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### The Impact of Sustainability Reporting on Firm Profitability

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## The Impact of Sustainability Reporting on Firm Profitability

### Abstract

Using a hand-collected representative sample of 95 publicly traded American firms from various sectors in 2015-2016, I examine how corporate sustainability reporting affects the financial performance of firms. I find a positive and significant effect of sustainability reporting on a firm's return on equity, return on assets, and profit margin in the subsequent year. However, this relationship is found only for firms with low institutional ownership. These results suggest that sustainability reporting would be a worthwhile use of corporate resources for this subset of firms. Further, corporate sustainability reporting is shown to be an effective substitute for monitoring by institutional investors.

### Keywords

corporate social responsibility, sustainability reporting, institutional investors, financial performance

### Cover Page Footnote

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## Introduction

Corporations are becoming increasingly critiqued on the negative impacts of their business operations on employees, society, and the environment. As the pronounced effects of corporate mismanagement become highlighted from oils spills, accounting fraud, and employee mistreatment, companies face tremendous ramifications from their negligence which oftentimes results in bankruptcy, loss of value, hits to firm reputation, and public distrust. When culprits like BP<sup>1</sup> were placed under scrutiny and examination by investigators after the Deepwater Horizon disaster in 2010, it was clear to see that the company's failures were almost entirely inevitable. Robert Bea, an engineering professor at the University of California-Berkeley, comments specifically on the fatal flaws of BP's breach saying, "It's clear that the problem is not technology, but people" (Hoffman, 2010). This sentiment can be attributed to many other companies that knowingly cut corners to achieve short-term gains.

As success oftentimes breeds complacency, when a company becomes engulfed in attaining more and more, it can begin to cause excessive environmental degradation, disregard corporate regulations, and threaten employee safety – further alarming customers, employees, suppliers, governments, and investors. These parties are pushing corporate management to assume responsibility and undertake additional measures towards becoming more socially responsible.

Known as corporate social responsibility (CSR), this business practice takes into consideration employee wellbeing, the broader community it serves, and environmental protection. Despite well-established regulatory measures through agencies like the Securities and Exchange Commission (SEC) and the Environmental Protection Agency (EPA) that ensure public company compliance and accountability, malpractice still occurs. Destructive business decisions result in plummeting stock prices and destroy brand reputation, ultimately affecting not only markets and shareholders, but also third parties. The obvious and destructive potential of firms and their management are being noticed. Realizing this, many firms are aware that they can no longer act as detached entities that disregard society and the environment.

In attempt to mediate concerns, some firms have begun to devote more company resources toward socially responsible activities, whereas others refuse to participate on belief that CSR is not aligned with profit maximization. Firms that do invest in reporting on their non-financial performance may do so to be transparent to shareholders or believe that it may aid in profit generation; however, it is unknown if and to what extent sustainability reporting may affect firm profitability. Acknowledging the fact that there are many other factors that contribute to firm profitability rather than just CSR, this analysis will specifically focus on whether or not engaging in sustainability reporting is in the best interest of the firm when it is looking to enhance value in the short-term. If CSR reporting does enhance firm profitability it would be a worthwhile investment to firms and not merely a tactic that wastes corporate resources or something that is just “nice to do.”

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<sup>1</sup> In 2010, one of BP's oilrigs exploded, resulting in the Deepwater Horizon oil spill. Killing 11 workers and spewing an estimated 200 million gallons of oil into the Gulf of Mexico, this event is known to be one of the worst environmental disasters in American history, as it affected marine and aquatic life and the fishing industry (Hoffman). These offenses by major companies are clear examples of the irresponsible nature of corporate management.

## Literature Review

This paper adds to the literature on corporate social responsibility and firm profitability by examining the relationship between some measure of corporate social responsibility – sustainability reporting – and profitability. CSR, for the sake of this paper, will be used interchangeably with sustainability reporting and non-financial reporting. I seek to address how sustainability reporting influences profitability, depending on the varying amounts of institutional ownership. In doing so, I see how different levels of institutional ownership impact a company decision on whether or not to engage in reporting.

## Sustainability Reporting

A sustainability report as defined by the Global Reporting Initiative<sup>2</sup> (GRI) is, “a report published by a company or organization about the economic, environmental and social impacts caused by its everyday activities.” As researchers struggle on adequately measuring corporate social responsibility, sustainability reporting will act as the proxy for CSR in this econometric analysis.

These reports further enable companies to provide information regarding the non-financial aspects of its operations, ultimately allowing companies to actively engage in a solution towards improving firm accountability, transparency, and corporate image. As a pioneer in sustainability reporting, the GRI has transformed sustainability reporting into a practice that is adopted by organizations all over the world. Whether impacts are positive or negative, a sustainability report also encompasses the company’s values, governance model, and its approach towards creating a sustainable global economy. Much like the financial documentation required for public companies, non-financial reporting can also allow markets to respond to ever-changing conditions, keep shareholders informed, and provide an element of transparency into firm activity. Reporting on other areas such as the economic, social, and environmental profile is becoming an adopted practice throughout the world, as there is an emerging trend of firms reporting on non-financial issues (Kolk, 2003; KPMG, 2015). Although compliance and disclosure of CSR reporting is mandatory in some regions and countries<sup>3</sup>, it still remains a voluntary measure in the United States.

Through the creation of the Sustainability Reporting Standards<sup>4</sup> the GRI has alleviated much of the confusion on how to properly report since the strategies used to create reports can vary widely, as there are no specific accounting principles for social disclosure. The GRI reports 92 percent of the world’s largest 250 corporations report on their sustainability performance, and 74 percent of those companies use GRI Sustainability Standards, demonstrating the wide

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<sup>2</sup> The GRI operates as an independent international organization that works towards communicating the impact of business on critical sustainability issues (i.e. climate change, human rights, corruption, etc.).

<sup>3</sup> Non-financial reporting has become a mandatory practice instituted by governments throughout Europe but particularly the EU Commission who has transitioned to requiring large companies to publish regular reports on the social and environmental impacts of their activities. This is exemplified the transitional phase from the EU Accounts Modernization Directive (2003) to the EU Non-Financial Reporting Directive (2014). The directive applies only to large public-interest companies with more than 500 employees, which encompasses nearly 6,000 companies (European Commission, 2014). Since the European Commission promotes the interests of the European Union, the directive involves the EU’s 28 member countries.

<sup>4</sup> The GRI Sustainability Reporting Standards include distinctive elements that help indicate the impact of companies on critical sustainability issues. These elements include: multi-stakeholder input, a record of use and endorsement, governmental references and activities, independence, and shared development costs. The standards are a trusted reference for policy makers and regulators worldwide as they encourage and enable credible non-financial reporting by the companies under their jurisdictions (Global Reporting Initiative).

recognition and acceptance of these principles. Kolk (2003), through evaluating trends in sustainability reporting, found the practice is much more common in industrial sectors and less in the financial sector, demonstrating that certain sectors that are subject to high risks report more than others whose day-to-day operations are not creating imminent harm or danger<sup>5</sup>. This may be the case for companies that have high-risk operations that could cause large scale environmental degradation or human rights and employee safety violations; however, it could be argued that companies in the financial sector are more susceptible to risk and market fluctuations and can disrupt capital markets – affecting many market segments and the livelihood of consumers.

In addition, if sustainability reports are not assured by a credible source<sup>6</sup>, the report may not accurately reflect the company's reality in terms of sustainable practices. The GRI's "External Assurance of Sustainability Reporting" report seeks to inform reporters and readers as to why quality assurance is important. Using the national auditing framework, the International Standard on Assurance Engagements (ISAE) 3000 and AA1000AS, assurers seek to increase the robustness, accuracy and trustworthiness of non-financial and sustainability disclosures. Assurers are divided into three groups, accountancy, engineering, and sustainability service firms, each having expertise in different areas to address a company's needs. This quality assurance allows reports to be approved by a verifiable, external source and enhance transparency of firm activity.

Looking back on BP, the company has engaged in assured sustainability reports since 1998, prior to the Deepwater Horizon Oil Spill in 2010. After the incident stock prices plummeted for the company. Nevertheless, BP has institutional ownership of around 10.5 percent, and if it were part of this study's sample, it would be considered a firm with low institutional ownership. Despite their sustainability reports being assured, an important aspect was overlooked and not included in their reports, something so crucial that ended up being a major contribution in the Deepwater explosion. In BP's 2010 sustainability report, its assurer, Ernst and Young, states a key limitation to their review was that, "Our work did not include physical inspections of any of BP's operating assets." Operating assets are assets acquired for use in the conduct of the ongoing operations of a business which can include fixed long-term assets such as a company's plant and equipment. In BP's case – its oil rig. This goes to show that sustainability reports can be crucial in ascertaining areas that companies should and need to address.

### **Non-financial Reporting and Profitability**

The relationship between corporate social responsibility and firm profitability has produced inconsistent results, providing no conclusive evidence whether the relationship is positive, negative, or neutral (Aupperle, Carroll, & Hatfield, 1985; McWilliams & Siegel, 2000; Waddock & Graves, 1997; and Orlitzky, 2001). Despite reporting on social performance being a voluntary measure, Anderson and Frankle (1980) found that returns to portfolios consisting of

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<sup>5</sup> Industrial sectors may more involved with reporting due to requirements such like the Conflict Minerals rule (2012) that was required by the SEC's 2010 Dodd-Frank Wall Street Act, mandating certain publicly-traded manufacturing companies to review or audit the origin of their minerals (Securities and Exchange Commission). Because certain materials used in production are oftentimes outsourced from other countries that are subject to civil conflict and human rights abuses, this rule obligates these manufacturing companies to annually report if what they produce contains "Conflict Minerals." These minerals essentially include: tin, tungsten, tantalum and gold (Reuters).

<sup>6</sup> Auditing firms like Ernst & Young.

securities of only firms that disclosed information on their social performance were preferable compared to non-disclosing firms. Their findings indicate that social disclosure has information content, and that the market values this disclosure positively. Additionally, examining the impact of pollution control expenditures disclosures on the stock market, Belkaoui (1976) found that companies that disclosed their pollution control expenditures showed a temporary, but substantial, increase in stock market performance after disclosure<sup>7</sup>. These findings suggest that managers should allocate a proportion of their resources towards reporting on their attempts to mitigate the harmful impacts of their business operations – especially those in industries whose operations could be remarkably destructive.

### **Corporate Governance and Profitability**

Since corporate governance plays an integral part in a firm's overall wellbeing, how it is governed should impact its profitability. Ferrell, Liang, and Renneboog (2016) found that well-governed firms that suffer less from agency problems engage more in CSR. Their results show a positive relation between CSR and value, suggesting that engaging in CSR can be a means of generating more returns to investors.

Corporate mismanagement is a strong reason why investors, employees, and society push for the firm to engage in socially responsible behavior. Even though existing laws and regulations dictate company actions regarding accounting practices, corporate governance procedures, and direct environmental impacts<sup>8</sup>, compliance by firms may still sometimes waver. Disregard for various laws and safety regulations has resulted in some of the most prominent environmental disasters and human rights violations caused by corporations. These occasions don't just occur by happenstance, but by negligent behavior to amass profusion – while society bears the cost. As executives attempt to increase company profits over a given time, they may cut costs in critical areas of operation. Not only does this behavior have tremendous external consequences, it can also be felt internally through the destruction of firm value, making it extremely difficult for a firm to recover its reputation. As executives are at the forefront of making many major decisions involving tradeoffs, the way CEOs are compensated for their job can contribute to how management decisions are made.

Some question to what extent are these lapses in managerial decision-making influenced by corporate incentives. Compensation for large public firms is given by some form of equity in the company – stocks and options – which can be a key driver of many decisions (good or bad) made within the firm. Minor (2016) explored how executive compensation through high-powered incentives can significantly increase the likelihood of environmental law breaking and magnitude of environmental harm. The findings suggest that even though incentives are intended to create positive outcomes, they also have the power to increase misconduct from

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<sup>7</sup> In this study, prior to disclosure of pollution control expenditures, the disclosing companies performed poorly compared to the market. The period of four months after disclosure, the stocks of these disclosing companies performed better than the market, indicating significant reactions to disclosure. The reactions had an immediate but temporary effect on the market.

<sup>8</sup> Reflective of laws including but not limited to: the Securities and Exchange Commission's (SEC) Securities Act (1933), Securities Exchange Act (1934), Sarbanes Oxley Act (2002), and the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010); the Environmental Protection Agency's (EPA) Clean Air Act (CAA) (1970), Clean Water Act (CWA) (1972), Safe Drinking Water Act (SDWA) (1974), Resource Conservation and Recovery Act (RCRA) (1976), Emergency Planning and Community Right-to-Know Act (EPCRA) (1986), Pollution Prevention Act (PPA) (1990), and the Toxic Substance Control Act (TSCA) (1976).

CEOs. Ultimately, CEO responsibility for critical environmental events is crucial due to the amount of compensation incentives – making insider ownership<sup>9</sup> an important control variable.

### Corporate Social Responsibility – An Agency Issue?

Concerns over the engagement in corporate social responsibility deal with the question on where a firm's responsibility should primarily lie: with shareholders, society – or both?

Corporate finance literature discusses the issue surrounding the agency problem as the existence of a conflict of interest between a firm's management and stockholders. If the managerial team is expected to act in the shareholder's best interests (i.e. maximize shareholder value), then it becomes questionable whether or not a firm should act in a socially responsible manner as a viable reason towards achieving increases in value.

The argument for CSR suggests that socially responsible firms that are more engaged in addressing not only value maximization, but also environmental protection and social equality, are better off in the long run. The practice is increasingly adopted by companies and can be seen in the eye of many firms as a measure to maintain a competitive advantage, attain socially responsible investors, and use corporate resources effectively towards bettering their corporate image. By signaling to the world their firm's "goodness," through product designations such as organic, animal-free tested, and made in the USA, companies encourage their customers to feel that through consumption they are making a difference. Not only do society and consumers value these tactics, but investors also push for similar strategies like that of non-financial reporting. Companies are now getting certified as B Corps (B corporations)<sup>10</sup>, realizing that they are interdependent and need to redefine what "success" means in business – creating companies that serve society and shareholders. Additionally, the MSCI KLD 400 Social Index, the equivalent to the Standard and Poor's 500 index but for socially responsible firms in the U.S., allows investors to access stocks of companies that have been designated as socially responsible for their positive environmental, social, and governance characteristics<sup>11</sup>. Another example, MSCI KLD scores, help sustainability conscious investors better analyze companies by comparing firms to industry equivalents on their triple bottom line performance based upon five key environmental, social and governance (ESG) factors<sup>12</sup>. These internal and external environments are increasingly persuading companies to at least consider participating in CSR to appeal to customers and investors.

Alternatively, the argument against CSR is that it is a waste of corporate resources. Stubbs, Higgins, & Milne (2013) found that sustainability reporting is considered by some managers to be unnecessary, time consuming, and expensive, and just a marketing technique – all of which divert firm management from devoting their energy into other core responsibilities. Additionally, these non-disclosing firms may not have sufficient discretionary income to

<sup>9</sup> Insiders are company directors or senior officers and any person or entity that beneficially owns more than 10% of a company's voting shares. However, insider trading encompasses those who trade company shares based on knowledge that is not available or accessible to the public (i.e. the condition of the company, future plans, etc.)

<sup>10</sup> B Corps are for-profit companies certified by the nonprofit B Lab to meet rigorous standards of social and environmental performance, accountability, and transparency. B Corps consist of more than 2,100 companies from 50 countries and are representative of 130 industries (B Lab).

<sup>11</sup> Launched in May 1990 as the Domini 400 Social Index, the MSCI KLD 400 Social Index is one of the first socially responsible (SRI) indexes. Since May 31, 1994 it has had average annual returns of 9.89%. (MSCI, 2017)

<sup>12</sup> The five MSCI KLD key environmental, social and governance (ESG) factors include: environment, community & society, employees & supply chain, customers, and governance & ethics. Created by KLD Research & Analytics Inc., these criteria aid in socially responsible investing (SRI).

contribute to social activities despite interest in doing so. A firm does not undertake sustainability reporting because there is little pressure to do so by the company, its culture or business structure, society, or stakeholders. The findings suggest that managers of firms are not oblivious or ignorant of the social and environmental impacts of their operations. They believe that there are more direct and effective ways of dealing with firm issues than devoting resources to produce reports. One suggestion is that the responsibility to encourage more participation in reporting rests upon stakeholders, whether that is government, industry associations, or institutional investors.

### **Institutional Investors**

Various financial organizations, funds, or endowments purchase outstanding shares to obtain an ownership stake in a company in large part to exert influence upon management of that particular firm. These investors have the ability to enact change within the organization through threatening to sell their shares, voicing concerns to the board of directors, or remaining passive or ambivalent in corporate decision making. Due to the fact that executives may have extensive wealth wrapped up in the organization, as their holdings incentivize them to oversee managerial decisions, these institutional investors are oftentimes regarded as corporate monitors in firms in which they invest. Gillan and Starks (2003) found that institutional investors are the primary actors that prompt change in many corporate governance systems whereby these large shareholder groups increase the monitoring of the firm's management. Existing literature discusses the role of institutional investors as corporate monitors, as they too have considerable amounts of wealth dependent on the success of the company; therefore, the size of the stake held by institutional investors influences their power in a firm. Investors with large positions want to ensure that these investments are handled with care.

Maug (1998) suggested that the amount of influence institutional investors carry is dependent on the amount they hold in the company. When there are high institutional holdings, shares are less marketable, leading investors to hold on for longer periods of time. With low institutional holdings, investors can easily liquidate their shares and have minimal interest and incentive to adequately act as monitors. This incentivizes these institutional owners to adequately monitor management to protect their investment. Those with higher holdings typically are more interested in long-term profitability, so they act as responsible corporate monitors to the firms they invest in. Their close involvement within these firms can yield tremendous power and influence upon firm decision-making, especially when investors demand the firm to act in a more socially responsible manner. The more shares owned by these investors, the greater power and control they yield within a firm that can lead to significant changes within the firm.

Additionally, Ferreira and Matos (2008) discovered firms with higher ownership by foreign and independent institutions have higher firm valuations, better operating performance, and lower capital expenditures. In terms of the effect of institutional ownership on enhancing firm performance, Cornett, Marcus, Saunders, and Tehranian (2007) found that there is a significant relationship between operating cash flow returns and institutional ownership. These findings stem from a subset of institutional investors, those who are less likely to have business relationships with the firm. Classified as "pressure insensitive" investors (i.e. investment companies and independent investment advisors), they may be more likely to impose more disciplinary action on the firms they invest in. These results suggested that institutional investors with close business ties to the firm compromise their ability to act as diligent monitors to the

organization and its management<sup>13</sup>. Ultimately, the extent of the financial impact of institutional investor ownership on firm profitability is still unclear.

Institutional investors are increasingly interested in firm management especially if the company is underperforming. Their initiative in corporate governance can lead to extensive changes if they sternly demand it, as they have the capability and power to threaten to sell shares if corporate leadership does not meet their expectations which could lower firm value or signal the ineffectiveness in corporate leadership. Although many of the prior studies discuss the impact of institutional investors as being advantageous to the high valuation of firms, there is still no direct link between whether firms that engage in sustainability reporting yield a higher financial performance after they engage in reporting.

### Data and Methodology

Using cross-sectional data, I examine the impact of sustainability reporting on firm financial performance with the relative impact of high and low amounts of institutional ownership. Return on equity, return on assets, and profit margin (dependent variables), were used as proxies for firm profitability. Corporate sustainability reporting (independent variable) was measured as a dummy variable. Firms were assigned a value; one if it reported in 2015 and zero otherwise. Control variables reflecting capital structure (total debt to equity and revenue) and firm ownership (percent held by insiders and percent held by institutions) were also included as additional determinants of corporate profitability. The relationship between corporate sustainability reporting and profitability is estimated in the following regression model:

$$Profitability_t = B_0 + B_1csr_{t-1} + B_2lr_t + B_3inside_t + B_4institution_t + B_5de_t + u$$

### Control Variables

The primary focus is of the impact of sustainability reporting on firm performance. However, there are other internal corporate and financial mechanisms that serve to influence firm profitability and are necessary for this analysis. These control variables, which have been included and examined in prior research, include firm size, ownership, and capital structure. I discuss these in turn.

**i. Firm size.** Firm size has been considered as an important determinant of firm profitability and is included as a performance measure in many alternative studies. Moreover, I employ the inclusion of firm size as a control variable, as the size of firm does tend to influence profitability in some, but not necessarily in all industries (Hall & Weiss, 1967; Marcus, 1969; Abiodun, 2013). Revenue<sup>14</sup> will serve as a proxy control variable for firm size and as denoted in the regression equation; *lr* (log of revenue) will be used to best fit the model.

**ii. Capital structure.** The capital structure of a firm is the amount of debt and or equity it uses to finance its operations and growth. Although there is no model for optimal capital structure, financing can be achieved with various combinations of securities and sources of funding, depending on firm preferences. The impact of leverage can be a strategy firms use to finance operations and augment their return on investment (ROI), making it a crucial control variable in this analysis. The debt-to-equity ratio<sup>15</sup> will be used as a proxy to measure this

<sup>13</sup> Disclosure: Although this is implied the study does not directly prove this relationship.

<sup>14</sup> Revenue is defined as the amount of money the firm receives over an annual period.

<sup>15</sup> Debt/Equity Ratio is a debt ratio is calculated by dividing a company's total liabilities by its stockholders' equity. A high debt/equity ratio generally means that a company has been aggressive in financing its growth through the assumption of debt. (Investopedia)

financial leverage. It is indicative of how much debt the company is using to finance its assets relative to its total shareholder equity, essentially creating a figure that assesses the degree to which this borrowed money, used to fund projects, increases firm value. Jensen and Meckling (1976) theorize that the existence of debt and outside equity is the origin of the agency problem, as corporate leveraging techniques can be a source of conflict between management and shareholders.

Assuming large amounts of debt to fund projects can be one of those techniques that promote disagreement between the two parties. Gill, Biger, and Mathur (2011) found that there is a positive relationship between capital structure and profitability<sup>16</sup>. Noting that interest payments on debt are tax deductible, taking on debt in the capital structure aids in the profitability of the firm – ultimately suggesting that the higher the debt, the higher the profitability of the firm. Financial leveraging can provide some tax benefits to a firm, since interest on debt is tax deductible; however, there are increased risks on defaulting on that debt when there are higher levels of debt.

I used this model for six sub-sample regressions to conduct a comparison of the effects of whether or not firms were split between high and low institutional ownership.

$$roehigh_t = B_0 + B_1csr_{t-1} + B_2lr + B_3inside + B_4institution + B_5de + u$$

$$roahigh_t = B_0 + B_1csr_{t-1} + B_2lr + B_3inside + B_4institution + B_5de + u$$

$$roshigh_t = B_0 + B_1csr_{t-1} + B_2lr + B_3inside + B_4institution + B_5de + u$$

$$roelow_t = B_0 + B_1csr_{t-1} + B_2lr + B_3inside + B_4institution + B_5de + u$$

$$roalow_t = B_0 + B_1csr_{t-1} + B_2lr + B_3inside + B_4institution + B_5de + u$$

$$roslow_t = B_0 + B_1csr_{t-1} + B_2lr + B_3inside + B_4institution + B_5de + u$$

Where  $B_0$  is the constant of the regression equation, and  $B_1, B_2, B_3, B_4$ , and  $B_5$  are the respective coefficients for *csr*, *lr*, *inside*, *institution*, and *de*.  $Profitability_t$  is the dependent variable for firm profitability ratios in 2016, measured by return on equity, return on assets, and profit margin, and  $u$  is the error term (see appendix A for variable descriptions).

All variables are taken from time period  $t = 2016$  except the dependent variable *csr*, which is taken from time period  $t - 1 = 2015$ . A lag is placed on the *csr* variable ( $t - 1$ ) while the other variables in the regression are kept contemporaneous ( $t$ ) to mitigate the issue of reverse causality<sup>17</sup>. This means that using *csr* ( $X$ ) from the year prior than the profitability measures rules out profitability ( $Y$ ) as being the reason that firms engage in sustainability reporting. If sustainability reporting does affect firm profitability, it presumably would do so prior to the year of better or worse performance. I hypothesize that firms that engage in sustainability reporting will demonstrate better financial performance. That is, a positive relationship will exist such that companies decide to report in the prior year, their return on equity, return on assets, and profit margin will increase in the following year.

Information on company's sustainability reporting tendencies was retrieved from the Global Reporting Initiative's Sustainability Disclosure Database from the year 2015. The

<sup>16</sup> Using data from 272 publicly listed American firms in the service and manufacturing industries over a period of three years (2005-2007), Gill, Biger, and Mathur (2011) assess short-term debt to total assets, long-term debt to total assets, and total debt to total assets on profitability (return on equity) – while using sales growth and firm size as controls.

<sup>17</sup> Reverse causality means that  $X$  and  $Y$  are associated, but not in the way you would expect. Instead of  $X$  causing a change in  $Y$ , it is really the other way around:  $Y$  is causing changes in  $X$ .

complete version of data had to be requested from the organization through submission of the “GRI Reports List Request Form.” This detailed database provides an aggregate overview of all reports published from 1999 till present. As an undergraduate student, the complete version of the GRI Reports List was free of charge with proof of enrollment at a college institution. With permission to use the GRI’s complete compilation of data, I agreed to not share any raw data from the list with third parties. This list provides access to all types of sustainability reports, whether GRI-based or otherwise, and other information relevant to the companies that report.

A data set was constructed from the GRI’s selection of companies to include 95 publicly traded American companies from various industries that either reported or did not report in the year 2015. I used a stratified random sampling method<sup>18</sup> to get a balance of companies from a wide variety of sectors that reported and did not report in 2015. For each company, data were collected on each firm’s profit margin, return on assets, return on equity, revenue, percentage held by insiders, and percentage held by institution. All financial data were gathered using Yahoo Finance for the year 2016. Financial data from the subsequent year, from when a firm reported or did not report, were used to predict current values of the dependent variable, thus avoiding reverse causality. I consider the sample to be a representative sample of American firms across a variety of sectors that did or did not choose to report.

Table 1 presents descriptive statistics for the sample. All variables were calculated using the data analysis and statistical program Stata. Total observations fluctuated for each variable due to some missing data or data that were not applicable to that firm. In the non-reporters category, total observations came to 41 firms. The average profitability indicators for this group are as follows: return on equity at 16.81percent, return on assets at 5.73 percent, and profit margin at 8.75 percent. Other mean values for explanatory variables include revenue at \$28.19 billion, insider ownership at 8.96 percent and institutional ownership at 83.53 percent, and total debt to equity ratio at 103.62.

For the reporting group, total observations came to 54 firms. The average profitability indicators are as follows: return on equity at 26.43 percent, return on assets at 5.99 percent, and profit margin at 13.12 percent. The mean values for the explanatory variables include revenue at \$41.63 billion, insider ownership is 7.24 percent and institutional ownership is 76.67 percent, and a total debt to equity ratio of 204.6. The median value for reporters in terms of return on equity, return on assets, and profit margin is greater than those of non-reporters; however, when compared with the mean values, the difference is not as noteworthy. But it is important to examine as the median value is not as influenced by outliers, which indicate that the sample means may be more affected by outlying values.

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<sup>18</sup> Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata. In this method, the strata are formed based on members' shared attributes or characteristics then pooled to form a random sample.

**Table 1 - Descriptive Statistics of Independent, Dependent, and Control Variables**

csr	variable	mean	sd	p25	p50	p75	N
0	roe	16.808	20.67888	8.645	13.58	20.695	40
	roa	5.73	4.519958	3.01	4.58	7.47	41
	ros	8.746341	7.955445	2.81	7.99	13.66	41
	revenuebil~s	28.18613	71.24655	3.61	7.34	15.81	41
	inside	6.32825	9.356071	.295	1.49	9.875	40
	de	103.6185	80.13585	42.73	81.21	123.61	39
	institution	84.0775	17.88451	71.15	86.95	96.85	40
1	roe	26.42796	45.32911	6.17	13.725	27.79	54
	roa	5.992407	5.084704	2.13	5.665	8.78	54
	ros	13.10741	21.5236	3.06	7.615	16.29	54
	revenuebil~s	41.62667	52.68763	7.44	19.885	55.23	54
	inside	7.240204	17.35921	.12	.38	6.42	49
	de	204.597	526.9617	43.43	101.53	149.29	53
	institution	76.66531	18.16866	68.7	78.4	89.2	49
Total	roe	22.33436	37.05622	7.48	13.58	22.08	94
	roa	5.879158	4.825772	2.71	5.07	8.19	95
	ros	11.22526	17.11285	2.9	7.89	14.17	95
	revenuebil~s	35.82601	61.40034	5.46	12.5	39.3	95
	inside	6.830337	14.26082	.2	1	7.31	89
	de	161.7909	404.8189	43.215	92.455	138.06	92
	institution	79.99663	18.31824	70.7	83	92	89

Table 2 shows sector diversity of the firms within the sample. In order to assess the impact of reporting on an entire economy, a representative sample of firms was chosen, not just those centered in certain industries. Firms within the retailers sector constitute the largest group included in the study.

**Table 2 - Distribution of Firms by Sector**

Sector	Freq.	Percent	Cum.
Agriculture	3	3.16	3.16
Automotive	3	3.16	6.32
Aviation	3	3.16	9.47
Chemicals	2	2.11	11.58
Commercial Services	2	2.11	13.68
Computers	4	4.21	17.89
Conglomerates	4	4.21	22.11
Construction Materials	3	3.16	25.26
Consumer Durables	3	3.16	28.42
Energy	3	3.16	31.58
Energy Utilities	3	3.16	34.74
Equipment	4	4.21	38.95
Financial Services	4	4.21	43.16
Food and Beverage Products	2	2.11	45.26
Healthcare Products	4	4.21	49.47
Healthcare Services	3	3.16	52.63
Household and Personal Products	3	3.16	55.79
Logistics	4	4.21	60.00
Media	3	3.16	63.16
Metals Products	2	2.11	65.26
Other	3	3.16	68.42
Railroad	1	1.05	69.47
Real Estate	3	3.16	72.63
Retailers	6	6.32	78.95
Technology Hardware	3	3.16	82.11
Telecommunications	3	3.16	85.26
Textiles and Apparel	4	4.21	89.47
Tobacco	2	2.11	91.58
Tourism/Leisure	1	1.05	92.63
Toys	1	1.05	93.68
Waste Management	3	3.16	96.84
Water Utilities	3	3.16	100.00
Total	95	100.00	

Table 3 provides additional descriptive statistics showing the levels of institutional ownership of the firms in the sample. I used the median value of the sample levels of institutional ownership to categorize them as being either high or low in terms of institutional ownership in the regression. Firms above 82.95 percent are considered firms with “high” institutional ownership, and firms that fall below that threshold are considered firms with “low” institutional ownership. As a few firms do not have any institutional ownership, the number of observations for the regressions decreases. Therefore, these observations are not included in the regression. When examining the table, institutional ownership exceeds 100 percent, which is possible. If an organization holds a certain number of shares, and an institution owns all of those shares, of which some are borrowed by a second firm, then in the process of shorting those shares to a third institution, the second institution sells a stock that they do not own. In this instance, multiple parties own the share of a stock, thus, institutional ownership exceeds 100 percent (Asquith, Pathak, & Ritter, 2005).

**Table 3 - Descriptive Statistics - Amount of Institutional Ownership of Firms – Percentage Breakdown**

%Held By Institutions				
	Percentiles	Smallest		
1%	14.6	14.6		
5%	46.7	18.1		
10%	60.6	34.2	Obs	89
25%	70.7	40.8	Sum of Wgt.	89
50%	83		Mean	79.99663
		Largest	Std. Dev.	18.31824
75%	92	104.7		
90%	99.4	105.5	Variance	335.5581
95%	101.8	119.1	Skewness	-1.010017
99%	120.6	120.6	Kurtosis	5.201684

## Results

**Table 4 Lagged Regression of Profitability - Results Breakdown by “Low” and “High” Levels of Institutional Ownership**

Regression	1	2	3	4	5	6
Ownership	Low	High	Low	High	Low	High
Dependent	roe	roe	roa	roa	ros	ros
csr	22.041* [0.077]	-10.809 [0.113]	3.324** [0.034]	-1.634 [0.330]	10.719* [0.078]	0.552 [0.925]
ln(revenue)	-3.634 [0.333]	4.415 [0.157]	-0.521 [0.267]	1.416* [0.072]	-3.276* [0.078]	0.466 [0.864]
Inside	-0.329 [0.402]	-0.105 [0.872]	-0.021 [0.674]	-0.082 [0.611]	-0.001 [0.995]	-0.663 [0.248]
Institution	0.135 [0.779]	-0.619 [0.178]	0.055 [0.362]	-0.062 [0.578]	0.034 [0.886]	-0.371 [0.349]
Debt/Equity	0.056*** [0.000]	0.04 [0.315]	0 [0.921]	-0.002 [0.851]	-0.004 [0.378]	0.014 [0.692]
Intercept	8.206 [0.822]	67.903 [0.154]	1.981 [0.663]	10.406 [0.374]	15.778 [0.377]	44.332 [0.285]
N	43	42	43	43	43	43
R-sq	0.549	0.219	0.154	0.169	0.132	0.1

p-values in brackets

="\* p&lt;0.1    \*\* p&lt;0.05    \*\*\* p&lt;0.01"

A positive relationship was found between CSR reporting and all measures of profitability for firms with low institutional ownership. Table 4 provides all six regressions and associated significance levels. Regression (1) indicates that sustainability reporting and capital structure all have a positive and significant impact on firm return on equity. The coefficient on *csr* is positive (22.041) and significant at the 10 percent level (p-value = 0.077). Moreover, the economic impact of sustainability reporting on roe is relatively important. Holding all other variables constant, the model predicts that when a firm decides to switch to reporting, return on equity would increase return on equity by 22 percent. Note that 54.9 percent ( $R^2 = 0.549$ ) of the variance of the degree of profitability can be explained by the degree of *csr*, *lr*, *inside*, *institution*, and *de*. Regression (3) indicates that sustainability reporting has a positive and significant impact on a firm's return on assets. The coefficient on *csr* is positive (3.324) and significant at the 5 percent level (p-value = 0.034). The coefficient on *csr* suggests that a firm would experience a 3.324 percent increase in return on assets by engaging in sustainability reporting. Regression (5) demonstrates that *csr* reporting has a positive and significant impact on a firm's profit margin. The coefficient on *csr* (10.719) is positive and significant at the 10 percent level (p-value = 0.078). This result implies that sustainability reporting enhances a firm's profit margin by 10.719 percent.

The robust results are statistically significant in that sustainability reporting has a positive impact on profitability regarding firms with low amounts of institutional ownership. Firms with

high amounts of institutional ownership do not see the same relationship, and in fact have negative relationships between return on equity and *csr* as well as return on assets and *csr* reporting. The results suggest that firms that decide to report and have low institutional ownership could potentially see large increases in return on equity, return on assets, and profit margin in the short term. Sustainability reporting for firms with low institutional ownership could act as a substitute for other means in enhancing profitability and monitoring mechanism to make them more competitive with other firms.

### Conclusion

I have explored how sustainability reporting impacts the profitability between firms with high and low institutional ownership. It can be extremely beneficial as a substitute in enhancing firm profitability where there is an absence, or lack of, significant institutional ownership. At least in this sample, sustainability reporting has significant impact on a firm's profitability in the short-term; however, one size does not fit all. This study provides an important guide to managers by demonstrating not all companies should engage in CSR reporting – only companies with low institutional ownership. These findings suggest that by engaging in sustainability reporting, firms with lower institutional ownership show significant improvements in financial performance in the subsequent year after reporting. For companies that lack a large amount of institutional ownership and are not necessarily interested or motivated to pursue an active role in the corporation, it would be expected that they do not exert much influence over corporate governance. Engaging in sustainability reporting for these firms would prove to be quite beneficial in realizing increases in profitability, allowing them an alternate measure or strategy to potentially reap huge gains to increase shareholder value when there is an absence or lack of institutional ownership. The key here is that institutional investors have tremendous influence because they have the financial firepower to yield significant change in corporate management, and if there is a lack of institutional ownership, sustainability reporting could fulfil a piece of that monitoring role.

One key limitation to the study was omitting a key variable that has been shown to be an important determinant of profitability – R&D investment. McWilliams and Siegel (2000) suggested that these inconsistencies between CSR and profitability are due to misspecifications in the model by omitting R&D investment. R&D investment is linked to improvements in long-run economic performance (Griliches, 1979); (Lichtenberg and Siegel, 1991); (Hall 1999). If R&D is found to have a positive impact on firm performance, then it would make sense to include the variable within the regression to avoid overestimation in others that are closely related to R&D investments. Unlike findings from McGuire, Sundgren, and Schneeweis (1988) that indicate prior performance being more closely related to CSR, this study finds that subsequent performance is linked to engagement in CSR.

For future research, adjustments could be made for differences in industry profitability. Taking the difference between the individual firm's profitability and its industry median should be accounted for, as it is less affected by the influence of outliers. By comparing a company's performance to industry peers (benchmarking), we could get insight in a firm's performance relative to firms within its own industry. As some industries have higher profitability than others, seeing how the profitability and CSR relationship will vary by industry could prove insightful. Another suggestion to guide future research would be to include another dummy regressor indicating whether or not reports were assured or not. Including this assurance variable could help show if assuring reports is another viable means towards generating returns, as the

credibility of reports is enhanced by an auditor.

One last suggestion would be to obtain data across multiple years to assess the long-term impact of sustainability reporting on firm profitability. Using long-term financial data could indicate whether sustainability reporting is a worthwhile investment for the long term and not just a short-term remedy for firms to enhance profitability. This would show over time whether or not CSR enhances profitability, diminishes it over time, has a neutral impact, or even taking an inverse exponential growth trajectory, increasing sharply in the rewards to firms in the short-term, but ultimately plateauing in the long run as it may become a routine procedure for all corporations. All further extensions of this research could prove promising.

## Appendix A: Variable Description

Measure	Variable	Symbol	Source	Description	Year
<b>Corporate Social Responsibility (Independent)</b>	Sustainability Reporting (Dummy)	csr	Global Reporting Initiative's Sustainability Disclosure Database	Don't Report = 0 & Report = 1	2015
<b>Ownership (Control)</b>	% Held By Insiders	inside	Yahoo Finance	Total number of shares owned by insiders divided by the total shares outstanding	2016
	% Held By Institutions	institution	Yahoo Finance	Ownership stake in a company that is held by large financial organizations.	2016
<b>Profitability (Dependent)</b>	Profit Margin (%)	ros	Yahoo Finance	Net Income/Revenue	2016
	Return on Assets (%)	roa	Yahoo Finance	Net Income/Total Assets	2016
	Return on Equity (%)	roe	Yahoo Finance	Net Income/Shareholder Equity	2016
<b>Size (Control)</b>	Revenue (in billions)	revenuebil~s	Yahoo Finance	Income received during a specific period	2016
		lr		log(revenue)	2016
<b>Capital Structure (Control)</b>	Total Debt/Equity (Ratio)	de	Yahoo Finance	Total Liabilities/Shareholder Equity	2016



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