# Table of Contents

Abstract 1

Introduction 2

Essential Constraints and Definition of CSR 6

Internal and External Benefits 11

Complexity of Measurement in Business Literature 16

Cause-Marketing and Advertising 21

Previous Research 25

Method 31

Results 36

Discussion 46

Areas for Further Study 49

Conclusion 52

Bibliography and Consulted Works 53
**Corporate Social Responsibility: A Financial Performance-Based Approach in Understanding CSR**

**Abstract**

This paper overviews several foundational concepts and questions regarding corporate social responsibility (CSR). Its primary contribution is a statistical examination into key correlations between CSR and Newsweek’s 2011 Green Rankings using forensic-based financial and accounting measures. It somewhat replicates a previous study and further introduces new variables in looking at CSR from a financial perspective. Interestingly, this paper is interdisciplinary in nature in that it synthesizes previous studies’ conceptions of CSR through finance, consumer behavior, branding, and ethics — a mix which has so far been widely neglected — in an attempt to better define and measure corporate social responsibility.
Introduction

The polarization between business relativity and idealism in business ethics is a constant source of debate in academia. Scholars from almost every perspective chime in on essential questions regarding business ethics. “What is the function of business in society?” “Isn’t CSR primarily a cost-benefit instrument for risk management, and, if not, why would businesses buy into it?” And, from many philosophers and ideologues, “there is no such thing as business ethics.” These questions and concerns are seemingly difficult to answer since business ethics is not a singular topic, but pertains to areas such as corporate governance, employee relations, and social responsibility. Further, many of these topics often are related to sociopolitical theory, making tangible and testable examination of such questions much more complex to answer. This seems to be the ongoing plague of the business ethicist — the inability to gauge, study, and measure the absolute numbers that scientists look so fondly at in order to confirm hypotheses and theories. Instead, the business ethicist is left with a seemingly emotionally-based sea of theoretical convictions and the ability to statistically confirm none of them. This leaves business ethics in a precarious and vulnerable position — it faces an indefinite, social confirmation of relativity. However, this conclusion is shortsighted, and, instead, should function as the catalyst for continued and increased study of business ethics.
Consequently, business ethics is a term used frequently to describe various attitudes and behaviors within the workplace and society. The past decade, which some business ethicists call “the Decade from Hell” (Serwer, 2009) has highlighted a need for tighter regulation and better legislation related to banking practices, corporate governance, and environmental responsibility (Ryan, Buchholtz, & Kolb, 2010). It has also shown us that the practice of business ethics is vital for the long-term well-being of our country. The 2007-2010 housing crisis brought about what is known now as the Great Recession — millions of bankruptcies, growing unemployment, and a long-term increased stratification of economic social classes. Despite the heightened level of attention paid to business ethics by academia, the mass media, and human resources, it seems that there is no conclusive definition as to what it is. Part of this problem stems from the various conflicting sociopolitical viewpoints on what business ought to be, government regulation of it, and its environmental and cultural responsibility. These differences lead to a matrix of ideologies that seemingly convolute its nature. Does one approach it from an absolutist sociopolitical perspective such as a humanitarian, fiscal, or moral lens, or a combination of all three? These are questions commonly sought after in the academia of business ethics, but there is little agreement as to what leads to a working definition and practice.

In addition, business ethics is a relatively new field in academia. There are no founding fathers, except for idolized figures such as Milton Friedman
and companies such as Ben & Jerry’s and The Body Shop. It seems that this is the reason for the gray area commonly spoken of when discussing business ethics — its interdisciplinary nature provides incongruities throughout much of the material — causing much ambiguity as to what business ethics is.

Consequently, there are seemingly an infinite number of socioeconomic and sociopolitical interpretations. One such interpretation and potential solution to corporate malfeasance manifests itself in the idea of corporate social responsibility (CSR), also known as “corporate sustainability” and “corporate citizenship” (Fox, 2007). CSR is defined in several, similar ways. Keith Davis views it as businesses’ “decisions and actions taken for reasons at least partially beyond the firm’s direct economic or technical interest” (Dennis, Neck, & Goldsby, 1998, p. 387). In 2001, the European Commission defined it as the “integration by companies of social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis” (Commission, 2001, p. 7). And further, from an instrumental definition, “CSR is a privileged channel for expressing corporate personality, as it combines the three elements of corporate identity mix: behavior, symbolism, and communication” (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009, p. 550).

In practice, CSR is the idea that corporations have a social responsibility toward their communities, consumers, employees, and their environmental consequences in and for running their businesses. This paper
will examine the nature of CSR, including 1) its essential constraints and definition, 2) its internal and external benefits, and 3) its complexity in measurement in business literature. After this theoretical aspect, it will somewhat replicate the previous research from Cochran and Wood (1984) using many of their variables that found significant results and running their initial analysis from recent data on an improved CSR environmental ranking. This will determine if there have been significant changes in firms’ asset age correlations to CSR rankings. This is an important step in this body of academia; Cochran and Wood’s work has been the only research that has found a statistically significant correlation regarding a CSR index (created by Moskowitz and also used by Sturdivant and Ginter) and some measure of financial performance. In addition, this study has never been replicated or revised in any form since it was published in 1984. In this time, publicly traded, high technology companies and other new industries that are now Fortune 1000 companies have emerged, which may lead to very noteworthy results. Further, this paper also looks into the role of reported advertising expense and selling, general, and administrative (S, G, & A) expense of firms in the creation of Newsweek’s 2011 Green Rankings to see if either is somewhat of a proxy for consumer behavior or the rankings themselves. The results from these tests will shed light into the nature of CSR indices and their construction. Consequently, and pending these results, it will synthesize its findings with key ideas from past studies to contribute a more modern analysis of CSR.
Essential Constraints and Definition of CSR

As already defined, CSR is the attempt for corporations to engage in actions that are not necessarily in “the firm’s direct economic or technical interest” with the connotation that it will also have some altruistic and/or positive intent, as implied through social or environmental initiatives or some form of communal welfare. Even so, there are many layers in defining CSR. On a sociopolitical and organizational level, this definition breaks down into three fundamental aspects: “(1) the societal expectations toward companies (“social responsibility”), (2) the processes that companies generate to meet these expectations (“social responsiveness”; Epstein, 1987), and (3) the effects—or, rather, the measurable results—that follow the processes (“social responses”)” (Scherer & Palazzo, 2007, pp. 1098-99). On a more reductive level, the fundamental structure of CSR is: (1) society; (2) the company; (3) delivery/actualization; yet, these ideas do little in leading to a system for measuring a firm’s CSR activities. A more refined, but still ambiguous definitional approach is “Carroll’s Construct,” introduced in 1979, that views CSR through an economic, legal, ethical, and discretionery (philanthropic) framework (Figure 1).
Figure 1: Carroll’s Pyramid of Corporate Social Responsibility


This definition represents an improvement toward a better understanding of CSR since it involves somewhat measurable categories. Using this construct, Aupperle, Carroll, and Hatfield (1985) were able to conclude that “CEOs make fairly unambiguous negative associations between economic and non-economic components taken together, but make few associations among the non-economic components themselves,” and were therefore able to add more insight into the nature between CSR and corporate action (p. 462). However, these results also suggest that since decisions are made on fiscal grounds, the ethical and philanthropic sectors (what could be seen as the most ideal form of CSR) should be defined differently. The necessary components of ideal CSR are: (1) a firm maintaining profitability so that it can be in business, which allows for (2) initiatives on social welfare and altruistic actions that get addressed and benefit the internal and external
operations of the firm, which are manifested by (3) marketing and branding (Figure 2).

Figure 2: The Essence of CSR—The Venn’s that Kind of Don’t Get Along

It is also interesting to note here the cultural definitional differences, which most likely stem from different sociopolitical viewpoints. Research conducted on a Spanish population regarding telephone services found that companies are viewed as socially responsible if philanthropic and ethical-legal obligations are met (García de los Salmones et al., 2005), while CSR obligations to German and French consumers are considered to be legal, ethical, and philanthropic issues (Maignan, 2001). However, “Americans also include economic matters” to CSR models (Figure 3) (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009, p. 549).
Figure 3: The Three-Domain Model of Corporate Social Responsibility

(Schwartz & Carroll, 2003)

These models and definitions are the two styles used in academia for measuring CSR: a theoretical, ideal approach; and, an empirically measurable approach. Essentially, this dichotomy is what separates many papers on CSR. Empirical research in CSR focuses on statistical analysis, usually using financial- and accounting-based variables. Then, some form of ranking or index is introduced, which functions as a normative control. This technique, however, has a large drawback because the process of creating an adequate ranking or index without bias is incredibly difficult (this will be thoroughly discussed later). Subsequently, statistical analyses of CSR can only measure relationships within indices and can only “explain the status quo common to social systems,” not the normative criteria itself (Scherer & Palazzo, 2007, p. 1099). On the contrary, the more ideal frameworks look into strictly what
corporations should do and oftentimes ignore firms’ realworld constraints. Consequently, models such as “Carroll’s Construct” represent a practical compromise because, although simple in structure, they consider both ethics and realworld constraints, while providing a way for CSR measurement.

Consequently, a primary purpose of this paper is to investigate any possible long-term proxy or correlation of CSR rankings (i.e. the retesting of Cochran and Wood’s variables) and other performance measures (i.e. reported advertising expenses, etc.) that may foundationally influence index rankings and ratings since variables like these may proxy for emotional/qualitative bias in creating a CSR index. By doing this, although it may not introduce specific normative criteria for CSR practices, it will determine likely financial- and accounting-based forensic correlations between indexes and firms, which allow for more determinite financial patterns related to CSR practices.
Internal and External Benefits

The counterintuitive financial successes of firms actively practicing corporate social responsibility has raised many questions about the ability for companies to “do well and be good” at the same time. These successes, such as Ben & Jerry’s and The Body Shop, have spurred much research, academia, and innovation into the idea of implementing socially responsible initiatives in many firms that traditionally would have found the idea counteractive to their business model. These successes are attributed to several differing and sometimes conflicting views about the function of CSR and are generally divided between socially-oriented and egoistically-oriented CSR initiatives. Even so, regardless of orientation and perhaps from the ambiguity of what CSR is, the internal and external effects of CSR have generally been the same. This section of the paper will highlight many of the associated benefits.

The internal benefits for a firm marketing social responsibility are quite numerous. Bob Willard and Lougee and Wallace (2008) identify that it enhances recruitment, retains top talent, increases employee productivity, and creates or maintains an atmosphere of pride within the workplace (Fox, 2007; Lougee & Wallace, 2008). For example, a Netherlands-based company, Capgemini, rewarded survey respondents by “funding a week of housing and schooling for poor children in India,” instead of the traditional “T-shirt or coffee mug for completion of the survey,” which resulted in over 2,000 qualified applicants, a filling of 800 positions, and over 10,400 weeks of
housing and education for children (Fox, 2007, pp. 45-6). This outcome is further supported by “a 2003 Stanford University study, Corporate Social Responsibility Reputation Effects on MBA Job Choice, [which] found that MBA graduates would sacrifice an average of $13,700 in salary to work for a socially responsible company” (Fox, 2007, p. 45). In addition, studies have found that environmental initiatives provide a cost-benefit relationship for operating overhead costs and employee productivity. A case study from researchers at Carnegie Mellon University’s Intelligent Workplace found that lighting improvements increased employee productivity by 3.2 percent, amounting to $1,600 per employee per year and found that “lighting improvements costing $370,000 saved almost $700,000 in energy and operating costs for a typical workplace” (Fox, 2007, p. 47).

Outside of these benefits, CSR is thought to build a positive image, which is vital to consumer behavior because it prefaces “the consumers’ impression of the corporation, corporate product marketing, and the [goods and] services provided by the corporation” (Keller, 1998; cited by Kreng & Huang, 2011, p. 529). Further, it builds “consumers’ subjective overall assessment of the corporation” (Kreng & Huang, 2011) because “71 percent of consumers have a good impression of a corporation if they have access to positive information about it” (Denworth, 1989; cited by Kreng & Huang, 2011, p. 530). In this vein, CSR somewhat also helps with “a good corporate reputation [because it] differentiates a company from its competitors and is
thus an important strategic asset to a firm. [This is] not only because of its value creation potential, but also because its intangible character makes it difficult for competing firms to replicate” (Lai, Chiu, Yang, & Pai, 2010, p. 461; Fombrun and Shanley, 1990; Roberts and Dowling, 2002).

In addition, several empirical studies have confirmed the ideas that “CSR has positive impact on industrial brand equity, corporate reputation, and brand performance” (Lai, Chiu, Yang, & Pai, 2010, p. 464). Therefore, it can be said that CSR programs act sometimes as an instrumental tool for building a positive corporate reputation, which oftentimes indicate “other intangible variables that add to a company’s value, such as good management, committed consumer base, and lower legal expenses” (Blumenshine & Wunnava, 2010, p. 239). Consequently, CSR accounts for certain variances within corporate reputation (Figure 4), which:

signal the underlying quality of a firm’s products and services; the payment of lower prices in its purchases due to lower contracting and monitoring costs; attracting more qualified people in the labor market because of the association of good corporate reputation with high self-esteem; greater loyalty from employees because employees prefer working for high-reputation firms; greater loyalty from customers because customers value associations and transactions with high-reputation firms. (Lai, Chiu, Yang, & Pai, 2010, p. 461)
Another benefit of CSR programs is risk management. An analogy to CSR risk management campaigns is best summed up by Abbott and Monsen (1979) citing historical social legislation in Germany:

In order to stem the rising influence of the socialists, Bismarck supported progressive social legislation in an attempt to reduce pressure for more dramatic forms of political change. The progressive social legislation thus was intended to ‘take the wind out of the sails’ of the socialists. Although conservative in purpose, the policy appears to be liberal ... this political mode of thinking is no less applicable to the situation in which the corporation at present finds itself (p. 511).

This line of thinking has been made useful practice in campaigns such as “British American Tobacco’s health initiatives, British Petroleum’s installation of alternative energy wind turbines, and Wal-Mart’s decisions to sell organic
groceries and build eco-friendly stores” (Lougee & Wallace, 2008, p. 100). Lougee and Wallace further say that “it simply makes good business sense to have a program of CSR; it is an essential component of the ‘political economy’ of running a large organization in a world where public opinion and politicians can have major effects on corporate values” (p. 99). To substantiate this claim, they cite that “when attempting to enter new markets, companies such as Target and Costco, with their superior CSR reputations, rarely face the same level of resistance as Wal-Mart, with its poor CSR reputation” (p. 100). Subsequently, whether the functional importance of CSR programs to firms are socially- or egoistically-oriented, they provide a long list of benefits for their practicing firms, therefore confirming the importance of any form or type of CSR, regardless of intent.
Complexity of Measurement in Business Literature

Due to the ambiguity of CSR, there have been many attempts to standardize rankings through indices. Online sites such as www.CorporateRegister.com provide reports and statistics for over 9,000 companies and give awards for firms that exemplify the notion of corporate sustainability. Other sites are geared more toward environmental and “green” standards, such as Newsweek’s Green Rankings, while still others focus on employee satisfaction ratings and benefits. In addition, there are many indices on public companies that provide multi-faceted CSR rankings, such as the Domini 400 Social Index, the Calvert Social Index, the Citizens Index, the KLD Research and Analytics database, and the Dow Jones Sustainability Index (Statman, 2005). For example, the “KLD Research and Analytics database contains quantitative measures of over 90 social and environmental indicators that are grouped into seven broad categories: Community, Corporate Governance, Diversity, Employees, Environment, Human Rights, and Products” (Lougee & Wallace, 2008, p. 101).

The first approach in ranking CSR is creating a reputational index. This involves one person or group creating standards to rank, such as omitting companies that sell tobacco or invest in public gambling companies (Cochran & Wood, 1984). This has its positives, since it is "internally consistent because one evaluator is applying the same criteria" to all of the companies within the chosen industry. Further, it "may summarize the perceptions of a key
constituency of various firms," which indicate their potentiality for alignments and groupings with public interests (p. 43). Even so, the negatives of using a reputational index far outweigh the positives. The rankings are highly subjective due to one person’s or group’s criteria, and, usually, the size of sample is too small and, therefore, hard to generalize (Cochran & Wood, 1984). In addition, this form of indexing has embedded bias based on that person or group’s values and beliefs and assumes that corporations who sell socially-questionable products cannot exercise social responsibility outside their direct interests.

The second commonly used method for measuring CSR is through content analysis, which consists of noting particular items in reports (qualitatively or quantitatively) such as counting the number of times words come up, which, arguably, represents what is on the firm’s mind (Cochran & Wood, 1984). The advantage of this method is that "once the particular variables have been chosen, the procedure is reasonably objective," and the "technique is more mechanical," which leads to larger sample sizes (p. 44). However, the choice of variables is subjective and only accounts for nominal word choice. In addition, there is no measure as to what the firm may actually be doing — it does not consider action, only words (Cochran & Wood, 1984).

The third approach that is commonly used is surveying. This technique is carried out by the researcher sending out surveys or forms to a list of firms and having them answer a series of questions. This technique seems to be the
most ineffective: return rates are always low, the sample size is limited, it is very time consuming for the researcher, and it is still a highly subjective process for both the researchers to pick the firms and the firms themselves to answer the questions.

Consequently, due to these inefficiencies, there have been innovative attempts in trying to find a better method for accurately measuring socially responsible companies. Cochran and Wood (1984) find that “average age of corporate assets is found to be highly correlated with social responsibility ranking” (p. 42). They believe that one large and immeasurable difficulty in measuring social responsibility through a financial lens is market efficiency. Therefore, they looked into using broader financial performance variables that are related to CSR, such as asset-based measures. Further, to date, every study attempting to link profitability with CSR has either contradicted past studies or used flawed methodologies. Consequently, Cochran and Wood find that using the ratio of operating earnings (before depreciation) to assets is effective, since it factors out depreciation, which is a large source of distortion to financial analysis. In addition, comparing firms within and to their industry is a must, since this has a higher likelihood in “homogeneous ... accounting practices, operating leverage, and other variables, [such as risk], that may influence test results” (Cochran & Wood, 1984, p. 47). Therefore, the ratio "measures the relative efficiency of asset utilization... [with the] major strength of this ratio [being] that it is free from the effects of bias that can result from
differences in capital structure between firms” (Cochran & Wood, 1984, p. 49). Conversely, a remedy would be to run an industry analysis to compare firms to mitigate this form of distortion, if doing it after depreciation.

Even so, they find that in order to have genuine correlations with CSR and financial performance, asset age must be incorporated, although, “nonetheless, with [asset age] included, there still is weak evidence of a positive correlation between CSR and financial performance” (Cochran & Wood, 1984, p. 43). Although, "newer firms have higher CSR ratings and higher reported asset values relative to their older competitors” (p. 52), it is just a correlation between the data and could be explained from perhaps newer companies with newer and more progressive policies regarding CSR efforts, which they posit that “no work to date has statistically demonstrated the direction of causation between these two variables” (p. 55).

In conclusion, the research of Cochran and Wood has provided a benchmark in measuring an established CSR index and financial performance. Their method employed the combined reputational index used in several of the previous studies’ so that their results could still be viewed within that field’s paradigm (Moskowitz, 1972; Sturdivant & Ginter, 1977), in addition to having larger sample sizes — a predominant flaw in previous studies. Their sampling also is an improved technique, since, as already discussed, they compared various firms with contrasting CSR scores to their respective industries prior to running two, five-year period cross-industry analyses. This also improves
validity: it accounts for two different market shifts, as well as universalizes an accounting-based measure across industries. To date, their methodology represents the best validity in measuring a pre-established corporate social performance (CSP) index and is why replicating several of these key techniques is crucial to CSR academia.


**Cause-Marketing and Advertising regarding CSR**

During the past two decades, there has been an emphasis by some researchers to understand the role that CSR programs play regarding consumer behavior and perception. Generally, the conclusions have been similar in that CSR is either causal or significantly correlated with brand attractiveness and/or a positive corporate reputation. Consequently, this leads to some type of competitive advantage. This section of the paper highlights the ideas and findings of this research, which are foundational claims to several upcoming hypotheses.

There are two general paradigms this form of research looks at: (1) how effective is cause-marketing (CM, also referred to as cause-related marketing (CRM)); and, (2) the relational models between CSR, consumer branding, and a competitive advantage.

Cause-marketing campaigns are quite ubiquitous in most individual, consumer-driven marketplaces. A study in 2000 by the Promotion Marketing Association and Gable Group found “that CRM was being used by over 85% of the organization’s corporate members” (Nan & Heo, 2007, p.63). Examples of CRM include: the “Box Tops for Education,” which has given over $475 million to schools in the United States since 1996 (General Mills, 2012); the various products that, when purchased donate a certain percent of the sale or profit to cancer research, and companies such as Ben & Jerry’s that donate a certain percent of their profit to organizations represented in their ice cream flavors.
These campaigns are important on two organizational levels. Ross, Patterson, and Stutts (1992) found that companies engaging in CRM are perceived by consumers to be socially responsible, and Smith and Alcorn (1991) attributed that CRM activities increase a consumer’s willingness to purchase a company’s product. Interestingly, though, research has also shown that luxury goods, such as ice cream and concert tickets are more successful in CRM campaigns in terms of purchase intention than items such as laundry detergent and toothpaste (Strahilevitz & Myers, 1998).

Further, Nan and Heo (2007) found that CRM messaging led to a “significantly more favorable attitude toward [a] company compared with those exposed to a regular ad without a CRM component,” suggesting that CRM campaigns are more effective than traditional advertising when trying to build positive company image (p. 70). Consequently, CRM is not only a microcosm of CSR, but is generally regarded as an adequate marketing tool to boost several facets within a firm.

CSR programs have similar impacts on building positive corporate image; however, due to the ambiguity of CSR, previous research has found it difficult to affirm such straight-forward claims as the case with CRM. Instead, it has generally looked into the relational models between CSR, its effect in branding, and subsequently, its importance to a competitive advantage. In this light, the most basic argument for CSR programs are that they provide a unique personality for the practicing firm’s product (Berger et al., 2006; Du et
al., 2007; Fournier, 1998), which act as a way “to differentiate themselves from competitors with [an] aim of increasing sales and market share” (Lougee & Wallace, 2008, p. 100). Examples of this are found in “Whole Foods Market, Ben & Jerry’s, and The Body Shop, [who] have all successfully used CSR as a brand differentiator” (Lougee & Wallace, 2008, p. 100). In addition to being a brand differentiator, Lai, Chiu, Yang, and Pai (2010) assert that “buyers’ perceptions [(brand strength)]” of CSR programs “induces buyers’ positive brand awareness/association of suppliers’ products, improves perceived quality about these products, builds brand loyalty, and brings about brand satisfaction” (pp. 457-8). Figure 5 illustrates these significant correlations regardings CSR’s effect.

Figure 5: The Competitive Models of CSR, Corporate Reputation, Industrial Brand Equity, and Brand Performance

(Lai, Chiu, Yang, & Pai, 2010)
In addition, CSR image also has been shown to effect brand prestige and brand distinctiveness (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009), which helps to build a niche brand strength, but is not causal as well in brand purchase intention. Figure 6 illustrates these relationships.

Figure 6: Direct and Indirect (in parenthesis) Effects of CSR Image

![Diagram of CSR Image Effects](image)

* $p < 0.10$

*** $p < 0.01$

(Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009)

Subsequently, these two charts convey several themes. First, CSR is very important in creating or maintaining a positive corporate image in society. This is important for two reasons: (1) it “reinforces the company’s legitimacy in society” (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009, p. 552; Handelman and Arnold, 1999); and, (2) therefore functions in part as a risk management campaign. Secondly, CSR image distinguishes a company from competition and thereby can create a competitive advantage through differentiation.
Previous Research

The 1970’s and 80’s produced a large amount of research geared at looking into corporate social responsibility and financial- and accounting-based performance measures, in addition to many different theories and definitions related to CSR. During the 1970’s, research was generally focused on relationships between CSR and profitability. This research generally used self-made and assessed CSR indices or relied on surveys, and tracked CSR performance through several variables, such as stock price increase, ROA, ROE, EPS, or some combination of these (Aupperle, Carroll, & Hatfield, 1985). Even so, many of these findings tended to contradict each other and/or be rejected on methodological grounds. The methodological flaws that led to contradictory results generally fell into categories such as: too small of a sample; no adjustment for risk; inadequate timeframe of study; or, questionable index constructs (Aupperle, Carroll, & Hatfield, 1985). Consequently, by the 1980’s the focus on CSR and profitability shifted after this cacophony of mixed results and methodological rejections. Instead, empirical CSR researchers began to look at different variables related to financial performance or view CSR through different organizational perspectives. McGuire, Sundgren, and Schneeweis (1988) found that risk and prior performance is “more closely associated with social responsibility than previous studies have suggested” (p. 854); Cochran and Wood (1984) found asset age to be correlated with CSR rankings; and, Aupperle, Carroll, and
Hatfield (1985) measured CEOs decision influence levels using “Carroll’s Construct” (1979), a new, organizational measurement system related to CSR, to find that “no statistically significant relationships were found between a strong orientation toward social responsibility, or concern for society, and financial performance” (p. 459).

Consequently, most research found little evidence of a relationship between CSR and financial performance; however, it seems that this may have been a result from casting a singular definition of CSR — most of the “socially responsible” firms were handpicked and, therefore, seemingly biased, and no work viewed CSR as a pluralistic and/or complex definition until later. Further, the research of the 1970’s generally assumed a causal model with tacit hypotheses such as, “does CSR increase or decrease EPS or stock price?”

However, there are many different ways a firm is able to be socially responsible, and it seems that the predominant research of the 1980’s shifted toward seeing this ambiguity and into correlations and other forms of measurements. It seems that this methodological shift produced Cochran and Wood’s results. Their study used industry controls and may have tacitly hypothesized that CSR manifests itself differently among heavy chemical, energy, and beverage industries. This technique of controlling companies by industry has shown to be preferable to other past studies that have looked for CSR relationships between firms in varying industries (e.g. Moskowitz, 1972; Parket & Eilbirt, 1975; Vance, 1975; Heinz, 1976; Alexander & Buchholz, 1978).
By studying within an industry, a more accurate and “homogeneous”
comparison between firms is possible, since certain industries have different
“accounting practices, operating leverage, and other variables, [such as risk],
[which] may influence test results” (Cochran & Wood, 1984, p. 47).

Hypothesis 1: Operating earnings to assets, operating earnings
to sales, asset turnover, fixed asset turnover, and excess value
will produce statistically significant correlations regarding asset
age.

However, since then, there has been a long void in this field of research,
with the exception of a few researchers and firms who continue to measure the
profitability of socially responsible investing (SRI) indices. These indices
include the Dow Jones Sustainability Index, the FTSE Group’s series of
indices, and the Calvert Social Index, which are somewhat compiled in part to
function as benchmarks for other privately managed socially responsible
investing firms. An example of this is Meir Statman’s work, which found that
“the mean score of each is higher than that of the S&P 500 Index,” and that the
“returns of socially responsible indexes were generally higher than those of the
S&P 500 Index ... [although] there is a wide range of scores of the companies
within each socially responsible index and much overlap between the lists of
companies in the socially responsible indexes and the S&P 500 Index” (pp. 15-
6). In this same vein, Lougee and Wallace (2008) found from April 1990 to
December 2006 that “the Domini 400 has delivered an annual rate of 12.09% 
while the benchmark, S & P 500, has produced an annual rate of 11.45%” (p.
103). In addition, Statman’s research found that from May 1990-April 2004, the differences between the Domini Social 400 Index and the S&P 500 Index, when not weighted by industry, showed more volatility/movement (Figure 7).

Figure 7: A Comparison of Differences in 12-Month Moving Averages of the Returns of the DS 400 Index and Those of the S&P 500 Index to Differences in Indexes Created by Weighting Industry Returns by the Weights of Industries in each Index

(Statman, 2005)

Hypothesis 2: Average asset age to CSR ranking will become more statistically distinct when controlled for industry. i.e. “modern” businesses such as tech firms will be correlated higher in CSR ranking than energy and retailing companies.

Outside of Statman’s work, and as already discussed, recent empirical CSR academia has focused on the relationship between CSR and advertising, marketing, consumer perception and behavior, and CSR brand strengths
under acquisitions (Curras-Perez, Bigne-Alcaniz, & Alvarado-Herrera, 2009; Lai, Chiu, Yang, & Pai, 2010; Page & Fearn, 2005; Nan & Heo, 2007; Robinson, Irmak, & Jayachandran, 2012). These studies have looked into the cause and effect relationships between CSR-based company image or cause-marketing campaigning and consumer purchasing behaviors related to CSR.

Further, past studies and research have found strong links to consumer purchasing behavior of firm’s products and consumer perception of a firm’s social concern. Mirvis (2008) cites a study by Cone, Inc., which found a growth of 65% to 87% of surveyed consumers from 1999 to 2007 who are “switching from one brand to another of same price and quality if the other brand is associated with a cause” (p. 110). In addition, academia has lately held the general attitude that “cause marketing campaigns result in more positive consumer attitudes toward a company and greater purchase likelihood for its products” (Robinson, Irmak, & Jayachandran, 2012, p. 126; Brown & Dacin, 1997; Pracejus, Olsen, & Brown, 2003; Strahilevitz & Meyers, 1998). Therefore, it seems that at least one of the advertising hypotheses is likely to yield a significant correlation. Consequently, the third hypothesis is:

Hypothesis 3: Reported advertising expense and/or selling, general, and administrative (S, G, & A) expenses will be correlated to CSR rankings.

Further, given that most of the research on cause-marketing and consumer behavior was conducted on an individual, consumer-based product
decision model, it seems that there will be a relationship between several industry categories. No CSR research has yet to look into the relationship between capital-intensive industries versus luxury goods and individual, consumer-sales driven product lines. It seems in a general sense that capital-intensive industries’ sales models will rely more heavily on large and long-term contractual deals and negotiations, not on large, high-budget advertising campaigns. However, firms that are associated more with individual product lines and individual, consumer-sales driven purchases will have a different capital structure and emphasis on advertising. Therefore, hypothesis four is:

Hypothesis 4: Reported advertising expense and selling, general, and administrative expenses correlations with CSR rankings will differ when adjusted into capital-intensive and individual, consumer-driven categories.

Although it is the case that much of the reported advertising is not directly related to CSR efforts, it seems likely that a higher advertising to company revenue/size would boost CSR rankings, given its effect on consumer behavior.
Method

The financial data used in this study were gathered using Compustat. The companies in this study were compiled from Newsweek’s 2011 Green Rankings, since this is currently the largest ranking, easily accessible, and comprehensive CSR list. This is advantageous for several reasons. The companies were selected from being “the largest 500 companies by revenue (most recent fiscal year), market capitalization, and number of employees as of June 30, 2011,” which allow for a high percentage of full to near full data sets (para. 1). Further, Newsweek has carried out these rankings since 2009 and have improved their methodology so that this year’s and future rankings can be compared on the same 100-point scale — allowing for year-to-year same company comparisons on their scores and commitments. This feature will allow building upon this research for subsequent years to come, thereby being able to have even larger sample sizes for further replication and an increased reliability.

In addition, the rankings are only based off of environmental concerns, thus limiting the scope and problem of ambiguity related to CSR and, therefore, allowing for more consistency within the data. Another advantage is their method in creating three separate scoring components, which consist of an “environmental impact score,” “environmental management score,” and “disclosure score.” The companies’ “environmental impact score” is given through a quantitative, industry-controlled economic model, allowing for a fair
comparison between firms that naturally use more raw materials and those that are more service oriented. The companies’ “environmental management score” is created through the “examination of company documents, media sources, online databases, government sources, NGO research, and other industry sources, as well as direct communication with key stakeholders,” which are all “peer reviewed internally and sent to companies for verification” (Newsweek, 2011, para. 8). The “environmental management score” is:

an assessment of how a company manages its environmental performance through policies, programs, targets, certifications, and the like. To account for a company’s overall environmental footprint, Sustainalytics’ focuses 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 (para. 6).

Subsequently, it seems plausible that this score may have somewhat of a corruptibility factor since marketing, advertising, and public relations factors contribute into the “positive performance-related criteria” and “assessment of environmental controversies and incidents.” To further this notion, 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. As part of its standard research cycle, all profiles are peer reviewed internally and sent to companies for verification (para. 8).
This method of measuring a firm’s environmental management therefore may intrinsically bias firms that are “greenwashing” or show the relationship between environmental responsibility and financial structure.

The companies’ “environmental disclosure score” is created from “evaluat[ing] the breadth and quality of company environmental reporting of their material impacts … as well as company involvement in key transparency initiatives such as the Global Reporting Initiative and Carbon Disclosure Project” (Newsweek, 2011, para. 9). Consequently, the 2011 green rankings’ method has synthesized environmentally financial-based analysis, content analysis, and surveying technique, which has not been done in any serious manner to date and therefore represents the most comprehensive and academically acceptable form of CSR ranking.

The sample consists of the 500 firms from Newsweek’s Green Rankings. In many correlations and tests, however, sample size is denoted since the firms’ do not use all the same accounting reporting practices. In many cases, industries are combined with each other, which accounts for larger sample sizes as well as functions for groupings in hypotheses. In addition, 2010 and 2011 financial variables are used as a way of “trapping” the Green Score, since the ranking statistics were determined in June of 2011.

Hypothesis 1 used Cochran and Wood’s variables: operating earnings to assets; operating earnings to sales; asset age (net fixed assets to gross fixed assets); asset turnover (net sales to total assets); and, excess market value, to
determine if the relationships they found are more or less relevant in today’s finance with new industries and under a better constructed CSR ranking. In addition, the ratio from Compustat of fixed asset turnover was incorporated since Cochran and Wood’s findings were asset-based.

Hypothesis 2 correlated asset age, asset turnover, and fixed asset turnover alongside the green ranking scores; however, instead of comparing the financial variables in such a broad way, the firms were broken down into industries where there are generally different capital structures and asset turnover rates, such as the case with high tech firms versus utility companies. If there is a seemingly large difference between these industry breakdowns, it may be possible to show that a natural industry bias exists in CSR indices, or that companies with high asset turnover and age are generally more prone to engage in CSR.

Hypothesis 3 and 4 incorporate reported advertising expense and selling, general, and administrative expense alongside the green ranking scores to determine if there are any significant correlations. Hypothesis 4 mirrors that same concept as hypothesis 2 in that it breaks industries into a dichotomy between capital-intensive and individual, consumer-driven industries. This is done since capital-intensive industries, such as materials (manufacturing) industries generally rely on more contractual relationships as opposed to individual, consumer-driven industries, which generally may more heavily rely on advertising and different marketing concepts. Consequently,
any significant findings will lead to further tests to hopefully determine a
better understanding as to the relationships of these variables.
Results

The initial results for the four correlation hypotheses were all confirmed with statistically significant correlations, usually at the ($\rho < .01$) confidence level. Hypothesis 1 found that the variables used in Cochran and Wood’s original study are still statistically significant with this paper’s sample of firms (Table 1).

Table 1

Financial Variable Correlation

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Earnings/Assets</td>
<td>1 (1)</td>
<td>.331** (.265**)</td>
</tr>
<tr>
<td>Operating Earnings/Sales</td>
<td>1 (1)</td>
<td>.360** (.189**)</td>
</tr>
<tr>
<td>Asset Age</td>
<td>1 (1)</td>
<td>-.120 (-.127**)</td>
</tr>
<tr>
<td>Asset Turnover</td>
<td>1 (1)</td>
<td>.514** (.483**)</td>
</tr>
<tr>
<td>Fixed Asset Turnover</td>
<td>1 (1)</td>
<td>.305** (.331**)</td>
</tr>
<tr>
<td>Excess Value</td>
<td>1 (1)</td>
<td>.002 (.016)</td>
</tr>
</tbody>
</table>

* $p < .05$  
** $p < .01$

Although there is a difference in some correlations’ strengths as compared to Cochran and Wood’s study, this similarity is important since it somewhat functions as a control check for the several new industries that now exist in the 28 year gap of research. Consequently, the acceptance of hypothesis 1 suggests that these variables’ relationships are consistent overtime and not significantly affected by the emergence of new industries.
Hypothesis 2 measures the difference between two groupings of industries with seemingly similar asset age in relation with their environmental scores and ranking. After examining the descriptive statistics using GICS economic sector codes, seven industries were put into two groupings. The first group (coded as “0”) consisted of all energy, materials, industrials, and utilities companies, which comprised a sample of 171 companies. The second group (coded as “1”) was coincidentally a 171 firm sample and consisted of all health care, financial, and information technology firms. Hypothesis 2 is confirmed as there is a large increase in the relationships between average asset age when controlled between these two groups as compared to Cochran and Wood’s findings (Table 2).

Table 2
Financial and 2011 Green Score Variable Correlation
2010 (2011)

<table>
<thead>
<tr>
<th>Asset Age</th>
<th>Asset Turnover</th>
<th>Fixed Asset Turnover</th>
<th>Industry Breakup</th>
<th>Green Ranking</th>
<th>Green Score</th>
<th>Env. Impact</th>
<th>Env. Mgmt.</th>
<th>Disc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (1)</td>
<td>-0.106*</td>
<td>0.352**</td>
<td>0.521**</td>
<td>-0.192**</td>
<td>0.158**</td>
<td>0.314**</td>
<td>-0.070</td>
<td>-0.197**</td>
</tr>
<tr>
<td>Asset Turnover</td>
<td>1 (1)</td>
<td>0.514**</td>
<td>-0.078</td>
<td>0.055</td>
<td>0.062</td>
<td>0.156**</td>
<td>-0.026</td>
<td>-0.181**</td>
</tr>
<tr>
<td>Fixed Asset Turnover</td>
<td>1 (1)</td>
<td>-0.078</td>
<td>-0.115*</td>
<td>-0.038</td>
<td>0.046</td>
<td>0.142**</td>
<td>-0.033</td>
<td>-0.180**</td>
</tr>
<tr>
<td>Industry Breakup</td>
<td>(1)</td>
<td>-0.247**</td>
<td>0.236**</td>
<td>-0.155**</td>
<td>0.141**</td>
<td>0.321**</td>
<td>-0.114*</td>
<td>-0.186**</td>
</tr>
<tr>
<td>Green Ranking</td>
<td>(1)</td>
<td>0.141**</td>
<td>0.415**</td>
<td>0.493**</td>
<td>0.107*</td>
<td>-1.166**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Score</td>
<td>(1)</td>
<td>-0.964**</td>
<td>-0.629**</td>
<td>-0.630**</td>
<td>-0.319**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Env. Impact</td>
<td>(1)</td>
<td>0.656**</td>
<td>0.648**</td>
<td>0.332**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Env. Mgmt.</td>
<td>(1)</td>
<td>-0.111*</td>
<td>-0.335**</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*ρ < .05
**ρ < .01
The increased relationships between asset age when certain industries are grouped is important to note for several reasons: (1) Cochran and Wood’s correlation only found “weak support for a link between CSR and financial performance” (p. 55), and this paper’s industry breakdown relating to asset age found a strong, moderate correlation for both 2010 and 2011; (2) the green rankings and all green scores except environmental management are statistically significant, which supports Cochran and Wood’s findings since this CSR ranking is the most extensive ranking to date; (3) the industry breakdown also leads to statistically significant results in every facet of Newsweek’s Green Ranking.

Hypothesis 3 incorporated advertising expense and selling, general, and administrative expense as addition variables. The sample sizes for advertising expense were limited to 212 firms in 2010 and 195 firms in 2011 since reported advertising expense is a voluntary disclosure. However, selling, general, and administrative expense samples totaled 414 firms in 2010 and 387 firms in 2011.

These results have many important implications. As with the previous correlations between asset age and the green rankings and scores, environmental management yielded no statistically significant results, except very weak, negative correlations with fixed asset turnover when $\rho < .05$. However, these results show statistically significant relationships between both advertising expense and selling, general, and administrative (S, G, & A)
expense variables and environmental management, while environmental impact is no longer statistically significant (Table 3). Further, these two variables also have a positive relationship with disclosure — the opposite case from the relationships between disclosure and asset age, asset turnover, and fixed asset turnover.

**Table 3**

Advertising, S,G, & A, and 2011 Green Score Correlation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising Expense</td>
<td>1 (1)</td>
<td>.590** (.568**)</td>
<td>-.281** (-.272**)</td>
<td>.268** (.256**)</td>
<td>.002 (-.003)</td>
<td>.337** (.330**)</td>
<td>.238** (.222**)</td>
</tr>
<tr>
<td>S,G, &amp; A</td>
<td>1 (1)</td>
<td>.164* (.170*)</td>
<td>-.331** (-.329**)</td>
<td>.336** (.335**)</td>
<td>.093 (.088)</td>
<td>.305** (.311**)</td>
<td>.267** (.272**)</td>
</tr>
<tr>
<td>Industry Breakdown</td>
<td>(1)</td>
<td>-.349** (-.349**)</td>
<td>(.353**) (.407**)</td>
<td>(.134**) (.134**)</td>
<td>(.159**) (.159**)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Ranking</td>
<td>(1)</td>
<td>-.964** (-.964**)</td>
<td>-.629** (-.629**)</td>
<td>-.630** (-.630**)</td>
<td>-.319** (-.319**)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Score</td>
<td>(1)</td>
<td>.656** (.656**)</td>
<td>.648** (.648**)</td>
<td>.332** (.332**)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Env. Impact</td>
<td>(1)</td>
<td>-.111* (-.111*)</td>
<td>-.335** (-.335**)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Env. Mgmt.</td>
<td>(1)</td>
<td>(.569**)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05    ** p < .01

This table also shows the results of hypothesis 4, which mirrors a similar filtering concept as hypothesis 2. This industry breakdown consists between capital-intensive and individual, consumer-driven categories. The capital-intensive category (coded as “0”) consisted of all the energy, materials, industrials, and utilities companies and totaled 171 firms. The second category (coded as “1”) consisted of all information technology, health care, consumer staples, consumer discretionary, and telecommunication services companies
totaling 271 firms. This breakdown shows statistically significant correlations on every variable.

Consequently, due to the statistically significant findings on all of the hypothesized variables, including the relationships between industry breakdowns and green ranking and green score, several more correlations were run. First, the dataset was divided into the top-ranked 50 companies and bottom-ranked 50 companies and rerun to test for any extreme relationships (Table 4). This procedure of removing all of the centrally-ranked firms also acted to remove any possible buffering effect that the middle-ranked firms may have.

Table 4
50/50 Split Between Top- and Bottom-Ranked Companies Correlation

<table>
<thead>
<tr>
<th></th>
<th>2010 (2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Asset Age</td>
</tr>
<tr>
<td>Asset Age</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Ad Exp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (1)</td>
</tr>
<tr>
<td>S,G,&amp;A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (1)</td>
</tr>
<tr>
<td>Green Rank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Green Score</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Env. Imp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Env. Mgmt.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Disclosure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
</tbody>
</table>

*p < .05    **p < .01

These results show an increased strength between advertising and S, G, & A expense relationships with almost all green scores, particularly between
advertising expense and disclosure. This is a rather important discovery, given its statistical strength. Another important observation in these results is the almost complete lack of statistically significant relationships regarding asset age. This echoes findings from past research, which include the findings of Bowman and Haire (1975), that “the highest performing firms [were] those found in the middle range of CSR” (Aupperle, Carroll, & Hatfield, 1985, p. 449), and Cochran and Wood (1984), where they found “honorable mention’ firms ... slightly superior to ‘best’ firms” in relationship to operating earnings/assets, although the latter had no statistical significance (p. 51). Therefore, to account for this possible curvilinear relationship, another correlation test was run after breaking down the 500 firms into equal thirds based on rank (coded as “0”, “1”, and “2”) (Table 5).

Table 5
Ranking Split into Equal Thirds
2010 (2011)

<table>
<thead>
<tr>
<th>Thirds</th>
<th>Asset Age</th>
<th>Ad Exp</th>
<th>S,G,&amp;A</th>
<th>Green Rank</th>
<th>Green Score</th>
<th>Env. Impact</th>
<th>Env. Mgmt.</th>
<th>Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (1)</td>
<td>-1.176**</td>
<td>-2.288**</td>
<td>-2.298**</td>
<td>.943**</td>
<td>-.874**</td>
<td>-.569**</td>
<td>-.569**</td>
<td>-.295**</td>
</tr>
<tr>
<td>2 (2)</td>
<td>.049</td>
<td>.042</td>
<td>-.192**</td>
<td>1.58**</td>
<td>.314**</td>
<td>-.070</td>
<td>-.197**</td>
<td></td>
</tr>
<tr>
<td>3 (3)</td>
<td>.590**</td>
<td>-.281**</td>
<td>2.68**</td>
<td>-.002</td>
<td>.337**</td>
<td>.238**</td>
<td>.222**</td>
<td></td>
</tr>
</tbody>
</table>

| Asset Age | 1 (1) | .049 | .042 | -.192** | 1.58** | .314** | -.070 | -.197** |
| Ad Exp    | 1 (1) | .590** | -.281** | 2.68** | -.002 | .337** | .238** | .222** |
| S,G,&A    | 1 (1) | -.331** | .336** | .093 | .305** | .267** | .272** | .272** |
| Green Rank | (1) | (1) | (.329**) | .335** | (.088) | (.311**) | (.272**) | (.335**) |
| Green Score | (1) | (.656**) | (.648**) | (.332**) | | | | |
| Env. Imp. | (1) | (.111*) | (.335**) | | | | | |
| Env. Mgmt. | (1) | (.569**) | | | | | | |
| Disclosure | (1) | | | | | | | |

*p < .05  **p < .01
The results now show statistically significant correlations between asset age and all green scores with the exception of environmental management, thereby suggesting that a curvilinear relationship does exist with the middle-tier ranking companies and supports the findings of Aupperle et al. and Cochran and Wood at a statistically significant level. It further shows the continuing trend between environmental impact scores and environmental management scores — asset age has no significant relationship with environmental management and advertising expense and S, G, & A expense have no significant relationship with environmental impact. Further, it also shows the incongruity of disclosure relationships between asset age and the advertising and S, G, & A expenses with asset age having a significant negative relationship and the other two having positive relationships.

The last test strictly pertained to the information technology industry, totaling a sample of 63 firms. This was conducted to further investigate the industry with the lowest average green ranking (a mean of 116.73—1 scoring as the best environmental company on Newsweek’s Green Ranking) to further isolate the relationships between green scores, ranking, asset age, advertising expense, and S, G, & A expense. As was the case with splitting the top- and bottom-ranked 50 companies, this test was intended to see if any of the three variables had an extensively higher correlation (Table 6).
These results confirm the statistically significant trend between asset age and environmental impact, as well as S, G, & A expense and environmental management — both at a positive, moderate relationship with $\rho < .01$, which represents a large increase from the previous results. In addition, selling, general, and administrative expense has a positive, moderate relationship with green score, disclosure, and environmental management, as well as a negative, moderate green ranking (meaning as S, G, & A expense goes up, green rank goes down closer to 1 — the best possible rank); however, although there is the relationship with asset age and environmental impact, asset age shares no other statistically significant correlations. This may be explained through asset age’s curvilinear relationship, though, and since the information technology industry has a high average of ranking, using asset age as a variable may only be viable when testing a more diverse sample.
This difference between negative and positive correlations between disclosure score when related to either asset age or advertising expense and S, G, & A expense represents a possible point between positive intent and “greenwashing.” The trend of a weak, negative relationship between asset age and disclosure score (meaning that firms with older assets have higher disclosure scores and firms with newer assets have lower disclosure scores) and a positive relationship between advertising expense and S, G, & A expense exists in every table where the three variables coincide, with the exception of table 4. Importantly, disclosure score is more closely related to advertising expense and S, G, & A expense, which may therefore mean that the disclosure score either represents illegitimate ranking or intrinsic bias toward certain industries.

An example of this is within the information technology industry, which has an asset age and disclosure relationship of a not statistically significant (-.163) in 2010 and (-.152) in 2011, yet has an advertising expense and disclosure relationship of (.407) at ρ < .05 and an S, G, & A expense and disclosure relationship of (.428) in 2010 and (.438) in 2011 at both a ρ < .01. In this vein, these results suggest the conclusion of McGuire, Sundgren, and Schneeweis (1988) in that “it may be more fruitful to consider financial performance as a variable influencing social responsibility than the reverse” (p. 869). In addition, these results also represent the curvilinear relationship of asset age with ranking and suggest the relative strength of advertising expense and S, G,
& A expense on CSR scores. These findings related to disclosure scores also resonate with the very recent research of Chatterji and Toffel (2012), who find that “firms that are transparent about their environmental activities do not necessarily tell us much about their political activity on the environment” (para. 4). They found a correlation between “companies’ political transparency scores [and] their environmental transparency scores from the Newsweek Green Rankings” to be weakly correlated at .20, which again suggests the importance of factoring advertising expense and S, G, & A expense into CSR score models to mediate transparency issues (para. 4). In addition, these relationships further represent the difficulty on CSR measurements and index construction.
Discussion

The results from this study are providing further knowledge related to the ties between corporate social responsibility and financial performance. It shows several new relationships between CSR and financial performance that have so far been overlooked, as well as retests the variable of asset age.

Its two most important contributions are testing asset age, advertising expense, and S, G, & A expense with the several different scores provided by Newsweek, as well as introducing a different system of breaking down CSR. Past studies have looked at CSR with a singular definition that could be found through financial analysis across many differing industries. However, the results that show increased relationships between the three variables and among different green scores suggest that different industries either manifest their CSR in different ways or that certain industries are innately better off when being rated on their social responsibility. This is not a new thought and is found in Cochran and Wood’s conclusion, whereby they state that their asset age and CSR correlation could be explained such that:

firms with older assets constructed plants in a period when regulatory constraints were less severe than they are today. For example, if a firm built a plant prior to the mid-sixties there is an excellent chance that its facility pollutes more than one built in the recent past. Management of such a firm may be attempting to respond to the social demands for a cleaner environment and may actually have spent more to upgrade its facilities than did firms that built later in anticipation of these new constraints (pp. 54-5).
This idea has broader implications and applies to the capital-intensive industries of industrials, materials, energy, and utilities. These industries have more long-term, heavy equipment that is amortized over a longer period as compared to health care, information technology, and financial industries. These latter industries generally have the most up-to-date equipment and technology, thereby intrinsically being advantaged for quicker internal change when faced with any unforeseeable external pressure. Such can be posited with the information technology sector, which has the best average ranking. It is a new field with continual expansion, growth, and turnover, which, when compared to capital-intensive industries, has the greatest potential to have the most modern, environmentally sound practices. When the industries are grouped into capital-intensive and individual, consumer-driven products categories, the results were statistically significant across every green score and were consistent with the rest of the relationship trends. In addition, the methodology used for calculating the environmental impact score consisted of “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” (para. 3). Consequently, given this method and consistent relationship with asset age, industry, and environmental impact score, the rationale seems fitting.

The consistent relationships between scores with advertising expense and S, G, & A expense suggest several possible explanations regarding
marketing, branding, and advertising. A simple explanation is that marketing and branding is a core component in the essence of CSR, as postulated in this paper (Figure 2, p. 8). Another explanation could be that companies with great marketing and advertising teams understand the several roles CSR campaigns can play on consumers. Subsequently, the campaigns, firms’ brand equity and strength, and firms that are more prone to advertise may influence index construction and ratings since advertising expense and S, G, & A expense may proxy for emotional/qualitative bias. This idea supports much of the general attitude regarding research on cause-marketing and CSR advertising, as well as some of the sentiments within this paper.
Areas for Further Study

As already noted, the financial variables of asset age, advertising expense, and selling, general, and administrative expense are all strongly related to CSR scores. These variables should be examined further and under different CSR index rankings (i.e. corporate governance CSR rankings) to determine if they have an absolute importance with CSR ratings in general.

One difficulty in this study was sample sizes, since there are different reporting and accounting practices among different companies and industries. Therefore, the industries were divided based off the GICS economic sector codes, which are broad enough to filter industries to provide larger sample sizes, but at the same time compromise the acuity of the results and intended groupings of the hypotheses. Currently, it seems that there are no CSR rankings that are as large, specific, and comprehensive in measurement as Newsweek’s Green Ranking. There is therefore a waiting period until larger samples of companies are ranked, such as the Fortune 1000. Once something like this becomes available, far more statistics could be run to determine more definite relationships.

On this same note, since 500 firms are still somewhat of a small sample and the 500 firms in Newsweek’s 2012 rankings have somewhat changed, using the Fortune 1000 would provide an even larger buffer zone to be able to create a predictive model of CSR activities and scores based off of their financial relationships. This would also then provide a more specific system of
grouping, whereby the information technology grouping could be broken into their GICS subcode of: software and services; technology hardware and equipment; and, semiconductors and semiconductor equipment.

On a different note, a general observation in the results is that the green scores seem to have stronger relationships with the 2010 financial variables. This suggests that the prior year’s financial measures may be more indicative of the following year’s green rankings. Consequently, an analysis of Newsweek’s 2012 Green Ranking using 2011’s and 2012’s financial datasets could provide even more insight into the construction of this ranking and would be a great way for comparison. An example of this would be to run a similar analysis as this study as well as to further Chatterji and Toffel’s original intent (between political lobbying disclosure and environmental disclosure) and systematize a way to screen or measure company or industry “greenwashing.”

Another observation for further study is the similarity between the findings of Cochran and Wood’s significant, but weak correlation with asset age and this study’s significant and weak to moderate asset age correlations. A question to ask regarding both of these results is: if Cochran and Wood’s ranking system was so simplistic in nature and Newsweek’s ranking was far more extensive, then could any index or ranking provide similar asset age relationships? Depending on these results, the absolute significance of asset age and CSR would have to be questioned. In addition, this question asks
whether there will ever be objective CSR rankings. Currently, CSR ranking practices rely on a collective subjectivity. This paper’s findings could be further explored to determine the variables’ causal role and then incorporated into ranking models in order to counter unseen biases. This would represent a large step toward objective CSR ranking practice since it would filter out such qualitative biases, which is what advertising expense and S, G, & A expense may represent.

Finally, future statistical studies relating to CSR must begin to breakdown or group industries with similar structures. This seems to be the first time it has been done and the results significantly reflect this step. Importantly, this step furthers the notion that CSR scores are not as singular as CSR’s generally accepted definition and should be continued to be used in future studies.
Conclusion

Corporate social responsibility is not a singular topic or definition as generally stated; it has many levels and can be exercised differently, according to an industry’s or firm’s interests. This paper has shown the difficulty in measuring CSR, and it suggests that currently there is no absolute solution until further research is conducted regarding this paper’s variables and new ones. Research is still relatively new in this field; the past forty years have shown the growth of the topic, from defining it and measuring it in very simple terms of profitability, to understanding strict relationships between CSR image and its relationship to brand strength—it seems that there is still a wide range of research to be done.
Bibliography and Consulted Works


