

Corporate Social Responsibility Disclosures: A Study of the Financial Characteristics and Capital Expenditures of the S&P 500 Firms

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Abstract

This paper examines the corporations' decision to disclose information related to corporate social responsibility (CSR) and its implications. While there are no accounting standards similar to those for financial reporting, companies here in the U.S. and abroad have voluntarily started disclosing CSR information. While a study as recently as 2010 shows that only 30 percent of S&P 500 firms issued CSR reports, this situation has changed dramatically in the last 5 years with respect to the extent and substance of CSR disclosures.

The issue of whether and how CSR disclosures are informative deserves attention. For investors, the potential interplay between financial results and CSR reporting provides an important piece of information. For a policy maker, this interplay provides an important dimension to consider with respect to environmental policy evaluation. For corporate managers, the impact of CSR disclosures on public image and the cost of capital plays an important role in strategic decision-making.

In this paper, I analyze possible motivators for the disclosure decision. I also examine how capital expenditures may be associated with CSR disclosures. I use data available from Bloomberg for measures of CSR. As expected, I find a positive association between CSR reporting and firm size; and between CSR disclosures and environmentally sensitive industries. More importantly, and this is the main contribution of my paper, I find a positive association between CSR disclosures and capital expenditures, but this positive association is reduced by the energy- and materials intensity of the industry in which a firm finds itself.

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Introduction

Society's concerns with the impact of the corporate world in the last 50 years has gradually led corporations to a recognition of the need to take action to meet these concerns. One change has been the greater willingness of an increasing number of corporations to disclose information to the public concerning their corporate citizenship or what has become known as corporate social responsibility (CSR). According to McWilliams and Siegel (2001), CSR may be defined as "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (p. 117).

In this paper I focus on capital expenditures and ask whether they have a bearing on the extent to which a corporation behaves responsibly. Capital expenditures determine the trajectory of a corporation's growth, with a definite economic impact on itself and society at large. Drilling for oil and natural gas, for example, is such an activity. Whether this may be accompanied by responsible corporate behavior is an empirical question that has not been widely examined in the literature. Part of the reason for this has been a lack of readily available data for a wide range of companies and industries. This has changed in the past decade or so, as U.S. and international organizations concerning with CSR have started working with corporations for more disclosures and more uniformity in such disclosures. For example, the Global Reporting Initiative (GRI) based in the Netherlands has proposed a reporting framework for corporations to follow in disclosing CSR information. Disclosure scores and performance data on the environment, society, and governance (ESG) are now available from Bloomberg.

I. Review of the Literature

1. Voluntary disclosure and public policy

Voluntary disclosure theory (as explained by Dye, 1985 and Verrecchia, 1983) predicts a positive association between environmental performance and the extent of discretionary environmental disclosure. Environmentally superior firms disclose to signal their superiority, while poor performers tend to disclose less. This outcome is attributed to uncertainty on the part of disclosing firms concerning which type they belong to and also to the proprietary costs of disclosure.

2. Environmental disclosure and public policy

Lydenberg, Rogers, and Wood (2010) made the case for mandatory reporting of environmental impact in that it provides consistent and useful information to investors and policy makers. Crawford and Williams (2010), comparing the U.S. and France, found that regulatory pressures are important determinants of quality disclosures.

Lyon and Maxwell (2011) model environmental disclosures in which public policy may be conducive to disclosures that are more in line with environmental performance. Wiseman (1982), in her study of 26 companies, reported that there was no relation between environmental disclosures and actual environmental performance.

3. Determinants of Environmental Disclosure

a. Environmental Performance

Patten (2002) reported a negative correlation between environmental disclosures and environmental performance, and the correlation is more pronounced among firms in non-environmentally sensitive industries (ESIs). Social and political pressures may explain the negative correlation. Bad environmental performance leads to pressure to disclose, and ESIs are not affected as much by this pressure because they already receive more scrutiny. Ullmann (1985) developed a framework for predicting corporate social activity based on a stakeholder theory of strategic management.

Clarkson, Li, Richardson, and Vasvari (2008) focused on purely discretionary environmental disclosures and developed a content analysis index based on the Global Reporting Initiative sustainability reporting guidelines to assess the extent of discretionary disclosures in environmental and social responsibility reports. Using a sample of 191 firms from the five most polluting industries in the U.S., they reported a positive association between environmental performance and the level of discretionary environmental disclosures, consistent with the predictions of the economic theories of discretionary disclosure. However, for companies experiencing pressure for better environmental performance by external stakeholders, the social-political frameworks do provide a structure for predicting disclosures of environmental information when the company has not made a hard commitment to disclose the information.

A number of studies have explored the associations between environmental disclosures, environmental performance, and/or financial performance. Clarkson, Li, and Richardson (2004), examining and pulp and paper industry, found increased disclosures of environmental information when firms are more likely to pollute, when stakeholders become more aware of the firms' environmental liabilities, and when threats to obtaining regulatory costs decline. They also found that environmental capital expenditures yield gains for low-polluting companies, but not their high-polluting counterparts. Also, investors utilize data on companies' environmental performances to assess future environmental liabilities that are yet to be recognized.

Some companies manage their environmental disclosures in relation to performance. For example, Cho, Patten, and Roberts (2006) found that companies with higher political lobbying efforts have increased environmental disclosures and lower environmental performances, suggesting a management strategy to influence environmental regulatory procedures. This management also involves the use of reporting language, as reported by Cho, Roberts, and Patten (2010) in that the worse the corporate environmental performance, the more optimistic and vague the environmental disclosure language in the entity's annual reports.

b. Economic Performance

Al-Tuwaijri, Christensen, and Hughes (2004) arrived at different results from Patten (2002) when they considered endogeneity among environmental performance, financial performance, and environmental disclosures. They reported positive links, suggesting that environmental stewardship and economic success do not have to be adversarial objectives. Orlitzky and Benjamin (2003) provided general support for a positive relation between corporate socially responsible behavior and financial performance. Ruf, Mrulidhar, Brown, Janney, and Paul (2001) used stakeholder theory to explain a broader positive link between corporate social

performance and financial performance, suggesting that firms better serve their shareholders when they address other stakeholder concerns. Jose and Lee (2007) suggested that companies perceive environmental issues as a competitive advantage instead of a regulatory burden. In contrast to the above results, Murray, Alan, Donald Sinclair, David Power, and Rob Gray (2006) found no relation between UK companies' stock returns and their environmental and social disclosures. However, there was a positive relationship between a company's level of disclosures and the consistency of their financial returns (i.e. high disclosure levels correlated with consistently high returns, and vice versa).

In another study on market reactions, Blacconiere and Northcutt (1997) showed that the market placed a value on environmental disclosure information surrounding U.S. environmental regulations in 1986 (the Superfund Amendments and Reauthorization Act). Specifically, chemical companies with pre-1986 environmental disclosures received better market reactions compared to companies disclosing under EPA regulations. This finding supports Blacconiere and Patten's (1994) earlier analysis of a different critical event - the 1984 Union Carbide chemical leak incident in Bhopal, India. In this study, investors also appeared to respond more favorably (i.e. not as negatively) to chemical companies that disclosed environmental information more thoroughly before the incident occurred.

Within industry subsectors like pharmaceutical, chemicals, mining, transport, electronics, and automobiles, whose activities either result directly in high environmental impacts or are at least suspected of causing them, empirical evidence exists (see, for example, Ling and Mowen, 2013) that environmental information disclosure has become a competitive relevance.

Blacconiere and Patten (1994) found that chemical firms that disclosed more environmental information prior to the 1984 Bhopal disaster experienced a lower market reaction than firms releasing less information. Investors apparently found firms' environmental disclosures to be informative and conditioned their market reaction to the disaster accordingly. Roberts (1992) empirically tested the ability of stakeholder theory to explain social responsibility disclosures. She found that measures of stakeholder power, strategic posture, and economic performance are significantly related to levels of corporate social disclosure.

Cowen et al. (1987) examined the relation between a number of corporate characteristics and specific types of social responsibility disclosures, based on an extensive sample of U.S. corporate annual reports. Corporate size and industry category are found to correlate with certain types of disclosures while the existence of a corporate social responsibility committee appears to correlate with one particular type of disclosure.

Trotman and Bradley (1981) suggested some reasons why companies provide social responsibility information and examines the effects of four variables (size, systematic risk, social constraints, and management decision horizon) on the social responsibility disclosure practices of Australian companies.

Al-Tuwaijri, Christensen, and Hughes (2004) studied the relation among environmental disclosure, environmental performance, and economic performance. They found "good" environmental performance is significantly associated with "good" economic performance, and also with more extensive quantifiable environmental disclosures of specific pollution measures and occurrences.

King and Lenox (2001) found that the relation between environmental performance and financial performance may be conditioned on a firm's other characteristics, so that the

relation may not be monotonic. This result may thus explain a lack of an association in some studies between environmental performance and financial performance.

c. Legitimacy theory

This theory suggests that firms disclose environmental information simply to gain permission from society to operate. Thus, if society is appeased by only a firm's level of information disclosure (i.e. words but not necessarily action), then improved environmental performance cannot be a guaranteed outcome. This potentially explains the lack of association between environmental disclosure and environmental performance, as reported by Walden and Stagliano (2003) and by Patten (2002).

Adams (2002) had a similar observation and argued that the reason for the increase in the number of companies producing environment reports is not regulation or public pressure but the desire to improve the corporate image with customers, regulators, investors, and the community.

d. Capital expenditures

Patten (2005) reported findings that suggest that projections of environmental capital expenditures were not as accurate as total capital expenditures, but did not explain why this may be the case.

Clarkson, Li, and Richardson (2004), examining and pulp and paper industry, found increased disclosures of environmental information when firms are more likely to pollute and when stakeholders become more aware of the firms' environmental liabilities. They also found that environmental capital expenditures yield gains for low-polluting companies, but not their high-polluting counterparts. Combining these results would seem to indicate that there is a negative association between environmental capital expenditures and environmental disclosures.

Cho, Freedman, and Patten (2012) examined the disclosure of environmental capital expenditures and reported a negative correlation between these expenditures and environmental performance, suggesting that these disclosures were designed to address political and regulatory concerns.

4. CSR Disclosure and Economic Performance

Ullman (1985) reviewed studies done in the 1970s and early 1980s and reported conflicting results that led him to suggest that CSR and its relation to economic performance was in need of a theory. Studies that have not found a statistically significant association between CSR and financial performance include those of McWilliams and Siegel (2000); Aupperle, Carroll, and Harfield (1985); Griffin and Mahon (1997); and Soana (2011). In contrast, among those who have reported an association include Waddock and Graves (1997), Cochran and Wood (1984), and McGuire, Sundgren, and Schneeweis (1988) (positive association); and Wright and Ferris (1997) (negative association).

II. Hypotheses and Model

Available empirical evidence suggests that while corporate SCR reporting is increasingly becoming more prevalent, the question of the link between such disclosures on the one hand, and actual environmental and social performance on the other hand, is still not definitely settled. A necessary condition for such disclosures to be informative is that the cost of

disclosing is inversely related the disclosing firms' actual level of expenditure on environmental performance.

1. Hypotheses

The following are the hypotheses that I want to test in this paper.

Hypothesis 1: There is a positive association between capital expenditures and corporate social responsibility (CSR) disclosures, *ceteris paribus*.

Hypothesis 2: The positive relation between capital expenditures and CSR disclosures is moderated by the nature of the industry the firm is in.

2. Discussion of ESG_DISC

ESG is a measure of the amount of disclosure calculated by Bloomberg from essentially counting the number of items reported by firms as related to (1) the environment, (2) society, and (3) governance.

3. Model

$$\text{ESG_DISC}_{it} = \beta_0 + \beta_1 * \text{INV_ASSETS}_{it} + \beta_2 * \text{ASSETS}_{it} + \beta_3 * \text{IND_DUM}_i + \beta_4 * \text{DT_EQ}_{it} + \beta_5 * \text{RET_EQ}_{it} + \beta_6 * \text{BETA}_{it} + u_{it} \quad (1)$$

where DT_EQ_{it} is the debt to equity ratio; RET_EQ_{it} is the return on the firm i 's equity in year t ; BETA_{it} is a measure of systematic risk; ASSETS_{it} is the total value of assets, used as a measure of firm size; IND_DUM_i is the industry classification for firm i . Table 1 below shows the summary statistics of the variables in the model, while Table 2 presents their correlations.

4. Discussion of model

Roberts (1992), who used data for the period 1984-1986 from the Council on Economic Priorities (CEP) for 130 major corporations, found no significant relation between systematic risk and corporate social responsibility disclosure. She found mostly significant associations between social responsibility disclosures (excellent 2, good 1, and poor 0) and the other variables in the model. Similarly, Trotman and Bradley (1981) and Alexander and Bucholz (1978) also found no significant relation between systematic risk and corporate social responsibility disclosure. Wiseman (1982) used 26 companies' annual reports to study environmental disclosures. She found they were incomplete, and that there was no association between environmental disclosures and environmental performance.

Cowen, Ferreri, and Parker (1987) examined different types of disclosure: environmental, energy, fair business practice, community involvement, human resource, and products. Orlitzky and Benjamin (2001) address the relation between corporate social performance and risk; they argue that the better a firm's social reputation, the lower its total market risk.

Eichholtz, Kok, and Quigley (2009) found that "firms active in the refining and energy sector are more likely to rent green space than conventional office space in the same cluster, despite the higher expense. Other relatively heavy users of green office space are in the finance, insurance, and real estate sector and in public administration, while manufacturing, retail, and

wholesale trade are underrepresented in green office buildings. These cross-industry differences suggest that intangibles, which may differ with the nature of firms and industries, play a role in determining the economic premium for green buildings.” Eichholtz, Kok, and Quigley (2010) explained that environmentally sustainable buildings (with a “green rating”) command higher rents (by 3 percent per square foot) and market values that are higher by 16 percent.

III. Empirical Results

Table 1 reports summary statistics of the variables used in estimating the model. The S&P 500 sample shows a standard deviation of ESG disclosures (ESG_DISC) that is about half of the mean, with a minimum of 11.57 and a maximum of 65.29. In Table 2, ESG_DISC is shown to be positively correlated with firm size (as measured by total assets, ASSETS) and with capital expenditures as a percentage of total assets (INV_ASSETS). On the other hand, ESG disclosures are negatively correlated with market risk (BETA) and with the return on equity (RET_EQ).

Table 3 reports the estimation results for four combinations of the model as specified in (1). In the simplest model with the traditional variables of size (ASSETS) and industry (IND_DUM), the signs of the coefficients are as expected, that is ESG_DISC is positively related to size and to industry (more energy- and materials-intensive industries disclose more). In the more complete model that allows for the interaction between capital expenditures and industry, Table 3 reports a negative association. That is, firms with greater capital expenditures would be more likely to disclose, but this tendency is affected by the type of industry the firms are in: industries that are energy- and materials-intensive would make a firm less likely to disclose when it incurs capital expenditures.

IV. Conclusions

The purpose of this paper is to investigate whether and how a firm’s capital expenditures may affect its CSR reporting, and how such a decision may depend on the type of industry that the firm is in. This is an area of research that has not been examined extensively, partly due to the lack of readily available data and to how questions related to CSR reporting have been raised. I consider capital expenditures to be one of the most important decisions made by a firm, which have wide-ranging effects. I look at one effect, which is the decision to disclose CSR activities. We find that firms that undertake greater capital expenditures also disclose more of their CSR activities. But somewhat surprisingly, this decision is negatively associated with the intensity of energy- and materials usage by firms.

Table 1
Summary Statistics

	Mean	SD	Min	Max	N
ESG_DISC 1,571	29.85	14.48	11.57	65.29	
INV_ASSETS 1,571	4.49	4.72	0	25.64	
DEBT_EQ 1,571	92.06	188.62	-391.78	1,529.75	
RET_EQ 1,571	21.06	28.64	-64.31	142.75	
BETA 1,571	1.15	0.57	0.21	2.79	
ASSETS (\$ billion) 1,571	\$44.926	\$109.898	\$0.982	\$885.296	

Note. ESG_DISC is the disclosure score, as calculated from counting the number of items reported as related to the environment, society, and governance. INV_ASSETS is the ratio of capital expenditures to total assets, in percent. ASSETS is the value of total assets, in billions of dollars. IND_DUM is equal to 1 if a company is classified as energy and materials intensive, and 0 otherwise. RET_EQ is the return on equity, in percent. BETA is a measure of risk, equal to the beta coefficient in a market model of returns. DEBT_EQ is the ratio of total debt to total equity. A balanced data set is used, which is applicable to the period 2010 to 2013. The variables are winsorized at 1 percent. The number of observations is 1,571, from a balanced panel applicable to the period 2010 to 2013 for 485 companies from the S&P 500 list.

Table 2
Correlations

	ESG_DISC	INV_ASSETS	ASSETS	IND_DUM	RET_EQ
BETA					
INV_ASSETS	0.1024				
ASSETS	0.1978	-0.1235			
IND_DUM	0.2030	0.2835	-0.0884		
RET_EQ	-0.0695	-0.0667		-0.0274	-0.0483
BETA	-0.0794	-0.1391		0.1718	-0.0313
DEBT_EQ	0.0600	-0.0533	0.1628	-0.0094	-
	0.0017	0.1187			

Note. ESG_DISC is the disclosure score, as calculated from counting the number of items reported as related to the environment, society, and governance. INV_ASSETS is the ratio of capital expenditures to total assets, in percent. ASSETS is the value of total assets, in billions of dollars. IND_DUM is equal to 1 if a company is classified as energy and materials intensive, and 0 otherwise. RET_EQ is the return on equity, in percent. BETA is a measure of risk, equal to the beta coefficient in a market model of returns. DEBT_EQ is the ratio of total debt to total equity. A balanced data set is used, which is applicable to the period 2010

to 2013. The variables are winsorized at 1 percent. The number of observations is 1,571, from a balanced panel applicable to the period 2010 to 2013 for 485 companies from the S&P 500 list.

Table 3
Estimated model. Dependent variable is ESG_DISC

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
INV_ASSETS		0.8913*** (0.000)	0.8938*** (0.000)	0.8124*** (0.000)
ASSETS	0.3952*** (0.0009)	0.0322*** (0.000)	0.0320*** (0.000)	0.0327*** (0.000)
IND_DUM	0.0282*** (0.000)	9.8293*** (0.000)	9.8510*** (0.000)	9.5606*** (0.000)
INV_ASSETS* IND_DUM		-0.9601*** (0.000)	-0.9788*** (0.000)	-0.9003*** (0.000)
RET_EQ			-0.0281*** (0.000)	-0.0246** (0.042)
BETA				-2.2258*** (0.000)
DEBT_EQ				0.0034* (0.066)
CONSTANT	26.8068*** (0.000)	22.5161*** (0.000)	23.1479*** (0.000)	25.5745*** (0.000)
R ²	0.054	0.109	0.111	0.118

Note. ESG_DISC is the disclosure score, as calculated from counting the number of items reported as related to the environment, society, and governance. INV_ASSETS is the ratio of capital expenditures to total assets, in percent. ASSETS is the value of total assets, in billions of dollars. IND_DUM is equal to 1 if a company is classified as energy- and materials-intensive, and 0 otherwise. INV_ASSETS*IND_DUM is the interaction variable between INV_ASSETS and IND_DUM. RET_EQ the return on equity, in percent. BETA is a measure of risk, equal to the beta coefficient in a market model of returns. DEBT_EQ is the ratio of total debt to total equity. A balanced data set

is used, which is applicable to the period 2010 to 2013. The numbers in parentheses are P-values.

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