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The Impact of Corporate Social Responsibility on Investment Recommendations

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THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY
ON INVESTMENT RECOMMENDATIONS

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Abstract

Using a large sample of publicly traded US firms over 16 years, we investigate the impact of corporate socially responsible (CSR) strategies on security analysts' recommendations. Socially responsible firms receive more favorable recommendations in recent years relative to earlier ones, documenting a changing perception of the value of such strategies by the analysts. Moreover, we find that firms with higher visibility receive more favorable recommendations for their CSR strategies and that analysts with more experience, broader CSR awareness or those with more resources at their disposal, are more likely to perceive the value of CSR strategies more favorably. Our results document how CSR strategies can affect value creation in public equity markets through analyst recommendations.

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INTRODUCTION

In recent years, there has been a growing interest, both in the academic as well as the business world, around the issue of Corporate Social Performance (CSP) - a multidimensional measure (Carroll, 1991; Griffin and Mahon, 1997) of corporate social responsibility (CSR) that captures firm actions aimed at engaging a broader set of stakeholders and ranging across a wide variety of inputs, internal routines or processes, and outputs (Waddock and Graves, 1997; Wood, 1991; Aupperle et al., 1985; Wolfe and Aupperle, 1991; Aupperle, 1991; Miles, 1987; Gephart, 1991). In the literature to date, perhaps the most studied aspect of CSR has been its (potential) link to Corporate Financial Performance (CFP). Much work has focused on understanding this link and a number of theoretical insights and empirical findings have been revealed in the process. However, the causal directionality of this link has by no means been established[3]. Different theories predict conflicting directionality and a number of empirical studies have found inconsistent results.

In this paper we seek to shed more light on the broader issue of whether CSR strategies result in value creation and to do so, we focus on the role of sell-side analysts as important information intermediaries, functioning at the interface between the firms' CSR strategies and the capital markets. The overarching argument of our work therefore, is that if socially responsible behavior creates value for firms in the long-run, then such value creation will be reflected in the investment recommendations of the analysts. To be more specific, in our primary analysis we evaluate the overall impact of CSR strengths and concerns on sell-side analysts' recommendations, and subsequently, we investigate how analysts' as well as firms'

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[3] Margolis, Elfenbein and Walsh (2007) conducted a meta-analysis of 167 studies and find an overall effect that is positive, yet small.

characteristics interact with CSR information to impact analysts' perceptions of value creation and therefore, impact their recommendations. Our work reveals new theoretical and empirical insights by merging theory on CSR with an extensive line of work from accounting and finance on the important role of sell-side analysts in capital markets.

There are several reasons why CSR strategies might affect sell-side analysts' recommendations. First, if CSR affects a firm's long-term financial performance by creating (or destroying) value for a broad range of stakeholders, including customers, employees and competitors, then the resulting changes in financial performance will have a direct impact on analysts' recommendations. Second, many mutual funds invest in socially responsible firms, thus creating a growing demand for analysts that understand CSR strategies. In 2007 for example, mutual funds that invested in socially conscious firms had assets under management of more than $2.5 and $2 trillion dollars in the US and Europe respectively. Socially conscious funds in Canada, Japan and Australia held $500, $100 and $64 billion respectively. Moreover, assets under management of socially responsible investors grew considerably in the last ten years. For example, funds in the US, UK and Canada grew by $400, $600, and $400 billion respectively, between 2001 and 2007.[4] Third, the substantial amount of funds intended for investment in socially responsible corporations might increase the stock price of these corporations, thus also affecting analysts' recommendations. If the number of corporations that qualify as socially responsible is moderate and the amount of funds is large enough, investors will put pressure on the stock price of these companies, because under such conditions the demand curve for these stocks will be downward sloping instead of perfectly elastic (Shleifer 1986; Coval and Stafford

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[4] We calculated these numbers from information provided by national and international organizations that track socially conscious funds, such as Eurosif, Social Investment Forum, Responsible Investment Association Australasia, Social Responsible Organization, and SRI funds in Asia.

2007; Khan, Kogan and Serafeim 2010). Finally, the emergence of a substantial number of firms that rate and rank companies on multiple CSR dimensions (such as KLD and ASSET4 (Thompson Reuters) among others), also highlights the growing demand for information about CSR strategies by the investment community.

Previously[5], scholars within the neoclassical economics tradition argued theoretically that CSR strategies unnecessarily raise a firm's costs, thus creating a competitive disadvantage vis-à-vis competitors (Friedman, 1970; Aupperle et al., 1985; McWilliams and Siegel, 1997; Jensen, 2002). Arguing from an agency theory perspective (Jensen and Meckling, 1976) other studies have suggested that employing valuable firm resources for positive social performance strategies results in significant managerial benefits rather than financial benefits to shareholders (Brammer and Millington, 2008).

On the other hand, scholars have argued that enhanced social performance may lead to obtaining better resources (Cochran and Wood, 1984; Waddock and Graves, 1997), higher quality employees (Turban and Greening, 1996; Greening and Turban, 2000), better marketing of products and services (Moskowitz, 1972; Fombrun, 1996) and it may even lead to the creation of unforeseen opportunities (Fombrun, Gardberg and Barnett, 2000). Better social performance may also function in similar ways as advertising does, by increasing overall demand for products and services and/or by reducing consumer price sensitivity (Dorfman and Steiner, 1954; Navarro, 1988; Sen and Bhattacharya, 2001; Milgrom and Roberts, 1986). Moreover, it has been suggested that positive social performance could reduce the level of waste within productive processes (Konar and Cohen, 2001; Porter and Van Der Linde, 1995).

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[5] We draw extensively from three thorough and excellent literature reviews in the following papers: Brammer and Millington (2008), Barnett and Salomon (2006) and Zollo and Coda (2009).

Another theoretical stream, stakeholder theory, emphasizes that effective management of stakeholder relationships, the fundamental blocks of CSR, may also result in better financial performance. They argue that identifying and managing ties with key stakeholders may mitigate the likelihood of negative regulatory, legislative or fiscal action (Freeman, 1984; Berman et al., 1999; Hillman and Keim, 2001), attract socially conscious consumers (Hillman and Keim, 2001) or even attract financial resources from socially responsive investors (Kapstein, 2001). In addition, stakeholder management theories suggest that CSR strategies may lead to better performance by protecting and enhancing corporate reputation (Fombrun and Shanley, 1990; Fombrun, 2005; Freeman et al., 2007). Finally, a substantial number of studies within the resource-based view of the firm argue for the mechanisms through which socially responsible behavior may lead to competitive advantage (Hart, 1995; Litz, 1996; Rugman and Verbeke, 1998a, 1998b; Sharma and Vredenburg, 1998; Marcus and Geffen, 1998; Delmas, 1999; Delmas, 2000; de Bakker and Nijhof, 2002; de Bakker et al., 2002; McWilliams et al., 2002; Hockerts, 2003; Branco and Rodrigues, 2006).

Empirically, studies have found contradictory evidence of a positive or a negative relation (or a neutral one), and a U-shaped or even an inverse-U shaped relation (Barnett and Salomon, 2006; Margolis and Walsh, 2003; Orlitzky, Schmidt and Rynes, 2003; Hillman and Keim, 2001; McWilliams and Siegel, 2000; Rowley and Berman, 2000; Mahon and Griffin, 1999; Roman, Hayibor and Agle, 1999; Griffin and Mahon, 1997; Ullmann, 1985). According to McWilliams and Siegel (2000), such mixed results may be attributed to existing studies "suffer[ing] from several important theoretical and empirical limitations" (p.603) while other scholars have suggested that contradictory evidence arises due to "stakeholder mismatching" (Wood and Jones, 1995), the neglect of "contingency factors" (e.g. Ullmann, 1985), the

existence of "measurement errors" (e.g. Waddock and Graves, 1997) or overall "flawed empirical analysis" (McWilliams and Siegel, 2000). Going a step further, Margolis and Walsh (2003) have even highlighted the futility of the quest for a general relation between CSR and CFP.

While both the theoretical and empirical debates are still ongoing[6] (Margolis, Elfenbein and Walsh, 2007), it is evident that the issue of whether CSR strategies result in value creation is by no means decided. With our work, we contribute to the resolution of this issue by paying attention to the channels and mechanisms via which critical information around socially responsible behaviors flows from firms to public equity markets. We ask therefore, how do external institutions that monitor and channel the flow of CSR information towards the capital markets perceive and assess, if at all, the value that is potentially created via socially responsible firm strategies? What particular conditions could affect the perceptions of potential value creation by the analysts and thus, affect their recommendations?

Thus, we specifically seek to understand *how social performance ratings impact sell-side securities analysts' recommendations in the United States*. In other words, we focus on a specific mechanism via which CSR information flows from firms towards capital markets and we investigate the potential perception of value creation (or destruction) on information intermediaries. We subsequently characterize conditions both at the firm, as well as the analyst level, that could potentially affect the perception of such value creation (or destruction). We built on a large number of studies in the accounting and finance literature that documents a) the role of

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[6] An additional dimension of the debate is the timing of the social performance – financial performance link (Brammer and Millington, 2008). Whilst CSR strategies often require short-term costs, the benefits are usually realized across time (i.e. in the long-run), and are contingent upon the specific type of CSR strategy as well as the environmental context and external institutional factors such as financial institutions and analysts that follow the firm (i.e. stakeholder awareness).

security analysts as crucial information intermediaries in public equity markets (Healy and Palepu, 2001; Gilson et al. 2001; Gleason and Lee, 2003) as well as b) their ability to substantially affect the price and the trading volume of a firm's stock (Stickel 1995; Womack, 1996; Francis and Soffer, 1997; Barber, Lehavy, McNichols and Trueman, 2001). Importantly, prior studies have documented that analysts' expectations of the future value of the firm, are also a good proxy for the overall equity holders' expectations around the firms' future value (Fried and Givoly, 1982; O'Brien 1988)

We obtain social performance data from Kinder, Lyndenberg and Domini (KLD) and aggregate a focal firm's CSR strengths and concerns by year. Using consensus analyst recommendation as the dependent variable, we uncover a time trend: whereas in early periods CSR strategies had a negative impact on investment recommendations, for later periods the impact reverses, becoming positive and significant: CSR strengths point strongly towards "buy" recommendations. When we investigate the focal firm's market visibility, we find that higher visibility firms receive more favorable recommendations for their CSR strategies. We also find that analysts with higher ability to understand CSR are more likely to perceive CSR strengths as value-creating and thus produce more favorable recommendations. Moreover, since higher ability analysts tend to produce more accurate evaluations and influence capital markets more, we effectively document a mechanism via which CSR strategies are indeed perceived as value-creating and through the recommendations, are translated into economic value in capital markets.

With our work we make several theoretical contributions to the literature. Our paper integrates across diverse theoretical streams and offers the first empirical piece of evidence about how CSR strategies are perceived as value-creating by an important information intermediary:

sell-side analysts. Moreover, our focus on analysts' recommendations substantially mitigates the endogeneity issue traditionally associated with the CSR – CFP link by taking advantage of the panel nature of our dataset and utilizing firm and year fixed effects in our specifications. We also take advantage of the temporal dimension, by using analysts' recommendations in the months *following* the announcement of the KLD CSR ratings in each year. Thus, unlike previous research, we are able to carve out and explain some part of value created through CSR strategies and realized in public equity markets with low, if any, levels of endogeneity.

Moreover, our work integrates the CSR management literature with a large body of research in accounting and finance, to shed light on aspects of CSR activity for which little is known and much less is being understood; namely, the channels and the mechanisms through which the CSR impact is perceived and realized in public equity markets. Finally, the cross-industry and cross-time structure of our panel dataset allows us to test our hypotheses in multiple empirical settings (industries) and across time, thus making our results not only more robust, but also more generalizable than would otherwise have been the case.

The rest of the paper proceeds as follows. In the next section we review the prior literature on CSR, sell-side analysts and then draw from the neo-classical economics, economic sociology and innovation literatures to develop our hypotheses about how CSR ratings are likely to impact analysts' investment recommendations, while investigating firm-level and analyst-level characteristics. Then, we describe our empirical methodology as well as the data sources we use in order to test our hypotheses. The next section presents and discusses our results, followed by a section in which we discuss the implications of our findings for scholars as well as for

practitioners. After presenting caveats and limitations of our study, we conclude by discussing avenues of future research.

PRIOR LITERATURE AND THEORETICAL DEVELOPMENT

Corporate Social Responsibility: One Multidimensional Construct

Although the literature has not reached consensus on a precise definition, CSR is generally conceived of as a single broad construct comprised of actions aimed at stakeholder management and social issue management (Clarkson, 1995; Swanson, 1995; Hillman and Keim, 2001; Wood, 1991). In this paper, we follow Carroll (1979) in defining CSP as a construct with four main components: economic responsibility to investors and consumers, legal responsibility to the government or the law, ethical responsibilities to society, and discretionary responsibility to the community. We therefore, join a stream of work (e.g. Carroll, 1979; Wolfe and Aupperle, 1991; Waddock and Graves, 1997; Hillman and Keim, 2001; Waldman, Siegel and Javidan, 2006), in defining corporate social performance as one multidimensional construct capturing "a business organization's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's social relationships" (Wood, 1991: p.693).

Security analysts and Corporate Social Responsibility

There is a long literature documenting the role of security analysts as information intermediaries in capital markets (Healy and Palepu 2001; Bradshaw 2008). Sell-side analysts are employed by brokerage houses, investment banks or independent firms to assess the performance of the companies they follow. Analysts specialize in covering firms mostly within a

single industry (Zuckerman, 1999; Zuckerman and Rao, 2004) and they regularly publish reports based on their analysis. The output of this process is usually an earnings forecast[7], a target stock price and a long-term growth forecast. More importantly, in these reports analysts include investment recommendations in the form of "strong buy", "buy", "hold", "underperform" or "sell" (e.g. Schipper, 1991; Bradshaw, 2004). Prior research has shown that to produce these recommendations, analysts usually rely on shared "valuation models" with the goal of assessing future profitability and cash flows of firms within the industry they cover (Zuckerman, 1999; Zuckerman and Rao, 2004; Benner 2009). These shared valuation models often reflect taken-for-granted ideas about the most suitable strategies for profit generation within an industry context, in addition to a variety of measures for quantifying them, such as cash flow and price-to-earnings ratios (Bradshaw, 2004; Zuckerman and Rao, 2004; Benner, 2009).

The significance of analysts as an institution of information brokering is highlighted by the impact of their assessments and forecasts on investment behaviors. In particular, many studies have documented that analysts' recommendations substantially affect stock prices and trade volume (Stickel 1995; Womack 1996; Francis and Soffer 1997; Moreton and Zenger, 2005). For example, Womack (1996) finds that within a three day window around a change in analysts' recommendations, the stock price increases by 4% for a stock that is added to the buy list, or decreases by 3.8% for a stock added to the sell list. The main argument here is that analysts reduce the informational asymmetries between market participants and may well be in possession of superior private knowledge compared to what is publicly available (e.g. Frankel, Kothari and Weber, 2006; Rammath, Rock and Shane, 2008; Horton and Serafeim 2008).

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[7] In fact, analysts' earnings forecasts are more accurate than time-series models of earnings, in part because analysts may incorporate in their analysis more timely firm and economy-wide news (Healy and Palepu, 2001)

Therefore, investment recommendations issued by sell-side analysts are a potential avenue via which corporate socially responsible behaviors are incorporated into the market valuation of any given firm (see Figure 1). Moreover, past literature has treated research analysts' perceptions as a good proxy for investor expectations (Fried and Givoly 1982; O'Brien 1988). For example, analyst forecasts of future earnings are considered a reasonable approximation of the market assessment of the future earnings power of the company. Thus, analysts' investment recommendations reflect the opinion about the performance of a firm from an equity-holder's perspective.

Insert Figure 1 about here

Since analysts' actions have such influence on a firm's market valuation, we argue that if CSR strategies create (or destroy) the future earnings' potential of a firm, then such value creation (or destruction) will be reflected in their recommendations. Thus, in this paper we specifically ask: How do analysts perceive and react to information about CSR strategies implemented by firms? Prior literature from economic sociology offers useful guidance: Zuckerman (1999) shows that initially, analysts' reactions are negatively affected[8] by deviations from "industry categories" as well as deviations from the associated "models of valuation". Similarly, Moreton and Zenger (2005) show that stock price discounts may result from the implementation of strategies that are unique or complex, requiring higher than usual levels of information processing by analysts. Arguing from a technology strategy perspective, Benner (2007) and Benner and Ranganathan (2009) show that investment recommendations by analysts become increasingly negative for firms that invest in radically new technologies as the industry

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[8] In particular he shows that as firms diversified in unrelated industries, thus deviating from their original industry category, analysts faced difficulty in assessing the firm's stock and subsequently dropped coverage, leading to decreases in the stock price.

experiences a "radical technological discontinuity". This negative assessment, they argue, reflects the departure of firms from traditional (historic) categories and their associated "stock market identity" through their investments in the radical new technology.

We argue that CSR strategies are characterized by comparable underlying processes, and therefore they may potentially impact analysts in a similar manner. Consider for example, in recent years, the attempted transformation of British Petroleum (BP), from an oil company into a firm that seeks "to do no damage to the environment – a challenge that stimulates BP "to find innovative ways to manage our environmental impact at local, regional and global levels". BP claimed to have become a firm aiming to "work in ways that will benefit the communities and habitats where we do business – and earn the world's respect"[9]. BP's attempt to implement a broad CSR strategy, arguably a form of "management innovation" (Birkinshaw, Hamel and Mol, 2008), resulted in perceived departure[10] from its usual industry classification as well as obvious perceived deviation from the traditional valuation models used in the oil/energy industry.

Could analysts have accurately perceived and evaluated the future earnings potential of the new BP right away? As Zuckerman & Rao (2004) and Tripsas (2009) show, changes in valuation models are slow to come about and therefore implementation of CSR strategies may well collide with inertial valuation beliefs by analysts, which in turn may initially result in negative[11] analysts' reactions. In addition, increased uncertainty resulting from the implementation of relatively novel organizational strategies, such as socially responsible

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[9] From the BP website (www.bp.com) accessed November 3, 2009.

[10] Despite the recent oil disaster in the Gulf of Mexico, in previous years BP pioneered its own internal carbon emissions trading system, made diverse investments in solar power and other renewable technologies and funded biofuels research.

[11] Similar negative reactions to unrelated diversification have been documented by Berger and Ofek (1996), Zuckerman (1999), Amihud and Lev (1981).

strategies, exaggerates the difficulties faced by analysts when they attempt to evaluate the firm's future (expected) value, cash flows as well as the suitability of current investments. Increased uncertainty, in turn, may lead to rather more conservative and consequently pessimistic perceptions and thus, reactions by analysts.

From an economic theory perspective, the relative timing of the costs and benefits of CSR strategies may cause negative upfront analysts' reactions: often enough, the net benefits to social performance accumulate only over the long-run with a priori higher levels of uncertainty, when the costs associated with CSR strategies get amortized and stakeholders become sufficiently aware, whereas the investment costs of such strategies are incurred in the short-run (Brammer and Millington, 2008). Therefore, even if analysts perceive CSR strategies to be value-creating in the long-run, the presence of up-front investment costs in the short-run combined with their aforementioned lag in adjusting their valuation models to reflect the impact of such strategies, will lead them to lower evaluations of future earnings' potential and consequently negative recommendations, up until their models adjust to reflect the value creating (or destructing) potential of CSR strategies. If CSR strategies are value-creating, then the initially negative evaluations will become more positive, and vice-versa.

In addition, there is no such thing as a single monolithic CSR strategy. Rather, CSR is a complex multidimensional array of strategies that includes policies aimed at improving the firm's environmental footprint, its community involvement, its labor relations record, its diversity measures and a range of other issues, addressing the needs and concerns of a wide range of stakeholders. Tackling all or even some of these issues concurrently, is what makes the overall implementation and evaluation of a CSR strategy complex, and as such, requires higher than usual levels of information processing by analysts (Moreton and Zenger, 2005). Added

complexity coupled with lag in the adjustment of valuation models, therefore, leads in the short-run to less favorable recommendations and subsequently more positive recommendations if CSR strategies as perceived as value-creation or more negative ones if they are perceived as value-destructing.

Although unfavorable analysts' reactions are probable at the initial stages of implementing CSR strategies, legitimization of such strategies in the external environment, diffusion of managerial innovation and practices over time as well as the eventual adjustment of the valuation models to the new realities and perhaps an industrial re-categorization will affect analysts perceptions, this time, in the opposite direction, i.e. towards being more favorable, if CSR strategies are perceived as value-creating. Moreover, accrual of potential benefits associated with CSR strategies will accumulate over time (as opposed to costs that have already been incurred in the short run), whilst the broader group of stakeholders gradually becomes aware of both the strategies as well as the accrued benefits.

In particular, in the case of CSR policies, external market legitimization may originate from, among others, macro events such as the public call for more CSR investments by Kofi Annan in 2001, the Nobel Peace Prize to Al Gore in 2007 for his campaign against global warming, the adoption of the Kyoto Protocol in 1997, aimed at combating global warming, or the passage of the Sarbanes-Oxley Act that attempted to reform the corporate governance field. The emergence of firms like KLD or ASSET4 (Thompson Reuters), whose task is to collect and compile publicly available information on firms' CSR strategies and report rankings according to numerous screens, as well as the emergence of teams with the specific mandate of analyzing CSR information within large banks such as J.P. Morgan Chase and Deutsche Bank[12], coupled

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[12] Cobley, M. 2009. "Banks Cut Back Analysis on Social Responsibility", *The Wall Street Journal*, June 11th 2009.

with the increasing attention paid by academics to CSR issues (Orlitzky, Schmidt and Rynes, 2003) are also indications of a rapid process of legitimization. Such a process may therefore reduce the uncertainty created by the initial implementation of such CSR strategies and lead to more accurate evaluations of the future earnings' capacity of the firm and potentially more positive recommendations is CSR strategies are value-creating. Given the above discussion, we can formulate the following hypothesis:

> *HYPOTHESIS 1: Securities analysts' recommendations will initially be more negative towards firms that implement CSR strategies, whereas through time, if CSR strategies are perceived to be value-creating (value-destructing), analysts' recommendations will become more positive (negative) towards firms that implement CSR strategies.*

Up until now we have treated all firms as a homogeneous group of potential CSR strategists. However, we expect that the perceived benefits of CSR activities will be an increasing function of a firm's visibility. In particular, prior literature used firm size as a good proxy for firm visibility (e.g. Brammer and Millington, 2008), and documented a positive relationship between corporate social performance and firm size (e.g. Ioannou and Serafeim 2010). We employ both firm size as well as analyst coverage to proxy for firm visibility in our empirical specifications. Regulators, customers, investors and employees are more likely to scrutinize CSR strategies and are thus, more likely to change their behavior when such strategies are more visible and in the public domain. Therefore the advantages of lower likelihood of negative regulatory action (Freeman, 1984; Berman et al., 1999; Hillman and Keim, 2001), attraction of socially conscious consumers (Hillman and Keim, 2001), attraction of socially responsive investors (Kapstein, 2001), and hiring of higher quality employees (Turban and

Greening, 1996; Greening and Turban, 2000) will be particularly strong for companies that are more visible, if such benefits are perceived to be value-creating by the analysts.

HYPOTHESIS 2: If CSR strategies are perceived to be value-creating (value destructing), then the association between securities analysts' recommendations and CSR strategies will be positively (negatively) moderated by firm visibility.

Yet, not all analysts' recommendations are equally accurate. A number of prior studies in accounting (Stickel, 1992; Sinha, Brown and Das, 1997; Clement, 1999) have documented systematic and time-persistent differences in analysts' earnings forecast accuracy, and some have explained why this is the case by linking analyst performance to observable analyst characteristics. In particular, Clement (1999) finds that forecast accuracy is "positively associated with general and firm-specific forecasting experience and employer size, and negatively associated with the number of firms and industries followed by the analyst" (p.287). We argue, in a similar manner, that higher ability analysts will be better positioned to assess a focal firm's CSR strategies both in terms of short run as well as long run impact, and consequently, if CSR strategies are perceived as value-creating (value-destructing), they will reward (penalize) these firms with more favorable (unfavorable) recommendations, compared with their lower ability counterparts.

In particular, we expect that analysts with more years of firm-specific experience will be more favorable towards CSR strengths, if they perceive such strengths to be value-creating. Given the complexity and information processing capacity required to understand CSR strategies, as explained in the previous section, analysts with more firm-specific experience are more likely to have acquired firm-specific skills over time, such as a better understanding of the

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idiosyncrasies of a focal firm's CSR reporting practices and strategies. Secondly, analysts from large brokerage houses may have superior resources available to them (e.g. access to CSR-related databases from KLD, ASSET4 (Thomson) and others) or better administrative support and are thus better positioned to perform their research. More research into CSR-strong firms, therefore, would imply better valuations and perhaps a more rapid adjustment of the valuations models used, relative to other analysts, as well as more accurate perceptions of the value-creating (destructing) potential of such strategies. Lastly, we expect that analysts that have been exposed to more CSR related activities would be more accurate in their perceptions simply because their exposure to a large and more diverse set of CSR policies over time would increase their ability to more accurately evaluate the future earnings' potential of such firms and relative to other analysts. The existence of specialized CSR analysts within large brokerage houses such as J.P. Morgan and Deutsche Bank as well as the emergence of the "Social Investment Research Analyst Network" in recent years, emphasize the importance that market participants place on specialized CSR knowledge and research by investment analysts. Therefore, for all these reasons, we expect higher ability analysts to form more accurate evaluations of the value-creating (value destructing) potential of CSR strategies:

> *HYPOTHESIS 3: Security analysts' recommendations with greater CSR understanding are more positively (negatively) associated with CSR strategies perceived to be value creating (value destructing) compared to other analysts' recommendations.*

SAMPLE, DATA AND METHODS

Sample and Data Collection

We build our sample by combining several databases. We take CSR data from KLD, analysts' recommendations data from I/B/E/S, stock market data from CRSP and accounting data from COMPUSTAT. The resulting sample includes in total 20,715 observations with available data for all variables during 1993-2008. Although the KLD database starts in 1992, we dropped one year due to the lack of I/B/E/S data that are only available after 1992. In 1993, we have complete data for 546 US companies. The sample increases substantially after 2000 and in 2008 we have data for 2,698 US companies. Across years, 4,109 unique US companies are included in the sample. We start with the firms in the KLD dataset and drop firms for either of three reasons: a) analysts' recommendations were not available through I/B/E/S or b) stock market data were not available from CRSP or c) accounting data were not available from COMPUSTAT.

Dependent Variable: Investment recommendations

Our primary dependent variable is the consensus (mean) investment recommendation for each firm-year pair. I/B/E/S measures investment recommendations on a five point scale with 1 being a "strong buy" and 5 being a "sell" recommendation. We invert this scale so more favorable recommendations take a higher value. In our empirical analysis, we use the mean recommendation across analysts for each firm-year to test hypothesis 1 and 2, while for hypothesis 3 we employ the data set at the analyst-firm-year level of observation. I/B/E/S reports consensus recommendations at the third Friday of each month. We select the March dataset in each year since most US firms release their annual reports within 90 days after fiscal year end. We fit panel data models that incorporate firm fixed effects with year indicator variables.

Independent Variables: Measuring Corporate Social Responsibility (CSR)

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In the literature to date, it has been rather difficult to construct a truly representative measure of CSR due to two main reasons: a) because of the complexity of the theoretical construct itself and b) because measurements of a single dimension (e.g. philanthropic contributions) provide a rather limited perspective with regards to the firm's performance in the relevant social and environmental domains (Lydenberg et al., 1986; Wolfe and Aupperle, 1991). Indeed early on Waddock and Graves (1997) highlighted the "need for a multidimensional measure applied across a wide range of industries and larger samples of companies" (p.304).

Prior studies have devised a wide variety of CSP measures (Waddock and Graves, 1997). Such measures include forced-choice survey instruments (Aupperle, 1991; Aupperle et al., 1985), the Fortune reputational and social responsibility index or Moskowitz' reputational scales (Bowman and Haire, 1975; McGuire et al., 1988; Preston O'Bannon, 1997), content analysis of corporate documents (Wolfe, 1991), behavioral and perceptual measures (Wokutch and McKinney, 1991), and case study methodologies (Clarkson, 1991). In recent years, corporate social responsibility data provided by KLD have been used broadly and in fact, have contributed greatly towards the high proliferation of CSR-related studies (Margolis, Elfenbein and Walsh, 2007). For our study we utilize their KLD STATS[13] product. Overall, the KLD database[14] has been used by a large number of CSR-related studies (e.g. Graves and Waddock, 1994; Turban and Greening, 1997; Fisman,Heal, and Nair, 2005; Mattingly and Berman, 2006; Godfrey et al.,

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[13] For a detailed description of the various screens and criteria included in KLD STATS the interested reader can have a look at Appendix 1 as well as KLD's online information at (www.kld.com) and at (http://www.kld.com/research/stats/index.html)

[14] Studies have shown that this dataset exhibits robust construct validity around its underlying measures (e.g., Scharfman, 1996; Szwajkowski and Figlewicz, 1999; Mattingly and Berman, 2006). More recently, however scholars have raised criticisms around aspects of the dataset. For example, Chatterji et. al (2009) find "little evidence that KLD's environmental strengths predicted any of the environmental outcomes" they analyzed (p.162) although stating that "KLD environmental ratings do a reasonable job of aggregating past environmental performance" and that "the single KLD *net environmental score* (environmental strengths ratings minus environmental concerns ratings) and KLD's *total environmental concerns* ratings helped predict future pollution levels, the value and number of subsequent regulatory penalties, andwhether firms eventually reported any major spills (p.162).

2009) and is currently the largest multi-criteria CSR database available in the market. KLD provides corporate responsibility ratings annually over the course of 16 years, making it an excellent resource for comparative CSR research over time. Researchers at KLD review the company's public documents, including the annual report, the company website, corporate social responsibility reporting, and other stakeholders' and data sources. Company ratings represent a snapshot of the firm's CSR profile at calendar year end.

KLD researchers also monitor media sources for developing issues on a daily basis. Data for the previous year is generally available by early February. KLD's historical ratings data set is designed primarily as a binary system. For each strength or concern rating applied to a company, KLD includes a "1" indicating the presence of that screen/criterion and a "0" indicating its absence. The appendix provides an overview of the strengths and concerns that are taken into account when forming each issue area. In total, six issue areas are included: a) Community, b) Corporate Governance, c) Diversity, d) Employee Relations, e) Product and f) Environmental Issues.

Compared to other databases, KLD rankings have a number of advantages. Graves and Waddock (1994) for example, note that KLD rates firms with a rather objective and clearly defined set of screening criteria, applies the ratings consistently across companies, and has a staff of knowledgeable individuals who are not affiliated with any of the rated companies[15]. The data collection process and the reporting criteria of KLD ensures that the CSR strategies recorded are the strategies being implemented rather than the ones that are simply stated or declared by the firms. In other words, both theoretically and empirically, our paper focuses on actual strategies

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[15] For a more detailed description of KLD rankings and data collection process, see Graves and Waddock (1994) and Turban and Greening (1997).

and not potentially empty declarations of intent of action. To give an example, a firm's environmental performance is evaluated in the KLD database by accounting for several specific actions, such as the extent to which the firm uses clean energy and alternative fuels, recycles, derives substantial revenue from products that promote or generate environmental benefits, or violates environmental statutes (Waldman, Siegel and Javidan, 2006).

One aggregation issue faced by scholars that have used the KLD database in the past to construct a CSR measure, has been the weights assigned to the six issue areas mentioned above. Some studies have utilized differential category weights based on either (subjective) academic opinions about category importance (Graves and Waddock, 1994; 1997) or have used the analytic hierarchy process to derive weights (Ruf, Muralidhar and Paul, 1993). To date however, the theoretical literature in stakeholder management and adjacent fields has not identified a theoretically derived ranking of importance for the various stakeholder groups and issues, as a guide for empirical work. In fact, Mitchell, Agle and Wood (1997) claim that finding such a universal ranking is not even theoretically possible. For our paper, we follow the convention established by Waddock and Graves (1997) and Sharfman (1996), followed by Hillman and Keim (2001) and Waldman, Siegel and Javidan (2006) among others, in developing a single CSR score by giving equal importance (and thus equal weights) to the categories of the KLD database.

In particular, *Total Strengths* is the by firm/year equally-weighted sum of KLD strengths adjusted by the mean of strengths averaged across all firms in the sample in the focal year[16], to take into account firm entry into the KLD panel. In this way, we also account for the overall trend in CSR strategies within our sample in the given year. Similarly, we construct *Total*

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[16] We also used another specification, where we averaged across firms within the same industry in the same year with virtually no impact on our results.

Concerns, by deriving an equally-weighted sum of KLD concerns for each firm in each year of our sample.

We capture the analysts' ability to understand CSR strategies using three different measures. Firstly, *Firm Specific Experience* is the logged number of years that the focal analyst has followed a focal firm in our sample. Secondly, *CSR Awareness* is the logged sum of the CSR (strengths) score for all firms that the focal analyst is following over all years in her career. Lastly, *Employer Size* is a proxy for the total resources available to the focal analyst and it is measured as the logged total number of analysts that work for the analyst's employer. Accordingly, we are interested in the interaction effect between these three variables with our main variables of interest: *Total Strengths* and *Total Concerns.* We include these interaction terms in our empirical specifications.

Control variables

We include several control variables identified in prior research as determinants of firm performance and/or of investment recommendations. Logged *Market Value* of equity is a good proxy for firm size. Analysts might issue more optimistic recommendations for large firms since trading in these firms generates more trading commissions and these firms are more likely to generate investment banking business. The two revenues are the primary source of analyst compensation. *Market-adjusted return* is the stock return for the company over a fiscal year minus the stock return on the value-weighted index. We expect better performing stocks to have more positive recommendations reflecting a tendency for analysts to chase stock returns.

We also include several time-varying firm characteristics that might influence analyst recommendations. First, we include two valuation ratios, earnings over price (*Earnings-to-price*

ratio) and shareholder's book value over market value of equity (*Book-to-market ratio*). We expect all else equal that analysts will issue more optimistic recommendations for firms with higher valuation ratios. Second we include controls for the profitability of the firm measured as *Return-on-assets* (ROA), percentage of assets that are *Intangibles*, and *Capital expenditures* as percentage of assets. The latter two variables indentify firms that grow either by acquisitions or by investing in capital projects. We expect positive coefficients on all three variables. Finally, we estimate the model by including year and firm fixed effects. We cluster standard errors at the company level to mitigate serial correlation within a firm.

Similar to Benner (2009), we note here that the panel data design of our regression analysis coupled with the firm and year fixed effects, allows us to condition on the within-firm changes over time instead of the between-firm variation. Thus, we may more accurately claim causality in the change of both the dependent and independent variables, than if we had used a cross-sectional design, and depended on between-firm variation.

RESULTS

Table 1 presents summary statistics for the variables used in our analysis. On average a firm in our sample has one or two CSR strengths or concerns. However, considerable variation exists. The summary statistics show that our sample comprises larger firms with high stock market liquidity and low bid-ask spreads. Fourteen percent of the assets of the average company are intangibles. The average company is profitable (mean ROA=7.5%).

Insert Table 1 about here

Table 2 presents pair-wise correlations between the variables. Interestingly, there exists no strong correlation between the CSR variables, whether classified as strengths or concerns. Firm size has a strong positive correlation both with CSR strengths and concerns.

Insert Table 2 about here

In table 3 we present our baseline robust panel data models with firm and year fixed effects and the mean analysts' recommendation as our dependent variable. Our independent variables of interest are *Total Strengths* and *Total Concerns*. To test hypothesis 1 – which states that over time the impact of CSR strategies on analysts' recommendations will shift from negative in early periods to more positive (negative) in later periods if CSR strategies are perceived as value-creating (value-destructing) – we ran the model on different bundles[17] of years to detect how the impact changes over time.

Consistent with hypothesis 1, the models of table 3 show that in the earlier years, 1993-1997, firms' CSR strengths had a significant negative impact on analysts' recommendations whereas the trend reverses and subsequently - after 1997, after 1999 and so on – the impact becomes significantly positive. Thus, we provide evidence[18] of changing analysts' perceptions: as time goes by, CSR strategies are perceived to be value-creating, potentially more legitimate, thus uncertainty about future cash flows and profitability is reduced and, analysts assess CSR initiatives more accurately. They are possibly better positioned to re-classify firms in newly

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[17] We also run these specifications with one or three year windows with virtually no qualitative changes in our results.

[18] We also run the specifications of table 3 utilizing dynamic panel regression techniques based on the Arellano-Bond difference GMM estimator (Arellano and Bond, 1991), first proposed by Holtz-Eakin, Newey and Rosen (1988). Although we obtain qualitatively the same, and in fact more significant, coefficients compared to the ones shown in table 3, we do not report these results because both the Sargan test of overidentifying restrictions as well as the autocorrelation test fail, indicating that the dynamic panel modeling is not appropriate in this case, and the instruments are weak.

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defined industry categories and evaluate them based on revised valuation models. Interestingly, the reverse is *not* true for CSR concerns according to our data.

Insert Table 3 about here

The specifications of table 4 test, and in fact confirm, our hypothesis 2, suggesting that higher visibility firms receive more favorable recommendations for the implementation of CSR strategies, thus implying that CSR strengths are perceived to create more value for more highly visible firms. In order to capture firm visibility we utilize two alternative variables: firm size measured as logged market value (column 1) and the analyst coverage measured as total number of recommendations issued for the focal firm in any given year (column 2). The coefficient on the interaction term between Total Strengths and Market Value (Size) is positive and highly significant, showing that CSR strategies implemented by larger firms are more favorably perceived by analysts. In addition, the interaction term with Analyst Coverage is positive and significant for CSR strengths, and negative and significant for CSR concerns. In other words, CSR strategies implemented by higher visibility firms are not only perceived to be more value-creating by the analysts, but also CSR concerns are perceived to be relatively more value-destructing for firms of higher visibility.

Insert Table 4 about here

In Table 5, we present our panel data analysis based on observations at the analyst-firm-year level. In addition to firm and year fixed effects, our empirical specification also includes monthly fixed effects. The variables of interest in these specifications are the three interaction terms. In line with hypothesis 3, we find strong evidence that analysts of higher ability are more

likely to appreciate CSR strengths and incorporate them favorably in their recommendations, suggesting that CSR strengths are perceived to be value-creating. In particular, analysts with more firm-specific experience (column 1) or analysts with broader CSR awareness (column 2) or analysts with more resource availability, i.e. larger employer size (column 3), provide more favorable recommendations for CSR strong firms compared to the rest of the analysts. Interestingly, the reverse is *not* true for CSR concerns and therefore, CSR-weak firms. In other words, here we document an interesting asymmetric effect: CSR-strengths are perceived as value-creating by analysts, and as such, they are rewarded with more favorable recommendations, whereas CSR-concerns are *not* perceived as value-destructing, and as such, are not penalized with less favorable recommendations. Overall, all three different proxies for the underlying analyst ability and skill, confirm the prediction of hypothesis 3: higher analyst ability is associated with more favorable recommendations for CSR-strong firms, confirming that CSR-strengths are perceived to be more value creating by higher ability analysts. We note that this finding has implications for real value creation in capital markets: since higher ability analysts produce more accurate and thus more credible forecasts of firm growth (Stickel, 1992; Sinha, Brown and Das, 1997), their impact on market capitalization, through their recommendations, reflects accurate perceptions of the long-run value-creation potential of CSR strengths, and that value is realized in capital markets via better stock recommendations by the analysts, which in turn affect both trading volume and the stock price favorably.

Insert Table 5 about here

DISCUSSION AND CONCLUSION

Contribution and Implications

In this paper we shed light on an important aspect of CSR strategy that has not received attention in the literature to date: we examine a crucial channel and a critical stakeholder, namely sell-side analysts, through which strategic CSR information flows from firms towards public equity markets in which value is being created. In particular, we explore whether CSR strategies are perceived to be value-creating or value-destructing by investment analysts, for a period of 16 years and we investigate both firm heterogeneity as well as analysts' characteristics that interact with CSR strategies and affect the evaluation of such strategies and the subsequent investment recommendations. We thus provide insights into the nature and direction of analysts' perceptions and reactions to CSR strategies implemented by firms across sectors and across time in the United States.

Through the use of robust panel data models with firm and year fixed effects, we find evidence that in earlier periods, CSR strategies were perceived as value-destructing and thus, had a negative impact on investment recommendations, whereas for later periods, CSR strengths are perceived as value-creating, reversing the earlier negative into a positive impact on recommendations: analysts are more likely to recommend a stock "buy" for CSR-strong firms in later years, documenting a change of CSR perception over time at the analyst level. Furthermore, we explore the role that firm heterogeneity plays and, in particular, we find that higher visibility firms are more likely to receive favorable recommendations when implementing CSR strategies, suggesting that positive CSR strategies are more likely to be perceived as value-creating for higher visibility firms. We also consider how analyst ability and skill may impact the relationship between CSR ratings and recommendations. Accordingly, we find solid evidence

that analysts with more experience with the focal firm, or with broader CSR awareness or with a larger availability of resources, are more likely to perceive CSR strengths as value-creating and thus, are more likely to reward CSR strengths compared to other analysts. In other words, higher ability analysts are better positioned to appreciate CSR strengths and consequently reflect this information through their favorable recommendations. This becomes particularly important when one accounts for the fact that capital market participants respond more to the recommendations of analysts employed by large brokerage houses relative to other analysts (Stickel, 1995; Clement, 1999). Consequently, for a strong CSR firm, coverage by higher ability analysts leads to even greater value creation in the capital markets, relative to the same firm being covered by less able analysts, since higher ability analysts are more accurate forecasters of long-run firm performance and our data suggest that they perceive CSR-strengths as value-creating.

With our work, we make several contributions both theoretically as well as empirically. Firstly, although a large number of studies have explored the link between CSR strategy and CFP, none of them has explicitly focused on the mechanisms via which crucial CSR information first gets evaluated and then reaches public equity markets and, in particular, none of them has documented empirically and quantified the impact of CSR behaviors on such channels. Our paper is the first one to do so by estimating the impact of CSR strategies on sell-side analysts' recommendations. The findings we provide are based on a large longitudinal sample utilizing models which condition on changes within-firm over time, thus ensuring that it is not just between-firm differences that drive our results but rather shifts in analysts' recommendations within each firm.

Secondly, prior studies have suggested that analysts' perceptions are a good proxy for overall investor and equity-holders' expectations and perceptions of the long-run earnings potential of a firm (Fried and Givoly, 1982; O'Brien 1988). Therefore, by examining the impact of CSR on investment recommendations and, by extension, on equity-holders' expectations of value creation, our work broadens the scope of the CSR and stakeholder theories, by linking them to a long empirical tradition in the accounting, finance and economics fields. Essentially in this paper, we theorize about and estimate how CSR strategies are being perceived and evaluated by one of the firm's most important stakeholders, the equity-holders, in relation to the value created by such strategies in the marketplace for all stakeholders. Furthermore, this study has implications for better understanding how market value is being created as heterogeneous firms implement socially responsible strategies in their respective industries. In essence, we investigate if and how CSR strategies, i.e. the effective management of a firm's stakeholders, could potentially lead to value creation in public equity markets. We find that indeed, this has happened over time and we are able to point to specific sources of firm heterogeneity (i.e. firm size) and specific analysts' characteristics (i.e. analysts' ability and skill) that characterize the value creating process.

Fourthly, the cross-industry and across-time structure of our panel dataset, and the robust panel data regression models that we utilize, allow us to test our hypotheses in multiple empirical settings (industries) and across time in the largest and most advanced economy in the world, the United States, thus making our results not only more robust, but also more generalizable than would otherwise have been the case.

Lastly, while this study focuses explicitly on the context of CSR strategies, our results also have broader implications with regards to how public equity markets and information intermediaries could potentially perceive and react to firms' management innovation and adaptation strategies, both in the short- and long-run. It may be the case that securities analysts' reactions initially discourage the adoption of managerial innovations in the early periods and prior to their full legitimization, whereas later on, as these strategies diffuse, attitudes change, analysts learn and they eventually become more positive and optimistic in their reactions. Our study also reinforces prior literature in accounting in terms of documenting systematic differences in analysts' forecast accuracy but in addition, we document systematic differences in their ability to accurately perceive and evaluate business model innovations (e.g. the implementation of CSR strategies). More importantly, we find evidence that certain aspects of firm heterogeneity, in our case firm size, are a decisive factor in determining the impact that information flows have on institutional intermediaries' perceptions of firm's strategies.

Managerial Implications

Importantly, our paper also contributes to management practice. Developments in recent years have consistently highlighted the social role and responsibilities of firms, with particular emphasis on their environmental impact and community involvement. CSR and sustainability strategies have received increasing amounts of attention by the media and have become a hot topic of discussion across news channels. Top executives and managers interested in implementing CSR strategies in their organizations should be aware that negative analysts' reactions, and subsequent value destruction in capital markets is a real possibility when they initially attempt to implement such strategies. Managers should particularly focus on

communicating the value of CSR strategies to the investment community. Highlighting short term costs but also long-term benefits could mitigate difficulties that investors may face in understanding the value generated through such activities and might expedite the adjustment of their valuation models to these new CSR-augmented business models. In other words, managers should be aware that not only what is communicated matters but also to whom it is communicated to.

Caveats and future research

We acknowledge certain limitations of this study. First, although, we have controlled in our empirical specifications both for observable time-varying firm characteristics and unobservable firm heterogeneity, it is still possible that our results suffer from a correlated omitted variable. For example, it might be the case that companies that receive more public attention adopt CSR policies and that analysts are more optimistic for these firms. Second, to the extent that the CSR ratings are noisy indicators of actual CSR strategies we might be underestimating the effect of a firm being socially responsible.

Future research may seek to understand how analysts' reactions to CSR strategies affected subsequent implementation of such strategies by the same firm or by other firms in the same industry. Another interesting extension of this study would be to examine the association between CSR ratings and investment recommendations internationally. Different countries are characterized by different cultures and institutions, potentially moderating the effect of CSR on recommendations. Finally, another fruitful area of research would be the association between CSR policies and ownership structure. We know very little about which types of investors accept social responsibility. A study that shows whether institutional investors, retail investors or

company insiders are more probable to support CSR activities could greatly enhance our understanding of why and which firms adopt CSR policies.

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Table 1: Summary statistics (20,715 obs.)

Variable	Mean (1)	Std. Dev. (2)	Min (3)	Max (4)
Mean Analyst Recommendation	3.617	0.557	1.000	5.000
Total CSR Strengths	1.482	2.027	0.000	22.000
Total CSR Concerns	1.711	1.782	0.000	16.000
Market Value (Size)	14.289	1.506	10.928	19.325
Analyst coverage	10.168	7.085	1.000	47.000
Market Adjusted Return	0.026	0.393	-0.860	3.207
Intangibles (% of assets)	0.125	0.173	0.000	0.767
Return on assets	0.074	0.121	-0.878	0.416
Earnings-to-price ratio	-0.011	0.450	-8.940	0.382
Book-to-market ratio	0.514	0.513	-2.309	7.281
Capital Expenditure (% of assets)	0.043	0.055	0.000	0.383

Table 2: Correlation matrix (20,715 obs.)

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Mean Analyst Recommendation	1.00										
2	Total CSR Strengths	-0.04	1.00									
3	Total CSR Concerns	-0.03	0.36	1.00								
4	Market Value (Size)	0.07	0.45	0.44	1.00							
5	Analyst coverage	0.03	0.34	0.29	0.73	1.00						
6	Market Adjusted Return	0.18	-0.02	0.00	0.09	0.00	1.00					
7	Intangibles	0.07	-0.02	0.01	0.03	0.01	-0.03	1.00				
8	Return on assets	0.08	0.08	0.04	0.30	0.16	0.12	0.11	1.00			
9	Earnings-to-price ratio	0.11	0.01	0.00	0.16	0.07	0.11	-0.01	0.23	1.00		
10	Book-to-market ratio	-0.16	-0.06	-0.02	-0.24	-0.16	-0.17	-0.03	-0.16	-0.23	1.00	
11	Capital Expenditure	0.08	-0.03	0.04	0.04	0.12	-0.01	-0.17	0.11	-0.01	-0.05	1.00

Table 3: Panel regression analysis: Impact on mean analysts' recommendations over time

	1993-1997	>1997	>1999	>2001	>2003	All Years
Dependent Variable	*Mean Rec*	*Mean Rec*	*Mean Rec*	*Mean Rec*	*Mean Rec*	*Mean Rec*
Total CSR Strengths	-0.076***	0.010*	0.012**	0.013**	0.014*	0.004
	(0.020)	(0.006)	(0.006)	(0.007)	(0.008)	(0.005)
Total CSR Concerns	-0.009	-0.011	-0.016**	-0.013	0.006	-0.009
	(0.016)	(0.007)	(0.007)	(0.008)	(0.011)	(0.007)
Market Value (Size)	0.281***	0.213***	0.226***	0.230***	0.228***	0.182***
	(0.056)	(0.014)	(0.014)	(0.015)	(0.018)	(0.013)
Market Adjusted Return	0.204***	0.152***	0.152***	0.148***	0.123***	0.162***
	(0.033)	(0.010)	(0.011)	(0.012)	(0.013)	(0.010)
Intangibles	0.135	0.100	0.072	0.076	0.146*	0.134**
	(0.178)	(0.066)	(0.068)	(0.075)	(0.084)	(0.061)
Return on Assets	0.605*	0.359***	0.342***	0.354***	0.249**	0.448***
	(0.329)	(0.082)	(0.084)	(0.090)	(0.102)	(0.079)
Earnings-to-price ratio	0.257	0.009	0.007	0.004	0.002	0.015
	(0.191)	(0.015)	(0.015)	(0.015)	(0.014)	(0.016)
Book-to-Market ratio	-0.285***	-0.054***	-0.047***	-0.038**	-0.022	-0.063***
	(0.099)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Capital Expenditure	0.103	0.323*	0.289	0.289	0.274	0.458***
	(0.413)	(0.178)	(0.186)	(0.201)	(0.211)	(0.164)
Constant	-0.494	0.884***	0.432**	0.291	0.315	1.227***
	(0.867)	(0.191)	(0.193)	(0.218)	(0.252)	(0.180)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,995	18,720	17,794	16,416	13,075	20,715
R-squared	0.161	0.164	0.144	0.095	0.089	0.158

Dependent variable is the consensus recommendation across analysts for firm i at the end of March for year t. Robust standard errors in parentheses, clustered at the firm level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4: Panel Regression Analysis: Interacting CSR measures with firm characteristics

Dependent Variable	Mean Rec (1)	Mean Rec (2)
Total CSR Strengths	-0.126***	-0.010
	(0.045)	(0.011)
Total CSR Concerns	-0.058	0.010
	(0.064)	(0.014)
Total CSR Strengths * Market Value (Size)	0.008***	
	(0.003)	
Total CSR Strengths * Analyst coverage		0.001*
		(0.000)
Total CSR Concerns * Market Value (Size)	0.003	
	(0.004)	
Total CSR Concerns * Analyst coverage		-0.002*
		(0.001)
Analyst coverage		-0.007***
		(0.002)
Market Value (Size)	0.171***	0.205***
	(0.014)	(0.014)
Market Adjusted Return	0.163***	0.155***
	(0.010)	(0.010)
Intangibles	0.133**	0.141**
	(0.061)	(0.061)
Return on Assets	0.446***	0.433***
	(0.079)	(0.080)
Earnings-to-price ratio	0.014	0.014
	(0.016)	(0.016)
Book-to-Market ratio	-0.065***	-0.060***
	(0.015)	(0.015)
Capital Expenditure	0.460***	0.461***
	(0.163)	(0.164)
Constant	1.408***	0.994***
	(0.189)	(0.184)
Firm Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Observations	20,715	20,715
R-squared	0.159	0.160

Robust standard errors in parentheses, clustered at the firm level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5: Panel Regression Analysis: Interacting CSR measures with analyst quality measures

Dependent Variable	Analyst Rec (1)	Analyst Rec (2)	Analyst Rec (3)
Total CSR Strengths	-0.010	-0.023**	-0.037***
	(0.008)	(0.011)	(0.013)
Total CSR Concerns	-0.011	-0.013	-0.038**
	(0.009)	(0.013)	(0.016)
Total CSR Strengths * Firm Specific Exp	0.017***		
	(0.004)		
Total CSR Concerns * Firm Specific Exp	0.003		
	(0.005)		
Total CSR Strengths * CSR awareness		0.008***	
		(0.003)	
Total CSR Concerns * CSR awareness		0.002	
		(0.003)	
Total CSR Strengths * Employer Size			0.011***
			(0.003)
Total CSR Concerns * Employer Size			0.008**
			(0.004)
Firm Specific Experience	-0.072***		
	(0.008)		
Analyst's CSR Awareness		-0.055***	
		(0.004)	
Employer Size			-0.086***
			(0.005)
Market Value (Size)	0.023*	0.027**	0.023*
	(0.012)	(0.012)	(0.012)
Market Adjusted Return	0.177***	0.177***	0.179***
	(0.012)	(0.012)	(0.012)
Intangibles	-0.032	-0.030	-0.038
	(0.064)	(0.065)	(0.065)
Return on Assets	0.087	0.069	0.089
	(0.082)	(0.081)	(0.082)
Earnings-to-price ratio	0.012	0.011	0.018
	(0.020)	(0.020)	(0.020)
Book-to-market ratio	-0.094***	-0.095***	-0.097***
	(0.020)	(0.019)	(0.020)
Capital Expenditure	-0.078	-0.087	-0.056
	(0.158)	(0.158)	(0.159)
Constant	3.460***	3.464***	3.747***
	(0.176)	(0.176)	(0.177)
Firm Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Observations	112,572	112,080	112,572
R-squared	0.031	0.032	0.036

Robust standard errors in parentheses, clustered at the firm level. *** p<0.01, ** p<0.05, * p<0.1
Figure 1: The focus of this paper