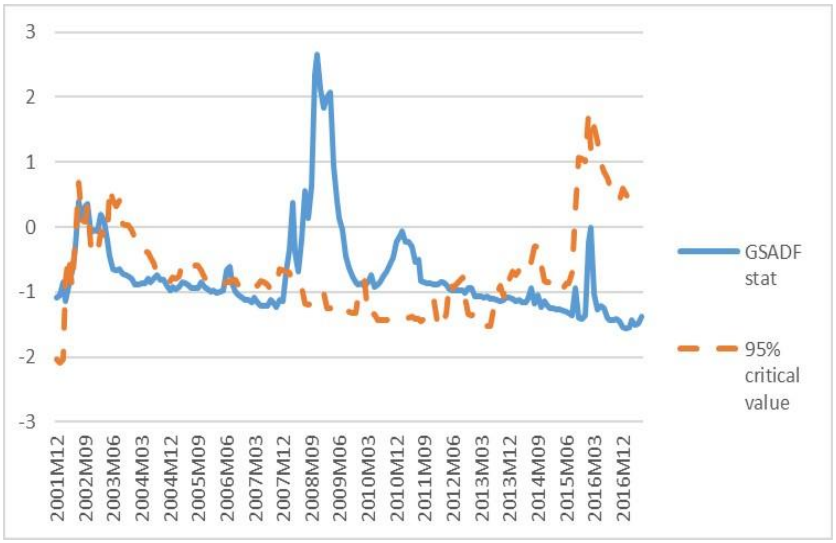

Figure 3. S&P 500 GSADF statistics and bootstrapped 95% critical values

4. Discussion

The DJSIUS and the S&P 500 are tested for the presence of speculative bubbles over the period from August of 1999 to June 2017. Speculative bubbles are found in both series. Seven bubbles are found in the S&P 500, but only one in the CSR high-scoring DJSIUS. Considering the considerable overlap in the coverage of the underlying indices, it seems reasonable to conclude that a possible reason for the difference in the number of speculative bubbles formed is due to the differences in reporting requirements between the higher scoring CSR firms in the DJSIUS. Given that the one bubble shared between the two series occurred during a time of restatement of corporate earnings due to accounting scandals would seem to buttress this hypothesis.

The estimation was performed using the Rtadf add-on for E-views written by Itamar Caspi.

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