# Corporate Governance and CSR Nexus

*Maretno A. Harjoto and Hoje Jo**

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Jo (corresponding author) is in the Department of Finance, Leavey School of Business, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053-0388, (408) 554-4779, (408) 554-4029 (fax), Email: hjo@scu.edu. Harjoto is in the Graziadio School of Business and Management, Pepperdine University, 24255 Pacific Coast Highway, Malibu, CA 90263, (310) 506-7352, (310) 506-4126 (fax), Email: Maretno.A.Harjoto@Pepperdine.edu.

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**Corporate Governance and CSR Nexus**

ABSTRACT. Some argue that managers over-invest in corporate social responsibility (CSR) activities to build their personal reputations as good global citizens. Others claim that CEOs strategically choose CSR activities to reduce the probability of CEO turnover in a future period through indirect support from activists. Still others assert that firms use CSR activities to signal their product quality. We find that firms use governance mechanisms, along with CSR engagement, to reduce conflicts-of-interest between managers and non-investing stakeholders. Employing a large and extensive sample of firms within Russell 2000, S&500 and Domini 400 indices during the 1993-2004 period, we find that consistent with the conflict-resolution hypothesis, the CSR choice is positively associated with governance characteristics, including board independence, institutional ownership, and analyst following. In addition, after correcting for endogeneity of CSR engagement, our results show that CSR engagement positively influences operating performance and firm value, supporting the conflict-resolution hypothesis as opposed to the over-investment and strategic choice arguments. We find only a weak support of the product-signaling hypothesis as a major motive of CSR engagement.

KEY WORDS: Corporate social responsibility; corporate governance; firm value and performance

## Introduction

One of the most significant and contentious corporate trends of the last decade is the growth of Corporate Social Responsibility (CSR).[1] Although CSR activities have received substantial attention from media and academics, the fundamental rationale behind firms' engagement in CSR still remains a puzzle. In essence, CSR can be viewed as an extension of firms' efforts to maximize shareholders' wealth but also conformed to the basic rules of society (Friedman, 1970). McWilliams and Siegel (2001) define CSR as actions that appear to further some social good beyond financial goals and that are required by law. Hill, Ainscough, and Manullang (2007) define CSR as the economic, legal, moral, and philanthropic actions of firms that influence the quality of life of relevant stakeholders. In general, CSR describes how firms manage the business processes to produce an overall positive impact on society and refers to serving people, communities, and the environment in ways that go above and beyond what is legally and financially required of a firm.

Prior to the acceleration of CSR activities, there has been a remarkable discussion over the last two decades among scholars and practitioners on what constitutes the best corporate governance practices. The recent financial crisis of many firms has not only proven to be a watershed momentum in U.S. corporate governance, it also has highlighted the importance of CSR. Hopkins (2001), in his World Bank report, suggests that there is increasing advocacy of a broader and more inclusive concept of corporate governance that extends to corporate social responsibility. Despite the pivotal roles played by CSR and corporate governance in current financial markets, the relationship among CSR, corporate governance and financial performance is still unclear.[2]

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[1] Tsoutsoura (2004) suggests that an increasing number of shareholders, analysts, regulators, activists, labor unions, employees, community organizations, and news media are asking companies to be accountable for an ever-changing set of CSR issues. In the United States, more than half of the Fortune 1,000 companies regularly issue CSR reports. A recent survey by the Economist Intelligence Unit found that 47 percent of the firms responding agreed that corporate social responsibility (CSR) "is a necessary cost of doing business" and 47 percent agreed that it "gives us a distinctive position in the market" (*Economist*, January 17, 2008).

[2] Margolis and Walsh (2003) identified 127 empirical studies and 13 surveys focusing on the relation between CSR and financial performance. Although a number of studies found no relation, they concluded that the overall weight of the studies showed a positive but *weak* correlation between the two dimensions of corporate performance.

Due to the mixed findings of academic studies on empirical relation among CSR, corporate governance, financial performance, and stakeholders' interests, there have been several competing theories that attempt to explain why corporations engage in CSR and how CSR relates to governance, performance and stakeholders. We choose four most noteworthy and representative hypotheses from the CSR and corporate governance literature. Specifically, first, using the principal-agent theory (Jensen and Meckling, 1976), Barnea and Rubin (2006) argue that top management tends to over-invest in CSR activities to build their own personal reputation as good global citizens (over-investment hypothesis). Second, Cestone and Cespa (2007) state that incumbent CEOs strategically choose CSR activities to generate support from social and environmental activists in order to reduce the probability of CEO turnover in a future period (strategic choice hypothesis). Third, Fisman, Heal, and Nair (2005; 2006) indicate that firms use CSR activities to signal their product quality, especially those that operate in highly competitive market (product-signaling/differentiation hypothesis). The last, but not the least, Jensen (2001), Calton and Payne (2003), and Scherer, Palazzo, and Baumann (2006) believe that firms use CSR activities to reduce conflict of interest between managers, investing and non-investing stakeholders (conflict-resolution hypothesis).

In this paper, we investigate the relation between corporate governance and CSR engagement that recently have emerged by exploring the impact of various governance systems on firms' CSR engagement. We also empirically test the above four competing hypotheses. We call this linkage among CSR, governance, and firm performance as a *governance-CSR nexus*. To examine the existence of the governance-CSR nexus and to determine the relative importance of the four competing hypotheses behind the CSR engagement, we investigate the empirical association between various governance mechanisms and the choice of CSR involvement.

If the over-investment hypothesis is correct, then we expect that firms with more effective corporate governance are less likely to engage in CSR since more effective governance is associated with less over-investment (less agency problem) (Gomper, Ishii, and Metrick, 2003). According to the strategic choice hypothesis, managers strategically utilize CSR to increase their job security. Thus, if the strategic choice

hypothesis is correct, we expect that CSR engagement in current period reduces the likelihood of CEO turnover in the next period. And if the product-signaling explanation is correct, then we expect no association between corporate governance and CSR because the product-signaling explanation does not predict any relation between the two. Rather, CSR is a result of managers' efforts to differentiate firms' products when firms operate in more competitive markets. In contrast, the conflict-resolution explanation suggests that strong corporate governance enforces managers to act on the best interests of shareholders. Thus, if the conflict-resolution hypothesis is valid, then we expect firms with more effective governance are more likely to engage in CSR. With more effective governance, managers utilize CSR to reduce conflict between investing and non-investing stakeholders. And less conflict, and therefore, reduced agency problems among various stakeholders results in higher financial performance for their shareholders.

We examine two categories of effective corporate governance devices: internal (ownership concentration and board structure) and external (takeover pressures, institutional ownership, and monitoring by security analysts) monitoring. We also examine managerial entrenchment measures, GINDEX (Gomper et al., 2003) and entrenchment index, ENTINDEX (Bebchuk et al., 2004). Given that there is no clear consensus on the relation between CSR engagement and corporate governance, this study makes a step forward toward better understanding of the empirical association between firms' CSR engagement and corporate governance.

Margolis and Walsh (2003) suggest that assessments of previous studies are complicated because of the studies' various imperfection, such as measurement problems related to CSR and financial performance, omitted variable problems, a lack of necessary analyses of causality and/or endogeneity, a lack of methodological rigor, and a lack of theory. Without considering endogenous treatment effects in which better-quality firms tend to choose CSR engagement to begin with, the relationship of governance-CSR nexus and contribution of CSR engagement to firm performance/value will be overstated or attributed incorrectly (Greene, 1993). To properly address these measurement and methodology issues, we proceed our empirical analysis in two stages. Based upon a large sample of 12,527 firm-year observations (2,952 firms from Russell 2,000, S&P500 and Domini 400 indices), including both firms that

engage in CSR and firms that never engage in CSR (non-CSR engaging firms) during the 1993 ~ 2004 period, we initially perform a first-stage probit regression analysis of CSR engagement. The first-stage results indicate that firms with higher managerial entrenchment index (GINDEX and ENTINDEX) are more likely to engage in CSR, which seems to support overinvestment hypothesis. We also find that firms with higher CEO turnover increases the likelihood of CSR engagement, which supports the strategic choice hypothesis. We also find some evidence to support the product signaling hypothesis indicated by the results that firms in more competitive market, measured by higher advertising ratio, are more likely to engage in CSR. And consistent with the conflict-resolution hypothesis, the results show that the likelihood of opting for CSR involvement is significantly and positively related to more effective governance characteristics as board independence, institutional ownership, and analyst following.

In the second-stage analysis, we find that after correcting for the endogeneity of CSR engagement decision in the first-stage, firm value and operating performance are positively related to the CSR choice, suggesting that CSR engagement positively influences firm performance. This result from second-stage supports the conflict-resolution hypothesis, as opposed to the overinvestment explanation. However, the over-investment hypothesis is only supported in the subset of firms with high managerial entrenchment because the CSR engagement reduces firm value and performance only in that group of firms, but not the other group of firms. Furthermore, we find that CSR engagement either insignificantly or even positively affects the future probability of CEO turnover, which is against the prediction made by the strategic choice argument. The results regarding the product-signaling hypothesis are mixed. In particular, we find a positive association among the advertising expenditure (as one measure of competitive market), CSR, and financial performance (industry-adjusted Tobin's q or industry-adjusted ROA). However, the Herfindahl-Hirchman Index industry competitiveness measure (low HHI) and CSR have insignificant or negative effect on financial performance. This latter finding is not consistent with the product signaling hypothesis. Overall, our second stage results suggest a strong support for the conflict-resolution motive above the others. Our findings also have managerial policy implications because CSR can be used to resolve conflicts among various stakeholders, eventually leading to improved firm value and performance.

However, shareholders wealth is adversely affected if CSR is adopted by a group of firms with high managerial entrenchment.

**Hypotheses**

While the existence and scope of CSR have been important issues for decades (Donham, 1927; Bowen, 1953; and for an overview, see Whetten, Rands, and Godfley, 2002), there is no universally agreed-upon rationale behind CSR engagement, and there are at least four competing explanations regarding its existence. First, Barnea and Rubin (2006) consider CSR engagement as a principal-agent relation between managers and shareholders. They argue that affiliated insiders have an interest in over-investing in CSR if doing so provides private benefits of reputation building as good global citizens, possibly at the cost of shareholders. In a related vein, Goel and Thakor's (2008) theoretical model shows that overconfident managers sometimes make value-destroying investments. If CEOs tend to over-invest in order to build their personal reputations as good citizens, we expect a negative association between effective governance mechanisms and CSR choice. Effective internal and external governance mechanisms should reduce the insiders' ability and opportunity to over-invest in CSR (Gomper et al., 2003). More importantly, if the over-investment hypothesis is valid, firm performance/value will be adversely affected by the CSR engagement because of the agency cost created by the managers' engagement in CSR (Jensen and Meckling, 1976). In short, if CSR represents an agency problem, then CSR engagement and more effective governance should be negatively related. And firm value should be adversely affected by the CSR engagement.

*Hypothesis 1*: (a) If the over-investment hypothesis is valid, we expect an inverse association between CSR engagement and effective governance mechanisms after controlling for confounding factors; and (b) According to the over-investment hypothesis, operating performance measured by ROA and firm value measured by Tobin's q are inversely associated with the choice of CSR engagement.

Second, Cespa and Cestone (2007) propose a theoretical model investigating the conflicts of interest between managers, shareholders, and other non-investing stakeholders in the case when managers are not

performing. When stakeholders' protection is left in hands of managers, incumbent managers under a tough replacement threat may use relationships with stakeholder activists as an entrenchment strategy. Similar to Pagano and Volpin (2005) model of collusion between top managers and workers against takeover threats, the strategic-choice hypothesis predicts that the higher the managerial entrenchment, the greater the propensity for the firm's engagement in CSR to receive support from social and environmental activists (Surroca and Tribo, 2008). If non-performing managers are using CSR as a strategic device to satisfy other stakeholders such as activists or local communities, then the incumbent CEO can reduce the probability of CEO replacement.

*Hypothesis 2*: (a) If the strategic-choice hypothesis is correct, then we will observe a positive association between managerial entrenchment or the probability of CEO turnover and the choice of CSR engagement; and (b) We also expect to observe an inverse association between CSR engagement in current period and the next-period probability of CEO turnover given that CSR engagement provides stakeholders' support to reduce probability of CEO turnover.

Third, Fisman, Heal, and Nair (2005) derive CSR engagement from the rationale of profit-maximizing behavior. They find that managers in more competitive industries and with higher advertising intensity tend to use CSR to signal the high quality of their products, and consequently, to gain higher profitability and market value. In their subsequent paper, Fisman, Heal, and Nair (2006) suggest a signaling model of corporate philanthropy. In their model, there exists a separating equilibrium at which firms managed by socially concerned managers may use firms' resources for philanthropy as a signal of their products and their commitment for customers. They find that corporate philanthropy and profits are positively related in the industries with high competition and high advertising expenses, which indicates that CSR is used to differentiate firms from their competitors. Siegel and Vitaliano (2007) present evidence that firms selling experience goods tend to engage in CSR as a product differentiation strategy.[3]

[3] See Tetrault, Sirsly, and Lamertz (2008) and Kopel (2009) for studies in utilizing CSR as a first mover advantage in product market.

Thus, if the product-signaling hypothesis is correct, then governance mechanisms should be irrelevant factors to firms' CSR engagement. Instead, firms' product differentiation/quality represented by their advertising ratio (or advertising intensity) and the industry's competitiveness, measured by HHI will influence firms' decisions to engage in CSR. If the product-signaling motive holds, we expect that while governance mechanisms and CSR may not affect firm performance/value, the firms' advertising intensity and the competitiveness of its industry along with CSR engagement will enhance firm performance and value.

*Hypothesis 3*: (a) If the product-signaling explanation is correct, then we expect to observe a positive association between the choice of CSR engagement and high-product quality measured by high advertising expenditure (used by Fisman, Heal, and Nair, 2006) and the same association in the industry with higher competition measured by a lower industry Herfindahl-Hirschman Index (HHI); and (b) If the signaling hypothesis is effective, we should observe a positive association between CSR interacted with the high advertising expenditure and profitability (ROA) or firm value (industry-adjusted Tobin's Q), as well as a positive relation between CSR interacted with the highly competitive industry and firm performance/value after correcting for endogeneity.

Last but not the least, while it may not be completely possible to satisfy all related stakeholders, there is a growing literature on conflict resolution (Jensen, 2001; Calton and Payne, 2003; Scherer, Palazzo, and Baumann, 2006), in which the role of the corporation is also subject to discursive scrutiny by non-investing stakeholders (i.e., social or environmental activists) as well as the shareholders. Effective corporate governance enforces managers to act in the best interests of their shareholders. Under effective governance, managers utilize CSR engagement to resolve conflicts among stakeholders to maximize the shareholders' wealth. Therefore, CSR engagement would be positively related to more effective governance mechanisms. We further maintain that if the conflict-resolution motive is correct, then effective governance mechanisms, together with CSR engagement, will lead to better firm performance/value through reduced agency costs and reduced conflict of interests among various stakeholders.[4] Since internal monitoring mechanisms often viewed as ineffective (Jensen, 1993), to the

[4] In their seminal article, Jensen and Meckling (1976) suggest that reduced agency costs will be associated with increased firm value. There could be other channels through which CSR increases firm value. Baron (2007; 2008) provides other reasons why managers choose to engage in CSR. For instance, (1) consumers reward firms for their

extent that institutional investors and security analysts provide effective external monitoring (Demsetz and Lehn, 1985; Shleifer and Vishny, 1986; Chung and Jo, 1996; Knyazeva, 2007; Yu, 2008; Jo and Kim, 2008) regarding the information transparency of CSR engagement, CSR activities will have positive effects on firm value and performance. Thus, the predictions of the conflict resolution hypothesis are exactly the opposite of over-investment and strategic choice hypotheses.

*Hypothesis 4*: (a) If the conflict-resolution hypothesis is correct, we expect a positive association between the choice of CSR engagement and effective governance mechanisms; and (b) According to the conflict-resolution hypothesis, operating performance measured by ROA and firm value measured by Tobin's q are positively associated with the choice of CSR engagement or investing in CSR activities and external monitoring mechanisms after correcting for endogeneity.

**Data and measurement**

*Data*

We use an extensive and combined data set from the Kinder, Lydenberg, and Domini's (KLD's) Socrates database, the Investor Responsibility Research Center's (IRRC's) governance and director database, Standard and Poor's Execucomp database, CDA/Spectrum 13(f) filings, and the Institutional Brokers Estimation Service (*I/B/E/S*) database during the period from 1993 to 2004. KLD's Socrates database includes more than 3,000 companies listed on the Russell 2,000, S&P 500 or Domini 400 Social Indexes. It contains various CSR characteristics. Appendix A lists the KLD database classifications. In particular, KLD's inclusive social rating criteria contain strength ratings and concern ratings for community, diversity, employee relations, environment, and product.[5] Although the KLD data represent an unbalanced panel data and there are some

social activities; (2) having loyal shareholders who are socially responsible might lead a firm to have low volatility and stable share prices. Because it is difficult to empirically test either the consumers' reward or firms' attraction of socially responsible shareholders, we do not include Barron's (2007; 2008) managerial incentive in our tests. Goss and Roberts (2007) analyze the association between CSR and the cost of bank loans. They find that firms with the worst social responsibility scores pay higher loan costs while firms with good scores do not receive lower loan costs.

[5] KLD also has exclusionary screens, such as alcohol, gambling, military, nuclear power, and tobacco. Because KLD's exclusionary screens differ from the inclusive screens in that only concern ratings, but no strength ratings, are assigned, we only use the inclusive screens in our main tests. In fact, the KLD database has few firms that actually have exclusionary items. We find only 756 firm-year observations that report exclusionary items. The rest have zero exclusionary items. For the KLD strength scores, we find 4,174 firm-year observations. For the combined strength and concern scores, we have 6,479 firm-year observations. In addition, while the KLD database reflects whether a

construct-validity issues (Chatterji, Levine, and Toffel, 2007), we decide to use KLD data because it is the most comprehensive and widely-used data on CSR research and includes social ratings data for more than 3,000 companies over a consecutive periods.[6]

We use the IRRC governance database, the IRRC director database, CDA/Spectrum 13(f) filings, Standard and Poor's Execucomp database, and the *I/B/E/S* database to obtain corporate governance and monitoring characteristics that include CEO ownership, the proportion of outside independent directors, the proportion of institutional holdings, the proportion of blockholdings, CEO turnover, and the number of security analysts following the firm.[7] Specifically, (i) our sample firm must be available from the IRRC governance and director database; (ii) CEO ownership and insider blockholder data must be available; (iii) the data for outside institutional holdings must be available from CDA/Spectrum 13(f) filings. These filings contain quarterly information on common-stock positions greater than 10,000 shares or $200,000 for each institution with more than $100 million in securities under management; and (iv) the number of analysts following a firm must be available from the *I/B/E/S* database. We also require that sufficient COMPUSTAT and Center for Research in Security Prices (CRSP) data are available for our tests. This procedure produces a combined sample of 12,527 firm-year (2,952 firms) observations from 1993 to 2004. If there are any (no) observations in the KLD ratings, then we view them as firms that never engage in CSR (non-CSR firm).

*Measurement of variables*

company is engaged in CSR activities and includes a list of the types of activities, it does not report how much each firm invests in CSR activities. Although we are not aware of the existence of CSR investment data, the availability of such data could provide additional benefits.

[6] Another limitation of the KLD rating is KLD's own assessment of the firm's CSR based on a survey and their in-house analysis. They do not include direct feedback from stakeholders. There are several other metrics to measure CSR, such as those ratings, produced by Innovest and Calvert. But they neither report direct feedback from stakeholders. Thus, we have a self-selection bias problem due to the limitation of the KLD database. In an attempt to mitigate this self-selection bias somewhat, we adopt the instrumental variable (IV) approach that is well-known to handle sample-selection bias.

[7] In 2002, KLD renamed the other category as corporate governance. However, because KLD's definition of corporate governance, which includes compensation, ownership, tax disputes, and other issues, is quite different from that of conventional corporate governance in finance, we do not include KLD's corporate governance dimension.

In our tests, all financial variables are taken from COMPUSTAT. Additionally, we use the following variables measuring the quality of corporate governance systems – CEO ownership, insider blockholder ownership, board independence, outside institutional ownership, and the number of analysts following a firm – and collect the other governance data from the IRRC.

Agency theories argue that pressures from external investors, such as institutional investors, are necessary to motivate managers to maximize firm value instead of pursuing managerial objectives (Jensen, 1986; Shleifer and Vishny, 1986; Allen, Bernardo, and Welch, 2001). Large blockholders, recognizing that managers have a tendency to skew decisions in directions that would benefit themselves, have an incentive to monitor managers (Demsetz and Lehn, 1985; Shleifer and Vishny, 1986). In addition, Chung and Jo (1996) suggest that because security analysts play important roles as corporate monitors who help reduce agency costs, and as information intermediaries who help expand the breadth of investor attention, firm value should be an increasing function of the number of financial analysts following the firm. Knyazeva (2007) and Yu (2008) also view the potential role of analysts as an additional monitoring mechanism and maintain that analyst coverage imposes discipline on misbehaving managers and helps align managers with shareholders, thus improving managerial incentives to undertake more optimal policies. We measure external monitoring by the equity ownership of outside institutional holders, which we identify as the sum of the greater-than-five percent owners that are unaffiliated with the firm (PCTINSTI). We also measure external analyst monitoring by the number of analysts who follow the firm from the *I/B/E/S* database. Since the number of analysts is highly skewed to the right (Lim, 2001; Bushman, Piotroski, and Smith, 2005), we measure analyst coverage with the natural logarithm of one plus the number of analysts following the firm (LOGANAL).

We construct several structural measures of corporate governance from the IRRC Director Database (e.g., board characteristics such as independent outside board proportion, board ownership, etc). We use an independent outside director as a measure of internal monitoring for effective corporate governance. Hermalin and Weisbach (1998; 2003) suggest that the independent outside director often plays a monitoring role, and the director's effectiveness is a function of the board's "independence" from

management. Hermalin and Weisbach (1998), Raheja (2005), and Harris and Raviv (2008) model the determinants of board structure, specifically the roles of insiders and outsiders. Our definition of an independent director follows that of the IRRC, which defines an independent outside director as a director elected by shareholders who is not affiliated with the company. Since Linck, Netter, and Yang (2008) also suggest that board independence and board leadership are important determinants of board structure, we use board independence measured by the proportion of outside independent directors (PCTINDEP). We also use CEO ownership (PCTCEOWN) and director ownership (PCTDIRSHR) to measure managerial and directors' incentives.

Our main proxy for managerial entrenchment is the governance index (GINDEX) developed by GIM (2003). As the basic ingredients for the GINDEX are anti-takeover provisions (ATPs) and the IRRC reports 24 ATPs at the firm level, the GINDEX ranges from 0 to 24. A high value indicates stronger managerial power (less takeover pressure), and therefore a greater potential for managerial entrenchment. Based on the GINDEX, Bebchuk, Cohen, and Ferrell (2004) examine which provisions, among a set of 24 governance provisions followed by the IRRC, are highly correlated with firm value and stockholder returns. They then create an entrenchment index (ENTINDEX) based on six provisions – four constitutional provisions that prevent a majority of shareholders from having their way (e.g., staggered boards, limits to shareholder bylaw amendments, supermajority requirements for mergers, and supermajority requirements for charter amendments), and two takeover-readiness provisions that boards establish to be ready for a hostile takeover (i.e., poison pills and golden parachutes).

We measure operating performance by return on assets (ROA) and firm value with Tobin's q. In particular, we use industry-adjusted Tobin's q (the natural log of firm's q divided by the median q in the firm's industry) instead of levels of Tobin's q as a measure of firm value (Campbell, 1996). The advantage of using industry-adjusted Tobin's q (ADJTOBINQ) is that it neutralizes the effect of specific industries on Tobin's q. Similarly, we use industry-adjusted ROA (ADJROA) as the individual firm's

ROA subtracted by the firm's industry average ROA.[8] Similar to McWilliams and Siegel (2000), Gompers, Ishii, and Metrick (GIM) (2006), and other CSR literature (i.e., Fisman, Heal, and Nair, 2005; 2006), other control variables include firm size measured by the natural log of total assets (LOGTA), R&D expenditures divided by sales revenue (RNDR), advertising expense divided by total sales (ADVR), total debt divided by total assets (DEBTR), profitability measured by ROA, risk measured by standard deviation of return (DEVRET), Industry Herfindahl-Hirschman Index (HHI) calculated based on firms' annual sales using the Fama-French 48 Industries, and the Fama-French (FF) 48-industry classification.

*Endogenous treatment effects and the instrumental variables approach*

Operating performance and firm value could be affected by two broad sources of unique features: the choice of CSR engagement and corporate governance. To address this issue properly, we conduct an endogeneity correction (treatment effects) for CSR engagement. A regression of ROA and Tobin's q on various governance and firm characteristics and a dummy variable for the choice of CSR allows a first-pass estimate of whether CSR involvement impacts firm performance/value. However, it may be that firms engaging into CSR activities are simply of higher (or lower) quality and deliver better (or worse) performance, regardless of whether they choose to become involved in CSR. In this case, the coefficient on the CSR dummy variable might reveal a value-add from CSR engagement, when indeed there is none.

Heckman (1976, 1979) proposed a two-stage estimation procedure using the inverse Mills' ratio to take account of the endogeneity bias. In the first step, a regression for observing a positive outcome of the dependent variable is modeled with a probit (or logit) model. The estimated parameters are used to calculate the inverse Mills' ratio, which is then included as an additional explanatory variable in the OLS estimation (see Greene, 1993). Using Heckman's two-stage estimation, we correct the specification for

[8] Tobin's q is widely used as a measure of firm value. See, for example, Chung and Pruitt (1994) and Chung and Jo (1996), among others. Following Chung and Pruitt (1994), Tobin's q is calculated as: {[Market value of common stock + Book value of preferred stock + Book value of long-term debt + Book value of current liabilities – (Book value of current assets – Book value of Inventories)] / Book value of total assets} in the last fiscal year ending before the SEO announcement. Thus, we use Tobin's q to measure firm value. Accounting and finance literature uses return on assets (ROA) to measure firm's operating performance. Thus, we examine this performance as wells.

endogeneity of CSR engagement and examine whether CSR activities enhance operating performance and firm value.

Another approach is to use the instrumental variable method that GIM (2006) employ. They distinguish endogeneity problems from sample-selection problems. Selection bias may arise even if the error terms are not correlated with the explanatory variables. CSR firms that are identified in our sample may not be representative of all firms for the relation between governance structure and firm value/performance.[9] Although it is not possible to correct for both endogenous treatment effects and selection bias at the same time, in order to solve the selection bias problem, Heckman and Robb (1985) and Moffitt (1999) suggest the instrumental variable (IV) method, which focuses on finding a variable (or variables) that influences the CSR choice, but does not influence Tobin's q or ROA (and thus is not correlated with the random error term in the second-stage equation). In our case, our choice of an instrumental variable is FIRMAGE, which is highly correlated with CSR engagement, but is uncorrelated with industry-adjusted Tobin's q or ROA (unreported correlation coefficient is 0.01).

**Empirical analyses**

*Univariate tests and bivariate correlations*

To examine the potential difference between firms that engage in CSR (CSR firms) and those that never engage in CSR (no-CSR firms), we compare and contrast firm and governance characteristics. In Table I, we present the means and medians of the control and governance variables. Based on the firm characteristics reported in Panel A, CSR involvement is, on average, more common among larger firms,

[9] Sample selection bias and endogeneity bias refer to two distinct problems, both entailing distinct solutions. In general, sample selection bias refers to problems in which the dependent variable is observed only for a restricted, nonrandom sample. Endogeneity arises when an independent variable included in the model is potentially a choice variable, correlated with unobservables relegated to the error term. The dependent variable, however, is observed for all observations in the data (see Millimet, 2001).

more leveraged firms, more profitable firms, firms with a higher advertising expense ratio, and firms with a higher Tobin's q.

[Table I about here]

The differences between CSR firms and no-CSR firms in terms of governance characteristics are reported in Panel B. CSR firms are, on average, associated with more anti-takeover provisions (GINDEX) or higher managerial entrenchment (ENTINDEX) which seems to support the over-investment hypothesis. Also, CSR engagement is adopted by firms with higher board independence, higher total block ownership, and a higher percentage of institutional share ownership. Furthermore, they are covered by more security analysts. This positive relation between CSR engagement and more effective governance measures seems to support the conflict-resolution hypothesis. However, CSR firms have a lower percentage of CEO ownership (PCTCEOSHR) and director ownership (PCTDIRSHR).

Table II presents the Spearman correlation matrix for the variables discussed in the previous section. Consistent with the positive association between CSR engagement status (CSR) and board independence (PCTINDEP), and between CSR and institutional ownership (PCTINSTI) or analyst coverage reported earlier, CSR is positively related to analyst following, PCTINSTI, and PCTINDEP. The Spearman correlation coefficient between CSR and PCTINDEP (LOGANAL) is relatively high in absolute numbers, at 0.19 (0.35). Again, these positive correlations between CSR and effective governance measures seem to support the conflict-resolution argument. Likewise, the Spearman correlation coefficient between CSR and the GINDEX (ENTINDEX) is 0.17 (0.07). These positive correlations between CSR and managerial entrenchment measures support the over-investment hypothesis.

[Table II about here]

*The determinants of CSR engagement*

Here, we describe a detailed empirical model to understand the differences between firms with and without CSR involvement. To examine these differences, our model relies on a probit analysis of the firm probability choice to engage in CSR. We assert that there are characteristics of the firm and of the governance structure that lead some firms to choose CSR engagement, and we choose a large number of variables to model the probability of that choice.

In Table III, we estimate five models with different sets of explanatory variables to compare and contrast the various impacts of the control variables and the corporate governance variables. Progressing from Model (1) to Model (5), we replace or add some of the explanatory variables so as to investigate the role of governance and monitoring in the analysis.[10]

[Table III about here]

In model (1), we only include control variables as regressors. Model (1) shows that firms with higher advertising expense ratio (ADVR) are more likely to choose CSR engagement. However, the coefficient on the market concentration, Herfindahl-Hirschman index (HHI), is insignificant. Model (2) shows the same results with the industry adjustment. The results closely mirror those in model (1). However, the coefficient on HHI becomes positive and significant at the five-percent level. The positive and significant impact of advertising expense ratio on CSR engagement provides a supporting evidence of product signaling hypothesis. However, the impact of HHI on CSR engagement is either insignificant or positive, which is contrary to the product signaling hypothesis (Hypothesis 3a).

[10] In addition, we perform logistic regression models to examine the likelihood of a choice decision. The results are qualitatively the same as those of the probit models shown in Table III. When we further examine the probit analysis with the lagged independent variables with the following model, $\Pr[CSR_{it} \mid Z_{it-1}] = \Phi[B'Z_{it-1}]$, the results remain qualitatively unchanged.

In model (3), we report the results for the governance variables only. Model (3) suggests that the coefficients on PCTINDEP, PCTINSTI, and LOGANAL are significantly positive at the one-percent level, implying that firms with a higher proportion of outside independent directors (PCTINDEP), a higher proportion of institutional investors (PCTINSTI), and more analysts following the firm (LOGANAL) are more likely to choose CSR engagement. These findings suggest that internal and external monitoring by independent boards, institutional investors, and security analysts are positively related to the choice of CSR engagement, supporting the conflict-resolution hypothesis, as stated in Hypothesis 4(a). We also find that higher managers' entrenchment measures (GINDEX and ENTINDEX) increases the likelihood of CSR engagement, which supports the over-investment and strategic-choice explanations (Hypotheses 1a and 2a).[11]

Because CEO turnover is endogenously determined, we estimate Prob(CEOTURN) using Murphy's (1999) model. To predict the probability of CEO turnover, we take the firm's current-year stock return minus the current-year stock return in the industry using the Fama-French 48 industry classification as one independent variable, the firm's previous year stock return minus the previous year stock return in the industry as another independent variable, and CEO age above 64 as a dummy variable representing possible CEO retirement for the entire sample period of 1993-2004. Model (3) of Table III suggests that the coefficient on Prob(CEOTURN) is significantly positive, and thus, firms with higher CEO turnover are more likely to engage in CSR activities, supporting the strategic-choice hypothesis, as stated in Hypothesis 2(a).

In models (4) and (5), we report the results when we include both control variables and governance variables. The results for the governance variables are qualitatively similar to those of model (3). It is important to note that the effective internal and external governance variables remain highly significant,

[11] However, according to our unreported table, we further find that GINDEX and ENTINDEX do not significantly increase the likelihood of CSR engagement for firms with above the median value of GINDEX (ENTINDEX). In contrast, the positive impact of GINDEX (ENTINDEX) is only found in firms with GINDEX (ENTINDEX) below the median. In sum, even though we find positive effect of GINDEX (ENTINDEX) on CSR engagement for full sample, we do not find evidence to support the overinvestment hypothesis when we make comparison for the impact

supporting the conflict resolution (Hypothesis 4a) hypothesis that effective governance and CSR engagement are positively related.[12]

*The value and performance of firms with CSR engagement*

We next examine what impact CSR involvement has on operating performance (industry-adjusted ROA, ADJROA) and firm value, as measured by industry-adjusted Tobin's q (ADJTOBINQ) because ADJTOBINQ neutralizes the effect of specific industries on Tobin's q. We report several models in Table IV using Heckman's (1979) two-stage model. In model (1) for ADJTOBINQ and model (2) for ADJROA, following McWilliams and Siegel (2000), Shin and Stulz (2000), Morck and Yang (2001), and GIM (2006), we include growth options measured by R&D expenditure divided by sales (RNDR), capital expenditures divided by total sales (CAPXR), the ratio of advertising to sales (ADVR), and sales growth (SGROWTH). The evidence suggests that CSR engagement positively affects industry-adjusted ROA and industry-adjusted Tobin's q after correcting for the endogeneity of CSR engagement decision.

[Figures 1 and 2 about here]

We also include governance and monitoring variables to investigate whether any governance or monitoring variables influence firm performance/value after the endogeneity correction. Notably, the

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of managers' entrenchment measured by GINDEX (ENTINDEX) based on the subsample of firms with above versus below median of GINDEX (ENTINDEX).

[12] In an unreported table, we also examine the coefficient of estimates from the Tobit model explaining the determinants of CSR engagement based on the CSR combined scores instead of the CSR choice (dummy) variable. We use the Tobit model because the dependent variables are left censored at zero rather than dichotomous variables. The Tobit Model is an econometric model proposed by Tobin (1958) to describe the relation between a non-negative dependent variable and an independent variable (or vector). We compute the arithmetic average of the combined scores of KLD inclusive strengths and concerns of community, environment, diversity, employee relations, and product criteria to get combined CSR scores. KLD scores report both strengths and concerns for the above-mentioned dimensions. The dependent variable is the CSR combined scores, including both strengths and concerns (CSRCOMPOSITE), combined strength scores (CSRSTR), and combined concern scores (CSRCON), respectively (see the calculation procedures of the combined strengths and concerns, combined strength, and combined concern scores in Appendix C). The results closely mirror those of Table III. In addition, as expected, the signs of the coefficients on all the variables based on CSRCON are exactly opposite of those of the coefficients based on CSRSTR. These results are available from authors upon request.

association between CSR and ADJTOBINQ (ADJROA) is significantly positive.[13] In particular, a one unit increase of CSR engagement is followed by an increase of 1.981 (16.128) times of ADJTOBINQ (ADJROA). The positive association between CSR and ADJTOBINQ (ADJROA) supports the conflict-resolution hypothesis 4(b) and contradicts the over-investment hypothesis (Hypothesis 1b). The positive association between CSR and Tobin's q (adjusted ROA), between CSR and analyst following, and between analyst following and Tobin's q (adjusted ROA) are depicted in Figures 1 for Tobin's q and 2 for adjusted ROA.[14] In contrast, however, the coefficients on GINDEX are significantly negative, indicating that managerial entrenchment through anti-takeover provisions (GINDEX) adversely affect firm value and performance. This result is consistent with GIM (2003) and Cremers and Nair (2005). Similar to the findings of Agrawal and Knoeber (1996), we find that there is an inverse association between ADJTOBINQ and the proportion of outside independent directors (PCTINDEP).

[Table IV about here]

The product-signaling prediction has somewhat mixed results. In particular, the product-signaling Hypothesis 3(b) predicts a positive relation between firm value/performance and an interaction variable of CSR*high advertising intensity (CSR*HIADVR). Consistent with the prediction, we find a positive association between ADJTOBINQ (ADJROA) and CSR*HIADVR. However, CSR as a product-signaling in a more competitive industry, measured by HHI, is not supported. The coefficient on CSR*LOWHHI are either insignificant or negative, where the product signaling hypothesis predicts that it should be positive.

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[13] The results based on the CSR combined scores (CSRCOMPOSITE), including both strengths and concerns, are qualitatively the same with those based on CSR (0,1) dichotomous variable while the CSRCOMPOSITE scores are constructed using the arithmetic average of the combined scores from all items in KLD strengths and concerns of community, environment, diversity, employee and product dimensions.

[14] The graph based on ADJTOBINQ is qualitatively the same as Figure 1. However, many observations of ADJTOBINQ are negative. Thus, we show the graph based on Tobin's q in Figure 1 and ROA in Figure 2.

In models (3) and (4), we report the regression results of CEO turnover in the next period as a function of CSR engagement and control variables with and without the governance variables. Similar to Murphy (1999), we include the dummy variable of CEOAGE greater than 64. The strategic-choice explanation predicts that CEOs strategically use CSR activities to reduce the probability of CEO turnover in the next period. We find that CSR is insignificant in model (3) and positively affects CEO turnover in model (4) – which goes against the prediction made by the strategic-choice argument (Hypothesis 2b).[15]

The above results of models (1) and (2) reported in Table IV may suffer from sample-selection bias because the coefficients on the inverse Mills' ratio are significantly negative. To reduce the sample-selection bias somewhat, we also report the results based on the instrumental variables approach (Angrist, 2000; Moffitt, 1999) with an instrumental variable of firm age in models (5) and (6). The positive association between CSR and ADJTOBINQ (ADJROA) remain intact, but with somewhat weaker significance, and the results on the governance variables are qualitatively similar to the results in models (1) and (2).[16] One notable difference is that the coefficients on PCTINSTI become positive and significant in both value and performance regressions, which provides evidence that external governance monitoring from institutional holding enhances firm value and performance.[17]

[Table V about here]

[15] When we break out our sample based on firm performance in terms of either positive or negative ADJTOBINQ and ADJROA, our unreported results suggest that CSR engagement either insignificantly or positively affects the likelihood of CEO turnover for firms with negative ADJTOBINQ (or negative ROA). This indicates that CSR engagement either increases or not affects the likelihood of CEO turnover for firms with poor performance (measured by ADJTOBINQ or ADJROA). Therefore, it is again evidence against the strategic choice hypothesis.

[16] Note that the magnitudes of the estimated slope coefficients from the instrumental variable method are different from those from the Heckman two-stage method. This is because of the difference in the magnitude between FIRMAGE in the instrumental variable and CSR choice in Heckman two-stage.

[17] We recognize a potential simultaneity bias between CSR and ADJTOBINQ (ADJROA) because both variables can be endogenous. To adjust for a potential simultaneity bias, we estimate the regressions in a simultaneous equation framework, where CSR is specified as a function of ADJTOBINQ and the same variables from Table III. The results are qualitatively similar results to those reported in Table IV. Overall, a potential simultaneity bias does not appear to change our inferences concerning the positive association between corporate social responsibility and firm value/performance.

To examine the joint effect of CSR engagement along with governance/monitoring mechanisms on firm performance and value, we use both the Heckman two-stage regressions and the instrumental variables approach. Because two methods yield qualitatively identical results, we only report the results based on the Heckman two-stage regressions in Table V. The results suggest that the joint effects of external monitoring by institutional investors (CSR*HIPCTINSTI) or security analysts (CSR*HILOGANAL), together with CSR engagement on firm performance and value, are positive and significant. [18] However, although the joint effects of internal monitoring by outside board (CSR*HIPCTINDEP) are positive, the coefficients are relatively weaker (significant at the 10-percent level). This implies that external monitoring by institutional investors or financial analysts in firms that engage in CSR is more effective than the internal monitoring by an independent board.

We also find that the joint effects of CSR engagement and managerial entrenchment (measured by CSR*HIGINDEX or CSR*HIENTINDEX) on firm value and performance are negative and significant. This implies that CSR engagement in firms with high managerial entrenchment reduces value and performance, which supports the over-investment hypothesis (Hypothesis 1b). The joint effects of CSR and advertising (CSR*HIADVR) are positive, but the coefficient on CSR*LOWHHI is positive (negative) in the ADJTOBINQ (ADJROA) regressions. This finding provides only a mixed support to the product signaling hypothesis (Hypothesis 3b). Since the coefficients on the control and governance/monitoring variables are similar to those reported in Table IV, we do not report those coefficients for brevity.

**Limitation and future research directions**

It is important to note that because we do not empirically examine Baron's (2007, 2008) managerial incentive explanation based on either consumers' reward for firms' social activities or firms' incentive to

[18] Because these interaction variables are highly correlated each other (except between CSR*HIADVR and CSR*LOWHHI), we conduct the regressions with each of interaction variable in a separate regression to avoid a multicollinearity problem.

generate loyal shareholders who are socially responsible, Baron's managerial incentive hypothesis remains as another plausible explanation for why firms engage in CSR activities.

Managers' incentive to engage in CSR could be driven from the investors reward from the capital market and consumers rewards from the product market. When consumers reward the firm that engage in CSR, then managers engage in CSR as a product signaling/differentiation (Fisman, Heal and Nair, 2006, 2007; Siegel and Vitaliano, 2007). The result of CSR engagement on firm performance and value would be positive during good times but negative during bad times (Baron, 2008). Future study that differentiates the consumers' preference on CSR engagement during good versus bad times will contribute to a better understanding of CSR as a product signaling/differentiation. Similarly, if investors reward CSR engagement (Baron, 2007), then firm value would be positively affected by CSR engagement and vice versa. It would be fruitful to empirically examine whether the impact of CSR engagement on firm value is positive, negative or insignificant from the investors perspective in a future study.

**Conclusions**

Despite the important impact of CSR and corporate governance on firm value/performance, there has been limited empirical evidence regarding the relation among corporate governance, CSR, and firm value/performance. This paper defines the relationship of CSR, governance, firm value/performance as the governance-CSR nexus. It attempts to fill the void by examining the determinants of CSR engagement and whether CSR engagement along with corporate governance mechanisms enhances firm performance and value using a comprehensive sample of firms with and without CSR engagement from Russell 2,000, S&P 500 and Domini 400 Indices during the 1993 to 2004 period.

Our paper complements the existing literature on CSR and corporate governance by making two main contributions. First, we empirically test the governance-CSR nexus based on four competing hypotheses: over-investment, strategic-choice, product-signaling and conflict-resolution. Second, by using a two-stage approach, including the first-stage probit regressions and the second-stage Heckman

regressions to control for endogeneity, we attempt to find the factual relationship among CSR, governance, and firm value/performance.

In the first stage, we find that CSR engagement can be explained by all three hypotheses: over-investment, strategic-choice and conflict-resolutions arguments and weakly explained by product-signaling. However, in the second stage, we find that CSR engagement enhances operating performance and firm value, supporting the conflict-resolution hypothesis only. Our second stage results do not support the strategic-choice hypothesis and only weakly support the product-signaling explanation. We find supporting evidence of CSR as an over-investment only on the subset of firms with high managerial entrenchment. Combined together, our empirical results strongly support the conflict-resolution explanation as a major rationale behind CSR engagement above and beyond the other three hypotheses.

Our findings reveal that examining the impact of CSR on firm value/performance should be done based on the fact that CSR engagement is endogenously determined by corporate governance and managerial entrenchment measures. Once we account for this endogeneity, the relationship among CSR, governance, and firm value/performance is best explained by the conflict-resolution hypothesis. These results also bring important policy implications for both investing and non-investing stakeholders when corporate managers determine whether they should engage in CSR activities or not. When managers use CSR activities to resolve conflicts between managers and various stakeholders, CSR engagement enhances firm value and performance.

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**Appendix A: List of the strength, concern and exclusionary items in the KLD database**

| KLD Inclusive Social Ratings | | |
|---|---|---|
| *Category* | *Strength Items* | *Concern Items* |
| Community | Generous Giving | Investment Controversies |
| | Innovative Giving | Negative Economic Impact |
| | Support for Housing | Indigenous Peoples Relations ('00-'01) |
| | Support for Education (added '94) | Other Concern |
| | Indigenous Peoples Relations (added '00, moved '02) | |
| | Non-U.S. Charitable Giving | |
| | Other Strength | |
| Environment | Beneficial Products & Services | Hazardous Waste |
| | Pollution Prevention | Regulatory Problems |
| | Recycling | Ozone Depleting Chemicals |
| | Alternative Fuels | Substantial Emissions |
| | Communications (added '96) | Agricultural Chemicals |
| | Property, Plant, and Equipment (ended '95) | Climate Change (added '99) |
| | Other Strength | Other Concern |
| Diversity | CEO | Controversies |
| | Promotion | Non-Representation |
| | Board of Directors | Other Concern |
| | Family Benefits | |
| | Women/Minority Contracting | |
| | Employment of the Disabled | |
| | Progressive Gay & Lesbian Policies | |
| | Other Strength | |
| Employee Relations | Strong Union Relations | Poor Union Relations |
| | No Layoff Policy (ended '94) | Health Safety Concern |
| | Cash Profit Sharing | Workforce Reductions |
| | Employee Involvement | Pension/Benefits (added '92) |
| | Strong Retirement Benefits | Other Concern |
| | Health and Safety Strength (added '03) | |
| | Other Strength | |
| Product Quality and Safety | Quality | Product Safety |
| | R&D/Innovation | Marketing/Contracting Controversy |
| | Benefits to Economically Disadvantaged | Antitrust |
| | Other Strength | Other Concern |

*Notes:* All items are listed in their corresponding category. Unless otherwise indicated, the item has been included in the data from 1993-2004. Items that were add to the data or discontinued (i.e., ended) in intermediate years are indicated, as are the cases in which an item was moved from one category to another. Further details on the definition of each indicator are available from KLD Research & Analytics, Inc at http://www.kld.com/research/ratings_indicators.html

## Appendix B: Variable definitions and measures

| Variable | *[Name]* | Variable definitions |
|---|---|---|
| CSR (1, 0) | [CSR] | Dummy variable equals to 1 if a firm has engaged in corporate social responsibility (CSR). |
| Industry adjusted Tobin's q | [ADJTOBINQ] | The natural log of firm's q divided by the median q in the firm's industry [Campbell (1996)] |
| Industry adjusted ROA (%) | [ADJROA] | Industry adjusted return on asset (source: COMPUSTAT) |
| Log Total Asset | [LOGTA] | Log of total asset (data 6) (source: COMPUSTAT) |
| Debt / Total Asset | [DEBTR] | Long term debt divided by total asset (source: COMPUSTAT) |
| R&D expenditure ratio | [RNDR] | Research and development expense divided by total sales (source: COMPUSTAT) |
| Advertising exp. Ratio | [ADVR] | Advertising expense divided by total sales (source: COMPUSTAT) |
| Capital expenditure ratio | [CAPXR] | Capital expenditure expense divided by total sales (source: COMPUSTAT) |
| Sales Growth | [SGROWTH] | Sales growth rate from t-1 to t. (source: COMPUSTAT) |
| Dividend/ Book Equity | [DIVR] | Dividend divided by book value of equity (data21/data60) (source: COMPUSTAT) |
| Deviation of stock returns (%) | [DEVRET] | Standard deviation of monthly stock returns during 5 years prior to current year (source: CRSP) |
| Industry Herfindahl- Hirschman Index | [HHI] | Industry Herfindahl-Hirschman Index calculated based on firms' annual sales using the Fama-French 48 Industries |
| Governance Variables | | |
| GINDEX | [GINDEX] | Gompers, Ishii and Metrick index (source: IRRC data) |
| Entrenchment Index | [ENTINDEX] | Bebchuk, Cohen, Ferrell (2004) Entrenchment Index (source: IRRC data) |
| CEO turnover (1, 0) | [TURNOVER] | Dummy variable equals to 1 if a CEO is replaced. (source: Execucomp and IRRC) |
| % of Independent Directors | [PCTINDEP] | Number of independent outside directors / Number of total directors (source: IRRC data) |
| % of director share | [PCTDIRSHR] | Percentage of director shares (source: IRRC director data) |
| % of CEO share | [PCTCEOSHR] | Percentage of CEO shares (source: Execucomp and IRRC) |
| Log of Blockholdings | [LOGBLKS] | Log of sum of total blockholdings (5% or more) |
| % of Institutional Ownership | [PCTINSTI] | Percentage of institutional share ownerships (CDA/Spectrum 13(f) filing) |
| Log (Number of Analysts + 1) | [LOGANAL] | Log of (number of analysts + 1 ) (source: I/B/E/S database) |

TABLE I
Univariate tests

| | Firms not engaging in CSR | | | Firms engaging in CSR | | | Difference tests | |
|---|---|---|---|---|---|---|---|---|
| | N | Mean | Median | N | Mean | Median | T-stat | Z-stat |
| Panel A: Firm Characteristics | | | | | | | | |
| ADJTOBINQ | 6,501 | -0.2556 | -0.2437 | 5,557 | -0.1422 | -0.124 | -10.144** | -9.24** |
| ADJROA | 6,588 | -1.103 | 0.584 | 5,575 | 1.303 | 0.911 | -6.657** | -6.209** |
| LOGTA | 6,588 | 6.8911 | 6.726 | 5,575 | 8.4108 | 8.297 | -55.566** | -50.42** |
| DEBTR | 6,563 | 0.2399 | 0.221 | 5,557 | 0.2453 | 0.239 | -1.527 | -4.95** |
| RNDR | 6,516 | 0.0358 | 0 | 5,568 | 0.0346 | 0 | 0.776 | - |
| ADVR | 6,589 | 0.0076 | 0 | 5,576 | 0.0106 | 0 | -6.122** | - |
| CAPXR | 6,525 | 0.0739 | 0.039 | 5,567 | 0.0711 | 0.042 | 1.489 | 4.28** |
| SGROWTH | 6,546 | 0.1411 | 0.084 | 5,575 | 0.1086 | 0.074 | 4.777** | 3.43** |
| DIVR | 6,562 | 0.0242 | 0.0012 | 5,550 | 0.0512 | 0.027 | -4.179** | -16.54** |
| DEVRET | 7,683 | 12.503 | 11.042 | 5,618 | 11.150 | 9.811 | 12.055** | 12.638** |
| HHI | 7,750 | 0.103 | 0.085 | 5,639 | 0.114 | 0.090 | -5.369** | -11.146** |
| Panel B: Governance Characteristics | | | | | | | | |
| GINDEX | 7,750 | 8.7931 | 9 | 5,639 | 9.7318 | 10 | -20.269** | -5.05** |
| ENTINDEX | 7,750 | 2.1285 | 2 | 5,639 | 2.3111 | 2 | -7.615** | -8.011** |
| TURNOVER | 6,706 | 0.069 | 0 | 5,594 | 0.098 | 0 | -5.657** | - |
| (1, 0) | | | | | | | | |
| PCTINDEP | 7,750 | 0.6011 | 0.625 | 5,639 | 0.6736 | 0.7 | -22.793** | -14.65** |
| PCTDIRSHR | 7,750 | 0.095 | 0.027 | 5,639 | 0.0541 | 0.007 | 11.281** | 26.62** |
| PCTCEOSHR | 7,458 | 2.126 | 0.082 | 5,609 | 0.979 | 0.009 | 12.320** | 14.139** |
| LOGBLKS | 7,750 | 13.6855 | 15.379 | 5,639 | 14.1394 | 16.205 | -4.791** | -32.05** |
| PCTINSTI | 7,750 | 57.5194 | 59.686 | 5,639 | 64.8823 | 66.167 | -21.986** | -14.02** |
| LOGANAL | 7,750 | 2.0178 | 2.054 | 5,639 | 2.5096 | 2.619 | -42.821** | -40.44** |

This table displays descriptive statistics for the 7,750 firm-year observations of no-CSR firms and 5,639 firm-year observations of CSR firms from 1993 to 2004. The number of firm-year observations (N), Mean, Median, Count (i.e., total number of observations for dummy variable) are reported by types of firms. Difference in mean (t-statistics) and median (non-parametric Wilcoxon) tests are reported. The definitions of variables are provided in Appendix B. **, * statistically significant at the 1%, and 5% levels, respectively.

TABLE II
Bivariate correlation matrix

| No. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CSR | 1 | | | | | | | | | | | | | | | | | | | |
| 2 | ADJTOBINQ | 0.09* | 1 | | | | | | | | | | | | | | | | | | |
| 3 | ADJROA | 0.06* | 0.18* | 1 | | | | | | | | | | | | | | | | | |
| 4 | LOGTA | 0.45* | -0.03* | 0.06* | 1 | | | | | | | | | | | | | | | | |
| 5 | DEBTR | 0.01 | 0.01 | -0.13* | 0.20* | 1 | | | | | | | | | | | | | | | |
| 6 | RNDR | -0.01 | 0.03* | -0.17* | -0.21* | -0.19* | 1 | | | | | | | | | | | | | | |
| 7 | ADVR | 0.06* | 0.05* | -0.05* | -0.04* | -0.01 | 0.03* | 1 | | | | | | | | | | | | | |
| 8 | CAPXR | -0.01 | 0.08* | -0.06* | -0.03* | 0.18* | 0.03* | -0.04* | 1 | | | | | | | | | | | | |
| 9 | SGROWTH | -0.04* | 0.15* | 0.04* | -0.003 | 0.01 | 0.07* | 0.01 | 0.08* | 1 | | | | | | | | | | | |
| 10 | DIVR | 0.04* | 0.04* | 0.02* | 0.04* | 0.04* | -0.03* | 0.04* | -0.01 | -0.01 | 1 | | | | | | | | | | |
| 11 | DEVRET | -0.10* | -0.09* | -0.23* | -0.36* | -0.15* | 0.44* | 0.05* | 0.06* | 0.09* | -0.06* | 1 | | | | | | | | | |
| 12 | HHI | 0.05* | -0.02 | 0.01 | -0.05* | 0.06* | -0.02* | 0.04* | 0.06* | -0.01 | 0.05* | 0.001 | 1 | | | | | | | | |
| 13 | GINDEX | 0.17* | -0.04* | 0.02* | 0.17* | 0.07* | -0.12* | -0.05* | -0.05* | -0.07* | 0.03* | -0.21* | -0.03* | 1 | | | | | | | |
| 14 | ENTINDEX | 0.07* | -0.07* | -0.003 | 0.04* | 0.07* | -0.08* | -0.07* | -0.02* | -0.06* | 0.01 | -0.09* | -0.05* | 0.72* | 1 | | | | | | |
| 15 | TURNOVER | 0.05* | -0.02* | -0.02* | 0.07* | 0.004 | 0.01 | 0.01 | -0.02* | 0.001 | 0.01 | 0.01 | 0.004 | 0.01 | 0.004 | 1 | | | | | |
| 16 | PCTINDEP | 0.19* | -0.04* | 0.01 | 0.18* | 0.01 | 0.03* | -0.05* | -0.04* | -0.07* | 0.03* | -0.09* | -0.04* | 0.27* | 0.26* | 0.07* | 1 | | | | |
| 17 | PCTDIRSHR | -0.10* | 0.01 | -0.02* | -0.11* | 0.02* | -0.03* | 0.07* | -0.005 | 0.02* | -0.01 | 0.09* | 0.04* | -0.17* | -0.16* | 0.004 | -0.24* | 1 | | | |
| 18 | PCTCEOSHR | -0.11* | 0.002 | -0.04* | -0.15* | -0.04* | -0.001 | 0.07* | -0.001 | 0.03* | -0.02 | 0.12* | 0.03* | -0.16* | -0.15* | -0.07* | -0.20* | 0.43* | 1 | | |
| 19 | LOGBLKS | 0.04* | -0.06* | 0.01 | -0.08* | 0.02 | 0.05* | -0.02 | -0.002 | 0.01 | -0.02* | 0.15* | 0.03* | -0.003 | 0.05* | 0.005 | 0.03* | -0.03* | 0.03* | 1 | |
| 20 | PCTINSTI | 0.19* | 0.06* | 0.13* | 0.04* | -0.03* | 0.03* | -0.03* | -0.01 | 0.03* | -0.02 | 0.10* | 0.07* | 0.06* | 0.11* | 0.02* | 0.18* | -0.15* | -0.09* | 0.51* | 1 |
| 21 | LOGANAL | 0.35* | 0.23* | 0.04* | 0.59* | 0.01 | 0.05* | 0.03* | 0.12* | 0.08* | 0.01 | -0.09* | -0.06* | 0.09* | 0.01 | 0.05* | 0.12* | -0.14* | -0.15* | -0.01 | 0.17* |

This table reports Spearman correlation coefficients among variables for the 7,750 firm-year observations of no-CSR firms and 5,639 firm-year observations of CSR firms from 1993 to 2004. See Appendix B for variable definitions. * indicate the 5% level of significance or less.

TABLE III
The determinants of CSR engagement

| | Model (1) | Model (2) | Model (3) | Model (4) | Model (5) |
|---|---|---|---|---|---|
| LOGTA | 0.455 | 0.606 | | 0.564 | 0.570 |
| | (44.37)** | (48.56)** | | (36.16)** | (36.42)** |
| DEBTR | -0.470 | -0.860 | | -1.003 | -0.997 |
| | (5.87)** | (9.68)** | | (10.95)** | (10.91)** |
| RNDR | 1.538 | 0.818 | | 0.868 | 0.827 |
| | (8.07)** | (3.57)** | | (3.60)** | (3.46)** |
| ADVR | 4.185 | 1.341 | | 1.763 | 1.616 |
| | (7.75)** | (2.11)* | | (2.57)* | (2.34)* |
| DEVRET | 0.012 | 0.017 | | 0.022 | 0.021 |
| | (4.68)** | (5.75)** | | (7.63)** | (7.20)** |
| ROA | 0.011 | 0.007 | | 0.013 | 0.013 |
| | (3.79)** | (3.67)** | | (7.17)** | (7.33)** |
| HHI | 0.062 | 0.654 | | 0.771 | 0.765 |
| | (0.54) | (2.22)* | | (2.66)** | (2.65)** |
| Prob(CEOTURN) | | | 12.462 | 18.608 | 19.213 |
| | | | (9.41)** | (18.39)** | (19.01)** |
| Governance Variables | | | | | |
| GINDEX | | | 0.048 | 0.036 | |
| | | | (9.43)** | (6.57)** | |
| ENTINDEX | | | | | 0.025 |
| | | | | | (2.25)* |
| PCTINDEP | | | 0.831 | 0.571 | 0.634 |
| | | | (10.54)** | (6.81)** | (7.57)** |
| PCTDIRSHR | | | 0.086 | 0.017 | -0.003 |
| | | | (0.90) | (0.22) | (0.04) |
| PCTCEOSHR | | | -0.004 | 0.0004 | -0.0002 |
| | | | (1.22) | (0.12) | (0.07) |
| LOGBLKS | | | -0.004 | -0.004 | -0.004 |
| | | | (1.54) | (1.18) | (1.22) |
| PCTINSTI | | | 0.011 | 0.011 | 0.010 |
| | | | (13.37)** | (11.40)** | (11.23)** |
| LOGANAL | | | 0.741 | 0.099 | 0.100 |
| | | | (32.83)** | (3.52)** | (3.57)** |
| Intercept | -3.718 | -5.335 | -4.280 | -8.017 | -7.876 |
| | (37.21)** | (13.11)** | (12.25)** | (18.50)** | (18.24)** |
| FF-48 Industry | No | Yes | Yes | Yes | Yes |
| Pseudo-$R^2$ | 0.1833 | 0.2419 | 0.1897 | 0.2965 | 0.2942 |
| Observations | 11,999 | 11,999 | 11,969 | 11,844 | 11,844 |
| Number of firms | 2,536 | 2,536 | 2,544 | 2,508 | 2,508 |

This table reports the coefficient of estimates from the probit model explaining the determinants of CSR engagement. The dependent variable is the CSR, which is a dichotomous variable that equals to one if a firm has involved into CSR activities. Otherwise equals to zero. Model (1) and (2) report only control variables. Model (3), (4), and (5) include internal and external corporate governance variables. The Fama-French (FF) 48 industry classification is included all Models except Model (1). T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. Appendix B provides variable definitions. **, * statistically significant at the 1%, and 5% levels, respectively.

TABLE IV

Firm value/performance and CEO turnover regressions based on the Heckman two-stage and the instrumental variables approach

| | Model (1) | Model (2) | Model (3) | Model (4) | Model (5) | Model (6) |
|---|---|---|---|---|---|---|
| Dependent Variable | ADJTOBINQ | ADJROA | TURNOVER | TURNOVER | ADJTOBINQ | ADJROA |
| INTERCEPT | 2.943 | 28.106 | -0.021 | | 0.504 | -21.328 |
| | (12.17)** | (10.05)** | (0.25) | | (2.59)** | (0.70)** |
| CSR | 1.981 | 16.128 | 0.023 | 0.055 | 0.011 | 4.215 |
| | (29.73)** | (18.55)** | (0.65) | (2.29)* | (2.53)* | (2.93)** |
| Governance Variables | | | | | | |
| GINDEX | -0.042 | -0.333 | -0.002 | | -0.025 | -3.861 |
| | (12.07)** | (8.28)** | (1.96)* | | (3.55)** | (2.99)** |
| PCTDIRSHR | 0.104 | 1.469 | 0.067 | | 0.1487 | 14.845 |
| | (2.27)** | (2.83)** | (4.72)** | | (2.45)* | (2.69)** |
| PCTCEOSHR | 0.002 | -0.024 | -0.004 | | 0.002 | -0.136 |
| | (1.33) | (1.16) | (6.85)** | | (1.15) | (1.24) |
| PCTINDEP | -0.497 | -3.664 | 0.098 | | -0.318 | -7.027 |
| | (9.33)** | (6.02)** | (5.59)** | | (3.67)** | (2.79)** |
| LOGBLKS | -0.012 | -0.152 | 0.0003 | | -0.011 | 0.088 |
| | (6.73)** | (7.27)** | (0.54) | | (9.55)** | (0.57) |
| PCTINSTI | -0.0008 | 0.038 | -0.0002 | | 0.006 | 0.467 |
| | (1.43) | (5.64)** | (1.01) | | (8.40)** | (3.69)** |
| LOGANAL | 0.367 | 1.405 | -0.002 | | 0.467 | 1.446 |
| | (21.34)** | (7.17)** | (0.39) | | (16.34)** | (3.08)** |
| CEOAGE>64 | | | 0.033 | 0.035 | | |
| | | | (3.75)** | (4.05)** | | |
| Control Variables | | | | | | |
| LOGTA | -0.504 (37.53)** | -3.165 (19.05)** | 0.010 (1.62) | 0.006 (1.15) | -0.249 (6.82)** | -2.001 (2.89)** |
| DEBTR | 0.439 (7.88)** | -8.993 (14.05)** | 0.006 (0.30) | 0.020 (1.11) | 0.022 (2.52)* | -2.429 (3.27)** |
| RDNR | 0.438 (3.17)** | -41.341(26.43)** | -0.014 (0.32) | -0.008 (0.19) | 0.757 (7.21)* | -54.509 (5.18)** |
| CAPXR | 0.264 (3.47)** | 0.586 (0.63) | -0.038 (1.19) | -0.050 (1.57) | 0.233 (3.09)** | 26.557 (2.25)* |
| CSR*HIADVR | 0.053 (2.40)* | 0.689 (2.58)** | 0.013 (1.50) | 0.016 (1.79) | 0.095 (2.68)** | 5.084 (2.51)* |
| CSR*LOWHHI | -0.006 (0.03) | -1.018 (3.71)** | -0.007 (0.75) | -0.007 (0.77) | 0.097 (0.21) | -10.305 (2.74)** |
| SGROWTH | 0.239 (11.94)** | 3.604 (14.77)** | 0.008 (0.96) | 0.004 (0.47) | 0.319 (4.21)** | 18.285 (3.46)** |
| DIVR | 0.043 (2.41)* | 0.905 (5.04)** | 0.003 (0.47) | 0.004 (0.53) | 0.041 (1.75) | 6.533 (1.49) |
| DEVRET | -0.024 (13.75)** | -0.473 (23.34)** | 0.002 (2.82)** | 0.001 (2.66)** | -0.009 (2.02)* | -1.688 (2.12)** |
| Inverse-Mills Ratio | -1.152 (30.03)** | -9.161 (18.16)** | -0.014 (0.65) | -0.033 (2.30)* | | |
| Wald Chi-square | 5,772.59 | 6,3871.31 | 3,355.01 | 1,810.45 | | |
| Adjusted $R^2$ | | | | | 0.2678 | 0.1273 |
| Observations | 11,646 | 11,673 | 11,005 | 11,005 | 11,695 | 11,722 |
| Number of firms | 2,472 | 2,481 | 2,411 | 2,411 | 2,470 | 2,479 |

This table shows the results from the Heckman two-stage estimation method from model (1) through (4) in which one of the dependent variables is industry adjusted Tobin's q and the other dependent variable is the ADJROA. Models (5) and (6) report the results from the Instrumental Variables approach where the instrumental variable is firm age (FIRMAGE). CSR*HIADVR is an interaction variable of CSR*high (above median) advertising intensity and CSR*LOWHHI is an interaction variable of CSR*low (below median) HHI. The CSR scores are from the Kinder, Lydenberg, and Domini's (KLD) Socrates database. T-statistics are adjusted for robust and clustered (by firm) standard errors and reported in parentheses. See Appendix B for variable definitions. ** and * statistically significant at the 1% and 5% levels, respectively.

TABLE V
The joint effects of governance and CSR using Heckman two-stage regressions

| Panel A. Dependent variable: ADJTOBINQ | | | | | | |
|---|---|---|---|---|---|---|
| Interaction Variables | Model (1) | Model (2) | Model (3) | Model (4) | Model (5) | Model (6) |
| CSR*HIADVR | 0.152 | | | | | |
| | (8.95)** | | | | | |
| CSR*LOWHHI | 0.115 | | | | | |
| | (7.62)** | | | | | |
| CSR*HIPCTINDEP | | 0.0249 | | | | |
| | | (1.91) | | | | |
| CSR*HIPCTINSTI | | | 0.0755 | | | |
| | | | (5.49)** | | | |
| CSR*HILOGANAL | | | | 0.335 | | |
| | | | | (23.5)** | | |
| CSR*HIGINDEX | | | | | -0.096 | |
| | | | | | (5.29)** | |
| CSR*HIENTINDEX | | | | | | -0.045 |
| | | | | | | (3.56)** |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Other governance variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Wald Chi-square | 5,797.38 | 5,787.98 | 5,777.62 | 5,783.03 | 5,798.85 | 5,809.12 |
| Observations | 11,704 | 11,704 | 11,704 | 11,704 | 11,704 | 11,704 |
| Number of firms | 2,472 | 2,472 | 2,472 | 2,472 | 2,472 | 2,472 |
| Panel B. Dependent variable: ADJROA | | | | | | |
| Interaction Variables | Model (1) | Model (2) | Model (3) | Model (4) | Model (3) | Model (4) |
| CSR*HIADVR | 1.246 | | | | | |
| | (5.07)** | | | | | |
| CSR*LOWHHI | -0.632 | | | | | |
| | (2.85)** | | | | | |
| CSR*HIPCTINDEP | | 0.379 | | | | |
| | | (1.97)* | | | | |
| CSR*HIPCTINSTI | | | 0.409 | | | |
| | | | (2.05)* | | | |
| CSR*HILOGANAL | | | | 1.190 | | |
| | | | | (5.62)** | | |
| CSR*HIGINDEX | | | | | -2.046 | |
| | | | | | (6.88)** | |
| CSR*HIENTINDEX | | | | | | -1.403 |
| | | | | | | (7.12)** |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Other governance variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Wald Chi-square | 6,387.31 | 6,373.96 | 6,351.30 | 6,359.14 | 6,370.28 | 6,364.73 |
| Observations | 11,731 | 11,731 | 11,731 | 11,731 | 11,731 | 11,731 |
| Number of firms | 2,481 | 2,481 | 2,481 | 2,481 | 2,481 | 2,481 |

This table reports the coefficients on interaction variables estimated from Heckman two stage method. The dependent variable in the second stage is industry adjusted Tobin's q (ADJTOBINQ) in Panel A and industry adjusted ROA (ADJROA) in Panel B. CSR*HIADVR is an interaction variable of CSR*high (above median) advertising intensity, CSR*LOWHHI is an interaction variable of CSR*low (below median) HHI, etc. The Fama-French (FF) 48 industry classification is included all Models. T-statistics are reported in parentheses. ** and * statistically significant at the 1% and 5% levels, respectively.

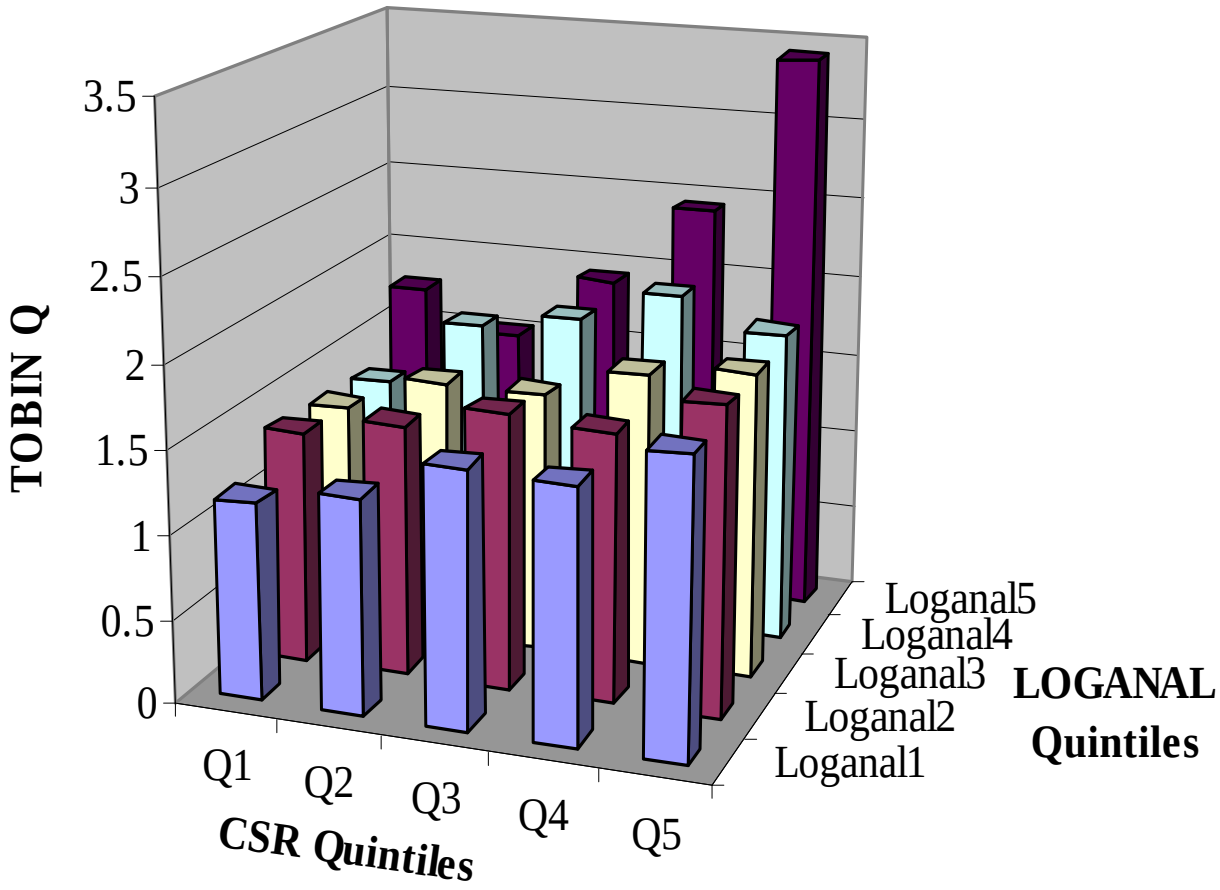


Figure 1. The relation among Tobin's q, CSR, and analyst following. This figure shows the relation among Tobin's q, analyst following, and the CSR engagement. We divide the sample by five quintiles of CSR and analysts following. CSR here is the CSR combined score. CSR Q1 is the lowest CSR group while CSR Q5 is the highest CSR group of firms. Similarly, Loganal1 is the lowest analyst following and Loganal5 is the highest analyst following.

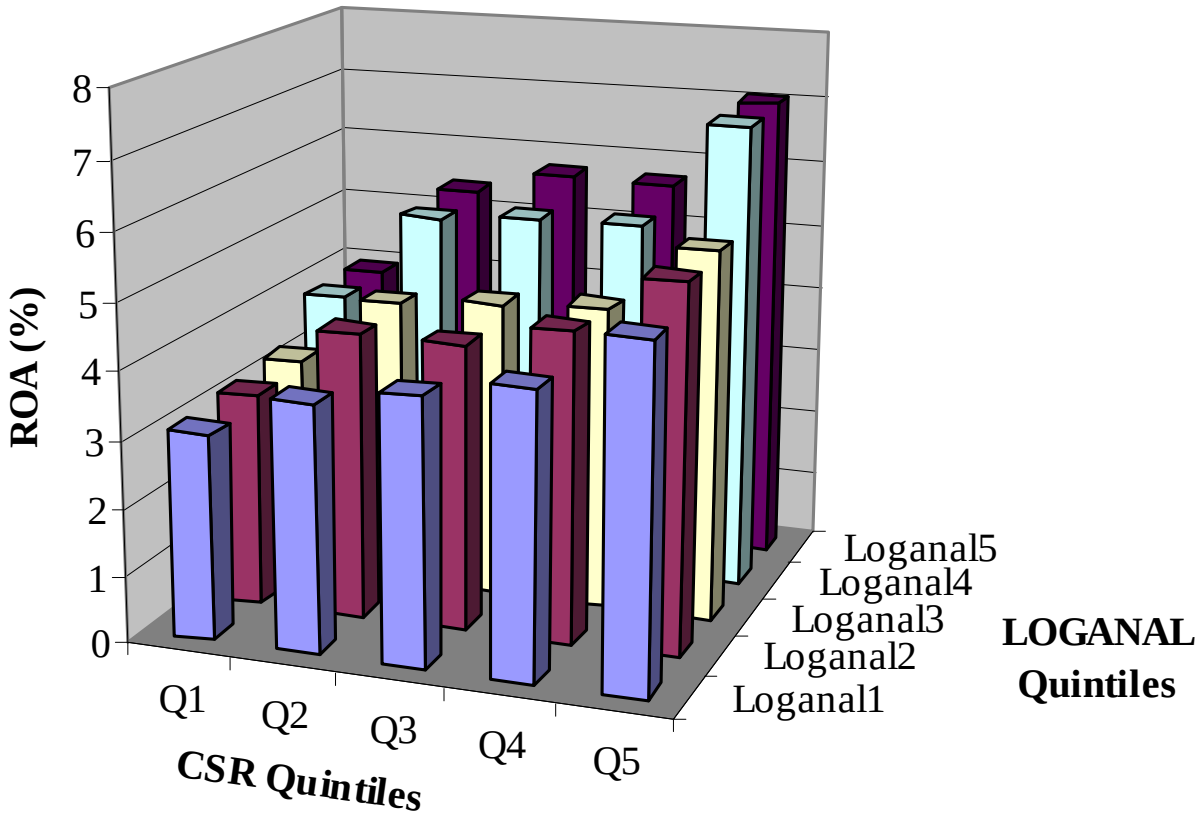


Figure 2. The relation among ROA, CSR, and analyst following. This figure shows the relation among ROA, analyst following, and the CSR engagement. We divide the sample by five quintiles of CSR and analysts following. CSR here is the CSR combined score. CSR Q1 is the lowest CSR group while CSR Q5 is the highest CSR group of firms. Similarly, Loganal1 is the lowest analyst following and Loganal5 is the highest analyst following.