GOING GREEN: IS IT REALLY FINANCIALLY WORTH IT?

by

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ABSTRACT

This study focused on the concept of Corporate Social Responsibility (CSR), specifically one subset called Corporate Environmental Responsibility (CER) and its relationship to both firm and stockholder profitability. Prior research has led to inconclusive results about the nature of this relationship; however, the trend seems to suggest that there is a positive relationship between being environmentally friendly and profitable. Based on Blazovich and Smith's (2013) prior research and methodology, this paper aims to prove that not only do more environmentally friendly firms perform better, but also they return more value to their stockholders. Though neither hypothesis could be proven with statistically significant data, the research does bring to light some interesting trends in the area of corporate environmental responsibility and its relationship to firm profitability.

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INTRODUCTION

"Corporate social responsibility (CSR) has moved from ideology to reality and represents an important dimension of contemporary business practices" (Lindgreen et al, 2009, p. 965). Due to recent corporate scandals, the financial crisis and the ever growing concern over environmental threats, the role of CSR in a firm's daily and long-term strategy has grown over the past decade. Critics of CSR argue that it is simply an added expense that does not contribute to the financial performance of the firm, while proponents see it as a source of innovation and efficiency and ultimately it provides a competitive advantage for those who can implement it properly in their firm's daily and long-term business strategy. This "new world of CSR" (Vogel, 2005) revolves around the idea of creating a positive link between corporate social responsibility and financial performance in order to show that companies can indeed do well by doing good. This paper aims to reflect upon the evolution of the definition of CSR and to show the relationship between a firm's responsible actions and its financial performance. Considering the multi-faceted nature of CSR, consisting of the economic, social and environmental components, and the inconsistent results provided by past research examining the term as a whole, this paper will mainly focus on studying the link between corporate environmental responsibility (CER) and corporate financial performance. By using third party, independent rating agencies, specifically the annual *Newsweek* Green Rankings, this paper hopes to verify whether "more green" companies are performing better financially than "less green" companies and whether or not investors are experiencing greater gains from these "more green" companies.

LITERATURE REVIEW

Corporate Social Responsibility

Though found under many names including corporate sustainability, corporate responsibility and corporate citizenship, corporate social responsibility generally speaks about the roles of businesses in society. CSR revolves around the concept that companies should focus on more than just the traditional "bottom line" of maximizing profits. Crane & Matten (2010, p. 51) note, "It is by now fairly widely accepted that businesses do indeed have responsibilities beyond simply making a profit." However, Crane et al. (2008, p. 5) continue by stating that "few subjects in management arouse as much controversy and contestation as CSR." This is due to the fact that CSR is a broad and diverse topic that encompasses many different perspectives, disciplines and ideologies. It should be no surprise then that a comprehensive and commonly accepted definition of this term has not yet been found. By examining the progression of the term since its origin, one can grasp a better understanding of the importance and debate surrounding corporate social responsibility and its role in the modern business structure.

Definition, Origin and Evolution

Within the scientific literature, Howard Bowen first formalized the term CSR in 1953. According to Falck and Heblich (2007, p. 250), he argued "it refers to the obligations of businessmen to pursue those politics, to make those decisions or to follow those lines of actions which are desirable in terms of the objectives and values of society." Though Carroll and Shabana (2010) state that Bowen should be called the "Father of Corporate Social Responsibility," his definition of CSR evoked

many critical questions including, “What if the values of our society are irresponsible?” However, this foundational definition paved the way for further research and expansion of the topic by others.

Most notably in 1967, Davis enlarged the definition to include not only businessmen, but also institutions and enterprises. Falck and Heblich (2007, p. 251) point out “the traditional use of the term *businessmen* by Bowen implied that an enterprise’s owner was also its manager, and thus bore the cost of every social commitment personally.” This expanded definition makes the managers the legal representatives of companies who decide the actions of the firm, but do not bear the costs of social conduct. As agents of the principals, managers have a commitment to the firm’s shareholders, which caused Milton Friedman to fundamentally reject corporate social responsibility.

The seminal piece for all opposition to CSR is Friedman’s 1970 *New York Times* article titled, *The Social Responsibility of Business is to Increase Its Profits*. Friedman views CSR as necessary only if it promotes the narrow end goal of profit maximization and shareholder wealth. His argument is that if corporate executives engage in socially responsible acts outside the goal of profit maximization, they would be going against their duties as agents of the stockholders. He does not completely reject the idea of bettering society, but plainly states “if managers wish to work toward the betterment of society, they should do so as private individuals at their own expense, not as agents of their principals and at their stockholders’ expense” (Friedman, 1970, p. 174).

More than four decades have passed since the publication of Friedman's article and each decade that passes brings about more opposition to his theory that corporate executives can do good, just only at their own expense (Friedman, 1970). In years following his article, more concrete examples of irresponsible companies underperforming emerged leading critics to accept a broader view of who corporate executives must serve in their decision making responsibilities. The publication of R. Edward Freeman's *Stakeholder Theory of the Modern Corporation* in 1984 brought about a new outlook on the relationship between a company and those who are affected by the company's actions. This approach to management widened the end goal of business managers from the traditional ideology of managerial capitalism, which simply seeks to maximize the interests of stockholders, to considering the treatment of many diverse groups. These groups include not only the stockholders in the company, but also the employees, suppliers, customers, special interest groups, and governmental entities that are tied to the firm in some way (Freeman, 1984). Freeman establishes the fact that capitalism is successful through the interconnectedness of all of these stakeholder groups and if companies solely focus on just the financiers they will soon enter into a decline (1984). This broader perspective produces the concept of "doing well by doing good." That is, by acknowledging the needs of the many different stakeholders in the company, including financial, environmental and social, the firm's managers can make decisions and implement initiatives that will lead to sustainable financial success.

Since the establishment of Freeman's Stakeholder Theory, others have produced their own definitions that build off the idea that firms should focus on

more than just stakeholder expectations. Falck and Heblich (2007, p. 249) define CSR as "voluntary corporate commitment to exceed the explicit and implicit obligations imposed on a company by society's expectations of conventional corporate behavior." This definition, though in a broad manner, states that a firm's behavior should not only promote the well-being of the financial stockholders in a company, but also should promote the fair treatment of all the societal and environmental stakeholders that are influenced by the company's actions.

Many have tried to narrow the scope of this concept by outlining the different facets that characterize CSR. Blowfield and Frynas (2005) give three responsibilities of companies who engage in CSR. "Companies have a responsibility for the behavior of others with whom they do business, a responsibility to manage their relationship with the wider society, and a responsibility for their impact on society and the natural habitat, which is sometimes beyond the confines of the law, regulations and compliance" (Blowfield & Frynas, 2005, p. 502). Other definitions confirm the multi-dimensional nature of CSR. Dahlsrud (2008) studied 37 different definitions of CSR and was able to divide the concept into five dimensions: stakeholder, social, economic, voluntariness and environmental. He then counted the frequency of these five dimensions in Google results for definitions of corporate social responsibility. Though his study did not provide an optimal definition, and Dahlsrud even puts forward the idea that there will never be a singular definition of the term, his research suggests that there is a hierarchical structure to the different dimensions or responsibilities of corporate social responsibility.

One of the original definitions that suggest that different categories of CSR exist is provided by McGuire in his 1963 article *Business and Society*. He argued: "The idea of social responsibilities supposes that the corporation has not only economic and legal obligations, but also certain responsibilities to society which extend beyond these obligations" (McGuire, 1963, p. 144). These responsibilities that extend beyond economic and legal would later be referred to as social and discretionary responsibilities. Carroll and Shabana (2010) in their four-tiered model view CSR as an intertwining of economic, legal, social, and discretionary responsibilities. They contend that the economic and legal responsibilities are required, the ethical responsibilities are expected and the discretionary responsibilities (also called philanthropic) are desired. The four tiers of this model can be overlapping and interrelated in their interpretation and application, but they are helpful for sorting out the specific types of benefits that businesses receive. These responsibilities have been ordered by some from most important to least important for the company with economic being the most important and discretionary being the least important of the four. Dahlsrud (2008) revealed that out of the five dimensions of CSR, the environmental dimension received significantly lower attention at first. However, once CSR was explained in greater depth, the environmental and social dimensions received equal amounts of significant attention. By shifting the analysis of CSR to a hierarchical structure of importance, "scholars' focus in research has moved more on strategic and managerial issues, especially the link between corporate social performance and corporate financial performance" (Lee, 2008, p. 56).

Corporate Social Responsibility and Firm Financial Performance

Today, there is a tighter coupling between CSR and the organization's financial goals. The focus of CSR has shifted away from an ethics orientation to a performance orientation. Vogel (2005) maintains that the close examination of the relationship between CSR initiatives and firm financial performance is a characteristic of the "new world of CSR." Broadening his case for a "new CSR", he argues that the "old CSR" was motivated by social considerations in the 1960s through 1980s. "While there was substantial peer pressure among corporations to become more philanthropic, no one claimed that such firms were likely to be more profitable than their less generous competitors" (Vogel, 2005, p. 20). In contrast to this old view, the "new world of CSR" revolves around the idea of doing well by doing good.

This concept of a "new CSR" inspired Carroll and Shabana (2010) to review what they called the "business case" for corporate social responsibility. "This refers to the underlying arguments or rationales supporting or documenting why the business community should accept and advance the CSR cause" (Carroll & Shabana, 2010, p. 87). This business case refers to the bottom-line financial and other reasons for businesses pursuing CSR strategies and policies. It should be noted that a multitude of different business cases for CSR have been developed over the years and there is no single, optimal case. However, many have broken down this process and provided different motivations for why businesses pursue CSR strategies.

Simon Zadek (2000) argued that companies pursue CSR strategies for four fundamental reasons: to defend their reputations, to justify benefits over costs, to

integrate with their broader strategies, and to learn innovate and manage risk. A similar outcome was given by Kurucz et al. (2008), which resulted in four general types of business cases for CSR. They maintain that there are four different groupings of the business case based on the focus of the approach, the topics addressed and the underlying assumptions about how value is created and defined. "The four approaches include: cost and risk reduction, gaining competitive advantage, developing reputation and legitimacy, and seeking win-win outcomes through synergistic value creation" (Kurucz et al., 2008, p. 85).

If corporate social responsibility is to be used as a competitive advantage for a firm to advance financially, it must be viewed as an investment in the company's future. According to Falck and Heblich (2007, p. 252), "this investment must be planned specifically, supervised carefully and evaluated regularly." In order for a firm to succeed in both its CSR and financial efforts, an important first step is to identify all the stakeholders affected by the firm and then consider how much of an impact each stakeholder has on the company. Stakeholder's importance is determined by the stakeholder's influence on the company's cash flow.

Falck and Heblich (2007) provide three categories to help firms prioritize stakeholder's importance. The first category includes key stakeholders. This group includes all stakeholders that have a direct connection to the company and can interfere significantly with both current and future cash flows. Once these key stakeholders are identified, their status is fixed until their relationship with the firm fundamentally changes.

The second category includes emerging stakeholders. This group does not have a current connection to cash flows, but this can change rapidly. The volatility of this connection makes this group of stakeholders especially important to managers since they can change from emerging to key stakeholders in a matter of days. Management must evaluate this group regularly or else they can have significant impacts on both current and future cash flows.

The third category includes minor stakeholders. This group cannot interfere directly with the company's cash flows. However, management needs to be aware of this group in case they become emerging or even key stakeholders after significant events. All three categories of these stakeholders can have an impact on the firm and its performance, whether immediately or sometime in the future. Whatever the case might be, all three categories need to be considered when making managerial decisions since their influence can have a direct impact on the firm's financial performance.

Engaging in socially responsible behaviors is one of the primary mechanisms through which a firm may foster and maintain trusting stakeholder relationships. As Jones (1995, p. 418) notes, "certain types of corporate social performance are manifestations of attempts to establish trusting, cooperative firm/stakeholder relationships and should be positively linked to a company's financial performance." Given the hundreds of published empirical studies that have tested this relationship between CSR and corporate financial performance and the wide variety of results that they have provided, it is difficult to measure the link by looking at the concept of CSR as whole. Therefore, in order to simplify the process, the focus of this paper

now turns to one specific facet of CSR: the environmental component, which is often called corporate environmental responsibility. By narrowing the scope of the relationship between CSR and financial performance to just the link between the environmental component and financial performance, one hopes the financial outcomes of this connection can become more clear.

Corporate Environmental Responsibility

With the progression of companies from a Friedman to a Freeman Stakeholder Theory point of view comes a further division of corporate social responsibility into integral sub-categories. One category of CSR is specifically targeted at environmental sustainability and responsibility. Corporate environmental responsibility (CER) or "environmental CSR" stems from the macro view of focusing on a wide array of diverse stakeholders for a company in order to lead to financial success and narrows it down to focus on a specific firm's environmental footprint and the implications this has on its financial performance.

Environmental responsibility is becoming an integral part of CSR and plays an increasingly important role in the corporate landscape. According to a study by Flammer (2013), 766 CEOs were surveyed recently by Accenture and the United Nations Global Compact (UNGC) and 93 percent of those surveyed believed that sustainability will be critical to the future success of their businesses. The increasing importance of CER among practitioners is receiving considerable attention in academic research and many studies are attempting to show the reasons why companies engage in environmental CSR and how it relates to corporate financial performance.

The research on the relationship between a company's environmental responsibility and its financial performance has produced a spectrum of different results over the past few decades. Past studies have resulted in everything from a positive relationship between the environmental responsibility and financial performance of a company (see Flammer [2013, Klassen and McLaughlin [1996] and Bergsma et al [2012]), where firms who make more environmentally friendly decisions are rewarded by a rise in financial performance, to no relationship between the two (see McPeak, Devirian, & Seaman [2010]), where firms engaging in environmentally friendly initiatives are neither rewarded nor punished any more than firms who engage in poor environmental policies. These differing results can be attributed to multiple factors including too small of a sample size, too short of a measurement period and the somewhat intangible nature of measuring environmental responsibility.

McPeak, Devirian, & Seaman (2010) set out to show the presence of a link between environmentally friendly companies and profitability. Their analysis of KLD analytical information (now known as MSCI Analytics, which is the leading provider of firm environmental, social and governance data) and stock price data led them to the conclusion that companies that did not invest in environmentally friendly initiatives were actually more profitable in terms of accounting measures. However, many reasons could play a pivotal role in this conclusion such as the time frame in which the results were measured and the difficulty of measuring financial performance changes after environmentally positive or negative behavior. The results of this study support the outlook of critics who believe that investing in

environmental initiatives does not pay off financially for companies, yet it also opens the door for further research.

The majority of research conducted that looks into the topics of CER and financial performance shows that there is a link between environmentally friendly companies and an increase in profitability in comparison to companies that engage in sub-standard or harmful environmental practices. Flammer (2013) develops many insightful conclusions that take a deeper look into this link between environmental responsibility and financial performance. Her "environment-as-a-resource" hypothesis argues that CER is utilized by environmentally friendly firms as an asset that improves business processes, increases innovation and competitiveness and strengthens the firm's reputation in the market. All of these factors result in a rise in stock price when companies engage in environmentally responsible acts and a fall in stock price when they act detrimentally to the environment.

In the mid 1990s, Klassen and McLaughlin (1996) collected surveys that showed shareholders made environmental responsibility a priority for companies even over the issuing of dividends back to stockholders. This trend led to their study of three separate hypotheses. The first of which was that strong environmental performance positively affects the firm's financial performance, and conversely, weak environmental performance negatively affects financial performance. This hypothesis was confirmed as valid through study of different firm's environmental awards and the subsequent reaction of their stock price. Klassen and McLaughlin (1996) argued that according to the Efficient Market Hypothesis, stock prices serve

as proxies for financial performance; thus, these positive stock movements after environmental awards suggest that environmental responsibility and the firm's financial performance are positively correlated.

With the confirmation of their main hypothesis, Klassen and McLaughlin (1996) aimed to further their claim of a connection between environmental responsibility and financial performance by comparing the stock price reaction of firms receiving an environmental reward for the first time and how stock price movements compared for companies across different industries. Their results suggested that firms, whether in traditionally "clean" or "dirty" industries, who received environmental rewards for the first time experienced greater returns in positive stock price movement than firms who receive annual awards for their responsible initiatives. However, the magnitude of gains from these first time awards varied by industry according to public perception. Firms in "dirtier" industries, even after winning an award for the first time, experienced a lesser stock gain than firms in "cleaner" industries, which Klassen and McLaughlin (1996) suggest is due to market skepticism. Though these results are slightly ambiguous, the overall research showed that firms who engaged in environmentally responsible activities gained in market share, while firms who engaged in environmentally harmful activities experienced a drop in market share and stock price.

With most studies concluding that there is a positive relationship between firms engaging in CER and improved financial performance, the question remains what factors play a role in this relationship and has this relationship changed over time? Flammer (2013), Bergsma et al (2012), and Klassen and McLaughlin (1996)

all look into these various factors. Many contribute this positive relationship to external and internal factors. External factors include increased environmental regulation by governmental bodies and increased media attention to CER. Companies not only gain financially by avoiding penalties for violating the ever-growing presence of environmental regulations, but also from strengthening their reputation in the public's perception by not engaging in harmful environmental activities.

From an internal perspective, Flammer (2013) suggests her environment-as-a-resource approach, which states that CER can result in improved internal business operations and strategies that lead to higher profits. These changes are implemented by managers and are not according to any form of external regulation.

Increased pressure from external factors and the increased implementation of internal CER initiatives by firms has led to a change in the magnitude of the linkage between acting environmentally responsible and seeing an improvement in financial performance. With an increase in environmental regulations being the norm, companies are seeing a decrease in return for environmentally friendly initiatives, but are seeing an increase in the punishment for environmentally harmful behavior. Also, from an internal perspective, firms are seeing decreasing marginal returns when implementing new initiatives that increase the firm's CER. Both of these trends suggest that corporate environmental responsibility and the "going green" initiative of companies might indeed just be a trend that is showcasing smaller results in financial profitability each year.

Socially Responsible Investing

The results of previous research focusing solely on the environmental aspect of CSR tends to be just as inconclusive as the research looking into the relationship between financial performance and CSR as a whole; however, as an overall trend, there seems to exist a positive (though weak) correlation between the two. This positive relationship has caused a growth in the concept of socially responsible investing (SRI). This type of investing philosophy uses screens based on environmental and social preferences to select or avoid investing in certain companies. It is based on the assumption that good environmental performance can be associated with good financial performance. According to the Social Investment Forum, "SRI has grown consistently in recent years, and currently more than 11% ($3.31 trillion) in assets under professional management in the United States are invested with social responsibility, including environmental responsibility, in mind" (Barnett and Saloman, 2012, p. 1103). This growing trend entices businesses who want to increase their reputation and attract more capital by being included in these SRI portfolios.

This increase in SRI has also had an impact on the financial and environmental reporting of companies. Regarding financial reporting, reporting on environmental matters is part of annual financial reports as well as specialized environmental reports. According to a study by KPMG (2000), 44 percent of the Fortune global top 250 firms in the nonfinancial sector issue specialized environmental reports, which is a substantial increase from previous years. More and more companies have their environmental reports validated by independent

third parties in order to integrate technical knowledge of environmental experts and financial auditors. The compelling force here is that this discretionary environmental responsibility yields a considerable positive impact on shareholder value.

There are three major, independent third party companies that evaluate the social and environmental responsibility of publicly traded firms both in the United States and abroad: KLD Research and Analytics, Trucost, and Sustainable Asset Management (SAM). The widespread reliance on these three companies is seen throughout much of the previous scholarly research on the topics of CSR and more specifically CER. The three rating schemes provided by these companies are highly visible not only to investment managers and executives, but also to general audiences globally.

KLD Research and Analytics rates the environmental and social performance of all firms listed on the Russell 3,000 Index, which represents approximately 98% of the investable U.S. equity market. The KLD database creates seven individual binary "strength" and "concern" scores across a range of environmental performance categories. These categories include products and services, operations and management, and climate change. These assessments are based on publicly available information from a comprehensive set of media providers. KLD does not rely at all on data provided by the companies themselves. Though this helps ensure greater objectivity in their ratings, it also results in less specific data than that found in other methodologies since their data focuses mainly on noteworthy environmental activity as reported by media sources. However, KLD is still by far

the most widely used data set in research on corporate environmental responsibility (Chen & Delmas, 2010).

Trucost performance indicators quantify a broad range of environmental impacts for the largest publicly traded U.S. companies on the Standard and Poor (S&P) 500. The variables that they use cover both direct and supply chain activities, such as emissions and waste production, natural resource use, and raw materials extraction. Trucost uses company-reported environmental data from annual reports, company websites, and other public disclosures. Trucost then quantifies the various environmental impacts and damage costs associated with these extractions and emissions using methodologies developed in the environmental economics literature, which are validated by an independent panel of academic advisors (Chen & Delmas, 2010).

Sustainable Asset Management (SAM) is a Swiss company specializing in sustainability investments. Its rankings focus primarily on the largest 2,500 companies by market capitalization list in the DOW Jones Wilshire Global Total Market Index. Unlike KLD, SAM's rating methodology is firm responses to sustainability surveys. SAM asks companies to fill out detailed questionnaires regarding various aspects related to their economic, social and environmental performance. Though only 20% of companies respond directly to the surveys, an additional 20% of the companies are analyzed using publicly available information, which results in an overall analysis of 40% of the world's largest companies (Chen & Delmas, 2010).

Newsweek Green Rankings

The information provided by these three independent firms account for the majority of the data used to create the many indices that have developed with this trend of socially responsible investing. Some of these indices include the Dow Jones Sustainability Index, the Domini 400 Social Index, the Calvert Social Index, and the NASDAQ OMX Green Economy Index. Along with these indices, organizations, such as *Newsweek*, use the data provided by these companies to compile their annual "Green Rankings." This list focuses on the largest publicly traded companies in America (U.S. 500 list) and worldwide (Global 500 list). East list consists of the largest 500 companies by revenue (most recent fiscal year), market capitalization, and number of employees. Companies on each list are ranked by their overall Green Score, which is derived from three components: an Environmental Impact Score, an Environmental Management Score, and an Environmental Disclosure Score, weighted at 45 percent, 45 percent, and 10 percent, respectively.

The Environmental Impact Score is a comprehensive, quantitative, and standardized measurement of the overall environmental impact of a company's global operations. More than 700 metrics, including emissions of nine key greenhouse gases, water use, solid-waste disposal, and emissions that contribute to acid rain and smog, are factored into the Environmental Impact Score. Once the specific impacts of a company have been quantitatively assessed, the environmental-damage cost, a dollar value representing the potential cost to society of resulting damage to the environment, for each company is calculated (Newsweek).

The Environmental Management Score is an assessment of how a company manages its environmental performance through policies, programs, targets and certifications. The focus is on three distinct spheres of influence: company operations, contractors and suppliers, and products and services. An analysis of positive performance-related criteria is counterbalanced by a detailed assessment of environmental controversies and incidents, which often indicate, the extent to which management systems are effectively implemented. The research process includes a thorough examination of company documents, media sources, online databases, government sources, NGO research and other industry sources, as well as direct communication with key stakeholders (Newsweek).

Finally, the Environmental Disclosure Score assesses each company's transparency with regard to its environmental performance. *Newsweek* equally weights data from two sources, Trucost and Sustainalytics, in computing this final score. Trucost's component reflects the proportion of environmental impacts a company is disclosing out of those which are relevant to its business operations. For example, nuclear waste would be among those considered material for some utility companies, but would not be directly relevant to companies in other sectors. Sustainalytic's component of this score assesses the breadth and quality of company environmental reporting, as determined by the level of involvement in key transparency initiatives, including the Carbon Disclosure Project (Newsweek).

All companies included in these rankings are notified by *Newsweek* and given the opportunity to submit any relevant data and engage in the research process. Participation has been approximately 50 percent over the past two years with more

global firms participating than U.S. firms. Once the three scores are completely compiled, an advisory panel of independent experts reviews the data before the final rankings are published. Since the *Newsweek* Green Rankings are so widely accepted, they will be used for the remainder of this paper as the rating system for distinguishing between "more green" and "less green" companies and trying to evaluate whether "more green" companies perform better financially than "less green" companies.

METHODOLOGY

The methodology used in this paper is largely based on prior research by Blazovich and Smith (2013). In their work, they aimed to answer two questions: (1) how do green companies perform financially, and (2) what is the risk level of green companies?

They examined the 2010 *Newsweek* Green Rankings and created two sample portfolios of the top 15 ranked firms and the bottom 15 ranked firms. In order to address their first hypothesis that "more green" companies perform better financially than "less green" firms, they computed several accounting-based performance measures of profitability. Specifically, the profitability measures that they examined were sales divided by total assets, cost of sales margin (computed as cost of sales divided by sales), return on total assets (computed as net income divided by total assets), return on equity (computed as net income divided by total equity), and market value of equity (computed as stock price per share multiplied by total number of shares outstanding). Using one-way analysis of variance

(ANOVA) and Tukey's post hoc analysis, they compared the top 15 ranked firms to the bottom 15 ranked firms (Blazovich and Smith, 2013).

In order to address their second hypothesis that "more green" firms are less risky than "less green" firms, they evaluated several common accounting-based risk measures. The measures included: the current ratio (computed as current assets divided by current liabilities), the leverage ratio (computed long-term debt divided by assets), and the Altman-Z score, which is a credit score used to predict corporate defaults and the financial distress status of a company.

Regarding their first hypothesis as to the impact of being green on financial performance, a higher green ranking was found not to be significantly related to firm financial performance. However, they do note that their results show that being green does not have a negative impact on firm profitability. Regarding their second hypothesis as to the relationship of being green to business risk, their results provided varied answers, where two of the three measures showed no relation between green score magnitude and risk. Though their results were inconclusive, they appear to indicate that, at best, being "more green" is associated with lower risk, and at worse, being "more green" does not negatively impact firm risk (Blazovich and Smith, 2013).

Building off of this previous research, this paper aims to readdress the question of whether higher ranked firms in *Newsweek's* Green Rankings perform better financially than lowered ranked firms, but from the perspective of someone wanting to invest in a well-balanced fund of 30 stocks spanning across the 10 different industry sectors of the S&P 500 Index. Using *Newsweek's* 2012 (the most

recently published rankings) Green Rankings, two portfolios were created: one with 30 highly ranked green stocks in their respective industries and the other with 30 low ranked stocks in their respective industries. Both the higher ranked and lower ranked portfolios are composed of sector weightings similar to the current sector weightings in the S&P 500. Though the sector weightings in the sample portfolios are not exactly the same as the S&P 500 sector weightings due to the size of the sample portfolios, it is close enough to attain the well-balanced portfolio characteristics desired in this study. The 10 different industry sectors and their given percentage weighting in each type of portfolio is shown in Figures 1 and 2 below.

Figure 1: S&P 500 Sector Breakdown (as of March 2014)

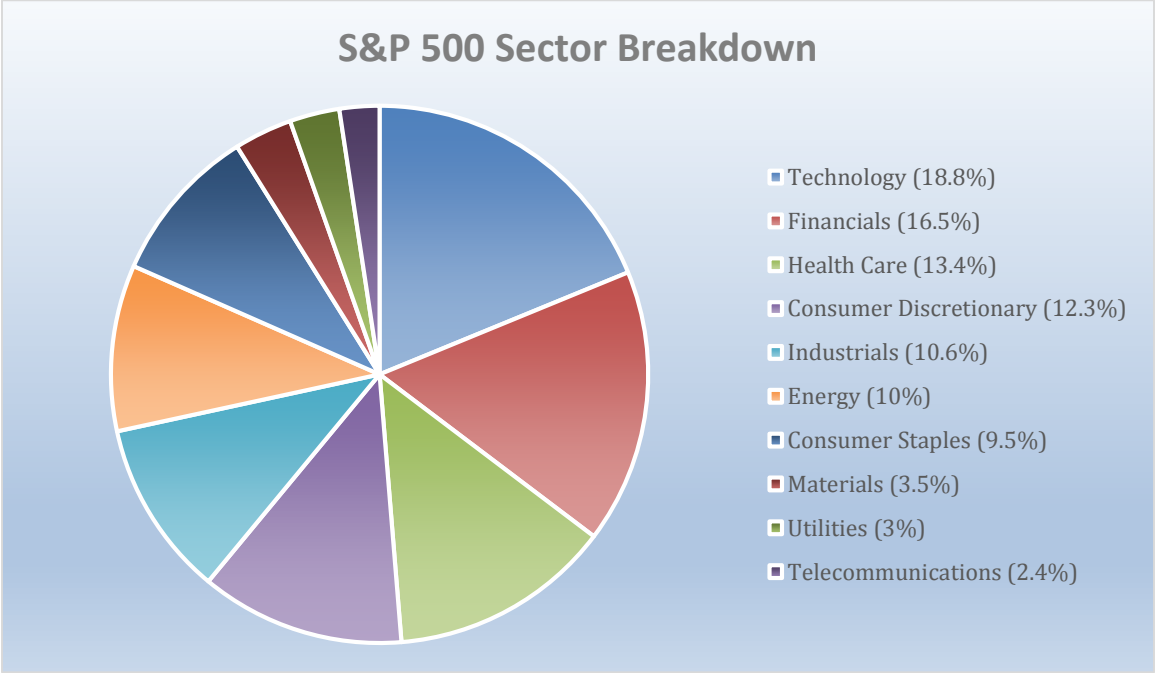
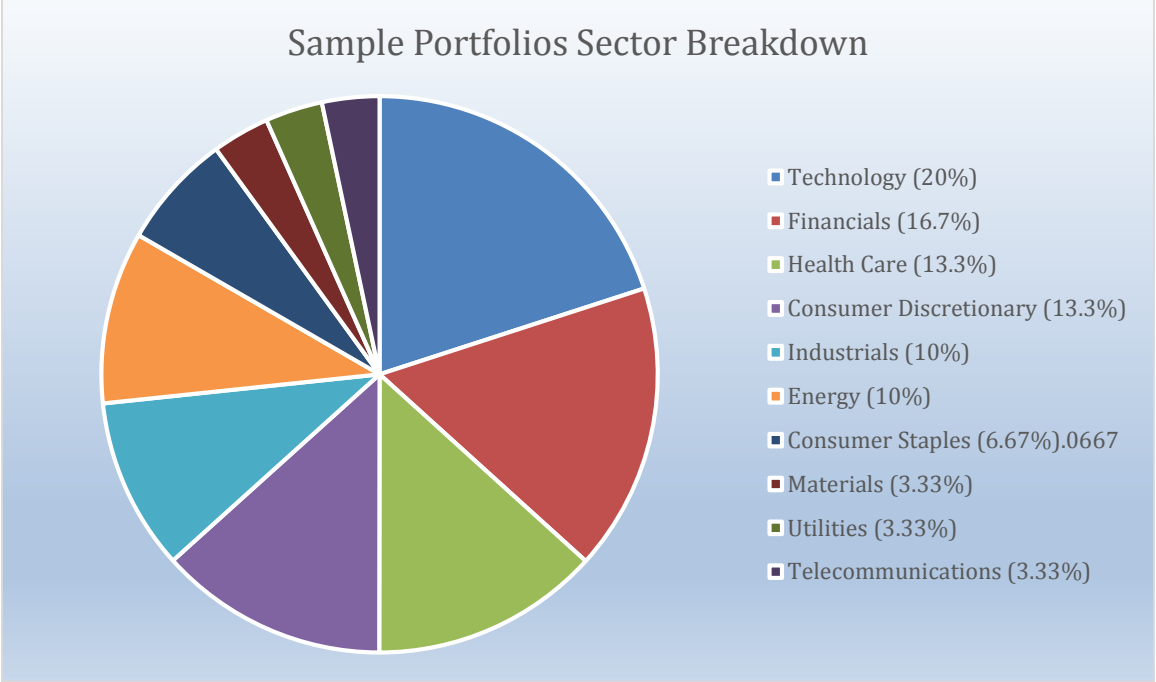


Figure 2: Sample Portfolio Sector Breakdown



By including firms in all 10 sectors of the S&P 500, this research aims to produce a more balanced sample than those produced in the research of Blazovich and Smith (2013), which were heavily dominated by one industry or another. For example, in their research the top 15 ranked sample was heavily weighted in the technology sector and the bottom 15 ranked sample was heavily weighted in the utilities and materials sectors mainly due to the nature of these respective industries regarding environmental responsibility. By creating two balanced portfolios of equities using the same S&P 500 sector weightings as a guide, this paper hopes to show that "more green" companies not only perform better financially, but also that investors experience a greater return by investing in companies that are the most environmentally responsible in their respective industries.

In consideration of past research and addressing the prior research questions regarding the financial performance of green companies and their return to stockholders, two hypotheses were formulated: 1) higher ranked green companies have better financial performance than lower ranked companies as measured by the before mentioned profitability ratios and 2) investors in higher ranked green companies experience a greater return than investors in lower ranked companies as measured by yearly total stock return.

Using a Bloomberg terminal to ascertain the data for each stock, three common profitability ratios were used in order to address the first hypothesis and the profitability of each firm in the portfolio: return on assets (calculated as net income divided by average total assets), return on equity (calculated as net income divided by average total common equity) and the asset turnover ratio (calculated as net sales divided by average total assets). Also, using a Bloomberg terminal, the total return (capital gains plus dividends reinvested) for the calendar year 2012 was calculated in order to address the second hypothesis and see whether investors experienced a greater return from the higher ranked portfolio or the lower ranked portfolio in the span of one calendar year. Finally, the market capitalization of each equity was attained using Bloomberg as well, in order to show the differences in the size of each company, which was not addressed in either hypothesis; however, could be a contributing factor to the results of the research conducted.

RESULTS

Figures 3 and 4 below provide the equity compositions of each portfolio and each stock's respective data used to test each hypothesis. Portfolio A is composed of

30 of the highest ranked companies in their respective industries and is therefore representing the "more green" portfolio of stocks. Portfolio B is composed of 30 of the lowest ranked companies in their respective industries and is therefore representing the "less green" portfolio of stocks.

Figure 3: Portfolio A ("More Green" Portfolio) Data

Portfolio A - 2012	Market Cap	ROE	ROA	Asset Turnover	Total Return
IBM	214,031.80	85.15	14.09	0.93	0.0597
HP	27,187.60	17.89	5.57	1.01	-0.4268
Dell	31,099.30	41.86	8.4	1.49	-0.296
Microsoft	256,374.80	27.51	14.77	0.64	0.0609
Nvidia	9,127.80	15.86	11.57	0.8	-0.11
Intel	100,017.10	22.66	14.16	0.69	-0.1138
Hartford	9,790.70	-0.37	-0.01	0.09	0.4055
Citigroup	119,822.70	4.13	0.4	0.05	0.5051
American Express	63,515.40	23.53	2.92	0.22	0.2351
Bank of America	125,135.60	1.28	0.19	0.05	1.0953
Unum Group	5,625.70	10.66	1.47	0.17	0.0104
Baxter	36,410.60	34.4	11.79	0.72	0.3789
Allergan	27,548.70	19.72	12.42	0.64	0.0478
Agilent Tech	12,452.50	24.3	11.77	0.7	0.1835
Becton Dickinson	15,469.30	26.1	10.74	0.71	0.0711
Office Depot	934.60	-16.11	-1.86	2.59	0.5256
Manpower	3,252.90	7.93	2.84	2.97	0.2112
Walt Disney	93,058.40	14.73	7.73	0.58	0.3477
Best Buy	8,299.40	-23.79	-7.27	3.03	-0.4647
Hess	18,087.30	10.23	4.9	0.57	-0.0606
Baker Hughes	18,013.80	7.99	5.09	0.83	-0.1479
Marathon Oil	21,676.60	8.93	4.75	0.47	0.0707
Boeing	56,944.30	83.14	4.62	0.97	0.0514
General Electric	218,414.10	11.39	1.94	0.21	0.2111
Cummins	20,564.80	27.2	13.59	1.43	0.2514
Coca-Cola	162,001.30	28.1	10.86	0.58	0.0653
Wal-Mart	209,728.50	22.45	8.39	2.37	0.1683
AT&T	188,148.80	7.34	2.68	0.47	0.1729
Praxair	32,422.30	29.29	9.82	0.65	0.0444
Northeast Utilities	12,273.20	7.94	2.39	0.29	0.1201

Figure 4: Portfolio B ("Less Green" Portfolio) Data

Portfolio B - 2012	Market Cap	ROE	ROA	Asset Turnover	Total Return
Amphenol	10,342.80	24.24	11.5	0.89	0.4347
Arrow Electronics	4,036.50	13.23	4.91	1.98	0.0179
Tech Data	2,132.50	9.38	3.12	4.2	-0.0785
SanDisk	10,304.30	5.83	4.07	0.49	-0.116
Alliance Datasystems	7,180.50	119.88	4.03	0.35	0.3941
Paychex	10,867.10	35.35	9.23	0.38	0.0976
BlackRock	34,908.20	9.74	1.29	0.05	0.1934
T. Rowe Price Group	16,736.30	24.17	22.16	0.76	0.1848
Invesco	11,516.10	8.24	3.68	0.22	0.3305
Ameriprise Financial	12,772.90	11.38	0.77	0.08	0.2905
Berkshire Hathaway	220,253.20	8.41	3.62	0.4	0.1756
Dentsply International	5,636.50	15.49	6.46	0.6	0.1383
Universal Health Services	4,718.50	17.7	5.59	0.97	0.2597
Health Management Associates	2,389.60	15.03	2.65	0.93	0.2646
Mylan	10,848.40	18.76	5.45	0.58	0.2791
Game Stop	3,327.00	11.45	6.86	1.93	0.0729
Dillard's	2,281.20	22.42	10.69	1.62	0.9824
Gannett	4,051.00	18.14	6.53	0.82	0.4069
Cintas	4,668.60	13.4	6.99	0.96	0.1933
Chesapeake Energy	11,041.00	-7.21	-1.84	0.3	-0.2387
Consol Energy	7,321.80	10.27	3.04	0.26	-0.1083
Peabody Energy	7,147.40	-11.27	-3.6	0.5	-0.186
Precision Castparts	25,115.00	15.77	12.55	0.74	0.1502
Stericycle	8,020.90	19.56	7.97	0.57	0.1971
Ametek	9,144.40	20.01	9.66	0.7	0.3464
Archer-Daniels-Midland	18,050.00	7.29	3.15	2.07	-0.0178
Energizer Holdings	4,590.20	19.61	6.17	0.69	0.0426
Frontier	4,273.20	3.12	0.78	0.28	-0.0913
CF Industries Holdings	12,789.10	35.38	19.32	0.64	0.4123
FirstEnergy	17,464.70	5.85	1.57	0.31	-0.0077

To test the first hypothesis, that green firms outperform other firms financially, the means of the four profitability ratios were calculated and compared between the two portfolios using post-hoc analysis to determine whether the means were significantly different. As shown in Figure 5, the results indicate that the only significant difference was between the mean market capitalizations of the two

portfolios. This shows that the companies in Portfolio A are significantly larger, as measured by their market value of equity, than those companies in Portfolio B.

Using post-hoc analysis, no significant difference in the mean value of the other three profitability ratios (ROA, ROE, and Asset Turnover) was found between the two portfolios. However, it is encouraging to see that the three means are at least greater in magnitude in Portfolio A versus Portfolio B, suggesting some truth in the first hypothesis. The final results suggest there is no significant difference between the means of the two portfolios suggesting that higher green rankings do not appear to improve firm performance; however, it is important to note that being "more green" does not appear to negatively impact firm profitability.

To test the second hypothesis, that investors in "more green" firms experience a great total return than investors in "less green" firms, the means for the total annual return were calculated and compared for each portfolio. Using post-hoc analysis, the results, as shown in Figure 5, suggest that there is not a significant difference between the total return means of the two portfolios. In fact, by simply comparing the two means, the investors in Portfolio B would actually experience a greater return than those investors in Portfolio A, suggesting that investors experience a greater annual return by investing in "less green" companies.

Figure 5: Comparison of Portfolio Averages and Variances

	Market Cap	ROE	ROA	Asset Turnover	Total Return
Average Portfolio A	70,581.00	19.38	6.3573	0.90	12%
Average Portfolio B	16,797.63	17.354	5.9457	0.84	17%
Variance Portfolio A	6158683517	500.327	31.112	0.671682299	0.089275254
Variance Portfolio B	6158683517	473.82	30.011	0.687218506	0.058710314
Z-Score	3.417410406	0.36186	0.2933	0.262839763	-0.65021789

Though according to the data collected, neither the first nor the second hypothesis can be confirmed, the results do contribute to some interesting observations on the link between firm financial performance and corporate environmental responsibility and suggest that further research is needed in the area of corporate environmental responsibility and corporate social responsibility as a whole.

DISCUSSION AND IMPLICATIONS

Corporate social responsibility is difficult to measure due to its many components both tangible and intangible. Though third party organizations are improving their measurement criteria and methods each year as more and more companies invest in CSR initiatives, it is still difficult to provide definitive measurements of how responsible a company is whether that be socially or environmentally. The focus of this study was on the environmental component of CSR largely because of its tangible nature, at least comparatively to the other components such as social or ethical responsibility. Prior research studying the link between corporate environmental responsibility and corporate financial performance has provided inconclusive results up to this point; however, the overall

trend is currently suggesting that even though CER initiatives may not provide a positively significant effect on financial performance, it certainly does not provide a negative effect either, which suggests a movement away from Friedman's Stakeholder Theory (Friedman, 1970) regarding CSR. Moving into the future, it can be assumed that companies will continue to invest in CSR initiatives and if a significant, positive link can be established between CSR and financial performance then companies will have no choice but to invest in all the components of CSR in order to stay competitive in their respective market.

The results of this study suggest that there is continued ambiguity in this relationship and further research should be conducted looking into the effects of being "more green" or "less green" on both the company's profitability, as measured by common accounting methods, and the investor's gains, as measured by total stock return. In this study, Portfolio A consisted of the highest ranked green companies in their given sectors, suggesting that they are "more green", as compared to those "less green" companies in Portfolio B, which consisted of the lowest ranked green companies in their given sectors. Even though neither hypothesis stated could be confirmed by a statistically significant measure, an analysis of the data collected suggests two trends that could impel further research.

The first trend is that there seems to be a greater benefit to overall company profitability (e.g. higher ROE, ROA and asset utilization ratios) by engaging in more environmentally friendly practices; however, investors in these "more green" companies do not experience the same degree of benefits as the company as a whole (e.g. higher total stock return). This trend could suggest that as CSR, and specifically

CER, develop and grow in acceptance, more and more managers are noticing the many benefits that CSR practices can provide to their company's business strategy and performance, while investors remain a little more skeptical. An interesting continuation of this study could be to analyze all the *Newsweek* Green Rankings since its inception in 2009 and identify whether there is an increasing benefit of being "more green" for both the companies and investors as each year passes.

The second trend, which can be better supported by the results of this study, suggests that larger companies are able to invest more in environmentally friendly initiatives and are thus "more green." This trend can be seen by the significant difference between the market capitalization of the companies in Portfolio A versus those in Portfolio B. This could support prior research that shows that larger companies are able to invest more money and resources into environmentally friendly initiatives compared to smaller companies, which results in a more favorable green ranking. These large cap companies might be investing more resources in CER in order to attain a favorable reputation with various stakeholder groups or they might realize that CER practices oftentimes result in an increase in innovation and efficiency. If this is the case, this could deter smaller companies from investing in CER, which would create significant headwinds in the movement to create a more beneficial relationship between society, the environment and all businesses.

CONCLUSION

Prior studies on corporate social responsibility and environmental matters cross all academic fields, including business, history, sociology, and science.

Operating in a manner that creates a positive relationship between society, the environment and business will be the norm for companies going into the future. Corporate social responsibility dictates that companies must take care of the physical environment. Being identified as “green” or “environmentally friendly” is a goal for all types of business in every sector of the economy. This study addressed two research questions, one pertaining to financial performance of companies based on their environmental practices and the other to the investor benefits from supporting “more green” companies versus “less green” companies. Regarding the first research question as to the impact of being green on financial performance, a high green ranking was found not to be significantly related to firm financial performance. At the same time, it is important to note that being green does not appear to negatively impact firm profitability, suggesting that there has been a movement away from Friedman’s argument (Friedman, 1970). Regarding the second research question as to the whether investors benefit more from investing in companies that are more environmentally responsible, a higher green ranking was found not to be significantly related to a higher total stock return for investors, suggesting that investors may still be skeptical about the benefits of investing in companies based solely on their environmental practices. Though neither hypothesis could be confirmed with statistically significant data, the link between corporate environmental responsibility and corporate financial performance will continue to be analyzed in hopes that a definitive, positive relationship will emerge creating an economic demand for all businesses to perform in an environmentally responsible manner.

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