

Institutional Investment Horizons and Corporate Social Responsibility

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Abstract

This paper examines the effect of institutional investor's investment horizons on corporate social responsibility (CSR). Using data on U.S. firms' CSR ratings from Kinder, Lydenberg and Domini (KLD) over the 1995-2012 period, we find that the presence of long-term institutional investors mitigates managerial short-termism. It appears that long-term oriented institutions have more incentives to monitor, and that this will push managers toward engaging in more CSR activities. Specifically, our results show that investment horizon of institutions is positively related to CSR, and also that long-term (short-term) institutional ownership is positively (negatively) related to CSR. Overall, our findings suggest that firms with good CSR activities are preferred by investors with long-term horizons.

JEL classification: M14; G31; G32; G34

Key words: corporate social responsibility (CSR); institutional investor; investment horizon; managerial short-termism

1. Introduction

The importance of corporate social responsibility (CSR) has been greatly emphasized by both business practitioners and academic researchers over the last decade. Many firms assign a significant proportion of their annual reports to describing their CSR activities. They also issue CSR reports annually, which present their CSR achievements to related parties such as investors, customers or employees.¹ Moreover, business schools have placed considerable emphasis on sustainability programs, including specializations in CSR among their MBA programs. These schools are responding to growing demands from students and employers for long-term social and ethical sustainability, and to increasing business opportunities in the CSR area.² The effect of CSR on corporate outcomes has been the topic for a rich body of literature. However, very little is yet known about the determinants of CSR (e.g., Ioannou and Serafeim, 2010; Di Giuli and Kostovetsky, 2014; Attig and Cleary, 2015).

In a related trend, institutional investors have become the largest owners of U.S. firms in recent decades (Gillan and Starks, 2000; Chen, Harford, and Li, 2007), and these investors have exerted great influence on corporate decision making (Aghion, Reenen, and Zingales, 2013).³ Although an extensive literature regards institutional investors as a homogenous group with similar objectives and investment agendas, these investors obviously have differing characteristics (Gillan and Starks, 2000). In particular, the different degree of institution's investment horizon is likely to be a notable determinant of CSR since CSR is enhanced by

¹ A survey by KPMG (2013) shows that 71% of 4,100 leading companies (the 100 largest companies in 41 countries) publish CSR reports, and that this proportion has increased by 7% since 2011. Also, CSR is showing exceptional growth in emerging economies. Furthermore, 93% of the largest *Fortune* Global 250 companies issue CSR reports, and their rate of disclosure has been similarly high since 2011. See "2013 KPMG International Survey of Corporate Responsibility Reporting." <https://assets.kpmg.com/content/dam/kpmg/pdf/2015/08/kpmg-survey-of-corporate-responsibility-reporting-2013.pdf>.

² See "Social Responsibility and M.B.A.s," *New York Times*, Oct. 20 (Schuetze, 2013). http://www.nytimes.com/2013/10/21/education/social-responsibility-and-mbas.html?_r=0. Also, see "Going Green: MBA Sustainability Programs," *Bloomberg Business*, April 17 (Di Meglio, 2012). <http://www.bloomberg.com/bw/articles/2012-04-17/going-green-mba-sustainability-programs>.

³ Chen et al. (2007) suggest that institutional investors owned more than 50% of the U.S. stock market in 2004.

long-term investment (Graves and Waddock, 1994) and these activities are essential to long-term value creation and survival (e.g., Mahapatra, 1984; Orlitzky, Schmidt, and Rynes, 2003; Deng, Kang, and Low, 2013). Thus, this paper aims to investigate the effect of institutional investment horizons on CSR activities.

CSR activities are based on long-term processes and they require lengthy periods of time to initiate, develop and fulfill. CSR activities may involve serving the implicit claims of various stakeholders, fostering a better corporate culture or maintaining positive relationships with communities. All of these activities require investments over a long duration (Graves and Waddock, 1994). Stakeholder theory suggests that high CSR firms tend to have stronger reputations for honoring their promises related to implicit contracts (e.g. Cornell and Shapiro, 1987; Titman, 1984). CSR also tends to reduce a firm's perceived future risks, such as risks from uncertain explicit claims including litigation and sanctions (Waddock and Graves, 1997; Agle, Mitchell, and Sonnenfeld, 1999; Hong and Kacperczyk, 2009). Through higher CSR investments, firms can mitigate the risks of potential future claims, and hence improve their likelihood of survival in the long run (Oh, Chang, and Martynov, 2011). Overall, CSR is likely to prove essential for promoting the long-term value.

Institutional investors are a heterogeneous group which includes pension funds, banks, hedge funds, mutual funds, EFTs and insurance companies. These investors are subject to different regulatory schemes, and they aim at differing levels of activism in terms of corporate governance (e.g., Gillan and Starks, 2000; Almazan, Hartzell, and Starks, 2005; Lim, 2013). One of the most important dimensions of heterogeneity among investors is the difference in the length of their investment horizons. For example, public pension funds are oriented toward long-term benefits, whereas hedge funds and mutual funds are generally focused on short-term results. Because long-term institutions tend to join with firms as shareholders on an ongoing basis, they have more incentive to engage in monitoring activities (Gaspar, Massa and Matos,

2005), reducing managers' career concerns threats and as result, promoting policies aimed to enhance the long-term value of the firm (Aghion et al., 2013). In contrast, short-term oriented institutional investors have less incentives to monitor managers. Instead, they seek short-term profits by exploiting informational advantages and boost managerial short-termism (Yan and Zhang, 2009; Bushee, 1998).

The dissimilar monitoring incentives of short-term and long-term institutional investors suggest an asymmetric effect of their investment horizons on CSR activities. Better monitoring of institutions with long-term horizons tends to push managers toward longer-term investments. As CSR activities improve the firm's long-term profitability and enhance its chances of long-term survival, managers in firms with long-term institutional investors are more likely to engage in CSR as one form of their long-term investment. Short-term institutional investors, however, are likely to regard CSR as a cost that limits their benefits in the short-run. Thus, the main hypothesis of this paper is that the presence of institutional investors with longer horizons is likely to enhance CSR activities, whereas shorter institutional investors are likely to decrease CSR activities.

Using a large and comprehensive sample of institutional investors and CSR, we examine the effects of institutional investment horizons on CSR. The CSR data are obtained from the Kinder, Lydenberg and Domini (KLD) dataset. Following an extensive body of literature (e.g., Di Giuli and Kostovetsky, 2014; Deng et al., 2014; Kruger, 2015), we measure each firm's adjusted CSR ratings by dividing the strength and concern scores for each dimension of CSR by its respective number of strength and concern indicators. Then we subtract the adjusted total concern score from the adjusted total strength score. The data on institutional investors are drawn from Thomson Reuters' 13F Holdings. In accordance with the work by Gaspar et al. (2005), we use institutional investors' investment horizons as our main explanatory variable. We calculate these horizons by using the turnover rate, which is defined

as the weighted average of the total portfolio churn rate of a firm's institutional investors. Additionally, we construct two other proxies for an institution's investment duration by measuring the institutional ownership of firms held by long-term and short-term investors. Long-term (short-term) investors are defined as investors whose turnover ratios are in the bottom (top) tertile. Our final sample represents 22,073 U.S. firm-year observations over the 1995-2012 period.

We find that the turnover rate of institutional investors is negatively related to the sample firms' adjusted CSR scores. Our results also show that long-term institutional ownership is positively associated with adjusted CSR scores, but short-term institutional ownership is negatively related to these scores. In addition, we find that firms with higher long-term institutional ownership invest more in CSR than firms with higher short-term institutional ownership. Furthermore, we separately investigate the effects of institutional investment horizons on the CSR strength scores and CSR concerns scores, because each of these scores reflects a different facet of CSR. For CSR strength scores, the coefficient on institutional investment horizons is significantly negative. Long-term institutional ownership positively affects CSR strength scores, but short-term institutional ownership negatively influences these scores. However, both long-term and short-term institutional ownership are negatively related to CSR concerns scores.⁴

We also examine the relation between institutional investment horizons and adjusted CSR scores for each of six dimensions, namely community, diversity, employee relations, environment, human rights and products. These assessments indicate that institutional turnover rates are negatively and significantly related to the CSR dimensions of community, diversity, employee relations and environment. However, the turnover rates do not appear to have a

⁴ See section 4.2 for a detailed explanation.

significant effect on the dimensions of human rights and products. These results suggest that long-term institutional investors are more likely to take care in meeting the demands of primary stakeholders that are most directly related to firms' long-term survival.

Our baseline results are probably subject to endogeneity concerns. To address omitted variable concerns, and to allow for the possibility that institutions with different investment horizons may have a delayed effect on CSR, we include institutional investment horizon measures lagged by three years and five years, instead of lagged by one year in the regression. After these changes in time lag, our previous results hold unaffected. Furthermore, in order to mitigate the concern about reverse casualty that goes from CSR to institutional investment horizons, we run two-stage least squares (2SLS) approach with instrumental variable (IV) and also a propensity score matching analysis. Overall, our main results remain unchanged, indicating a casual effect of institutional investment horizons on CSR. In addition, we identify potential channels through which institutional investment horizons motivate CSR, and find a stronger impact of institutional investment horizons on CSR in a firm facing high agency problems.

Our paper contributes to the limited literature on the determinants of CSR. At present, only a few studies exist concerning the characteristics that drive CSR. Some of the CSR-related factors investigated to date include financial constraints (Hong, Kubik, and Scheinkman, 2011), stakeholder preferences (Di Giuli and Kostovetsky, 2014) and managerial practices (Attig and Cleary, 2015). We supplement the findings of these studies by focusing on the heterogeneity of institutional investors and by indicating that institutions with long-term investment horizons lead firms to institute more socially responsible policies. Furthermore, this paper sheds light on the previous research linking institutional investment horizons to long-term investment. CSR activities tend to be nurtured by long-term investment (Graves and Waddock, 1994), and such activities are very important for the long-term performance and survival of firms (e.g.,

Hillman and Keim, 2001; Orlitzky et al., 2003; Edmans, 2012). Thus, as in the case with R&D and innovation, CSR activities are among the corporate policies that play an important role in long-term value creation. Our paper further develops this argument by demonstrating how different institutional investment horizons have an influence on a firm's long-term intangible investments, and specifically on its CSR activities.

The rest of the paper is organized as follows. In section 2 we review the related literature and describe the hypothesis more fully. Section 3 describes the data, summary statistics and the construction of key variables. We explain our main empirical findings in Section 4. Section 5 summarizes our findings and concludes the paper.

2. Literature Review and Hypothesis Development

2.1. Previous research related to the time horizons of institutional investors

Shleifer and Vishny (1986) suggest that institutional shareholders tend to have greater incentives for monitoring firms as a means to reduce managerial agency problems. Institutional investors, through holding large portions of shares and enjoying substantial voting powers, can easily influence the managers and boards of directors to take suggested actions. In addition, Ajinkya, Bhorjrai, and Sengupta (1999) document the role of institutional investors in mitigating informational risk and generating precise information. These authors find that firms tend to increase their disclosures in response to institutional ownership, because institutional shareholders pressure the managers to orient their decisions toward disclosing information in a timely manner.

Institutional investors differ greatly in terms of their investment incentives, trading styles, clienteles and regulatory restrictions, and these discrepancies are likely to affect both their roles in corporate governance (Gillan and Starks, 2000) and their abilities for gathering and processing information (Yan and Zhang, 2009). Many studies demonstrate how different

types of institutional investors exert their monitoring incentives. Almazan et al. (2005) find that sensitivity to pay-for-performance is positively associated with the ownership concentration of investment companies and investment advisors, but that this factor is insignificant for ownership by banks or insurance companies. These authors' empirical findings provide evidence concerning the divergent monitoring costs of active and passive institutional investors. Brickley, Lease and Smith (1988) suggest that institutions which are more independent of management influence (i.e., mutual funds and public pension funds) have a greater tendency to disagree with management proposals on antitakeover amendments than institutions that are sensitive to management influence (i.e., banks, insurance companies and trusts).

A number of recent studies place great emphasis on examining the divergent monitoring roles played by institutions with different investment horizons. Institutions with long-term holdings in a firm are regarded as investing in a relationship with the firm. This more enduring type of relationship causes short-term trading profits to seem less attractive, and makes monitoring activities appear more valuable (Hirschman, 1970). In contrast, Gaspar et al. (2005) show that institutions with short-term investment horizons have weaker monitoring. These institutions also have weaker bargaining positions in dealing with acquisitions, because their short-term- perspectives suggest that they may not remain as shareholders long enough to reap the payoff from their investments. Gaspar et al. (2005) also find that target firms held by institutions with shorter investment horizons are more likely to receive acquisition bids, and to get lower premiums. Bidder firms that are owned by short-term institutions commonly have negative abnormal returns around the dates of their merger and acquisition announcements. Overall, the extant studies in regard to institutional investment horizons suggest that long-term institutions have better monitoring. These differences, which are related to the heterogeneity of institutional investment horizons, have a great influence on financing costs and corporate decisions. These factors are shown to affect the cost of debt (Elyasiani, Jia, and Mao, 2010),

the cost of equity capital (Attig, Cleary, El Ghouli, and Guedhami, 2013), the expense of seasoned equity offerings (Hao, 2014) and the payout policy choices (Gaspar, Massa, Matos, Patgiri, and Rehman, 2013).

Our paper is directly related to previous studies on the relation between long-term investment and institutional investor horizons. Increased monitoring activities by institutions helps to insure firm managers against reputational risk from poor performance and reduce managers' career concern threats (Aghion et al., 2013). Thus, the better monitoring by long-term institutional investors are likely to push managers toward pursuing long-term value, whereas fewer monitoring incentives by short-term institutional investors tend to engage in short-term projects that generate quick profits but possibly impair firm's long-term value. In this stream of research, Barrot (2012) examines how the investor horizons of private equity funds influence corporate innovation. These authors also provide evidence that private equity funds with longer investment horizons help firms to increase the number of patents they achieve. Lerner, Sorensen and Stromberg (2011) investigate changes around the time of investments by private equity funds, and show how these changes affect the firms' long-run strategies, such as their innovative activities. Harford, Kecskes and Mansi (2013) find that firms with long-term-oriented investors tend to hold more cash and invest in projects with long-term payoffs. Bushee (1998) finds that transient institutional investors (i.e., short-term-oriented institutions) commonly decrease R&D expenditures to meet near-term earnings targets. We contribute to this line of research by investigating the extent to which different institutional investment horizons affect CSR activities, which are forms of long-term investment in intangible assets.

2.2. Previous research related to CSR activities

A voluminous literature is devoted to examining the desirability of CSR. In this

literature, two opposing views are commonly discussed: the stakeholder value maximization view, and the shareholder expense view. The stakeholder value maximization view suggests that CSR initiatives positively affect shareholder wealth, because meeting the demands of non-financial stakeholders such as customers, suppliers and employees increases the willingness of these stakeholders to support the firm's operations. This view is closely related to contract theory (Alchian and Demsetz, 1972; Cornell and Shapiro, 1987). According to contract theory, stakeholders supply firms with valuable resources or contribute their efforts in return for the fulfillment of claims, which are described as contracts. These contracts can be either explicit (e.g., wages) or implicit (e.g., promises to employees about working conditions, job security, retirement plans or continued service to customers). In terms of their legal standing, implicit contractual claims have little binding effect, whereas explicit contracts are legally binding. Therefore, the payouts on implicit contracts are uncertain. As a result, the value of implicit claims depends on the firm's reputation for keeping its implied promises (Cornell and Shapiro, 1987). Firms with high CSR are likely to have better reputations for honoring their implicit contracts than firms with low CSR. Such good reputations motivate the stakeholders to dedicate their resources and efforts to the firm. Thus, contract theory suggests that the interests of shareholders are more aligned with stakeholders in firms with high CSR.

The shareholder expense view, however, suggests that CSR activities are an expense to shareholders. Such activities may serve to build up a good reputation among the other stakeholders, but they do so at the cost of the shareholders. Therefore, engaging in high levels of CSR results in transferring wealth from shareholders to stakeholders (Friedman, 1998; Pagano and Volpin, 2005). In accord with this view, Benabou and Tirole (2010) suggest that CSR may be regarded as a delegated pro-social behavior, which supplies other stakeholders with direct value, although it is financially costly.

Many previous studies have examined the long-term perspective of CSR. These studies

argue that as CSR inherently requires long-term effort (Graves and Waddock, 1984; Mahapatra, 1984; Johnson and Greening, 1999), firms should make the long-term investments needed to maintain sustainable relationships with their stakeholders, satisfy their implied claims, interact consistently with local communities and foster a productive firm culture. In addition, CSR can pay off in the long run by boosting the chances of a firm's long-term survival through two channels: 1) CSR can decrease the risk of explicit claims and 2) it can enhance the firm's reputation.

First, CSR tends to reduce a firm's perceived future risks, such as risks from uncertain explicit claims (Waddock and Graves, 1997). For example, if a firm does not take care to ensure product safety, the probability of future lawsuits against the firm will increase, which in turn will lead to an increase in unnecessary costs. Socially irresponsible firms are subject to a higher likelihood of costly sanctions (Shane and Spicer, 1983; Agle et al., 1999), and they face greater risks of litigation (Hong and Kacperczyk, 2009). Hong and Kacperczyk (2009) illustrate that tobacco companies encountered substantial litigation risks until they settled a dispute with state governments in 1997. CSR can reduce the risk of potential claims, and thereby improve a firm's likelihood of survival in the long run (Oh et al., 2011).

Second, CSR can help a firm to build a favorable reputation. Stakeholder theory, as discussed above, suggests that firms with high CSR are likely to earn a better reputation for honoring their implicit contracts, thus contributing to the firms' long-term profitability and efficiency (Jawahar and McLaughlin, 2001; Freeman, Wicks, and Parmar, 2004). This kind of favorable reputation also enables a firm to hire and retain highly qualified employees (Turban and Greening, 1997), to attract customers and retain their loyalty (Brine, Brown, and Hackett, 2007), to enhance brand awareness and to differentiate their brands (Kay, 1993). Thus, CSR represents a valuable intangible asset that is difficult for competitors to mimic. Such advantages are essential for enabling firms to survive in the long-term (Barney, 1991; Hillman and Keim,

2001).

Recent studies have focused on finding the determinants of CSR. Previously, this issue has been overlooked, despite its importance. Peloza (2009) shows that the mediation process linking CSR to financial performance has been ignored, which has limited the practical application of prior research. Our paper contributes to this literature on understanding the antecedents of CSR. In this stream of research, Hong, Kubik and Scheinkman (2012) examine the role of financial constraints on corporate goodness, and they provide evidence that firms with fewer financial constraints are more often engaged in pursuing greater CSR. Di Giuli and Kostovetsky (2014) investigate the relation between stakeholders' political preferences and CSR, showing that firms with democratic-leaning executives (i.e., founders, CEOs and directors) score higher on CSR than firms with republican-leaning executives. Attig and Cleary (2015) suggest that superior managerial practices positively affect a firm's CSR rating. Cheng, Hong and Shue (2013) focus on the importance of agency problems in determining the level of CSR activities. Flammer (2015) emphasizes that product market competition fosters CSR practices. Oh et al. (2011) examine the effect of institutional investment horizons on CSR, but they do not provide consistent evidence to support their conjecture that long-term-oriented investors such as public pension funds motivate firms to engage in more CSR initiatives than short-term-oriented investors such as banks, insurance companies and securities companies. As Oh et al. (2011) explain, their measure of the investment horizon is based on classifications of certain types of institutions, and this measure does not clearly reflect the factor of investment horizons among institutional investors.⁵ In contrast, we measure the institutional investment

⁵ Although Oh et al. (2011) predict that certain types of institutions will have divergent effects on CSR, they find that all institutional investors are positively related to CSR activities. In regard to the discrepancy between their results and their hypothesis, Oh et al. (2011) suggest that their measure of the institutional investment horizon is likely to have some limitations. First, institutions such as banks and securities firms are considered to be short-term investors who are under pressure toward immediate economic profit. However, these institutional owners may be subject to difficulties in divesting their shares without significantly lowering the stock prices. Thus, if these institutions own a significant amount of shares, they are not likely to be purely short-term oriented. As

horizon by using the turnover rate of institutional investors, which directly calculates how frequently the investors rotate their positions on all of the stocks in their portfolios. Thus, the turnover rate can more precisely proxy for the investment horizons of institutions (Gaspar et al., 2005).

In summary, institutions with long-term investment horizons have more incentives to monitor managers. This better monitoring is likely to reduce managers' career risk and managerial myopia, thus leading managers to engage in long-term investments. As CSR is crucial for achieving sustainability, competitive advantages and improved chances of long-term survival, managers in firms held by longer horizon institutions tend to increase their investments in CSR initiatives. Short-term institutional investors, on the contrary, are likely to regard CSR activities as costs that limit their benefits in the short-run. Thus, we propose the following testable hypothesis:

Hypothesis: The presence of long-term institutional investors tends to enhance CSR, but short-term institutional investors are likely to decrease CSR.

3. Data Description and Research Design

3.1. Sample construction

For our sample, we obtain the CSR ratings on U.S firms from the KLD (Kinder, Lydenberg and Domini) database. Institutional ownership data are obtained from the Thomson Reuters CDA/Spectrum database (13F). Furthermore, we require that our sample firms have accounting and financial information, which is drawn from the Center for Research in Security Prices (CRSP) and Compustat. The sample includes firms with intersecting data on the KLD database, Thomson Reuters' 13F Holdings, Compustat and the CRSP. Observations with

another factor, they suggest that institutions may not be independent from the influence of governance, which can make it hard for financial institutions to deploy their own investment strategies and goals.

missing data on the dependent or independent variables are removed. Our final sample contains 22,073 U.S. firm-year observations from across the 1995-2012 period.

3.2. A firm's CSR

We construct our measures for CSR using the KLD STATS database. The KLD data cover all firms in the S&P 500 index as of 1991, the 1,000 largest publicly traded U.S. firms from 2001 to 2002 and the 3,000 largest publicly traded U.S. firms (by market capitalization) thereafter.⁶ The KLD database issues extensive annual CSR ratings in seven major areas: environment, community, product quality and safety, corporate governance, diversity, employee relations and human rights. Each dimension consists of indicators for strengths (positive CSR policies) and concerns (negative CSR policies). We eliminate the corporate governance dimension, as KLD's corporate governance area is regarded as a distinct construct that differs from the other dimensions (Hong, Kubik, and Scheinkman, 2012; Kim, Park, and Wier, 2012). It is also unclear whether the corporate governance measures of the KLD are consistent with the other dimensions in the traditional sense (Kruger, 2015). If a firm carries out a good (harmful) policy, this is included as a strength (concern) indicator, and it earns (loses) one point. Following the extant research (e.g., Di Giuli and Kostovetsky, 2014; Kruger, 2015), the raw CSR score (denoted as *Raw CSR* hereafter) is calculated as the sum of six major categories' scores, which cover approximately 60 strength and concern indicators. Thus, a higher value represents better CSR performance. However, this raw value has a disadvantage. As the number and composition of CSR indicators have greatly varied over time, using a simple summation of the indicator scores is not suitable (Manescu, 2009).

To mitigate this concern, we follow Deng et al. (2013) in measuring an adjusted CSR

⁶ The KLD database did not provide company identification numbers until 1994. Hence, our sample starts in 1995.

score by dividing the strength and concern scores for each dimension by its respective number of strength and concern indicators, and then subtracting the adjusted total concern score from the adjusted total strength score, which is denoted as the *Adjusted CSR* for the remainder of this paper. The adjusted CSR score provides equal weight to the six CSR dimensions, but not to the individual indicators.⁷ This adjusted CSR score that comprises six dimensions is our main measure for each firm's CSR performance.⁸

3.3. Institutional investment horizons

Institutional investors that own more than \$100 million in securities are required to file their holdings each quarter with the Securities and Exchange Commission (SEC). We obtain institutional investors' portfolio information from the Thomson's CDA/Spectrum database (Form 13F), which provides the quarterly filings of institutional holdings. Short-term institutional investors are expected to trade their shares frequently, but long-term institutional investors are expected to keep their positions unchanged over considerable periods of time. To realize this idea empirically, we follow Gaspar et al. (2005) by calculating each institutional investor i 's churn rate at quarter t , and measuring how frequently each institutional investor rotates the stocks of its portfolio by applying the following equation:

$$CR_{i,t} = \frac{\sum_{j \in Q} |N_{j,i,t} P_{j,t} - N_{j,i,t-1} P_{j,t-1} - N_{j,i,t-1} \Delta P_{j,t}|}{\sum_{j \in Q} \frac{N_{j,i,t} P_{j,t} + N_{j,i,t-1} P_{j,t-1}}{2}}, \quad (1)$$

where Q is the set of companies held by investor i , $P_{j,t}$ is firm j 's share price at quarter t , and $N_{j,i,t}$ is the price and the number of shares of company j held by institutional investor i at quarter t . A higher churn rate indicates a shorter investment horizon, whereas a lower churn rate

⁷ Untabulated tests show that the results of raw CSR scores are qualitatively similar to those of adjusted CSR scores.

⁸ Although KLD's corporate governance dimension is included in our analysis, untabulated results show that the findings remain unchanged.

represents a longer investment horizon.

Next, we calculate the investor turnover of firm k as the weighted average of the total portfolio churn rates of its investors over four quarters, as follows:

$$Investor\ Turnover_k = \sum_{i \in S} W_{k,i,t} \left(\frac{1}{4} \sum_{r=1}^4 CR_{i,t-r+1} \right), \quad (2)$$

where S is the set of shareholders in company k , and $W_{k,i,t}$ is the fraction of investor i 's ownership in the total ownership held by institutional investors at quarter t . We refer to this variable as *Turnover* for the remainder of this paper.

Following Attig et al. (2013), we also use two other proxies for the institutional investor horizon by measuring the firm's percentage of ownership held by long-term institutional investors and by short-term institutional investors, respectively. Long-term (short-term) institutional investors are defined as investors whose *Turnover* is in the bottom (top) tertile. Then, the long-term and the short-term institutional ownership represent institutional ownership by the long-term and the short-term investors, which are denoted as *LTIO* and *STIO*, respectively.⁹ Additionally, to identify whether firms are held more by longer-term institutional owners than by short-term institutional owners, we create a dummy variable that equals one if the institutional ownership by long-term investors is higher than the institutional ownership by short-term investors, and otherwise zero. This variable is denoted as $D(LTIO > STIO)$.

3.4. Other explanatory variables

To identify the effect of institutional investment horizons on a firm's CSR rating, we control for other determinants that have been identified in prior research as meaningful factors contributing to CSR. Firm size, which is measured by the natural logarithm of assets (and is

⁹ In untabulated tests, the results hold unchanged when we split the sample according to the median or quartile.

denoted as *Firm Size* for the remainder for this paper) is controlled in the regression analysis, because large firms are likely to increase their ability to engage in CSR as they have fewer resource constraints, more financial flexibility and lower uncertainty.

Leverage is defined as the ratio of the sum of long-term debt and short-term debt to book assets, and is referred to as *Book Leverage*. The effect of leverage on CSR initiatives is equivocal. Leverage can decrease the free cash flow available for spending at the discretion of managers, which reduces the incentives for risk-averse managers to invest in risky projects (Stulz, 1990; Jensen, 2001). Hence, leverage negatively affects CSR initiatives, because CSR is associated with financial slack, and it is considered a relatively risky undertaking due to its uncertain future outcome. In addition, Jensen and Meckling (1976) suggest that leverage provides incentives for self-interested managers to invest in negative NPV projects at the expense of debtholders. Thus, it becomes possible for managers to engage in CSR to benefit themselves at their creditors' cost (Tirole, 2001; Cheng et al., 2013).

We also control for the market-to-book equity ratio, which is measured as the natural log of the market-to-book equity ratio, and is denoted as *MB Ratio*. Di Giuli and Kostovetsky (2014) show that market-to-book ratios can be used to measure financial distress, and we show that lower financial distress is positively associated with a firm's CSR rating. In addition, we include firm age in the regression, which is defined as the natural log of the number of years that the firm appears in the Compustat database. This variable is referred to as *Firm Age*. As older firms are associated with more financial stability, better internal efficiencies and informational advantages concerning their environments, these firms tend to pay more attention to their stakeholders' demands (Attig and Cleary, 2015). Moreover, firm profitability, which is measured by return on assets and is referred to as *ROA*, is included as a control variable. As the more profitable firms typically have more slack resources, they are likely to make more contributions to CSR (Waddock and Graves, 1997).

We control for organization capital scaled by total assets, which we construct by using SG&A expense and the perpetual inventory method, following Eisfeldt and Papanikolaou (2013). This variable is denoted as *OC/Assets*. As firms with superior organization capital (proxied by management quality practices) seek to satisfy more diverse stakeholders' demands, and as the long-term orientation of organization capital is compatible with CSR, we regard higher organization capital as positively related to a firm's CSR ratings (Attig and Cleary, 2015). In addition, product market competition, which we define as the Herfindahl index constructed at the three-digit SIC level, is controlled in the regression analysis. We denote this variable as *Industry Concentration*. Flammer (2015) suggests that with increasing competition in the product market, firms are likely to strengthen their relation with stakeholders (including customers and employees) as a means to overcome the threat of competition and to survive in the long-run.

3.5. Descriptive statistics

Table 1 presents the summary statistics of all variables, including CSR ratings, institutional investment horizons and firm characteristics. Panel A of Table 1 provides the 25th percentile, median, mean, 75th percentile and the standard deviation of CSR ratings. The mean (median) value of adjusted CSR is -0.083 (-0.089), and the mean (median) raw CSR is -0.111 (0.000).

[Insert Table 1 here]

Panels B and C of Table 1 show the descriptive statistics for the main explanatory variables and control variables. The mean (median) institutional investors' turnover rate is 0.196 (0.193). The mean (median) long-term institutional investors' ownership represents 14.7% (13.7%), and the mean (median) short-term institutional investors' ownership is 10.9% (9.9%). On average, long-term institutional ownership is higher than short-term institutional ownership

in 65.1% of the firm-year observations. The mean total assets are 3,323.557 million U.S. dollars; the mean leverage is 20.3%, and the mean market-to-book ratio of assets is 2.876. The mean (median) age of firms and the ROA are about 23 years (17 years) and 11.5% (12.1%), respectively. In addition, the mean (median) ratio of organization capital to total assets is 0.611 (0.449). The mean Herfindahl index is 0.223. To mitigate the outlier effect, all continuous variables are winsorized at the 1% level at both tails. All independent variables are lagged by one year.

4. Empirical Findings

4.1. Univariate tests

We conduct univariate tests to extract preliminary insights on the relationship between institutional investment horizons and CSR initiatives. For the univariate tests, we split the sample into two groups, according to whether the weighted average of the churn rate is above or below the sample median. Then we perform mean and median difference tests between these two groups. Panel A of Table 2 shows that firms with long-term investors engage in more CSR activities than firms with short-term investors. Specifically, the mean (median) of adjusted CSR (which is a main dependent variable) is -0.065 (-0.067) for firms with long-term institutional investors, whereas those values are -0.117 (-0.101) for firms with short-term-oriented institutions. The differences are statistically significant at the 1% confidence level. These results also hold for raw CSR ratings. In addition, we find that firms with long-term investors have significantly larger size and higher leverage than firms with short-term investors. Compared with firms having short-term investors, those having long-term investors have lower market-to-book ratios, and they are older. Also, firms with long-term institutional investors tend to have less organization capital, and they are likely to operate in less competitive markets.

[Insert Table 2 here]

4.2. Multivariate analysis

The univariate analysis provides us with preliminary evidence on the positive relation between institutional investment horizons and CSR activities. In this section, we perform multivariate regressions to investigate how the institutions' investment horizons affect firms' CSR, after controlling for other antecedents of CSR as identified in previous studies. Table 3 presents the baseline results with respect to the effects of institutional investor horizons on a firm's overall CSR ratings. The coefficient on *Turnover*, -0.4, is significant at the 1% level. This finding corroborates our univariate test results that the presence of long-term institutional investors enhances CSR.

[Insert Table 3 here]

The factors of long-term and short-term institutional ownership are included in models (2)-(5), and serve as the other proxy variables for institutional investment horizons. In model (2), the coefficient on *LTIO* is 0.219, which means that the adjusted CSR score is enhanced by about 0.016 as the level of long-term institutional ownership increases by one standard deviation. In contrast, the estimated coefficient on *STIO* in the subsequent model is -0.157. This result indicates that a one standard deviation increase in the short-term institutional ownership is related to a decrease of about 0.01 in the adjusted CSR score. The result of model (4), which contains both long-term and short-term institutional investors, confirms the findings of models (2) and (3). This set of results indicates that higher long-term institutional ownership stimulates CSR initiatives, whereas higher short-term institutional ownership impedes CSR activities. In addition, the coefficient on $D(LTIO > STIO)$ is significantly positive, indicating that firms with greater long-term institutional ownership tend to conduct more CSR than firms having greater short-term institutional ownership.

The coefficient's signs of the control variables are as predicted. Firms with larger size,

less leverage, and higher market-to-book ratios have higher levels of CSR. In addition, firms with higher profitability and higher organization capital are associated with more CSR.

In Table 4, we estimate the coefficients on institutional investment horizons separately for the CSR strength score and the CSR concerns score, because each score reflects a different facet of CSR. The strength score reflects proactive and precautionary policies, but the concerns score reflects actual negative outcomes from inadequate CSR, such as oil spills or gas explosions (Di Giuli and Kostovetsky, 2014). These scores are denoted as *Adjusted CSR Strengths* and *Adjusted CSR Concerns* for the remainder of this paper.

[Insert Table 4 here]

Model (1) of Table 4 shows that the coefficient on *Turnover* is -0.352, which is significantly negative at the 1% level. In subsequent columns, the coefficients on *LTIO* and *STIO* are significantly positive and negative, respectively, suggesting that firms held by longer-term institutional investors are more engaged in activities concerning *Adjusted CSR Strengths*, but firms driven by shorter-term institutional investors show reduced *Adjusted CSR Strengths*. With respect to *Adjusted CSR Concerns*, the coefficient on *Turnover* is not significant, and the coefficients on both *LTIO* and *STIO* are significantly negative. The results on *STIO* seem to be intuitively appealing in that the concerns score is related to the actual outcomes from CSR. If negative CSR outcomes occur in the near term, the resulting losses will be huge for both short-term and long-term institutional investors. In this perspective, all institutions (regardless of their investment horizon) are more likely to avoid such risk, and thus seek to decrease *Adjusted CSR Concerns*. However, as *Adjusted CSR Strengths* are associated with proactive and precautionary policies in the long-run perspective, investing in those activities may be viewed as unnecessary costs by short-term institutional investors. Thus, as our findings show, firms with higher ownership by short-term institutional investors tend to reduce *Adjusted CSR Strengths*.

[Insert Table 5 here]

With Table 5, we seek to pinpoint the particular dimensions of CSR that are influenced by the investment horizons of institutions. Therefore, we decompose CSR into the six dimensions of community, diversity, employee relations, environment, human rights and products. These decomposed dimensions of CSR are denoted as *Com.*, *Div.*, *Emp.*, *Env.*, *Hum.* and *Pro.*, respectively. The regression analysis in Table 5 shows that *Turnover* is negatively and significantly related to the CSR dimensions of community, diversity, employee relations and environment, but *Turnover* does not appear to have an effect on the dimensions of human rights and products. The extant literature classifies the characteristics of CSR's six dimensions into two main groups (e.g., Hillman and Keim, 2001; Attig and Cleary, 2015). One group is closely linked to the firm's primary stakeholders, and this group includes the dimensions of community, diversity, employee relations, environment and products. The other group reflects participation in social issues, and contains the human rights dimension. Firms can gain efficiency, achieve sustainable competitive advantages and further their long-run benefits by investing in relationships with stakeholders (e.g., Jones, 1995; Hillman and Keim, 2001; Attig and Cleary, 2015). Our results suggest that long-term institutional investors pay more attention to the demands of primary stakeholders that are directly related to the firm's long-term survival.

4.3. Endogeneity issue

Our main findings show a positive relation between institutional investment horizons and CSR. However, our results might be subject to two types of endogeneity concern, omitted variable bias and reverse causality. Although we explicitly control for several determinants that are identified in the prior literature, omitted variables can influence both institutional investment horizons and a firm's CSR, making our observed relation suspicious. Moreover, we argue the casual relation going from institutional investment horizons to CSR, but some of the observed relation could be attributable to long-term institutional investors that prefer to hold

firms with more CSR. Those possibilities could make OLS estimation biased and inconsistent.

To mitigate omitted variable concern, we include institutional investment horizon measures lagged three years and five years (instead of lagged one year) in the regressions, because greater lag in the values of institutions' investment horizons should show less correlation with any current omitted firm characteristics. In addition, using values with greater lag allows for the possibility that institutions with different investment horizons may have delayed effects on CSR.

[Insert Table 6 here]

In Panels A and B of Table 6, all of the results are very consistent with our previous results. They still indicate that the presence of long-term institutional investors increases a firm's CSR ratings, but short-term institutional investors impede CSR activities.

Furthermore, we run two-stage least squares (2SLS) regressions with an instrumental variable (IV) to address reverse causality as well as omitted variable concern. The institutional variable should capture the variation in institutional investment horizons, but be exogenous to CSR. We employ Amihud (2002)'s stock illiquidity measure as the instrumental variable. This is measured by taking an average of absolute daily stock return divided by trading volume (expressed as thousand), denoted by *Illiquidity* for the remainder of this paper. The instrumental variable is motivated by Yan and Zhang (2009). They suggest that short-term institutional investors care more about stock liquidity since they trade more actively. On the other hand, stock liquidity is not likely to affect CSR activities. Hence, the change of institutional investment horizon caused by stock liquidity can be a possible exogenous variation which is useful to reinforce the direction of casual relation.

[Insert Table 7 here]

Results obtained from IV 2SLS estimation are present in Table 7. Model (1) report the first-stage regression with *Turnover* as a dependent variable. *Illiquidity* is significantly and

negatively related to *Turnover*, confirming that short-term institutions prefer stocks with high liquidity. The *F*-Statistics from the relevance test of instrument is 93.62 and significant at the 1% level. Based on the rule of thumb, we reject the null hypothesis that the instrument is weak. The second-stage results are reported in model (2). The coefficient on *Turnover* is -1.066, which is statistically significant. Therefore, our results from 2SLS analysis are consistent with the baseline OLS regression results that the presence of long-term institutional investors induces firms to engage in more CSR.

We also employ a propensity score matching procedure to mitigate reverse causality concern. Rosenbaum and Rubin (1983) show that this concern can be decreased by using a propensity score matching analysis. In particular, based on this method, we can identify a control group of firms that have relatively high institutional investors' turnover ratio but similar other observable firm characteristics compared to firms with low turnover ratio, which are treatment firms. We expect that the treatment firms will engage in greater CSR than the control firms because control firms, except for institutional investment horizons, have similar firm characteristics with treatment groups. We regard firms held by long-term institutions whose turnover ratios belong to bottom quartile as treatment firms, denoted as *Low Turnover*, whereas matching firms, which is denoted as *Control*, are defined as the one with the closest propensity score from the firm in question based on a set of firm characteristics employed as control variables in the baseline regression. We also use industry and year as additional matching criteria. Then, we adopt a nearest-neighbor propensity score matching procedure and match each treatment firm in a given year to a control firm with the closest propensity score in the same three-digit SIC industry in the same year. For a robustness, we also perform the propensity score matching analysis by identifying control firms and treatment firms in terms of long-term and short-term institutional ownership. Firms with long-term (short-term) institutional ownership that belong to top quartile are defined as treatment firms, denoted as *High LTIO*

(*High STIO*).

[Insert Table 8 here]

The results of propensity score matching procedure are reported in Table 8. Panel A reports univariate comparisons between treatment firms and their matched firms. *Low Turnover* groups engage in more CSR activities than *control* groups. In addition, *High LTIO (High STIO)* groups increase (decrease) CSR initiatives relative to control groups. Moreover, we run multivariate regressions to investigate the differences in CSR for the matched pairs of firms. The regression model is as follows:

$$CSR_{i,t} = \alpha_0 + \alpha_1 Treatment_Turnover_{i,t} \text{ (or } Treatment_LTIO_{i,t} \text{ or } Treatment_STIO_{i,t}) \\ + \alpha_2 Control\ Variables_{i,t} + Year\ Dummies_t + Industry\ Dummies_{i,t} + \varepsilon_{i,t} \quad (3)$$

Where *Treatment_Turover* is a dummy variable equal to one if firm *i* at time period *t* is a firm with *Low Turnover*, and zero otherwise. *Treatment_LTIO* is a dummy variable equal to one if firm *i* at time period *t* is a firm with *High LTIO*, and zero otherwise. *Treatment_STIO* is a dummy variable equal to one if firm *i* at time period *t* is a firm with *High STIO*, and zero otherwise.

In panel B, the coefficient of *Treatment_Turnover*, 0.023, is significantly positive. Also, the coefficients of *Treatment_LTIO* and *Treatment_STIO* is 0.033 and -0.017, respectively, in model (2) and (3), which are statistically significant. Taken together, these results indicate that the relations between institutions' investment horizons and CSR are not induced from observed differences in firm characteristics, industry, and year, providing additional evidence that supports our main finding.

4.4. Mechanism

The results far show that institutional investment horizons have a positive effect on CSR. To examine its possible channel, we analyze whether the influence of institutional

investment horizons on CSR depends on the extent of agency problems within a firm. The presence of long-term institutions leads to better monitoring, thereby reducing managers' short-termism and further, agency costs. If our institutional investment horizon measure indeed captures the extent of monitoring about managers, then we expect to observe a larger impact of institutional investment horizons on CSR in a firm with high agency problems. To measure agency problems at the firm-level, we use the index of antitakeover provisions by following previous studies (e.g. Desai and Dharmapala, 2006; Barclay, Holderness, and Sheehan, 2009). For this, we employ Gompers, Ishii, and Metrick's (2003) index of 24 antitakeover provisions (denoted as *GINDEX*), which is obtained from RiskMetrics database. Then, we split our sample into two subsamples: *High (Low) GINDEX* is defined as a firm whose *GINDEX* is in top (bottom) tertile. Firms with *High GINDEX* indicate that they face higher agency problems, compared to those with *Low GINDEX*.

[Insert Table 9 here]

Table 9 presents the results for agency costs subsample approach. Model (1) reports the results for pooled sample, and *Turnover* is significantly and negatively related to CSR. The analyses of *Low GINDEX* and *High GINDEX* are shown, respectively, in model (2) and (3). The coefficients of *Turnover* are significantly negative in both models. However, the coefficient of *Turnover* is much larger for *High GINDEX* firms (-1.024) than for *Low GINDEX* firms (-0.497). Collectively, the results show that the impact of institutional investment horizons on CSR is stronger for firms facing greater agency problems than for those with lesser agency problems.

5. Conclusion

This paper investigates the effects of institutional investor's investment horizons on CSR initiatives. We find that the presence of long-term institutional investors mitigates

managerial short-termism. It appears that long-term-oriented institutions have more incentives to monitor firms, and that these efforts tend to push managers toward engaging in more CSR activities. Specifically, our results show that investment horizon of institutions is positively related to CSR, and also that long-term (short-term) institutional ownership is positively (negatively) related to CSR. Those findings still hold even when endogeneity concerns are addressed. In addition, we find a greater impact of institutional investment horizons on CSR in a firm with high agency problems. Overall, our findings suggest that firms with high CSR activities are preferred by investors with long-term horizons.

Our paper contributes to the limited literature on the determinants of CSR. To date only a few studies have examined the characteristics that drive CSR. We contribute to these studies by measuring the effects of institutional investment horizons on socially responsible policies. Furthermore, our paper sheds light on the research linking institutional investment horizons to a firm's long-term investments. CSR activities can be an important corporate policy for long-term value creation. Particularly, this paper provides evidence on how institutions with different investment horizons influence firm's long-term intangible investments such as CSR activities.

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Appendix: Variable Definitions

| Variable | Definition |
|---|---|
| CSR Variables: | |
| <i>Raw CSR</i> | The sum of six major categories' scores that equals the total number of strengths minus the total number of concerns (Based on Di Giuli and Kostovetsky, 2014). |
| <i>Adjusted CSR</i> | A variable that divides the strength and concern scores for each dimension by its respective number of strength and concern indicators and then subtracts adjusted total concern score from adjusted total strength scores (Based on Deng et al., 2013). |
| <i>Adjusted CSR Strengths</i> | A variable that divides the strengths score for each dimension by its respective number of strength indicators and then sums up adjusted strengths score of each dimension (Based on Deng et al., 2013). |
| <i>Adjusted CSR Concerns</i> | A variable that divides the concerns score for each dimension by its respective number of concerns indicators and then sums up adjusted concerns score of each dimension (Based on Deng et al., 2013). |
| Investment Horizon Variables: | |
| <i>Turnover</i> | Weighted average of institutional investors' churn rates (Based on Gaspar et al., 2005). |
| <i>LTIO</i> | Institutional ownership by long-term investors whose turnover is bottom tertile (Based on Gaspar et al., 2005). |
| <i>STIO</i> | Institutional ownership by short-term investors whose turnover is top tertile (Based on Gaspar et al., 2005). |
| <i>D(LTIO – STIO)</i> | Dummy variable equal to one if institutional ownership by long-term investors is higher than institutional ownership by short-term investors, and zero otherwise (Based on Gaspar et al., 2005). |
| Firm Characteristic Variables: | |
| <i>Firm Size</i> | The natural logarithm of total assets. |
| <i>Book Leverage</i> | Ratio of the sum of short-term debt and long-term debt to total assets. |
| <i>MB Ratio</i> | The natural logarithm of ratio of market value to book value. |
| <i>Firm Age</i> | The natural logarithm of age of firm based on the years listed on Compustat. |
| <i>ROA</i> | Ratio of operating income before depreciation to total assets. |
| <i>OC/Assets</i> | Organization capital scaled by total assets. For a firm in Compustat, starting from the first year with non-missing SG&A expense, the stock of organization capital is constructed by cumulating the CPI-deflated value of SG&A expense based on a depreciation rate of 15%. The initial stock of organization capital is measured with a 10% real growth rate of SG&A expense (Based on Eisfeldt and Papanikoalou, 2013) |
| <i>Industry Concentration</i> | The sum of the squared share of each firm in total industry sales, constructed based on sales at the three-digit SIC level. |
| Instrumental Variables: | |
| <i>Illiquidity</i> | The average of absolute daily stock return divided by trading volume, which is expressed as thousand. |
| Propensity Score Matching Variables: | |
| <i>Low Turnover</i> | A firm held by institutions whose <i>Turnover</i> belongs to the bottom quartile. |

| | |
|--------------------------------------|---|
| <i>High LTIO</i> | A firm with <i>LTIO</i> that belongs to the top quartile. |
| <i>High STIO</i> | A firm with <i>STIO</i> that belongs to the top quartile. |
| <i>Control</i> | A matching firm with the closest propensity score from the firm in question (<i>Low Turnover</i> , <i>High LTIO</i> , or <i>High STIO</i>) based on a set of firm characteristics, industry, and fiscal year. |
| <i>Treatment_Turnover</i> | A dummy variable equal to one if a firm is held by institutions with <i>Low Turnover</i> , and zero otherwise. |
| <i>Treatment_LTIO</i> | A dummy variable equal to one if the firm is a firm with <i>High LTIO</i> , and zero otherwise. |
| <i>Treatment_STIO</i> | A dummy variable equal to one if the firm is a firm with <i>High STIO</i> , and zero otherwise. |
| Subsample Analysis Variables: | |
| <i>GINDEX</i> | Gompers et al. (2003) index of 24 antitakeover provisions |
| <i>High GINDEX</i> | A firm whose <i>GINDEX</i> belongs to top tertile |
| <i>Low GINDEX</i> | A firm whose <i>GINDEX</i> belongs to bottom tertile. |

Table1. Summary Statistics

This table presents distributional statistics for variables used in our analysis. Panel A presents 25th percentile, medians, means, 75th percentile, standard deviations, and number of observations of CSR measures. Panel B and C provide descriptive statistics of institutional investment horizon measures and a variety of firm characteristics, respectively. The sample includes 22,073 firm-year observations from 1995 to 2012.

| Panel A: CSR Measures | | | | | | |
|---|---------|-----------|-----------|-----------|-----------|--------|
| Variables | 25% | Median | Mean | 75% | SD | N |
| <i>Adjusted CSR</i> | -0.250 | -0.089 | -0.083 | 0.083 | 0.287 | 22,072 |
| <i>Raw CSR</i> | -1.000 | 0.000 | -0.111 | 1.000 | 2.184 | 22,072 |
| Panel B: Institutional Investment Horizon Measures | | | | | | |
| Variables | 25% | Median | Mean | 75% | SD | N |
| <i>Turnover</i> | 0.167 | 0.193 | 0.196 | 0.222 | 0.043 | 22,072 |
| <i>LTIO</i> | 0.086 | 0.137 | 0.147 | 0.206 | 0.071 | 22,072 |
| <i>STIO</i> | 0.056 | 0.099 | 0.109 | 0.155 | 0.062 | 22,072 |
| <i>D(LTIO – STIO)</i> | 0.000 | 1.000 | 0.651 | 1.000 | 0.477 | 22,072 |
| Panel C: Firm Characteristics | | | | | | |
| Variables | 25% | Median | Mean | 75% | SD | N |
| Assets (in millions) | 389.079 | 1,270.965 | 3,323.557 | 4,069.438 | 4,382.640 | 22,072 |
| Leverage | 0.030 | 0.173 | 0.203 | 0.309 | 0.191 | 22,072 |
| Market to Book Ratio | 1.315 | 2.081 | 2.876 | 3.407 | 3.263 | 22,072 |
| Firm Age (Years) | 10.000 | 17.000 | 22.581 | 35.000 | 15.781 | 22,072 |
| ROA | 0.060 | 0.121 | 0.115 | 0.178 | 0.122 | 22,072 |
| Organization Capital | 0.169 | 0.449 | 0.611 | 0.843 | 0.598 | 22,072 |
| Herfindahl Index | 0.097 | 0.171 | 0.223 | 0.279 | 0.186 | 22,072 |

Table 2. Univariate Test

This table reports mean and median comparison tests of firms' CSR scores and their firm characteristics between two groups. The sample is split into two subsamples according to whether the weighted average churn rate (*Turnover*) is above or below the sample median. The Appendix provides the definition of all variables. *t*-tests are performed for the difference test in the means, and Willcoxon-Mann-Whitney tests are conducted for the comparison test in the medians. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Variables | Sample with Turnover Rate below Median (N=11,036) | | | Sample with Turnover Rate above Median (N=11,036) | | | Test of Difference | |
|--|---|--------|--------|---|--------|--------|--------------------|-----------|
| | Mean | Median | StdDev | Mean | Median | StdDev | Mean | Median |
| Panel A: Institutional Investment Horizon and CSR | | | | | | | | |
| <i>Adjusted CSR</i> | -0.065 | -0.067 | -0.306 | -0.101 | -0.117 | 0.265 | 0.036*** | 0.050*** |
| <i>Raw CSR</i> | 0.078 | 0.000 | 2.363 | -0.299 | 0.000 | 1.972 | 0.377*** | 0.000*** |
| Panel B: Institutional Investment Horizon and Firm Characteristics | | | | | | | | |
| <i>Firm Size</i> | 7.357 | 7.321 | 1.445 | 7.034 | 6.947 | 1.381 | 0.323*** | 0.374*** |
| <i>Book Leverage</i> | 0.200 | 0.176 | 0.177 | 0.206 | 0.168 | 0.204 | -0.006** | 0.008** |
| <i>MB Ratio</i> | 0.738 | 0.682 | 0.731 | 0.872 | 0.822 | 0.772 | -0.134*** | -0.140*** |
| <i>Firm Age</i> | 2.982 | 2.996 | 0.754 | 2.693 | 2.708 | 0.812 | 0.289*** | 0.288*** |
| <i>ROA</i> | 0.115 | 0.118 | 0.112 | 0.114 | 0.123 | 0.131 | 0.001 | -0.005*** |
| <i>OC/Assets</i> | 0.585 | 0.425 | 0.593 | 0.637 | 0.476 | 0.603 | -0.052*** | -0.051*** |
| <i>Industry Concentration</i> | 0.231 | 0.173 | 0.197 | 0.215 | 0.166 | 0.175 | 0.016*** | 0.007*** |

Table 3. Institutional Investment Horizons and CSR

This table presents the results of regressions of CSR on institutional investment horizons. *Adjusted CSR* is measured by dividing the strength and concern scores for each dimension by its respective number of strength and concern indicators and then subtracting adjusted total concern score from adjusted total strength scores. *Turnover* is the weighted average of institutional investors' churn rates. *LTIO* (*STIO*) is institutional ownership of the firm held by long-term (short-term) investors. Long-term (short-term) investors are defined as investors whose turnover ratio is bottom (top) tertile. $D(LTIO > STIO)$ is a dummy variable equal to 1 if *LTIO* is higher than *STIO*, and 0 otherwise. All independent variables are lagged by 1 year. Variable definitions are provided in the Appendix. All regressions include year and industry fixed effects, defined based on three-digit SIC codes. Standard errors are corrected for clustering at the firm level. *t*-statistics are in parentheses. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Variables | Dependent variable = <i>Adjusted CSR</i> | | | | |
|-------------------------------|--|----------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) |
| <i>Turnover</i> | -0.400*** (-3.99) | | | | |
| <i>LTIO</i> | | 0.219*** (3.27) | | 0.222*** (3.32) | |
| <i>STIO</i> | | | -0.157** (-2.57) | -0.161*** (-2.64) | |
| $D(LTIO > STIO)$ | | | | | 0.021*** (3.24) |
| <i>Firm Size</i> | 0.055*** (10.43) | 0.053*** (9.70) | 0.056*** (10.48) | 0.053*** (9.74) | 0.054*** (10.40) |
| <i>Book Leverage</i> | -0.077*** (-2.67) | -0.079*** (-2.70) | -0.078*** (-2.71) | -0.075*** (-2.59) | -0.079*** (-2.72) |
| <i>MB Ratio</i> | 0.025*** (4.05) | 0.024*** (3.92) | 0.024*** (3.88) | 0.024*** (4.00) | 0.024*** (3.91) |
| <i>Firm Age</i> | 0.001 (0.21) | 0.002 (0.26) | 0.004 (0.61) | 0.001 (0.10) | 0.003 (0.50) |
| <i>ROA</i> | 0.117*** (3.37) | 0.114*** (3.28) | 0.125*** (3.56) | 0.116*** (3.35) | 0.121*** (3.47) |
| <i>OC/Assets</i> | 0.034*** (3.48) | 0.034*** (3.43) | 0.035*** (3.49) | 0.033*** (3.40) | 0.034*** (3.40) |
| <i>Industry Concentration</i> | 0.026 (0.69) | 0.028 (0.74) | 0.028 (0.73) | 0.024 (0.64) | 0.029 (0.76) |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes | Yes |
| Number of obs. | 16,569 | 16,569 | 16,569 | 16,569 | 16,569 |
| Adjusted R ² | 0.253 | 0.252 | 0.252 | 0.253 | 0.252 |

Table 4. Institutional Investment Horizons and CSR Strengths/Concerns

This table presents the results of regressions of CSR strength and concern scores on institutional investment horizons. *Adjusted CSR Strengths* (*Adjusted CSR Concerns*) is measured by dividing the strengths (concerns) score for each dimension by its respective number of strength (concern) indicators and summing adjusted strengths (concerns) score of each dimension. *Turnover* is the weighted average of institutional investors' churn rates. *LTIO* (*STIO*) is institutional ownership of the firm held by long-term (short-term) investors. Long-term (short-term) investors are defined as investors whose turnover ratio is bottom (top) tertile. $D(LTIO > STIO)$ is a dummy variable equal to 1 if *LTIO* is higher than *STIO*, and 0 otherwise. All independent variables are lagged by 1 year. Variable definitions are provided in the Appendix. All regressions include year and industry fixed effects, defined based on three-digit SIC codes. Standard errors are corrected for clustering at the firm level. *t*-statistics are in parentheses. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Variables | <i>Adjusted CSR Strengths</i> | | <i>Adjusted CSR Concerns</i> | |
|-------------------------------|-------------------------------|----------------------|------------------------------|----------------------|
| | (1) | (2) | (3) | (4) |
| <i>Turnover</i> | -0.352*** (-5.94) | | -0.031 (-0.46) | |
| <i>LTIO</i> | | 0.110*** (2.67) | | -0.118*** (-2.73) |
| <i>STIO</i> | | -0.247*** (-6.99) | | -0.148*** (-3.85) |
| <i>Firm Size</i> | 0.087*** (29.03) | 0.087*** (28.27) | 0.041*** (12.98) | 0.043*** (13.25) |
| <i>Book Leverage</i> | -0.103*** (-5.78) | -0.100*** (-5.65) | -0.024 (-1.35) | -0.023 (-1.28) |
| <i>MB Ratio</i> | 0.016*** (3.87) | 0.016*** (3.85) | 0.016*** (3.70) | 0.017*** (3.96) |
| <i>Firm Age</i> | 0.033*** (8.95) | 0.033*** (8.91) | 0.011*** (2.93) | 0.011*** (2.93) |
| <i>ROA</i> | 0.018 (0.88) | 0.021 (1.07) | -0.069*** (-2.93) | -0.062*** (-2.63) |
| <i>OC/Assets</i> | 0.038*** (6.18) | 0.038*** (6.08) | 0.012** (1.96) | 0.012** (1.98) |
| <i>Industry Concentration</i> | 0.055** (2.17) | 0.053** (2.07) | 0.035 (1.35) | 0.034 (1.30) |
| Year fixed effects | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes |
| Number of obs. | 16,569 | 16,569 | 16,569 | 16,569 |
| Adjusted R ² | 0.436 | 0.438 | 0.297 | 0.299 |

Table 5. Institutional Investment Horizons and Different Dimensions of CSR

This table presents the results of regressions of decomposed CSR on institutional investment horizons. *Adjusted CSR* for each dimension (community, diversity, employee relations, environment, human rights, and products) is measured by dividing the strength and concern scores for each dimension by its respective number of strength and concern indicators and then subtracting adjusted total concern score of each dimension from adjusted total strength scores of each dimension. *Turnover* is the weighted average of institutional investors' churn rates. All independent variables are lagged by 1 year. Variable definitions are provided in the Appendix. All regressions include year and industry fixed effects, defined based on three-digit SIC codes. Standard errors are corrected for clustering at the firm level. *t*-statistics are in parentheses. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Variables | Dependent Variable: Decomposed CSR | | | | | |
|-------------------------------|------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | <i>Com.</i> (1) | <i>Div.</i> (2) | <i>Emp.</i> (3) | <i>Env.</i> (4) | <i>Hum.</i> (5) | <i>Pro.</i> (6) |
| <i>Turnover</i> | -0.032* (-1.85) | -0.258*** (-4.36) | -0.063*** (-2.71) | -0.036*** (-2.60) | 0.008 (0.92) | 0.001 (0.03) |
| <i>Firm Size</i> | 0.006*** (7.52) | 0.062*** (23.23) | -0.001 (-1.22) | 0.005*** (6.67) | -0.001*** (-2.87) | -0.014*** (-9.69) |
| <i>Book Leverage</i> | -0.002 (-0.47) | -0.056*** (-3.50) | -0.013** (-2.03) | -0.006 (-1.61) | -0.001 (-0.26) | 0.004 (0.45) |
| <i>MB Ratio</i> | -0.000 (-0.29) | 0.017*** (4.20) | -0.002 (-1.20) | -0.001 (-0.79) | -0.001 (-1.39) | -0.004* (-1.90) |
| <i>Firm Age</i> | 0.003*** (3.03) | 0.017*** (4.85) | 0.001 (0.80) | 0.003*** (2.96) | -0.002** (-2.43) | -0.000 (-0.11) |
| <i>ROA</i> | 0.017*** (2.88) | -0.001 (-0.03) | 0.061*** (7.41) | 0.009** (2.07) | 0.008*** (2.79) | 0.004 (0.36) |
| <i>OC/Assets</i> | 0.006*** (3.57) | 0.037*** (6.35) | -0.005** (-2.51) | 0.000 (0.11) | -0.001 (-0.94) | -0.003 (-1.16) |
| <i>Industry Concentration</i> | 0.000 (0.06) | 0.006 (0.31) | 0.002 (0.24) | 0.007 (0.89) | -0.004 (-1.04) | -0.004 (-0.31) |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of obs. | 16,569 | 16,569 | 16,569 | 16,569 | 16,569 | 16,569 |
| Adjusted R ² | 0.139 | 0.401 | 0.176 | 0.200 | 0.066 | 0.187 |

**Table 6. Institutional Investment Horizons and CSR:
Using the Variables Lagged 3 and 5 Years**

This table presents the results of regressions of CSR on institutional investment horizons. *Adjusted CSR* is measured by dividing the strength and concern scores for each dimension by its respective number of strength and concern indicators and then subtracting adjusted total concern score from adjusted total strength scores. *Turnover* is the weighted average of institutional investors' churn rates. *LTIO* (*STIO*) is institutional ownership of the firm held by long-term (short-term) investors. Long-term (short-term) investors are defined as investors whose turnover ratio is bottom (top) tertile. $D(LTIO > STIO)$ is a dummy variable equal to 1 if *LTIO* is higher than *STIO*, and 0 otherwise. All independent variables are lagged by 3 years and 5 years. Variable definitions are provided in the Appendix. All regressions include year and industry fixed effects, defined based on three-digit SIC codes. Standard errors are corrected for clustering at the firm level. *t*-statistics are in parentheses. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Dependent variable = <i>Adjusted CSR</i> | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|
| Panel A: <i>Three-year lagged</i> | | | | | |
| Variables | (1) | (2) | (3) | (4) | (5) |
| <i>Turnover</i> | -0.399*** (-3.16) | | | | |
| <i>LTIO</i> | | 0.247*** (2.79) | | 0.246*** (2.77) | |
| <i>STIO</i> | | | -0.199*** (-2.68) | -0.198*** (-2.67) | |
| $D(LTIO > STIO)$ | | | | | 0.026*** (3.35) |
| <i>Firm Size</i> | 0.067*** (10.65) | 0.064*** (9.79) | 0.068*** (10.76) | 0.065*** (9.84) | 0.066*** (10.61) |
| <i>Book Leverage</i> | -0.115*** (-3.06) | -0.117*** (-3.06) | -0.116*** (-3.08) | -0.111*** (-2.96) | -0.116*** (-3.07) |
| <i>MB Ratio</i> | 0.040*** (5.11) | 0.038*** (4.96) | 0.039*** (5.02) | 0.039*** (5.05) | 0.039*** (5.02) |
| <i>Firm Age</i> | 0.002 (0.21) | 0.002 (0.21) | 0.004 (0.52) | 0.001 (0.07) | 0.003 (0.37) |
| <i>ROA</i> | 0.125*** (2.76) | 0.123*** (2.70) | 0.133*** (2.91) | 0.125*** (2.75) | 0.129*** (2.83) |
| <i>OC/Assets</i> | 0.058*** (4.56) | 0.058*** (4.51) | 0.058*** (4.56) | 0.057*** (4.46) | 0.057*** (4.50) |
| <i>Industry Concentration</i> | 0.023 (0.50) | 0.025 (0.54) | 0.022 (0.48) | 0.020 (0.44) | 0.024 (0.51) |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes | Yes |
| Number of obs. | 11,489 | 11,489 | 11,489 | 11,489 | 11,489 |
| Adjusted R ² | 0.284 | 0.284 | 0.284 | 0.285 | 0.284 |

| Variables | Panel B: Five-year lagged | | | | |
|-------------------------------|---------------------------|----------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) |
| <i>Turnover</i> | -0.438*** (-2.64) | | | | |
| <i>LTIO</i> | | 0.375*** (3.45) | | 0.368*** (3.36) | |
| <i>STIO</i> | | | -0.257*** (-2.88) | -0.249*** (-2.79) | |
| <i>D(LTIO > STIO)</i> | | | | | 0.044*** (4.65) |
| <i>Firm Size</i> | 0.081*** (10.98) | 0.076*** (9.69) | 0.082*** (11.08) | 0.076*** (9.73) | 0.079*** (10.70) |
| <i>Book Leverage</i> | -0.157*** (-3.24) | -0.157*** (-3.20) | -0.156*** (-3.22) | -0.149*** (-3.09) | -0.153*** (-3.17) |
| <i>MB Ratio</i> | 0.040*** (3.87) | 0.037*** (3.65) | 0.039*** (3.83) | 0.039*** (3.80) | 0.039*** (3.87) |
| <i>Firm Age</i> | -0.006 (-0.56) | -0.007 (-0.65) | -0.003 (-0.31) | -0.008 (-0.77) | -0.005 (-0.52) |
| <i>ROA</i> | 0.179*** (2.85) | 0.172*** (2.76) | 0.189*** (3.02) | 0.174*** (2.80) | 0.182*** (2.91) |
| <i>OC/Assets</i> | 0.076*** (4.79) | 0.075*** (4.74) | 0.076*** (4.79) | 0.074*** (4.66) | 0.074*** (4.67) |
| <i>Industry Concentration</i> | 0.011 (0.19) | 0.012 (0.22) | 0.008 (0.14) | 0.005 (0.10) | 0.009 (0.16) |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes | Yes |
| Clustered at a firm level | Yes | Yes | Yes | Yes | Yes |
| Number of obs. | 8,038 | 8,038 | 8,038 | 8,038 | 8,038 |
| Adjusted R ² | 0.303 | 0.305 | 0.304 | 0.306 | 0.305 |

**Table 7. Institutional Investment Horizons and CSR:
IV 2SLS Regressions**

This table provide the results of two stage least square (2SLS) regressions of CSR on institutional investment horizons, with Amihud (2002) illiquidity measure as the instrumental variable (IV). *Illiquidity* is defined as the average of absolute daily stock return divided by trading volume, which is expressed as thousand. *Adjusted CSR* is measured by dividing the strength and concern scores for each dimension by its respective number of strength and concern indicators and then subtracting adjusted total concern score from adjusted total strength scores. *Turnover* is the weighted average of institutional investors' churn rates. All independent variables are lagged by 1 year. Variable definitions are provided in the Appendix. All regressions include year and industry fixed effects, defined based on three-digit SIC codes. Standard errors are corrected for clustering at the firm level. *t*-statistics are in parentheses. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Variables | 1st Stage | 2nd Stage |
|-------------------------------|------------------------|----------------------------|
| | <i>Turnover</i> (1) | <i>Adjusted CSR</i> (2) |
| <i>Turnover</i> | | -1.066* (-1.74) |
| <i>Illiquidity</i> | -6.175*** (-9.68) | |
| <i>Firm Size</i> | -0.003*** (-6.89) | 0.053*** (10.43) |
| <i>Book Leverage</i> | 0.012*** (4.13) | -0.069** (-2.34) |
| <i>MB Ratio</i> | 0.003*** (5.07) | 0.027*** (4.14) |
| <i>Firm Age</i> | -0.009*** (-13.38) | -0.007 (-0.77) |
| <i>ROA</i> | -0.011** (-2.32) | 0.127*** (3.54) |
| <i>OC/Assets</i> | -0.001 (-1.30) | 0.033*** (3.47) |
| <i>Industry Concentration</i> | -0.013*** (-3.55) | 0.014 (0.38) |
| F-statistics | 93.62 | N/A |
| Year fixed effects | Yes | Yes |
| Industry fixed effects | Yes | Yes |
| Number of obs. | 16,378 | 16,378 |
| Adjusted R2 | 0.437 | 0.246 |

**Table 8. Institutional Investment Horizons and CSR:
Propensity Score Matching Analysis**

This table reports the results of univariate comparisons and multivariate regressions using a propensity score matching procedure to investigate the effects of institutional investment horizons on CSR. *Adjusted CSR* is measured by dividing the strength and concern scores for each dimension by its respective number of strength and concern indicators and then subtracting adjusted total concern score from adjusted total strength scores. *Turnover* is the weighted average of institutional investors' churn rates. *LTIO (STIO)* is institutional ownership of the firm held by long-term (short-term) investors. Long-term (short-term) investors are defined as investors whose turnover ratio is bottom (top) tertile. *Low Turnover* is defined as a firm held by institutions whose *Turnover* belongs to the bottom quartile. *High LTIO (High STIO)* is defined as a firm with *LTIO (STIO)* that belongs to the top quartile. *Control* is a matching firm with the closest propensity score from the firm in question (*Low Turnover, High LTIO, or High STIO*) based on a set of firm characteristics, three-digit SIC industry, and fiscal year. *Treatment_Turnover* is a dummy variable equal to one if a firm is held by institutions with *Low Turnover*, and zero otherwise. *Treatment_LTIO (Treatment_STIO)* is a dummy variable equal to one if the firm is a firm with *High LTIO (High STIO)*, and zero otherwise. In panel B, all independent variables are lagged by 1 year. Variable definitions are provided in the Appendix. All regressions include year and industry fixed effects, defined based on three-digit SIC codes. Standard errors are corrected for clustering at the firm level. *t*-statistics are in parentheses. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Panel A: Univariate Comparison | | | | |
|---|------------------------------------|-------------------------------|----------------------|---------|
| Variables | <i>Low Turnover</i> (N = 5,422) | <i>Control</i> (N = 5,422) | Mean Difference | T-stat. |
| <i>Adjusted CSR</i> | -0.063 | -0.083 | 0.020 | 2.44** |
| Variables | <i>High LTIO</i> (N = 5,392) | <i>Control</i> (N = 5,392) | Mean Difference | T-stat. |
| <i>Adjusted CSR</i> | -0.061 | -0.115 | 0.054 | 5.89*** |
| Variables | <i>High STIO</i> (N = 5,345) | <i>Control</i> (N = 5,345) | Mean Difference | T-stat. |
| <i>Adjusted CSR</i> | -0.104 | -0.087 | -0.017 | -2.51** |
| Panel B: Multivariate Tests | | | | |
| Dependent Variable: <i>Adjusted CSR</i> | | | | |
| Variables | (1) | (2) | (3) | |
| <i>Treatment_Turnover</i> | 0.023** (2.21) | | | |
| <i>Treatment_LTIO</i> | | 0.033*** (2.79) | | |
| <i>Treatment_STIO</i> | | | -0.017* (-1.95) | |
| <i>Firm Size</i> | 0.081*** (14.56) | 0.086*** (12.01) | 0.045*** (6.53) | |
| <i>Book Leverage</i> | -0.104*** (-2.84) | -0.101** (-2.44) | -0.086*** (-2.62) | |
| <i>MB Ratio</i> | 0.020** | 0.038*** | 0.021*** | |

| | | | |
|-------------------------------|----------|----------|--------|
| | (2.53) | (4.14) | (2.84) |
| <i>Firm Age</i> | 0.009 | 0.013 | 0.004 |
| | (1.10) | (1.27) | (0.52) |
| <i>ROA</i> | 0.206*** | 0.164*** | 0.056 |
| | (4.39) | (2.67) | (1.28) |
| <i>OC/Assets</i> | 0.059*** | 0.054*** | 0.013 |
| | (5.09) | (3.53) | (1.24) |
| <i>Industry Concentration</i> | 0.046 | 0.035 | 0.044 |
| | (1.13) | (0.57) | (0.94) |
| Year fixed effects | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes |
| Number of obs. | 8,462 | 9,019 | 7,848 |
| Adjusted R ² | 0.296 | 0.302 | 0.245 |

**Table 9. Institutional Investment Horizons and CSR:
Agency Cost Subsample Analysis**

This table presents the results of regressions of CSR on institutional investment horizons according to subsample analysis of the index of antitakeover provisions (*GINDEX*). *GINDEX* is Gompers et al. (2003) index of 24 antitakeover provisions with higher values indicating weaker corporate governance. *Low (High) GINDEX* is a firm whose *GINDEX* is in bottom (top) tertile. *Adjusted CSR* is measured by dividing the strength and concern scores for each dimension by its respective number of strength and concern indicators and then subtracting adjusted total concern score from adjusted total strength scores. *Turnover* is the weighted average of institutional investors' churn rates. All independent variables are lagged by 1 year. Variable definitions are provided in the Appendix. All regressions include year and industry fixed effects, defined based on three-digit SIC codes. Standard errors are corrected for clustering at the firm level. *t*-statistics are in parentheses. Significance at the 10%, 5%, and 1% is indicated by *, **, ***, respectively.

| Variables | Dependent Variable: <i>Adjusted CSR</i> | | |
|-------------------------------|---|--------------------------|---------------------------|
| | Pooled (1) | <i>Low GINDEX</i> (2) | <i>High GINDEX</i> (3) |
| <i>Turnover</i> | -0.714*** (-3.36) | -0.497* (-1.82) | -1.024*** (-3.44) |
| <i>Firm Size</i> | 0.069*** (7.54) | 0.070*** (5.33) | 0.064*** (4.75) |
| <i>Book Leverage</i> | -0.063 (-1.23) | -0.110* (-1.72) | 0.078 (0.94) |
| <i>MB Ratio</i> | 0.022* (1.89) | 0.025* (1.79) | 0.012 (0.67) |
| <i>Firm Age</i> | -0.035** (-2.24) | -0.026 (-0.99) | -0.057** (-2.47) |
| <i>ROA</i> | 0.196** (2.13) | 0.104 (1.14) | 0.452*** (2.82) |
| <i>OC/Assets</i> | 0.071*** (4.09) | 0.072*** (2.83) | 0.060** (2.35) |
| <i>Industry Concentration</i> | 0.067 (1.12) | 0.011 (0.14) | 0.186* (1.90) |
| Year fixed effects | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes |
| Number of obs. | 7,419 | 3,841 | 3,578 |
| Adjusted R2 | 0.306 | 0.355 | 0.339 |