

Corporate Social Responsibility and Managerial Incentives

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Abstract

We construct a measure of CEO concern for non-equity stakeholders based on corporate social responsibility (CSR) scores, and we investigate how such incentives affect firm leverage and cash holding. In general, we find that non-equity stakeholder incentives decrease leverage and increase cash holding, after controlling for CEO managerial incentives and other firm characteristics. Our findings suggest that corporate social responsibility benefit non-equity stakeholders, which may come at the expense of shareholders.

JEL Classification: G32, J33, M12, M14

Key Words: Managerial incentives; Corporate social responsibility; Shareholder interests; Non-equity stakeholder

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1 Introduction

The debate over “corporate social responsibility” has lasted for decades, motivating us to look into the role of CSR from a different perspective. In the 1970s, business professionals claim that firms should not only consider profit but also possess “social awareness”. However, Friedman (1970) argues that the fundamental social responsibility of business is to increase its profit insofar as it stays within the requirement of laws and regulations, and that the appeals made by corporate executives to promote “social ends” exploit shareholders’ benefit and harm the society under the cloak of corporate social responsibility. Although scholars differ in the exact modern definition of CSR (Carroll, 1979; and Hill et al., 2007), a common theme is that firms reallocate their resources to serve all stakeholders in a way that is beyond the requirement of regulations and laws. Stakeholders include not only shareholders but also non-equity stakeholders (such as bondholders, employees, customers, environment, and community, etc.). Accordingly, some questions arise. Does CSR engagement affect shareholders’ interests? How does managers’ personal value towards CSR affect their other policymaking? Who are the beneficiaries of CSR investing? We respond to these questions by separating the effect of CEO concern for shareholders and for non-equity stakeholders respectively. Specifically, we construct a measure that captures non-equity stakeholder incentives based on the residual from regressing CSR scores on CEO compensation incentives, and investigate how this measure affects risk-related corporate decisions such as leverage and cash holding. Our premise is that CSR could lead to operational policies that might not promote shareholder interests.

Scores of previous works test the direct relation between corporate social behavior and firm value in terms of accounting value and market value. According to the literature review summarized by Margolis and Walsh (2003), empirical results suggest that the relation between CSR and financial performance could be positive, negative, U-shaped, inverse-U shaped relation, and even irrelevant (Margolis and Walsh, 2003; Margolis, Elfenbein and Walsh, 2007). Additionally, other scholars investigate mechanisms to interpret the role of CSR in corporate financial performance: They relate CSR to resource efficiency (Turban and Greening, 1997; Jensen, 2001; Gardberg and Fomburn, 2006; Hull and Rothernberg, 2008), cost of financing (Goss and Roberts, 2009; Ghoul, Guedhami, Ywok, and Mishra, 2011; Cheng, Ioannou and Serafeim, 2014; I. Oikonomou et.al. 2014), and risk management (Lee and Faff, 2009; Frooman, 2010). Through direct or indirect approaches, the debate over whether CSR improves corporate financial perfor-

mance continues without conclusive agreement on its role.

The mixed findings between firm financial performance and socially responsible corporate investment outlined above is partly due to methodological concerns (Margolis and Walsh 2001), model misspecification, and the “lack of understanding about the channels through which CSR affects firm value” (Servaes and Tamayo, 2013, p.1045). Instead of conducting a direct test, we look into this issue from a different angle: We investigate whether CSR manifests as an agency problem in terms of the shareholder-bondholder conflict and how it influences financial decisions. In particular, since a higher CSR score suggests greater concern for non-equity stakeholders such as bondholders, CEOs of high CSR firms may be reluctant to make corporate decisions that increase firm risk, even if such decisions benefit shareholders. Relying on the insight of Barnea and Rubin (2010) that CSR has a negative impact on firm value if CSR evinces agency problems, CSR engagement would be questionable from the perspective of business if it benefits non-equity stakeholder at the expense of shareholders.

We posit that there are three major factors affecting firms’ investment in CSR: firms’ capability to invest (size, profitability, etc.), CEOs’ concern for shareholders (proxied by CEO compensation incentives), and CEOs’ concern for non-equity stakeholder. The capacity of the firm refers to how much resources are available to invest in CSR. Firms are able to contribute more to CSR activities if they are larger in scale, more profitable, and have more cash on hand. Large firms and those with better performance are better able to put resources to responsible behavior than small firms or firms in financial distress (Waddock and Graves, 1997, Jiao, 2010; Dhaliwal et al. 2011).

CEO concern for shareholders relates to managerial incentives arises from equity-based compensation, which aligns their economic interests with the interests of shareholders (Jensen and Meckling, 1976). Vega measures the sensitivity of manager wealth to changes in stock return volatility (the change in CEO wealth to a 0.01 increase in stock return volatility). Delta measures the sensitivity of manager wealth to changes in stock price (the change in CEO wealth to a 1% increase in stock price). Vega measures the incentive that motivates CEOs to take on more risk, and Delta measures the incentive that motivates CEOs to improve stock performance. To be more precise, higher Delta motivates CEOs to be more dedicated to their work for the reason that their economic benefits are more closely related to the gains and losses of shareholders (Core, 2006). However, because managers are more exposed to the firm-specific risk than shareholders

are, they may forgo some positive net present value but risky projects. Risk-taking incentives actuate them to invest in valuable and risk-increasing projects by offering them convex payoff of options, which also increase with firms' volatility (Guay, 1999; Ross, 2004; Core, 2006). Thus, managerial incentives (measured by Delta and Vega), which strengthen the alignment of interests between managers and shareholders, can be seen as a proxy for CEO concern for shareholders. After isolating the effects from the firm's capability to invest in CSR and the CEO's equity based incentives to invest in CSR, what remains must represent the CEO's concern for non-equity stakeholders, which is our focus.

By isolating CEO concern for non-equity stakeholder and investigating how it affects corporate financial decisions, such as leverage and cash holding, we find that CEOs with greater concern for non-equity stakeholder tend to make less risky financing decisions: those firms tend to have lower leverage and higher cash holdings. Therefore, CSR engagement is a positive signal to non-equity stakeholder, but it comes at the expense of shareholders' interest by forgoing risky financing decisions. We contribute to the existing literature in three main aspects: first, we methodologically document that CSR decisions are endogenously determined by firm and compensation characteristics. Second, we construct a measure for CEO social awareness and use this measure to examine how it affects their financial decisions in terms of leverage and cash holding. Among CEOs with the same level of compensational incentives, those who are more aware of CSR tend to reduce firm financial risk by reducing leverage and increasing slack more than may be desirable for shareholders. To the extent that CSR incentives mitigate the effect of managerial incentives, CSR engagement benefits non-equity stakeholder in a way that sacrifices shareholder interests. Third, we provide explanations on the mechanism of how CSR affects the cost of debt. High level of CSR engagement serves as a signal of "lower risks" to benefits non-equity stakeholder, bondholders in particular. In this way, bondholders would rationally consider the firms' CSR performance when pricing bonds.

The remainder of the paper is organized as follows: In Section 2, we go through the literature and develop four hypotheses. Data and methodology are presented in Sections 3 and 4. Results are discussed in Section 5. Section 6 presents our conclusions.

2 Literature Review and Hypothesis Development

2.1 Corporate Social Responsibility

Recent decades witnessed an increasing demand from social media and the public for firms to assume greater social responsibility. Some researchers argue that CSR benefits society and the firm at the same time (Freeman, 1984; Fombrun and Shanley, 1990; Brekke and Nyborg, 2005; Fisman et al, 2006). However, others argue that CSR reduces firms' value by wasting resources. Who is the beneficiary of CSR is the fundamental question that interest investors and shareholders, as well as scholars.

A majority of researchers focus on the direct effect of CSR on financial performance and firm value, including market value and accounting profitability, short- as well as long term. However, there is no clear consensus on CSR's effect on firm performance (Margolis and Walsh, 2003). Since the relation between CSR and firm performance is not clear, other researchers focus on the mechanisms through which CSR affects firm performance. Almost all the findings fall into two theories: "stakeholder theory" and "shareholder wealth maximization paradigm".

2.1.1 Stakeholder Theory

The "stakeholder theory" or "conflict-resolution hypothesis", developed by Freeman (1984), suggests that CSR activity is a good way to mitigate conflict of interest between shareholders and stakeholders and to develop good relationships between management, shareholders, employees, customers, etc., thereby reducing the contracting cost and achieve sustainable profit. In other words, firms invest in CSR activities to the point where marginal benefits from reduced contracting costs (to the firm, not the benefits to other stakeholders) equal marginal costs.

Some researchers support "stakeholder theory" from the perspective of market asymmetric information theory and implicit contract theory. They argue that good social performance leads to lower explicit cost because CSR can work as an information signal of good management, commitment and trustworthiness (Fombrun and Shanley, 1990; Brekke and Nyborg, 2005). Fisman et al. (2006) also model CSR as a screening device for firms to attract motivated workers, thus decreasing the contracting cost with employees. Without socially responsible manners, firms would enter into more explicit contracts with the parties who take the firms' social behaviour into consideration (Mcguire, 1988). Socially irresponsible behaviour or low CSR engagement is perceived negatively by non-equity stakeholders, who would transform implicit contracts into explicit ones in order to protect themselves. By comparison, firms that invest more in

CSR are more likely to have good reputations for honoring agreements, which encourage stakeholders to contribute resources to the firm with less explicit contracts (Deng, 2013).

Empirically, a number of papers support “stakeholder theory.” Researchers find a higher CSR score is on average associated with better stakeholder engagement and less short-term opportunistic behavior (Benabou and Tirole, 2010; Eccles et al., 2012; Cheng et al., 2014), better access to valuable resources (Cochran and Wood, 1984; Waddock and Graves, 1997), more qualified employees and developed intangible assets (Turban and Greening, 1997; Waddock and Graves, 1997; Greening and Turban, 2000; Zingales, 2000; Jensen, 2001; Gardberg and Fombrun, 2006; Hull and Rothernberg, 2008), lower likelihood of negative regulatory, legislative or fiscal action (Freeman, 1984; Berman et al., 1999; Hillman and Keim, 2001; Cheng et al., 2014), lower idiosyncratic risk and default risk (Lee and Faff, 2009; Frooman, 2010; Cheng et al., 2014). Thus, CSR creates unforeseen opportunities and reduces overall contracting costs (Fombrun et al., 2000; Jones, 2005).

2.1.2 Shareholder Theory

Advocates of shareholder theory support that firms should just conduct what law requires and maximize shareholder wealth. They argue that engaging in socially responsible corporate activities destroys firm value by increasing agency costs and reducing firm profit, thereby hurting society in the end. Friedman (1970) suggests that companies should only act in favour of shareholders, and that it is government’s obligation to promote the wellbeing of the society. The major argument relates to manager-shareholder agency problems. Due to its unaccountable nature, CSR investment becomes a catchall for managers to pursue their own interests instead of benefiting shareholders (or even other stakeholders) (Friedman, 1970; Aupperle et al., 1985; McWilliams and Siegel, 1997; Jensen, 2002; Brammer and Millington, 2008).

Jensen (2001) also maintains that CSR engagement creates agency problems and undermines the internal monitoring systems because there are no effective criteria and clear judgement about the trade-offs among different stakeholders. Therefore, managers can justify any decisions claiming those actions benefit social welfare. For example, they may pursue good public reputation for themselves by donating to education or charity on the ground that the contributions promote corporate social responsibility. Even worse, managers can choose his relatives’ projects using the excuse that it is environmentally friendly (Tirole, 2001).

Additionally, the over-investing hypothesis (Barnea and Rubin, 2010) suggests that there

may be an ulterior motive behind CSR investment. Using shareholders' resources, CEOs have a tendency to contribute unduly to CSR activities to build good public images of them, gain legitimacy, and pursue entrenchment power. For example, CEOs, instead of investing the free cash, distribute the cash to employees in the form of rewards or salary increases. While this improves employee job satisfaction, it also serves the executives' interest by making it difficult for them to be replaced (Pagano and Volpin, 2005; Cronqvist et al., 2009). On the other hand, CSR engagement can also result from management entrenchment. Zhang (2006, p.17) explains "companies will be more willing to sacrifice profits in order to be socially responsible when their management is entrenched or shielded from anti-takeover mechanisms... The reason is that these managers are less likely to be replaced by profit-maximizing ones." From this perspective, firms in more competitive markets would be less able to allocate resources to CSR activities, since it would expose them to the market for corporate control (Baumol, 1991; Tirole, 2001).

In conclusion, all the theoretical arguments and empirical results in support of "shareholder theory" suggest that CSR benefits non-equity stakeholder or the CEO themselves to the detriment of shareholders' best interests.

2.1.3 Other CSR- related Research

Apart from the argument between stakeholder theory and shareholder theory, there are also no conclusive results when it comes to the relation between CSR and firm risk. Some scholars find that firms with high CSR scores have lower idiosyncratic risk and default risk (Lee and Faff, 2009; Frooman, 2010), but on the other hand, some find higher CSR scores have no significant influence on the premiums on bank loans (Goss and Roberts, 2011; Allen and Gordon, 2009).

In addition to that, very few people treat CSR as an endogenous variable and look into the driving factors behind CSR engagement. Almost all of the existing empirical works treat the firm as an agent and ignore that it functions, to a certain degree, according to CEO's decisions. As Hemingway and Maclagan (2004) wrote, "The commercial imperative is not the sole driver of CSR decision-making in private sector companies, but that the formal adoption and implementation of CSR by corporations could be associated with the changing personal values of individual managers." Thus, it is reasonable to assume that CSR engagement is partly decided by the capacity of a firm and partly driven by the incentives of a CEO. As for firm capacity, several papers provide evidences for our argument. Large firms are more likely to take on overt socially responsible behavior than small firms are (Waddock and Graves, 1997). CSR is not an essential

investment that is required for firms' survival. It is doubtful that firms in financial distress or emerging small firms would have extra resources to allocate to CSR in lieu of operating. Accordingly, firms with a strong performance in generating sales and profits and large firms are more able to conduct good CSR behaviour (Jiao, 2010; Dhaliwal et al. 2011).

2.2 Managerial Incentives

As we point out in the previous section, a firm's engagement in CSR also relies on how the CEO is willing to make socially responsible policies and investments, which may be affected by their compensational incentives. To align CEOs' interests with the shareholders', stocks and options are granted to them as part of their compensation packages, which work to mitigate agency problems that are not addressed by direct monitoring. When CEOs' economic benefit is closely tied to shareholders' interests, they will dedicate more to their works and thus increase firms' value. However, when a CEO's wealth is, largely, decided by firm performance, he will likely forgo risky but positive-NPV investment (Smith and Stulz, 1985). It is known that CEOs face more firm-specific risks than shareholders and relatively limited benefits (Coles et al., 2006), thus managers may become risk-averse and forgo risky but positive NPV projects. To deal with risk related agency problems, shareholders compensate managers with the convex payoff from options whose value increases with firm volatility. Since option value increases with firm risk, option-based compensation encourages risk-averse managers to invest in valuable risk-increasing projects that they may otherwise forgo (Guay, 1999; Ross, 2004).

Two "Greeks" are used to measure these two incentives. Risk-taking incentive is measured by the sensitivity of CEO wealth to changes in stock return volatility, known as Vega. Pay-performance incentive, Delta, is the sensitivity of CEO wealth to changes in stock price. The one-year approximation method developed by Core and Guay (2002) provides a simplified way to measure these two sensitivities, which is used in most of the related empirical work.

Many papers examine the relationship between risk-taking incentives and investing and financing policies, and the results are quite consistent. They find that higher risk-taking incentive leads to higher leverage and stock-return volatility (Cohen et al. 2000), less hedging activities (Knopf, 2002), riskier policy choices, including more investment in R&D, less investment in property, plant and equipment, more focus on fewer lines of business, higher leverage (Core, 2006), lower cash balance (Chava, 2010), and increased cost of debt (Ortiz-Molina, 2007; Hagedorff and Vallascas, 2011). Although options appear to increase firm risk, there is no evi-

dence that this effect is either large or damaging to shareholders (Cohen et al., 2000).

To the extent that pay-performance sensitivity (Delta) motivates CEOs to work harder towards shareholders' interests and risk-taking incentives (Vega) convince them to bear more risk, these two managerial incentives thus jointly work as a proxy for the alignment between managers and shareholders in our research.

2.3 Hypotheses

Treating CSR as an endogenous variable, we assume that CSR is not only decided by firm characteristics but also subject to "personal value of individual managers" (Hemingway and Maclagan, 2004). We call this management's willingness or personal value towards social contribution "total CSR incentive". It is widely accepted that being socially responsible is to take both shareholders and other non-equity stakeholders (NES) into consideration; therefore, CEOs' total CSR incentives should include their concern for shareholders as well as for non-equity stakeholder. Methodologically, Total CSR incentive is the variation in CSR investment after controlling for the firm's capacity. For example, if there are firm A and firm B in the same industry and have the same characteristics (size, profitability, etc.), the difference between their CSR engagements should result from their CEOs' different value towards such activities. It is not feasible to measure their values quantitatively, so we use their compensation incentives as a proxy for the alignment of interests between CEOs and shareholders. After controlling for firm characteristics and CEOs' compensation incentives, the residual measures CEO's concern for non-equity stakeholder, which we call CEOs' "residual CSR incentive." From the perspective of CEOs' personal interests, their economics profit is aligned with their concern for shareholders and their social profit with non-equity stakeholders. In this sense, CEOs make trade-off between their demands in economic benefit and socially interest to reach the optimal point of his utility function. It is possible that CSR investment is relatively riskier than the on-going projects of the firms; we expect a positive relation between CSR and Vega and a negative relation between CSR and Delta.

Considerable evidence from previous work shows that compensation incentives are important factors of CEOs' financing decisions. Recalling the fact that managers are less diversified compared to other shareholders, CEOs are reluctant to take on extra risks. This compensation design makes the CEO conservative when he encounters a risky but positive NPV project. As John et al. (2008) maintain, "Higher managerial risk tolerance allows for capitalizing on profitable opportunities, and has been empirically linked to greater firm-level growth." As a result, op-

tion-based compensation, which provides a convex payoff and therefore increases in value because of increased volatility, gives CEOs an incentive to take on extra risks. As empirical results show, risk-taking incentives indeed lead to riskier financing policy (Cohen et al. 2000; Core 2006).

Based on our previous discussion on CSR, besides the firm characteristics and CEOs' compensation incentives, CEOs' decision on financing policy may also be affected by their concern for other stakeholders. Among the scholars who support the "value-enhancing" view, many examine the role of CSR from the perspective of firm risk (Lee and Faff, 2009; Frooman, 2010). Taking CSR as a risk-management instrument, they find that higher CSR scores are associated with lower volatility, thus lower cost of financing and higher firm value. However, it is likely that risk-taking incentives reduce CSR initiatives, leading to the same negative correlation between CSR and risk. On the other hand, CEOs with a greater concern for non-equity stakeholders may have a tendency to forgo risky projects, even if such projects are beneficial to shareholders. In this sense, the high CSR incentives are in favour of non-equity stakeholder, but not necessarily shareholders.

The first group of testable questions are whether total CSR incentives and residual CSR incentives discourage CEOs from taking on long-term debt. Residual CSR incentive is a proxy for how management acts in favor of non-equity stakeholder and bondholders in particular, who will benefit from lower financial risk and volatility. It is reasonable to argue that higher residual CSR incentives mitigate CEOs willingness to take on risky projects in order to protect the interests of non-equity stakeholder, especially bondholders. The only studies on this topic test the relation between CSR score and the premium of corporate debt or bank loan, and the results are mixed. Some articles show that good CSR performance is an indication of lower idiosyncratic risk and default risk (Lee and Faff, 2009; Frooman, 2010), and others find no significant association with lower cost in terms of debt or loans (Allen and Gordon, 2009; Goss and Roberts, 2011). Based on the implications of management incentives, we test whether CSR is in favor of bondholders at the cost of shareholders. We expect both CSR incentives work against the effect of Vega on firm leverage, which provides evidence that CSR engagement transfers wealth from shareholders to bondholders.

Hypothesis 1: *Higher residual CSR incentive is associated with lower leverage, ceteris paribus.*

Hypothesis 2: *Controlling for compensation incentives, higher total CSR incentive is associated*

with lower leverage, ceteris paribus.

Another important aspect of capital structure is cash holding. Firms with more free cash have higher liquidity and less credit risk, which is favorable to bondholders. However, excess cash reserve allows CEOs to make investment without the discipline from external financing markets (Opler, 1999). In terms of agency cost of managerial discretion, overt cash holding has negative value to shareholders. Additionally, CEOs may increase cash holding because they are reluctant to bear risk. Therefore, we can expect that CEOs' residual CSR incentive encourage CEOs to protect the interests of bondholders (and thus non-equity stakeholder) by increasing cash holding, which may not be optimal for the maximization of shareholder wealth. In other words, with the same level of alignment with shareholders, CEOs with greater concern for non-equity stakeholder interests tend to accumulate greater cash reserves, holding all else constant. The preceding arguments lead us to the following hypotheses:

Hypothesis 3: *Higher residual CSR incentive is associated with higher cash holding, ceteris paribus.*

Hypothesis 4: *Controlling for compensational incentives, higher total CSR incentive is associated with higher cash holding, ceteris paribus.*

3 Sample and Variable Construction

3.1 Sample Construction

Our sample covers the period from 1992 to 2006¹. The data is collected from several sources: CRSP, Compustat, Execucomp, and KLD STAT. Consistent with previous studies we exclude financial firms (SIC 6000-6999) and utility firms (SIC 4900-4999), as well as firms whose asset or sales data are missing. We replace the missing value of R&D, CAPEX and long-term debt with 0 and exclude the observations with negative earnings (negative EBITDA). This leaves a final sample of 5727 firm-year observations. All variables are winsorized at the 1st and 99th percentiles to eliminate outliers.

3.1.1 Corporate Social Responsibility

We use the firm's involvement or performance in corporate social responsibility as a proxy for the firm's investment in corporate social responsibility. These measures are calculated using the data from Kinder, Lydenberg, and Domini's (KLD's) Stats database. KLD STAT covers over 3000 companies and contains seven major corporate social performance categories including community, corporate governance, diversity, employee relations, environment, human rights and product. In addition, there are several positive indicators (strengths) and negative indicators (concerns) under each dimension. A firm receives one point under "strength" if it fulfills the requirement of that item, and similarly it receives one point under "concern" if it falls into the category of that item. The raw scores for "strength" and "concern" are simply the total score firms receive in "strengths" and "concerns" respectively. However, it is not possible to compare scores across years and dimensions because the number of strength and concern indicators varies considerably across most dimensions (Manescu, 2009). Considering this issue, we construct adjusted measurements of Strength and Concern based on percentage scores calculated by dividing the strength (concern) scores of each dimension by the total number of strength (concern) indicators in a given year (Deng, 2011).

Mattingly and Berman (2006) suggest that the CSR strengths and concerns grading scheme in KLD STAT are different in concept, and these two aspects do not measure opposite sides of a common underlying issue. Similarly, Strike et al. (2006, p.858) also document that "social responsible actions and social irresponsible actions are not merely the reverse reflections

¹ We also extend the data to 2011. The corresponding regression results are presented in Robustness test.

of each other but separate yet related constructs”.

Since the indicators under “concerns” and “strengths” are not in a one-to-one manner under the grading scheme of KLD STAT, it is not reasonable to assume the total CSR performance is the net score of Strength and Concern. For example, a firm, in one aspect, has a poor union relation, and in another aspect, it launches a sponsorship program in a university. It is not applicable to cancel out the scores in these two different divisions. Further, Concerns are more about situations that are less controllable by CEOs. Accordingly, for a large manufacturing company, it is more likely for the CEO to implement a recycling project than to avoid being the top manufacturer of depleting hazard waste. From an econometric perspective, since both Strength and Concern are positively correlated with firm characteristics such as firm size, we investigate the model by separating the two parts to avoid potential collinearity.

3.1.2 Managerial Incentives

Following the method of Guay (1999) and Core and Guay (2002), which use the Black-Scholes option valuation model, we construct Vega and Delta using the data from CRSP, Compustat, and Execucomp. The "option portfolio value" is the aggregate value of the options held in the portfolio. Vega is the change in option portfolio value for a 0.01 change in the annualized standard deviation of stock return. Delta is the change in option portfolio value and restricted stock value for a 1% change in the stock price. Those executives with CEO flagged are identified as the CEO for that year. However, in several cases EXECUCOMP has missing values for “CEO flag” to identify the CEO. In these instances, we manually fill in the value by using the date that an individual becomes and leaves the CEO position.

3.1.3 Financing policy

Debt and financial slack are two major sources from which firms obtain financing. These two methods have different risk characteristics: internal financing is considered as a less risky source and borrowing is relatively riskier. Thus, we consider two financing policy indicators: LEVERAGE and CASH. LEVERAGE is defined as the ratio of book value of long-term debt and book value of total assets. CASH is defined as cash and marketable securities scaled by total assets.

3.1.4 Other Control Variables

In this part, we identify control variables for regressions in both of the steps. All these control variables are chosen based on existing literature. 1) Firm size, which is measured by logarithm of total sales, may affect CSR, because larger firms may have a greater need to attract the

attention of investors (Waddock and Graves, 1997; Burke et al., 1986), possess greater operational impact and visibility (Barnea and Rubin, 2010), have more resources to invest, and have greater motivation to gain reputational wealth (Wang et al. 2013; Liu et al., 2013; Ayadi et al., 2014). Prior literature on risk-taking confirms that size is an important firm characteristic to control for (Coles et al. 2006; John et al. 2008; Boubakri et al. 2013). 2) MB, which is the market-to-book ratio, is defined as the market value of assets divided by the book value of assets (Coles et al., 2006; Barnea and Rubin, 2010). Market-to-book ratio represents growth and investment opportunities (e.g., Hovakimian, et al., 2001). Future profitability and investment opportunities guarantee firms with upcoming cash flows, motivating and allowing firms to contribute to CSR in order to get their messages across. These firms will be more likely to generate more profit and thus to invest in CSR. 3) ROA, calculated by EBITDA divided by assets, proxies for financial performance (Boubakri et al. 2013; Ayadi et al, 2014). Firms with strong performance likely have more resources for CSR activities (Dhaliwal et al. 2011). 4) RD, which is the R&D expenditures scaled by the book value of total assets (Dowell et al, 2000; King and Lenox, 2002). We include RD as another proxy for growth opportunities for regressions on leverage. The cost of long-term debt is relatively higher for growing companies, because of potential bondholder-shareholder conflicts. Therefore, future profitability should be negatively related to long-term debt (Titman, 1988). 5) Divi_dummy, which is a dummy variable, which equals to 1 if the firm issues a dividend in the given year. We control for it in regressions on cash holding following Faleye (2004). 6) CAPEX is the ratio of net capital expenditure (capital expenditure less the sale of PP&E) scaled by total assets (Jiao, 2010). CAPEX is another indicator of investment opportunities, which affects both leverage and cash holdings. 7) ADS is the ratio of advertising expenditures to total assets (Jiao, 2010). Advertisement increases firms' public exposure and their CSR engagement are more likely to be captured by the public. In addition, CSR-oriented firms are more likely to engage in advertisement campaigns to highlight their CSR activity. 8) CFV, defined as cash flow volatility scaled by total assets, is the standard deviation of the five-year trailing quarterly ROA. Firms with cash flow shortfalls often permanently forgo investment rather than obtaining external financing (Mintona Schrandb, 1999). 9) FCF is defined as free cash flow to the firm. If CSR does act as an agency problem, CSR should be positively related with free cash flow, because free cash is related to CEO entrenchment (Barnea and Rubin 2010). We fol-

low Frank and Goyal (2003) in defining free cash flow (FCF)². 10) FIRM_AGE controls for firm's life stage. Pastor and Veronesi (2003) find that younger firms experience higher volatility in their returns and profitability: thus, these firms have less capacity to invest in CSR. 11) Duality is a dummy variable that equals to one if the executive serves as the director. 12) Interlock is a dummy variable that equals to one if the executive serves in the compensation committee. Both Duality and Interlock are proxies for CEOs' power on the board of directors. Duality and Interlock measure CEOs' power over the board. Previous literature show that the level of CEO power significantly affects their decisions. However, the effect of CEO power could be positive and negative on CSR. On the one hand, duality power leads to unambitious and conservative decisions to avoid risk (Kim and Buchanan, 2008), and serving on a compensation committee reduces the effectiveness of compensational incentives. These arguments suggest that CEO power should relate negatively to CSR investment. On the other hand, CEO power over the board reduces monitoring effectiveness because of CEO entrenchment (Finkelstein, 1994). 13) NWC is net working capital excluding cash scaled by net assets, which is a measure of liquid assets. 14) *IGP* is the ratio of inventory plus gross plant and equipment to total assets. 15) *INTAN* is the ratio of intangible asset to total assets. 16) *DEP* is depreciation over total assets. Variable descriptions are presented in Table 1.

[Insert Table A.1 about here]

3.2 Summary and Correlation Statistics

Summary statistics of dependent variables and independent variables are presented in Table A.2. Before we merge the data with KLD STAT, policy variables, compensation variables, and other control variables are similar to the values reported in the work of Core (2006).

[Insert Table A.2 about here]

The correlation matrix is shown in Table A.3. Most variables are correlated with one another. However, the correlations are relatively small in magnitude except for FCF and ROA. To solve this problem, we design two specifications, one with only ROA and one with both. The results are consistent for these two different specifications, suggesting that the high correlation

² We follow Frank and Goyal (2003) in defining free cash flows (FCF): For firms reporting format codes (item 318) 1 to 3, CF equals Income Before Extra Items (item 123) + Discontinued Operation (item 124) + Depreciation and Amortization (item 125) + Deferred Taxes (item 126) + Equity in Net Loss (item 106) + Gain/Loss from Property, Plant & Equipment Sales (item 213) + Other Funds from Operations (item 217) + Other Sources of Funds (item 218).

between these two variables does not affect our conclusions. To detect the magnitude of multicollinearity issue, we calculate the variance inflation factors (VIF) for each specification. The values are all under 2.5, suggesting that multicollinearity is not a major concern.

[Insert Table A.3 about here]

4 Methodologies

We follow a two-step estimation procedure: We first isolate CEOs' incentives to invest in CSR, and then examine how these incentives affect their financing policy choices of leverage and cash holding. CEO incentives can be decomposed into financial incentives, that are verifiable, and incentives that are non-verifiable but are nonetheless important. To the extent that Vega and Delta closely align managerial and shareholder incentives, one could argue that CEO financial incentives also motivate them to serve shareholder interests. First, after controlling for firm characteristics affecting CSR engagement, the residual is attributed to CEO concern for equity and non-equity stakeholders. We denote this as total CSR incentive. Second, we further control for managerial financial incentives, in addition to firm characteristics. What remains is the incentive that could not be explained by firm characteristics and financial incentives that align manager and shareholder interests. We attribute this to managerial concern for non-equity stakeholders. We denote this as residual CSR incentive. We explain the detailed constructions in the following sections.

4.1 Total and Residual CSR Incentive

The first step in investigating who benefits from CSR investment is to construct the measures for residual CSR incentives corresponding to the wellbeing of non-equity stakeholder. Specifically, residual CSR incentive is the error term of the regression CSR strength score on the primary firm characteristics, compensational incentives and other control variables as it shows. Based on the analysis the models that we test are as follows:

$$\begin{aligned} & \text{STRENGTH} \\ & = \alpha_0 + \beta_3 \text{FIRM_SIZE} + \beta_4 \text{PROFITABILITY} + \beta_5 \text{CONCERN} + \beta_i \text{Controls} \\ & + \text{YearDummies} + \text{IndustryDummies} + \varepsilon_1 \end{aligned} \quad (4.1.1)$$

$$\begin{aligned} & \text{STRENGTH} \\ & = \alpha_0 + \beta_1 \text{LOG(VEGA} + 1) + \beta_2 \text{LOG(DELTA} + 1) + \beta_3 \text{FIRM_SIZE} + \beta_4 \text{PROFITABILITY} \\ & + \beta_5 \text{CONCERN} + \beta_i \text{Controls} + \text{YearDummies} + \text{IndustryDummies} + \varepsilon_2 \end{aligned} \quad (4.1.2)$$

The dependent variable STRENGTH is a proxy for firms' CSR engagement, which is a

percentage score ranging from 0 to 1. Accordingly, we use Tobit regression (censored regression model) to deal with the problem that censoring occurs on both sides. We use STRENGTH score as a dependent variable and control for CONCERN on the right-hand side in lieu of deducting CONCERN from STRENGTH.³ Strike et al. (2006) claim that “strength” and “concern” can be different in concepts even if they are under the same subcategory of CSR. For example, a firm that launches a volunteer program receives one point under “Community Strength”, and at the same time, it may receive one point under “Community Concern” if it is recently involved in a tax dispute related to community. It is questionable to deduct the one point for tax disputes from the one rewarded because of volunteer program. Likewise, it is hard to argue that a firm receiving three points under “strength” and three under “concern” is in the same condition as the firm that does nothing “good” or “bad.” The differences of firm characteristics and CEOs’ motivations between those firms are neglected by summing “strength” and “concern” (Mattingly and Berman, 2006). Furthermore, KLD strength score and concern score are positively correlated as we show in Table 3. One could expect that CSR engagement is also conditional on the magnitude of concerns that the firm creates. CSR investment, in this sense, serves as a tool for managers to divert public attention from the problems caused by their firm. Thirdly, “strength” related projects are more likely under the control of CEOs compared to the items that bring “concern”. Take a fundamental manufacturer in an industry that incurs heavy pollution as an example, it is beyond the CEO’s control to avoid being the substantial producer in depleting hazard waste. However, this CEO can invest its profits substantially in pollution prevention programs, conduct research and development on clean energy, or deliver environmental reports, etc. To conclude, it is more reasonable to use STRENGTH as a proxy for CSR engagement and treat CONCERN as a control variable on which CEOs’ investment in CSR relies.

Based on our discussion in literatures and hypothesis, the primary factors that affect firms’ ability to invest in CSR are firm size and profitability (Wang et al. 2013; Liu et al., 2013). One may expect large firms that are rich in resources and in the reputational asset conduct a better behaviour related to CSR. We use logarithm of total sales to proxy for firm size following Core (2006) and use ROA for profitability, both of which could have an influence on the re-

³ As a robustness check, we use net CSR score, calculated by subtracting CSR concern score from CSR strength score, as dependent variable in the first step. The results are presented in Robustness Tests section.

sources available to CSR engagement. We also include FCF to proxy for firm capacity. Theoretically, CEOs in cash-rich firms are more able to deploy cash under their discretion. However, because ROA and FCF are highly correlated, we do not include them in the same regression. Following Barnea and Rubin (2010), Jiao (2010) and Jo and Harjoto (2011), we also use the following variables: market-to-book ratio (MB), cash flow volatility (CFV), advertisement expense (ADS), firm age, duality and interlock.

LOG(1+VEGA) and LOG(1+DELTA) in Equation (4.1.1) proxy for firms monetary incentives to make investment. After controlling for the characteristics of the firm that affect the level of CSR engagement and compensation incentives, the residual term in Equation (4.1.1) is CEOs' residual incentive reflecting their concern for non-equity stakeholder. To the extent that CSR is an endogenous variable that decided by firms' capacity and CEOs' concern for the well-being of shareholder and non-equity stakeholder, the variation in firms' strength score is captured by CEOs' concern for non-equity stakeholder holding firms' capacity and CEOs managerial incentives constant. Likewise, if we only control for firms' characteristics, the residual term (total CSR incentives) in the specification (4.1.2) captures the difference in CEOs' socially responsible decisions incorporating the interests of both shareholders and non-equity stakeholder. Although not reported, each regression includes years dummy and industry fixed effect.

4.2 CSR Incentive, Compensation Incentives, and Leverage

One of the ways to increase firm risk is to use long-term debt financing (Core, 2006). Thus, CEOs who have a greater concern for the interests of non-equity stakeholder should use less leverage than those who care less about non-equity stakeholder, when they have same managerial incentives and capacity to invest. Accordingly, we regress leverage on different incentives and various control variables that are widely used as determinants of leverage. Following Titman and Wessels (1988), we use the collateral value of assets by distinguishing intangible versus tangible assets such as inventory, property, plant, and equipment (INTAN or IGP), non-debt tax shields (DEP), growth opportunities (CAPEX, MB, R&D), uniqueness (R&D), size (Firm_size), volatility (CFV), and profitability (ROA). We also control for year and industry fixed effects.

$$LEVERAGE = \alpha_0 + \beta_1 RES_INC + \beta_i Controls + YearDummies + IndustryDummies + \varepsilon. \quad (4.2.1)$$

$$LEVERAGE = \alpha_0 + \beta_1 TOT_INC + \beta_2 LOG(VEGA + 1) + \beta_3 LOG(DELTA + 1) + \beta_i Controls + YearDummies + IndustryDummies + \varepsilon. \quad (4.2.2)$$

We use RES_INC as our primary explanatory variable in model (4.2.1) to investigate how it will affect CEOs decisions on risky financing policies. After controlling for other determinants of leverage, greater concern for non-equity stakeholder wellbeing (RES_INC) mitigates CEOs' risk-taking behaviour and thus leads to lower leverage. To strengthen our arguments and test hypothesis 2, we use TOT_INC as our main explanatory variable in model (4.2.2) and controls for compensational incentives. TOT_INC is the total incentives to invest in CSR considering all stakeholders' interests including shareholders. Holding compensational incentives and other controls constant, the variation in TOT_INC arises from the difference of CEOs' concern for non-equity stakeholder.

4.3 CSR Incentive, Compensational Incentives and Cash Holding

Similarly, we investigate whether CSR incentives induce CEOs to increase cash holding. Following Opler et al. (1999), cash holding is a function of firm size (nature logarithm of annual sales), long-term debt-to-asset ratio (LEVERAGE), book-to-market ratio (MB), cash flow (FCF), sales growth rate, net working capital over net assets (NWC), dividend dummy (Divi_dummy), net capital expenditure over total assets (CAPEX), and research and development expenditure (RD). The models are as followed:

$$CASH = \alpha_0 + \beta_1 RES_INC + \beta_i Controls + YearDummies + IndustryDummies + \varepsilon. \quad (4.3.1)$$

$$CASH = \alpha_0 + \beta_1 TOT_INC + \beta_2 LOG(VEGA + 1) + \beta_3 LOG(DELTA + 1) + \beta_i Controls + YearDummies + IndustryDummies + \varepsilon. \quad (4.3.2)$$

We estimate models (4.3.1) and (4.3.2) to test hypothesis 3 and 4. As we discussed in previous sections, excess cash holding benefits CEOs themselves and non-equity stakeholder (especially bondholders) at shareholder expense. Therefore, we attempt to test whether higher concern for non-equity stakeholder (RES_INC) motivates CEOs to accumulate free cash, and whether higher concern for both shareholders and non-equity stakeholder still contributes to

more financial slacks if the management possesses same managerial incentives.

5 Empirical Results

5.1 CSR and Determinants

The first step regression results in specification (1) are presented in Columns 1, 3, and 5 of Tables 4 and 6,⁴ and the results in specification (2) are in Columns 1, 3, and 5 of Table 5 or 7. We start by estimating a baseline model as showed in each Column 1. We regress CSR performance on FIRM_SIZE, ROA, managerial incentives (Vega and Delta) to construct RES_INC (Column 1, Table 4 and 6) and then only on FIRM_SIZE, ROA to measure TOT_INC (Column 1, Table 5 and 7). As expected, whether we control for managerial incentives or not, CSR engagement is positively associated with firm size (FIRM_SIZE) and profitability (either ROA or FCF). The results are consistent across different specifications, indicating that large firms or profitable firms are more capable of investing in CSR, which is in line with previous literature (Waddock and Graves, 1997; Wang et al. 2013; Liu et al., 2013). In addition, STRENGTH increases with CONCERN. It consistent with the findings of Strick et al. (2006) that firms that create more social concerns and controversies tend to conduct a better behaviour related to CSR in order to redirect public attention from the real issue.

In Columns 3 and 5 of Tables 4-7, we extend our baseline model by incorporating more firm characteristics and corporate governance measures. We use FCF as another measure for firm capacity. Excess free cash flow makes it easier for CEOs to pursue investment policies towards CSR. Additionally, MB affects CSR engagement in a positive way. One possible reason is that CEOs of the firms with better growth opportunities (higher MB) use CSR engagement as a signal to inform the public of their optimistic future. Another explanation could be that future profitability assures CEOs that they can make use of their current resources (Barnea and Rubin, 2010). It is also worth noting that higher cash flow volatility (CFV) leads to lower CSR engagement. Inasmuch as firms face more uncertainty in their cash flow, they will be less generous when it comes to making a socially responsible contribution. In addition, investment in advertisement (ADS) promotes CSR engagement. Firms that conduct a great deal of CSR activities are more willing to increase their public visibility by advertising more. We also control for the board characteristics, Duality and Interlock, to control for the CEOs' power vis-à-vis the board. To the extent that CSR is negatively associated with CEOs' power on board, the results are consistent

⁴ Although we do not present all the results here, we also use three different residuals for each specification in step 2 for all the regressions not limiting to Table 4. All the results are consistent.

with organizational theory that CEOs duality power discourages their ambitious behaviours and risk-taking behaviours (Kim and Buchanan, 2008). Additionally, the increasing control over board and compensation committee may relieve CEOs' need to receive entrenchment by engaging in CSR.

In Columns 1, 3, and 5 of Tables 4 and 6, the positive coefficients of LOG (1+VEGA) and negative coefficients of LOG (1+DELTA) are all significant at 1% level in different specifications: CSR investment increases with risk-taking incentives and decreases with pay-performance sensitivity. One possible interpretation is that CSR investment is relatively riskier than on-going projects (such as R&D investment). Since the first step regressions mainly serve the purpose of deriving CSR incentives, the interpretation of each determinant is not our primary focus. We interpret the regression results in this section with caution.

5.2 Shareholder-Bondholder Conflict

Table A.4 (Columns 2, 4, and 6) present the regression results regarding regressions of leverage on residual CSR incentive (RES_INC) and other determinants. The estimations of how leverage corresponds to total CSR incentive (RES_INC), compensation incentives and other determinants are presented in Table A.5 (Column 2, 4, and 6).

[Insert Table A.4 about here]

[Insert Table A.5 about here]

In all specifications, the coefficients of our main explanatory variables RES_INC and TOT_INC are significantly negative. Consistent with our expectations, these results reveal the negative relation between leverage and CEOs' incentives to engage in CSR considering the interests of non-equity stakeholder (NES). In line with the results of Core (2006), leverage is significantly and positively associated to risk-taking incentives (Vega) and negatively to pay-performance incentives (Delta), as it shows in Table A.5. Accordingly, CEOs use less leverage when their compensation is tied closely to firms' performance and when they are offered fewer incentives to bear risk. By comparison, the negative coefficient of TOT_INC suggest that managers' concern for both shareholders and NES still motivate them to reduce leverage beyond that directly associated with compensation incentives. In this sense, CEO concern for NES signals less risk-taking behaviors in terms of financing approaches. In particular, managers would rather keep a lower debt level even though they might have to forgo some good financing opportunities or good risky projects. Thus, CEOs who advocate CSR engagement act in favor of bondholders

at the expense of shareholders. Bondholders are major beneficiaries of CSR awareness because of the lower bankruptcy cost and higher liquidity it brings. Therefore, CEOs' willingness to invest CSR shifts wealth from shareholders to non-equity stakeholder.

From the perspective of bondholders, higher CSR engagement may signal less financial risk and less likelihood of default. According to the definition of CSR, being socially responsible requires a firm to take not only its shareholders into consideration but also all other stakeholders, such as employees, the community, etc., including bondholders. However, previous empirical work seldom discusses the value of CSR to bondholders. Our work points out that higher level of CSR engagement benefits bondholders and non-shareholder employees, who have less exposure to financial risk than they otherwise would.

Our results for the control variables are consistent with the findings of Frank and Goyal (2003). Leverage is positively related to firm size (FIRM_SIZE), intangibles (INTAN), and tax shields (DEP) but negatively related to future growth opportunity (MB and RD). These results supports the trade-off theory. For example, firm size is inversely related to bankruptcy cost (Frank and Goyal, 2003), INTAN, such as branding, trademarks and patents, and guarantees creditors' claim on debt. Future investment opportunities are harder for bondholders to value because of information asymmetry, thus leading to higher cost of debt. DEP lowers the cost of debt. Similar to Titman (1988), we find that firm volatility (CFV) and collateral value of assets (IGP) has no significant influence on leverage after controlling for other factors.

5.3 CSR and Cash Holding

Tables 6 and 7 report the estimation results for cash holding. Table A.6 (Columns 2, 4, and 6) provides regression results regarding regressions of cash holding on residual CSR incentive (RES_INC) and Table A.7 (Column 2, 4, and 6) gives the regression results of relation between cash holding, total CSR incentive (TOT_INC) and managerial incentives.

[Insert Table A.6 about here]

[Insert Table A.7 about here]

RES_INC and TOT_INC both have significantly positive coefficients in different specifications in Step 2. These results indicate that CSR incentives motivate CEOs to accumulate cash. Specifically, CEOs with more incentive to protect non-equity stakeholder are willing to hold more cash. Additionally, over-investment in CSR is relatively easy when firms have excess cash on hand (Jensen, 1986; Zweibel, 1996). Since increasing cash holding has a decreasing marginal

value to shareholders (Liu, 1999), our results suggest that the incremental cash holdings brought by higher CSR incentives do not serve the best interest of shareholders. Consistent with Liu (2011), we observe a positive relation between CEO risk-taking incentives ($\text{LOG}(1+\text{VEGA})$) and cash holding in Table A.7. Firms with greater risk-taking behavior could have a higher cost of external funds and greater need for liquidity (e.g., minimum interest coverage ratio or working capital), which is in line with the precautionary motive of holding cash Liu (2011).

Our estimation results on other control variables are compatible with the findings of Bates et al. (2009) who look into the driving forces behind the increase in cash holding. Cash holding is negatively associated with firm size, leverage, net working capital, whether a firm pay dividends, and capital expenditure, but they are positively with the growth opportunity indicators R&D expenditure and market-to-book ratio. This evidence supports the transaction motive for holding cash. Large firms (measured by logarithm value of sales) have less dispersed collection activities associated with ongoing operations and thus require less cash holding as a “buffer.” The negative relation between leverage and cash holding arises because managers need to accumulate cash to reduce leverage if they are in financial distress. NWC is a substitution for cash, which should be negatively correlated with cash holding. Dividend paying firms are less risky (Bates et al., 2009), reducing the precautionary motive to hold cash. CAPEX contributes to firms’ collateral, thereby increasing firms’ debt capacity, and reducing the need for cash. Finally, as indicators of investment opportunity, MB and RD increase CASH, supporting both the precautionary motive of management and the agency cost of debt. Financial distress is more expensive to managers with more investment opportunities and the cost of external financing is higher for firms with intensive research and development that creates more information asymmetry. As a result, firms with higher MB or RD have more cash on hand.

5.4 Robustness Tests

5.4.1 Net CSR Scores

Previous results suggest that leverage is negatively associated with CSR incentives that we derive from the models of CSR determinants. However, it is possible that our findings rely on how we proxy CSR engagement the first step. Therefore, as a robustness check, we use net CSR score (CSR strengths less CSR concerns) as the dependent variable in lieu of the STRENGTH score to construct measures for total CSR incentives and residual CSR incentives. We test whether the negative relation between leverage and CSR incentives still exists. Table A.8 shows the OLS re-

gression results with time and industry fixed effects. Results are comparable to those reported in Table A.4 and A.5. Thus, our findings are not sensitive to the choice of proxy for CSR investment.

[Insert Table A.8 about here]

5.4.2 Pay-performance Sensitivity

Because of the high correlation between $\text{LOG}(1+\text{VEGA})$ and $\text{LOG}(1+\text{DELTA})$, we include $\text{LOG}(1+\text{DELTA})$ only as a proxy for managerial incentives. The rationale is that pay-performance sensitivity has long existed in literatures where it measures the alignment of interests of managers and shareholders (Jensen and Mackling, 1976; Guay, 1999). As Table A.9 shows, after excluding risk-taking incentives, the effects of CSR incentives on leverage and cash holding are consistent with our results. In terms of pay-performance sensitivity, $\text{LOG}(1+\text{DELTA})$ is negatively related to leverage and positively to cash holding, which is consistent with the theory that higher pay-performance sensitivity also incurs more risk-shifting behaviours (John and John, 1993; Guay, 1999). In addition, He (2011) also documents that pay-performance sensitivity affects negatively on leverage because of the cost of debt overhanging.

[Insert Table A.9 about here]

5.4.3 Empirical Results with Extended Period.

To verify our findings are consistent in recent years, we retest our main regressions with data from 1991 to 2011. In 2006, Execucomp changed the format of compensation data reporting. We use the methodology of Core et.al. (2013) to calculate the post-2006 Vega and Delta and examine if our results are still significant for the extended period. The results are presented in Table A.10-A.13. It shows that both RES_INC and TOT_INC are negatively related to leverage and positively related to cash holding, which are consistent with our previous findings. However, the coefficient of $\text{LOG}(1+\text{VEGA})$ becomes insignificant. One possible explanation is that risk-taking incentive becomes ineffective to steer managers towards taking on more risks. In addition, it could be due to the accuracy of new methodology in measuring Vega.

[Insert Table A.10-A.13 about here]

6 Conclusions

This paper introduces a new mechanism to interpret the role that CSR plays in corporate finance. We document evidence that is consistent with the “shareholder theory” (Jensen, 2001; Tirole, 2001) In particular, we find that firms with greater concern for non-equity stakeholder have less leverage and hold more cash on hand. These relations are still significant even after controlling for compensation incentives. The evidence is consistent with “shareholder theory” that CSR benefit other stakeholders (e.g. bondholders, employees, etc.), which may come at the expense of shareholders.

Our results also indicate that CSR engagement is a positive signal to non-equity stakeholder. CSR incentives of managers mitigate the effect of compensational incentives that would increase firms’ risk, thus reducing the possibility of bankruptcy and debt default. However, the value of CSR to shareholders requires further examination. CEOs’ concern for non-equity stakeholder mitigates CEOs’ incentives to take on risks. It could benefit shareholders if the risk reduction is excessive. It could also damage shareholder wealth if managers forgo risky projects generating positive value. In conclusion, we find CSR incentives promote less-risky financing policies, which benefits non-equity stakeholders but affects shareholders’ interests.

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Table A.1: Variable definitions and data sources

Variable name	Explanation	Formula	Source
VEGA	The change in value (in dollars) of CEO wealth for a 1% change in annualized stock return volatility	$dltt/at$	COMPUSTAT
DELTA	The change in value (in dollars) of CEO wealth for a 1% change in stock price	$\max(0, xrd)/at$	COMPUSTAT
LEVERAGE	Long –term book leverage	$dltt/at$	COMPUSTAT
CASH	Cash holding scaled by total assets	che/at	COMPUSTAT
STRENGTH	Percentage score of KLD Strength Categories scaled by the total strength score of that year	NA	KLD STAT
CONCERN	Percentage score of KLD Concern Categories scaled by the total strength score of that year	NA	KLD STAT
RD	R&D expenditure scaled by total asset	$\max(0, xrd)/at$	COMPUSTAT
CAPEX	Net capital expenditure scaled by total asset	$(capx-sppiv)/at$	COMPUSTAT
FIRM_SIZE	Total assets	$\ln(AT)$	COMPUSTAT
MB	Market-to-book ratio	$(at-ceq+prcc_f*csho)/at$	COMPUSTAT
ROA	Return on asset	$ebitda/AT$	COMPUSTAT
ADS	Advertising expenditure scaled by total asset	$\max(0, xad)/at$	COMPUSTAT
DIVI_D	Dividend Dummy	=1 if issue dividend	COMPUSTAT
FCF	Free cash flow to the firm scaled by total asset	Frank and Goyal (2003)	COMPUSTAT
CFV	Standard deviation of quarterly ROA	Standard deviation of quarterly ROA	COMPUSTAT
FIRM_AGE	The difference between the datadate and the date the firm first appear on CRSP	$datadate-birthyear$	COMPUSTAT, CRSP
DUALITY	Duality dummy	=1 if the executive serves as the director	Execucomp
INTER-LOCK	Interlock dummy	=1 if the executive serves in the compensation committee	Execucomp
INTAN	Intangible asset scaled by total assets	$intan/at$	COMPUSTAT
IGP	The ratio of inventory plus gross plant and equipment to total assets	$(invt+ppeveb)/at$	COMPUSTAT
DEP	Depreciation and amortization scaled by total assets	dp/at	COMPUSTAT
NWC	New working capital (exclude cash) scaled by net assets	$(act-lct-che)/(at-lt)$	COMPUSTAT

Table A.2: Data Summary

This table presents summary statistics of the dependent, main, and control variables. *STRENGTH* is the percentage score of KLD Strength Categories scaled by the total strength score of that year. *CONCERN* is the percentage score of KLD Concern Categories scaled by the total concern score of that year. *Vega* is the change in CEO wealth due to a 1% increase in stock return volatility. *Delta* is the change in CEO wealth due to a 1% increase in stock price. *LEVERAGE* is the ratio of long-term debt over book value of total assets. *CAPEX* is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. *FIRM_SIZE* is the natural log value of total asset. *FIRM_AGE* is the years since the firm's stock first appears on CRSP. *MB* is the ratio of market value of total assets to book value of total sales. *ROA* is the ebitda scaled by book asset. *FCF* is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. *RD* is total expenditures of research and development scaled by book value of total assets. *CFV* is the volatility of quarterly operating income scaled by total assets. *DUALITY* is a dummy variable equals to one if the executive serves as the director. *INTERLOCK* is a dummy variable equals to one if the executive serves in the compensation committee. *IGP* is the ratio of inventory plus gross plant and equipment to total assets. *INTAN* is the ratio of intangible asset to total assets. *DEP* is depreciation over total assets. *Divi_dummy* is a dummy variable that equals to one if the firm gives dividend during the indicated fiscal year. *NWC* is net working capital excluding cash scaled by net assets. The sample covers the period between 1992 and 2006 inclusive.

Variable	N	MEAN	SD	Min	P25	P50	P75	Max
LEVERAGE	5727	0.1804524	0.142749	0	0.0552958	0.1682509	0.2760543	0.6429256
CASH3	5725	0.1249243	0.1488924	0.0005195	0.0199553	0.0628432	0.1773487	0.68911
STRENGTH	5727	0.0544838	0.0630543	0	0	0.030303	0.0857143	0.28125
CONCERN	5727	0.0633016	0.0654333	0	0.030303	0.0357143	0.0909091	0.3030303
LOG(1+VEGA)	5727	4.22599	1.333248	0.4897979	3.379742	4.261552	5.158541	6.954847
LOG(1+DELTA)	5727	5.587705	1.427729	1.531378	4.66167	5.574936	6.510277	9.146891
FIRM_SIZE	5727	7.774423	1.432913	3.980784	6.767889	7.709521	8.74767	10.89258
RD	5727	0.0311592	0.0457409	0	0	0.0083555	0.0458655	0.2250593
FIRM_AGE	5727	29.46905	20.94972	0.7534246	12.26027	25.35342	39.0274	77.05206
MB	5727	2.233869	1.389201	0.8087645	1.361995	1.784362	2.588018	9.351221
ROA	5727	0.1603891	0.0753578	0.0101875	0.1071687	0.1531331	0.2043931	0.4072694
FCF	5727	0.0964793	0.0565452	-0.3110353	0.0599841	0.0908744	0.1253301	0.6033267
CFV	5317	0.0195288	0.0217774	0.0027645	0.0078452	0.0124218	0.022626	0.1733164
ADS	5727	0.0145724	0.0320049	0	0	0	0.0128053	0.1794522
Duality	5727	0.9921425	0.0883014	0	1	1	1	1
Interlock	5727	0.0396368	0.1951214	0	0	0	0	1
INTAN	5161	0.154671	0.1594282	0	0.0238401	0.1026492	0.2401586	0.6644458
IGP	5469	0.7070583	0.3656906	0.0734476	0.4167647	0.6796537	0.9712175	1.712652
DEP	5712	0.0459053	0.0236154	0.0071891	0.0297102	0.0422717	0.0570574	0.14226
CAPEX	5727	0.0623621	0.0496767	0	0.0281376	0.0494113	0.0826232	0.3091938
Divi_dummy	5727	0.6511262	0.4766556	0	0	1	1	1
NWC	5515	0.1381122	0.3505463	-1.124294	-0.0345326	0.1242094	0.3143364	1.443284

Table A.3: Pearson Correlation

	LEVERAGE	CASH	STRENGTH	CONCERN	LOG(1+VEGA)	LOG(1+DELTA)	FIRM SIZE
LEVERAGE	1						
CASH	-0.365***	1					
STRENGTH	-0.0111	-0.0398**	1				
CONCERN	0.116***	-0.101***	0.323***	1			
LOG(1+VEGA)	-0.00433	0.0708***	0.250***	0.252***	1		
LOG(1+DELTA)	-0.0767***	0.0728***	0.175***	0.137***	0.691***	1	
FIRM SIZE	0.176***	-0.397***	0.459***	0.497***	0.430***	0.368***	1
RD	-0.272***	0.517***	0.128***	-0.00374	0.0972***	0.0639***	-0.199***
FIRM AGE	0.138***	-0.293***	0.302***	0.396***	0.153***	0.0451**	0.512***
MB	-0.307***	0.368***	0.123***	-0.0602***	0.288***	0.399***	-0.0650***
ROA	-0.171***	-0.0141	0.119***	-0.0770***	0.146***	0.230***	0.0827***
FCF	-0.245***	0.127***	0.0112	-0.131***	0.0875***	0.186***	-0.0815***
CFV	-0.0763***	0.174***	-0.0762***	-0.0607***	-0.0414**	-0.0317*	-0.141***
ADS	-0.0346*	-0.0384**	0.127***	-0.0417**	0.0958***	0.123***	0.130***
Duality	0.0153	0.00170	-0.0695***	-0.00604	0.0343*	0.0565***	-0.0124
Interlock	0.0516***	-0.0682***	-0.0165	-0.0265	-0.0370*	-0.00268	0.0250
INTAN	0.186***	-0.186***	-0.0823***	-0.0486**	0.157***	0.129***	-0.00527
IGP	0.190***	-0.445***	0.0750***	0.143***	-0.176***	-0.191***	0.187***
DEP	0.0710***	-0.151***	0.0742***	0.0272	-0.119***	-0.142***	0.00771
CAPEX	-0.00242	-0.166***	0.0493***	0.00280	-0.0551***	0.0225	0.0458**
Divi dummy	0.0967***	-0.412***	0.226***	0.184***	0.0243	-0.0271	0.393***
NWC	0.127***	-0.210***	-0.162***	-0.116***	-0.232***	-0.156***	-0.0546***

	RD	FIRM AGE	MB	ROA	FCF	CFV	ADS
RD	1						
FIRM AGE	-0.146***	1					
MB	0.320***	-0.103***	1				
ROA	-0.0147	0.0272	0.585***	1			
FCF	0.127***	-0.153***	0.529***	0.796***	1		
CFV	0.0973***	-0.160***	0.127***	0.0699***	0.148***	1	
ADS	-0.0944***	0.129***	0.175***	0.264***	0.149***	0.0635***	1
Duality	0.00647	0.00251	0.0116	0.00274	-0.00216	-0.0236	-0.0156
Interlock	-0.0428**	0.0387**	-0.0348*	0.0122	-0.0334*	-0.0147	-0.0177
INTAN	-0.0500***	-0.0678***	-0.110***	-0.151***	-0.168***	-0.0754***	-0.0155
IGP	-0.337***	0.216***	-0.215***	0.175***	0.110***	-0.0487**	0.0157
DEP	-0.00822	-0.00826	-0.0822***	0.222***	0.281***	0.0342*	-0.0186
CAPEX	-0.120***	-0.0136	0.0755***	0.324***	0.304***	0.0326*	0.0475**
Divi dummy	-0.291***	0.461***	-0.122***	0.146***	-0.117***	-0.176***	0.104***
NWC	-0.135***	0.0421**	-0.168***	-0.0806***	-0.0722***	-0.0246	-0.0347*

	Duality	Interlock	INTAN	IGP	DEP	CAPEX	Divi dummy
Duality	1						
Interlock	0.0176	1					
INTAN	0.0320*	-0.0337*	1				
IGP	-0.0235	0.0467**	-0.518***	1			
DEP	-0.0116	0.0209	-0.271***	0.622***	1		
CAPEX	-0.00572	0.00226	-0.376***	0.559***	0.567***	1	
Divi dummy	-0.0124	0.0740***	-0.0654***	0.316***	0.0483**	0.0402**	1
NWC	-0.0120	0.0567***	-0.0829***	0.0404**	-0.169***	-0.150***	0.0803***

Table A.4: The impact of CSR residual incentive on LEVERAGE

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get RES_INC. The second step is OLS regression results from regressing LEVERAGE on RES_INC. STRENGTH is the percentage score of KLD Strength Categories scaled by the total strength score of that year. CONCERN is the percentage score of KLD Concern Categories scaled by the total concern score of that year. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. IGP is the ratio of inventory plus gross plant and equipment to total assets. INTAN is the ratio of intangible asset to total assets. DEP is depreciation over total assets. The sample covers the period between 1992 and 2006 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively.

	(1) Strength	(2) Leverage	(3) Strength	(4) Leverage	(5) Strength	(6) Leverage
RES_INC		-0.102*** (-3.13)		-0.0846** (-2.48)		-0.0742** (-2.17)
LOG(1+VEGA)	0.00301** (2.56)		0.00314*** (2.67)		0.00215* (1.75)	
LOG(1+DELTA)	-0.00266*** (-2.64)		-0.00230** (-2.28)		-0.00435*** (-3.93)	
FIRM_SIZE	0.0243*** (22.99)	0.00938*** (6.78)	0.0247*** (23.22)	0.00904*** (6.36)	0.0250*** (20.83)	0.00843*** (5.99)
ROA	0.0927*** (6.24)	-0.219*** (-6.63)		-0.396*** (-14.67)	0.0238 (1.27)	-0.184*** (-5.43)
CONCERN	0.0970*** (4.88)		0.0885*** (4.46)		0.0983*** (4.63)	
IGP		-0.00516 (-0.58)				
DEP		0.210* (1.82)		0.646*** (6.36)		0.409*** (4.22)
MB		-0.0191*** (-10.35)			0.00666*** (6.19)	-0.0194*** (-9.82)
CFV		0.115 (1.39)		0.0769 (0.92)	-0.0898* (-1.77)	0.122 (1.48)
RD		-0.473*** (-9.08)		-0.544*** (-10.63)		-0.386*** (-7.24)
FCF			0.0803*** (4.12)			
INTAN				0.183*** (13.30)		0.167*** (12.39)
CAPEX				0.0478 (0.90)		
ADS					0.168*** (4.50)	
FIRM_AGE					0.0000549 (0.88)	
DUALITY					-0.0444*** (-4.06)	
INTERLOCK					-0.0174*** (-3.13)	
Constant	-0.153*** (-12.63)	0.181*** (10.38)	-0.152*** (-12.46)	0.128*** (7.29)	-0.110*** (-6.65)	0.149*** (8.54)
N	5727	5092	5727	4802	5317	4802
R ²		0.137		0.148		0.164
Adjusted R ²		0.124		0.134		0.151
F		36.06		37.27		42.22
Chi ²	2043.2		2021.3		2065.3	

Table A.5: The impact of CSR total incentive on LEVERAGE

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get TOT_INC. The second step is OLS regression results from regressing LEVERAGE on TOT_INC. STRENGTH is the percentage score of KLD Strength Categories scaled by the total strength score of that year. CONCERN is the percentage score of KLD Concern Categories scaled by the total concern score of that year. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. IGP is the ratio of inventory plus gross plant and equipment to total assets. INTAN is the ratio of intangible asset to total assets. DEP is depreciation over total assets. The sample covers the period between 1992 and 2006 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively.

	(1) Strength	(2) Leverage	(3) Strength	(4) Leverage	(5) Strength	(6) Leverage
TOT_INC		-0.102*** (-3.12)		-0.0868** (-2.56)		-0.0705** (-2.07)
LOG(1+VEGA)		0.00384* (1.88)		0.00356* (1.70)		0.00422** (2.03)
LOG(1+DELTA)		-0.00622*** (-3.38)		-0.0112*** (-6.11)		-0.00677*** (-3.60)
FIRM_SIZE	0.0246*** (25.94)	0.0101*** (6.07)	0.0252*** (26.62)	0.0120*** (7.12)	0.0239*** (22.78)	0.00921*** (5.42)
ROA	0.0886*** (6.13)	-0.217*** (-6.56)		-0.353*** (-12.68)	0.0254 (1.36)	-0.181*** (-5.36)
CONCERN	0.102*** (5.13)		0.0931*** (4.71)		0.103*** (4.87)	
IGP		-0.00820 (-0.92)				
DEP		0.218* (1.89)		0.525*** (5.09)		0.398*** (4.10)
MB		-0.0174*** (-8.90)			0.00536*** (5.40)	-0.0175*** (-8.34)
CFV		0.111 (1.34)		0.0725 (0.87)	-0.0832 (-1.64)	0.116 (1.41)
RD		-0.487*** (-9.31)		-0.515*** (-9.97)		-0.395*** (-7.40)
FCF			0.0766*** (4.04)			
INTAN				0.190*** (13.85)		0.171*** (12.60)
CAPEX				0.0883* (1.66)		
ADS					0.165*** (4.43)	
FIRM_AGE					0.0000851 (1.37)	
DUALITY					-0.0474*** (-4.35)	
INTERLOCK					-0.0184*** (-3.32)	
Constant	-0.157*** (-12.99)	0.192*** (10.80)	-0.156*** (-12.81)	0.144*** (8.08)	-0.109*** (-6.61)	0.159*** (8.95)
N	5727	5092	5727	4802	5317	4802
R ²		0.138		0.155		0.166
Adjusted R ²		0.125		0.141		0.153
F		33.55		36.13		39.28
Chi ²	2034.6		2013.3		2049.7	

Table A.6: The impact of CSR residual incentive on CASH

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get RES_INC. The second step is OLS regression results from regressing CASH on RES_INC. CASH is the cash and marketable securities scaled by total assets. STRENGTH is the percentage score of KLD Strength Categories scaled by the total strength score of that year. CONCERN is the percentage score of KLD Concern Categories scaled by the total concern score of that year. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. Divi_dummy is a dummy variable that equals to one if the firm gives dividend during the indicated fiscal year. NWC is net working capital excluding cash scaled by net assets. The sample covers the period between 1992 and 2006 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively

	(1) Strength	(2) CASH	(3) Strength	(4) CASH	(5) Strength	(6) CASH
RES_INC		0.123*** (4.51)		0.116*** (4.36)		0.120*** (4.33)
LOG(1+VEGA)	0.00301** (2.56)		0.00314*** (2.67)		0.00215* (1.75)	
LOG(1+DELTA)	-0.00266*** (-2.64)		-0.00230** (-2.28)		-0.00435*** (-3.93)	
FIRM_SIZE	0.0243*** (22.99)	-0.0219*** (-17.70)	0.0247*** (23.22)	-0.0222*** (-18.40)	0.0250*** (20.83)	-0.0231*** (-18.52)
ROA	0.0927*** (6.24)				0.0238 (1.27)	
CONCERN	0.0970*** (4.88)		0.0885*** (4.46)		0.0983*** (4.63)	
FCF		0.552* (1.91)	0.0803*** (4.12)			-0.194*** (-6.04)
LEVERAGE		-0.166*** (-13.96)		-0.122*** (-10.50)		-0.132*** (-10.86)
RD		0.994*** (23.59)		0.833*** (19.88)		0.806*** (18.61)
CAPEX		-0.305*** (-8.16)		-0.354*** (-10.01)		-0.329*** (-8.54)
Divi_dummy		-0.044*** (-12.01)		-0.0418*** (-11.57)		-0.0423*** (-11.36)
NWC		-0.0680*** (-13.94)		-0.0626*** (-13.17)		-0.0641*** (-12.71)
MB				0.0205*** (17.10)	0.00666*** (6.19)	0.0249*** (18.10)
CFV					-0.0898* (-1.77)	
ADS					0.168*** (4.50)	
FIRM_AGE					0.0000549 (0.88)	
DUALITY					-0.0444*** (-4.06)	
INTERLOCK					-0.0174*** (-3.13)	
Constant	-0.153*** (-12.63)	0.330*** (24.72)	-0.152*** (-12.46)	0.294*** (22.60)	-0.110*** (-6.65)	0.312*** (22.67)
N	5727	5515	5727	5515	5317	5171
R ²		0.358		0.390		0.399
Adjusted R ²		0.349		0.382		0.390
F		137.7		158.4		147.3
Chi ²	2043.2		2021.3		2065.3	

Table A.7: The impact of CSR total incentive on CASH

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get TOT_INC. The second step is OLS regression results from regressing CASH on TOT_INC. CASH is the cash and marketable securities scaled by total assets. STRENGTH is the percentage score of KLD Strength Categories scaled by the total strength score of that year. CONCERN is the percentage score of KLD Concern Categories scaled by the total concern score of that year. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. Divi_dummy is a dummy variable that equals to one if the firm gives dividend during the indicated fiscal year. NWC is net working capital excluding cash scaled by net assets. The sample covers the period between 1992 and 2006 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively

	(1) Strength	(2) CASH	(3) Strength	(4) CASH	(5) Strength	(6) CASH
TOT_INC		0.132*** (4.89)		0.124*** (4.69)		0.120*** (4.36)
LOG(1+VEGA)		0.00951*** (5.69)		0.00826*** (5.02)		0.00683*** (3.98)
LOG(1+DELTA)		0.00727*** (5.07)		0.000720 (0.49)		0.00244 (1.60)
FIRM_SIZE	0.0246*** (25.94)	-0.0301*** (-21.19)	0.0252*** (26.62)	-0.0267*** (-18.85)	0.0239*** (22.78)	-0.0277*** (-18.87)
ROA	0.0886*** (6.13)				0.0254 (1.36)	
CONCERN	0.102*** (5.13)		0.0931*** (4.71)		0.103*** (4.87)	
FCF		0.00480 (0.17)	0.0766*** (4.04)			-0.188*** (-5.87)
LEVERAGE		-0.157*** (-13.31)		-0.123*** (-10.62)		-0.132*** (-10.92)
RD		0.958*** (22.86)		0.822*** (19.58)		0.801*** (18.46)
CAPEX		-0.299*** (-8.09)		-0.345*** (-9.76)		-0.323*** (-8.38)
Divi_dummy		-0.0409*** (-11.14)		-0.0407*** (-11.27)		-0.0408*** (-10.95)
NWC		-0.0623*** (-12.84)		-0.0597*** (-12.53)		-0.0615*** (-12.18)
MB				0.0182*** (13.83)	0.00536*** (5.40)	0.0220*** (14.83)
CFV					-0.0832 (-1.64)	
ADS					0.165*** (4.43)	
FIRM_AGE					0.0000851 (1.37)	
DUALITY					-0.0474*** (-4.35)	
INTERLOCK					-0.0184*** (-3.32)	
Constant	-0.157*** (-12.99)	0.327*** (24.23)	-0.156*** (-12.81)	0.301*** (22.81)	-0.109*** (-6.61)	0.317*** (22.72)
N	5727	5515	5727	5515	5317	5171
R ²		0.373		0.395		0.403
Adjusted R ²		0.365		0.386		0.394
F		135.0		147.9		137.6
Chi ²	2034.6		2013.3		2049.7	

Table A.8: The impact of CSR (net score) residual and total incentives on LEVERAGE

This table presents the industry and time fixed effects regression results. The RES_INC_net and TOT_INC_net are error terms from regressing CSR_net on firm characters and CEO risk taking incentives and from regression CSR_net on only firm characters respectively. (1)~(6) are regression results from second step regressing LEVERAGE on RES_INC_net or TOT_INC_net. CSR_net is the net score using KLD Strength minus CONCERN. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. IGP is the ratio of inventory plus gross plant and equipment to total assets. INTAN is the ratio of intangible asset to total assets. DEP is depreciation over total assets. The sample covers the period between 1992 and 2006 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
RES_INC_net	-0.0983*** (-3.02)	-0.0762** (-2.26)	-0.0634* (-1.89)			
TOT_INC_net				-0.0912*** (-2.81)	-0.0637* (-1.89)	-0.0555* (-1.66)
LOG(1+VEGA)	0.00387* (1.89)	0.00357* (1.70)	0.00426** (2.04)			
LOG(1+DELTA)	-0.00625*** (-3.39)	-0.0112*** (-6.11)	-0.00685*** (-3.64)			
FIRM_SIZE	0.0133*** (7.04)	0.0144*** (7.53)	0.0112*** (5.83)	0.0123*** (7.60)	0.0111*** (6.58)	0.0102*** (6.16)
ROA	-0.225*** (-6.74)	-0.357*** (-12.80)	-0.189*** (-5.53)	-0.226*** (-6.76)	-0.399*** (-14.75)	-0.190*** (-5.56)
IGP	-0.00817 (-0.92)			-0.00522 (-0.59)		
DEP	0.218* (1.89)	0.524*** (5.07)	0.396*** (4.07)	0.208* (1.80)	0.646*** (6.36)	0.407*** (4.20)
MB	-0.0174*** (-8.90)		-0.0172*** (-8.20)	-0.0191*** (-10.36)		-0.0192*** (-9.70)
CFV	0.112 (1.35)	0.0733 (0.88)	0.120 (1.46)	0.116 (1.40)	0.0787 (0.94)	0.126 (1.52)
RD	-0.487*** (-9.30)	-0.517*** (-10.01)	-0.397*** (-7.43)	-0.473*** (-9.07)	-0.548*** (-10.68)	-0.389*** (-7.29)
FCF						
INTAN		0.191*** (13.87)	0.171*** (12.58)		0.183*** (13.34)	0.167*** (12.38)
CAPEX		0.0878* (1.65)			0.0465 (0.88)	
ADS						
FIRM_AGE						
DUALITY						
INTERLOCK						
Constant	0.173*** (9.41)	0.129*** (6.98)	0.147*** (8.05)	0.163*** (9.00)	0.114*** (6.27)	0.137*** (7.65)
N	5092	4802	4802	5092	4802	4802
R ²	0.138	0.155	0.166	0.136	0.147	0.164
Adjusted R ²	0.125	0.141	0.153	0.123	0.134	0.151
F	33.52	36.06	39.25	35.96	37.13	42.12

Table A.9: The impact of CSR total incentive on LEVERAGE AND CASH (with only DELTA)

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get TOT_INC. The second step is OLS regression results from regressing CASH on TOT_INC. CASH is the cash and marketable securities scaled by total assets. STRENGTH is the percentage score of KLD Strength Categories scaled by the total strength score of that year. CONCERN is the percentage score of KLD Concern Categories scaled by the total concern score of that year. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. Divi_dummy is a dummy variable that equals to one if the firm gives dividend during the indicated fiscal year. NWC is net working capital excluding cash scaled by net assets. IGP is the ratio of inventory plus gross plant and equipment to total assets. INTAN is the ratio of intangible asset to total assets. DEP is depreciation over total assets. The sample covers the period between 1992 and 2006 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively

Dependent Variables	(1) LEVERAGE	(2) LEVERAGE	(3) LEVERAGE	(4) CASH	(5) CASH	(6) CASH
TOT_INC	-0.101*** (-3.10)	-0.0850** (-2.50)	-0.0688** (-2.01)	0.132*** (4.88)	0.125*** (4.69)	0.120*** (4.35)
LOG(1+DELTA)	-0.00442*** (-2.81)	-0.00950*** (-6.20)	-0.00478*** (-2.98)	0.0119*** (10.09)	0.00461*** (3.67)	0.00564*** (4.34)
IGP	-0.00859 (-0.96)					
DEP	0.212* (1.83)	0.519*** (5.03)	0.390*** (4.02)			
MB	-0.0173*** (-8.84)		-0.0173*** (-8.25)		0.0185*** (14.09)	0.0224*** (15.10)
FIRM_SIZE	0.0113*** (7.34)	0.0131*** (8.40)	0.0105*** (6.72)	-0.0274*** (-20.41)	-0.0242*** (-18.19)	-0.0257*** (-18.60)
CFV	0.110 (1.33)	0.0722 (0.87)	0.116 (1.40)			
RD	-0.479*** (-9.19)	-0.506*** (-9.85)	-0.386*** (-7.24)	0.981*** (23.46)	0.839*** (20.01)	0.815*** (18.82)
ROA	-0.217*** (-6.57)	-0.352*** (-12.65)	-0.182*** (-5.39)			
INTAN		0.191*** (13.88)	0.172*** (12.67)			
CAPEX		0.0857 (1.61)		-0.311*** (-8.40)	-0.357*** (-10.09)	-0.334*** (-8.66)
FCF				0.00406 (0.14)		-0.193*** (-6.00)
LEVERAGE				-0.155*** (-13.12)	-0.121*** (-10.40)	-0.130*** (-10.78)
Divi_dummy				-0.0408*** (-11.07)	-0.0406*** (-11.21)	-0.0407*** (-10.91)
NWC				-0.0649*** (-13.40)	-0.0619*** (-13.03)	-0.0634*** (-12.60)
Constant	0.187*** (10.64)	0.139*** (7.90)	0.152*** (8.72)	0.314*** (23.55)	0.290*** (22.22)	0.308*** (22.34)
N	5092	4802	4802	5515	5515	5171
R ²	0.138	0.155	0.166	0.370	0.392	0.401
adj. R ²	0.125	0.141	0.152	0.361	0.384	0.392
F	34.84	37.56	40.78	138.6	152.5	142.3

Table A.10: The impact of CSR residual incentive on LEVERAGE (1992-2011)

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get RES_INC. The second step is OLS regression results from regressing LEVERAGE on RES_INC. *STRENGTH* is the percentage score of KLD Strength Categories scaled by the total strength score of that year. *CONCERN* is the percentage score of KLD Concern Categories scaled by the total concern score of that year. *Vega* is the change in CEO wealth due to a 1% increase in stock return volatility. *Delta* is the change in CEO wealth due to a 1% increase in stock price. *LEVERAGE* is the ratio of long-term debt over book value of total assets. *CAPEX* is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. *FIRM_SIZE* is the natural log value of total asset. *FIRM_AGE* is the years since the firm's stock first appears on CRSP. *MB* is the ratio of market value of total assets to book value of total sales. *ROA* is the ebitda scaled by book asset. *FCF* is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. *RD* is total expenditures of research and development scaled by book value of total assets. *CFV* is the volatility of quarterly operating income scaled by total assets. *DUALITY* is a dummy variable equals to one if the executive serves as the director. *INTERLOCK* is a dummy variable equals to one if the executive serves in the compensation committee. *IGP* is the ratio of inventory plus gross plant and equipment to total assets. *INTAN* is the ratio of intangible asset to total assets. *DEP* is depreciation over total assets. The sample covers the period between 1992 and 2011 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively.

Dependent Variables	(1) STRENGTH	(2) LEVERAGE	(3) STRENGTH	(4) LEVERAGE	(5) STRENGTH	(6) LEVERAGE
TOT_INC		-0.162*** (-7.23)		-0.105*** (-4.78)		-0.136*** (-6.19)
LOG(1+VEGA)	0.00524*** (6.44)		0.00510*** (6.29)		0.00536*** (5.67)	
LOG(1+DELTA)	-0.00496*** (-6.25)		-0.00520*** (-6.57)		-0.00616*** (-6.50)	
FIRM_SIZE	0.0395*** (46.94)	0.0179*** (17.09)	0.0400*** (47.45)	0.0163*** (15.80)	0.0395*** (38.61)	0.0154*** (14.98)
ROA	0.148*** (12.60)	-0.0309 (-1.24)		-0.155*** (-8.05)	0.0506*** (3.27)	-0.0159 (-0.65)
CONCERN	0.0362** (2.36)		0.0369** (2.42)		0.0305* (1.74)	
IGP		-0.00369 (-0.57)				
DEP		0.280*** (3.24)		0.728*** (10.10)		0.517*** (7.56)
MB		-0.0182*** (-10.95)			0.00854*** (8.02)	-0.0160*** (-9.39)
CFV		0.0620 (1.07)		0.0804 (1.42)	0.0167 (0.42)	0.0971* (1.72)
RD		-0.446*** (-11.40)		-0.496*** (-13.64)		-0.382*** (-10.07)
FCF			0.204*** (14.09)			
INTAN				0.173*** (18.40)		0.164*** (17.87)
CAPEX				-0.0785** (-2.00)		
ADS					0.253*** (6.97)	
FIRM_AGE					0.000223*** (3.96)	
DUALITY					0.0115* (1.68)	
INTERLOCK					-0.0219*** (-3.00)	
Constant	-0.258*** (-10.32)	0.0776*** (4.67)	-0.260*** (-10.39)	0.0320** (2.00)	-0.270*** (-9.83)	0.0506*** (3.15)
N	12347	9625	12347	9761	10314	9761
R ²		0.106		0.126		0.135
Adjusted R ²		0.098		0.118		0.127
F		41.90		51.71		55.70
Chi ²	5468.9		5508.3		4666.7	

Table A.11: The impact of CSR total incentive on LEVERAGE (1992-2011)

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get TOT_INC. The second step is OLS regression results from regressing LEVERAGE on TOT_INC. *STRENGTH* is the percentage score of KLD Strength Categories scaled by the total strength score of that year. *CONCERN* is the percentage score of KLD Concern Categories scaled by the total concern score of that year. *Vega* is the change in CEO wealth due to a 1% increase in stock return volatility. *Delta* is the change in CEO wealth due to a 1% increase in stock price. *LEVERAGE* is the ratio of long-term debt over book value of total assets. *CAPEX* is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. *FIRM_SIZE* is the natural log value of total asset. *FIRM_AGE* is the years since the firm's stock first appears on CRSP. *MB* is the ratio of market value of total assets to book value of total sales. *ROA* is the ebitda scaled by book asset. *FCF* is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. *RD* is total expenditures of research and development scaled by book value of total assets. *CFV* is the volatility of quarterly operating income scaled by total assets. *DUALITY* is a dummy variable equals to one if the executive serves as the director. *INTERLOCK* is a dummy variable equals to one if the executive serves in the compensation committee. *IGP* is the ratio of inventory plus gross plant and equipment to total assets. *INTAN* is the ratio of intangible asset to total assets. *DEP* is depreciation over total assets. The sample covers the period between 1992 and 2011 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively.

Dependent Variables	(1) STRENGTH	(2) LEVERAGE	(3) STRENGTH	(4) LEVERAGE	(5) STRENGTH	(6) LEVERAGE
TOT_INC		-0.166*** (-7.40)		-0.105*** (-4.80)		-0.132*** (-6.02)
LOG(1+VEGA)		-0.00108 (-0.75)		-0.00199 (-1.42)		-0.00190 (-1.36)
LOG(1+DELTA)		-0.0110*** (-7.54)		-0.0121*** (-8.97)		-0.0100*** (-7.16)
FIRM_SIZE	0.0403*** (56.41)	0.0237*** (17.65)	0.0406*** (56.89)	0.0230*** (17.79)	0.0397*** (46.77)	0.0213*** (16.25)
ROA	0.139*** (12.30)	-0.0157 (-0.63)		-0.0917*** (-4.60)	0.0484*** (3.12)	-0.00370 (-0.15)
CONCERN	0.0370** (2.41)		0.0378** (2.47)		0.0300* (1.71)	
IGP		-0.00926 (-1.42)				
DEP		0.283*** (3.30)		0.608*** (8.38)		0.486*** (7.12)
MB		-0.0137*** (-7.87)			0.00716*** (7.12)	-0.0113*** (-6.35)
CFV		0.0505 (0.87)		0.0776 (1.37)	0.0174 (0.44)	0.0891 (1.58)
RD		-0.446*** (-11.35)		-0.446*** (-12.13)		-0.371*** (-9.72)
FCF			0.191*** (13.73)			
INTAN				0.177*** (19.00)		0.170*** (18.54)
CAPEX				-0.0457 (-1.16)		
ADS					0.258*** (7.12)	
FIRM_AGE					0.000256*** (4.57)	
DUALITY					0.0118* (1.73)	
INTERLOCK					-0.0244*** (-3.33)	
Constant	-0.270*** (-10.77)	0.0851*** (5.05)	-0.272*** (-10.83)	0.0386** (2.36)	-0.279*** (-10.16)	0.0503*** (3.08)
N	12359	9625	12359	9761	10322	9761
R ²		0.113		0.137		0.141
Adjusted R ²		0.104		0.128		0.133
F	41.79		52.71		54.68	
Chi ²		5415.9		5452.7		4616.5

Table A.12: The impact of CSR residual incentive on CASH (1992-2011)

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get RES_INC. The second step is OLS regression results from regressing CASH on RES_INC. CASH is the cash and marketable securities scaled by total assets. STRENGTH is the percentage score of KLD Strength Categories scaled by the total strength score of that year. CONCERN is the percentage score of KLD Concern Categories scaled by the total concern score of that year. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. Divi_dummy is a dummy variable that equals to one if the firm gives dividend during the indicated fiscal year. NWC is net working capital excluding cash scaled by net assets. The sample covers the period between 1992 and 2011 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively

	(1)	(2)	(3)	(4)	(5)	(6)
	STRENGTH	CASH	STRENGTH	CASH	STRENGTH	CASH
RES_INC		0.0711*** (3.79)		0.0372** (2.03)		0.0608*** (3.14)
LOG(1+VEGA)	0.00524*** (6.44)		0.00510*** (6.29)		0.00536*** (5.67)	
LOG(1+DELTA)	-0.00496*** (-6.25)		-0.00520*** (-6.57)		-0.00616*** (-6.50)	
FIRM_SIZE	0.0395*** (46.94)	-0.0185*** (-18.37)	0.0400*** (47.45)	-0.0191*** (-19.49)	0.0395*** (38.61)	-0.0194*** (-18.52)
ROA	0.148*** (12.60)				0.0506*** (3.27)	
CONCERN	0.0362** (2.36)		0.0369** (2.42)		0.0305* (1.74)	
FCF		0.325*** (16.43)	0.204*** (14.09)			0.0303 (1.25)
LEVERAGE		-0.153*** (-18.31)		-0.142*** (-17.50)		-0.152*** (-17.59)
RD		1.024*** (33.58)		0.888*** (29.18)		0.861*** (27.02)
CAPEX		-0.429*** (-15.41)		-0.383*** (-14.56)		-0.418*** (-14.05)
Divi_dummy		-0.0436*** (-16.16)		-0.0394*** (-14.99)		-0.0410*** (-14.87)
NWC		0.0000101*** (15.06)		0.0000102*** (15.60)		0.0000104*** (15.43)
MB				0.0284*** (27.77)	0.00854*** (8.02)	0.0276*** (21.53)
CFV					0.0167 (0.42)	
ADS					0.253*** (6.97)	
FIRM_AGE					0.000223*** (3.96)	
DUALITY					0.0115* (1.68)	
INTERLOCK					-0.0219*** (-3.00)	
Constant	-0.258*** (-10.32)	0.264*** (21.22)	-0.260*** (-10.39)	0.246*** (20.37)	-0.270*** (-9.83)	0.248*** (18.98)
N	12347	10633	12347	10633	10314	9667
R ²		0.324		0.354		0.358
Adjusted R ²		0.318		0.348		0.352
F		187.1		213.5		190.6
Chi ²	5468.9		5508.3		4666.7	

Table A.13: The impact of CSR total incentive on CASH (1992-2011)

This table presents the industry and time fixed effects regression results. The first step is Tobit regression results from regressing STRENGTH on CEO risk taking incentives and firm characters to get TOT_INC. The second step is OLS regression results from regressing CASH on TOT_INC. CASH is the cash and marketable securities scaled by total assets. STRENGTH is the percentage score of KLD Strength Categories scaled by the total strength score of that year. CONCERN is the percentage score of KLD Concern Categories scaled by the total concern score of that year. Vega is the change in CEO wealth due to a 1% increase in stock return volatility. Delta is the change in CEO wealth due to a 1% increase in stock price. LEVERAGE is the ratio of long-term debt over book value of total assets. CAPEX is capital expenditure net of sales proceed from PP&E scaled by book value of total assets. FIRM_SIZE is the natural log value of total asset. FIRM_AGE is the years since the firm's stock first appears on CRSP. MB is the ratio of market value of total assets to book value of total sales. ROA is the ebitda scaled by book asset. FCF is the cash flow to the firm (according to the definition of Frank and Goyal (2003)) scaled by book value of total assets. RD is total expenditures of research and development scaled by book value of total assets. CFV is the volatility of quarterly operating income scaled by total assets. DUALITY is a dummy variable equals to one if the executive serves as the director. INTERLOCK is a dummy variable equals to one if the executive serves in the compensation committee. Divi_dummy is a dummy variable that equals to one if the firm gives dividend during the indicated fiscal year. NWC is net working capital excluding cash scaled by net assets. The sample covers the period between 1992 and 2011 inclusive. Statistical significance at the 10%, 5% and 1% levels are represented by *, **, and *** respectively

	(1)	(2)	(3)	(4)	(5)	(6)
	STRENGTH	CASH	STRENGTH	CASH	STRENGTH	CASH
TOT_INC		0.0765*** (4.09)		0.0424** (2.31)		0.0652*** (3.37)
LOG(1+VEGA)		0.00446*** (3.84)		0.00484*** (4.25)		0.00497*** (4.09)
LOG(1+DELTA)		0.00765*** (6.88)		0.000349 (0.30)		0.00126 (1.04)
FIRM_SIZE	0.0403*** (56.41)	-0.0252*** (-20.69)	0.0406*** (56.89)	-0.0223*** (-18.56)	0.0397*** (46.77)	-0.0232*** (-17.99)
ROA	0.139*** (12.30)				0.0484*** (3.12)	
CONCERN	0.0370** (2.41)		0.0378** (2.47)		0.0300* (1.71)	
FCF		0.274*** (13.47)	0.191*** (13.73)			0.0227 (0.94)
LEVERAGE		-0.144*** (-17.21)		-0.140*** (-17.13)		-0.150*** (-17.28)
RD		0.996*** (32.52)		0.873*** (28.45)		0.845*** (26.29)
CAPEX		-0.425*** (-15.33)		-0.378*** (-14.37)		-0.411*** (-13.79)
Divi_dummy		-0.0419*** (-15.55)		-0.0393*** (-14.94)		-0.0407*** (-14.77)
NWC		0.0000102*** (15.37)		0.0000103*** (15.75)		0.0000106*** (15.64)
MB				0.0273*** (24.35)	0.00716*** (7.12)	0.0262*** (19.26)
CFV					0.0174 (0.44)	
ADS					0.258*** (7.12)	
FIRM_AGE					0.000256*** (4.57)	
DUALITY					0.0118* (1.73)	
INTERLOCK					-0.0244*** (-3.33)	
Constant	-0.270*** (-10.77)	0.267*** (21.07)	-0.272*** (-10.83)	0.255*** (20.67)	-0.279*** (-10.16)	0.257*** (19.31)
N	12359	10633	12359	10633	10322	9667
R ²		0.331		0.355		0.360
Adjusted R ²		0.325		0.349		0.354
F		179.7		200.1		179.3