

It's about Time!
The Influence of Institutional Investment Horizon on Corporate Social Responsibility

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Abstract

The U.S. equity market has witnessed the rising power of institutional investors over the past three decades. Yet, even as these institutional owners become more powerful their effect on corporate social responsibility (CSR) still remains unclear. The present study attempts to fill this gap by examining these investors' influence on CSR along the dimension of investor time-horizon. We find robust evidence that ownership by institutional investors with long investment horizon is positively associated with higher CSR scores while ownership by institutional investors with short investment horizon is either negatively or not significantly associated with CSR scores. The same results hold when we consider ownership by public pension funds, which present a unique case in which a theoretically long-term horizon has recently been questioned, due to pressures towards short-termism. Granger causality tests also show that the direction of the observed effects goes from institutional ownership to CSR and not the opposite.

JEL: G23, G30, M14.

1. Introduction

The U.S. equity market has witnessed the rising power of institutional investors over the past three decades. According to the Conference Board's 2010 Institutional Investment report, institutional investor ownership of total outstanding U.S. equities has increased from 6.1% (\$8.7 billion) in 1980 to 50.6% (\$10.2 trillion) in 2009. The same report indicates that institutional ownership in the top 1000 US corporations grew from 46.6% in 1987 to 73% in 2009. Boehmer and Kelly (2009) add that the volume of trading by institutional investors accounts for up to 96% of the total trading in the New York Stock Exchange. This notable increase in visibility of institutional investors has drawn much attention from academicians, practitioners and policy makers.² Recent studies show, however, that institutional investors exhibit significant heterogeneity and that investment horizon preference is one of the main dimensions that institutional investors differ across (e.g., Gaspar et al., 2005; Derrien et al., 2013). The present study examines whether and how institutional investment horizon matters to corporate social responsibility (CSR). As argued by Neubaum and Zahra (2006), even as these institutional owners become more powerful their effect on CSR still remains unclear. Thus, we attempt to fill this gap.

The 1991 case of the New York City Employees' Retirement System (NYCERS) shareholder intervention in the human resource practice of Cracker Barrel Old Country Store illustrates the way in which institutional owners can exert pressure. Cracker Barrel issued a press release in which it announced a policy that it would not hire individuals "whose sexual preferences fail to

² See, for example, Brickley, Lease, and Smith (1988), Gillan and Starks (2000), Parrino, Sias, and Starks (2003), Hartzell and Starks (2003), Aggarwal, et al. (2011), Helwege, Intintoli, and Zhang (2012), Cuñat, Gine, and Guadalupe (2012), Dutta et al. (2015), and McCahery, Sautner, and Starks (2016).

demonstrate normal heterosexual values,” and soon after fired at least eleven employees based solely on sexual orientation. Cracker Barrel responded to the resulting protests and negative publicity by admitting that the policy “may have been a well-intentioned overreaction to the perceived values of our customers and their comfort levels with these individuals,” (Ayotte, 1999). However, the company did not rehire the terminated employees, nor did it rescind the policy. Motivated by these actions, NYCERS submitted a shareholder’s proposal to add “sexual orientation” to its non-discriminatory hiring policy statement and implement policies related to this statement. The SEC, however, opined that the matter was excluded from shareholder proposals because it related to “ordinary business matters.” The ordinary business exclusion allowed the omission of proposals regarding “routine, day to day matters relating to the conduct of the ordinary business operations,” unless the proposal implicated a significant social policy. Cracker Barrel followed up with an action in federal court. In 1998, the SEC reversed its petition, and that year, after a year-long legal battle, the NYCERS proposal appeared on the Cracker Barrel proxy voting statement (Pettigrew and Whittington, 2001).

The Cracker Barrel incident is an example of the means through which institutional investors can engage with the firms in which they hold ownership to influence issues of corporate policy that go beyond shareholder value.³ It is also a vivid example of the *length of time* and effort that it can take to execute the decision to engage with investee companies on matters related to CSR. It illustrates the meaning of the word “engage” in shareholder engagement, signifying patient, long-term attempts to bring about changes in, or at a minimum call attention to, corporate policy related to governance, environmental, or social policies that affect either the firm’s shareholders or its stakeholders.

³ See Koppell (2011) for an illustration of the long history of corporate engagement.

The investor in the Cracker Barrel case was a large pension fund. In the intervening years, the presence and voice of institutional investors like the NYCERS has increased and their role in advocating for particular aspects of corporate behavior or performance related to CSR has increased (Martin, et al., 2007). And while in this single example we witnessed the eventual success of their intervention, we currently lack definitive answers concerning patterns of successes more broadly, and over a wider range of CSR-related issues. Such institutional investors are not a homogenous group. They are differentiated in numerous ways, for instance by the extent to which they are regulated, whether the institution is a controlling shareholder or not, whether they are diversified or concentrated in their investments, how they are compensated for the success of their portfolios, and the length of time they hold their investments either due to liquidity needs or performance enhancement (see Martin et al. 2007 for a discussion of these differentiating factors). In this study, we focus on this last characteristic, the investment horizon. Engagement involves deliberate and active participation in the corporate policies and management of investee firms and can involve navigating regulated and constrained channels for engagement (e.g., the courts, SEC, or voting cycles). It is, thus, best-suited for those who have the time to effect change through these channels.

In this paper, we investigate the degree to which investment horizon impacts the CSR outcomes for institutional investors. We find that ownership by institutional investors with long investment horizon is positively associated with higher CSR scores, while ownership by institutional investors with short investment horizon is either negatively or not significantly associated with CSR scores. The same results hold when we consider ownership by Public Pension Funds: Only those with long investment horizons are associated with higher CSR scores. Granger causality tests show that the direction of the identified positive association between long term institutional

ownership and CSR goes from long term institutional ownership to CSR scores and not the opposite. Our study suggests that the ability to engage, and the success of engagement, is related to the length of time available to the investor to pursue such engagement. Time horizon, then, matters.

Several motivations ground this study. First, in recent years, investment time horizons have, on average, been shrinking (Kay, 2012) due in part to the increased presence of so-called ‘high-frequency’ investors which now accounts for an estimated 70% of US equity trading.⁴ Such investors hold shares for a period of seconds only (Clarke, 2014), and frequently use computerized order-matching venues (so called “automated trading systems”) rather than human interaction, to consider and execute investment decisions (Dean, 2013). Indeed, their investment horizons are becoming even shorter:

It is the latest salvo in the “race to zero,” traders’ term for their efforts to whittle away the difference between the speed their orders travel at and the speed of light. Zero, the point at which that difference would disappear, has become a kind of holy grail to computerized traders, for whom nanoseconds—billionths of a second—can spell the difference between profit and loss in their algorithm-driven trades. (Patterson, 2014).

Second, the role played by these (and other) short-term investors has recently been problematized and subjected to scrutiny, including calls for increased regulation. The Kay report in the UK on short term investing was perhaps the most high profile critique of both the practice of, and institutional investors that practice, short-termism. Calls to regulate (and reduce or

⁴ As stated above, according to Boehmer and Kelly (2009), the volume of trading by institutional investors accounts for up to 96% of the total trading in the NYSE.

eliminate) these behaviors imply the need for research that develops a greater understanding of these kinds of investors.

Third, advocacy by institutional investors can draw even individual and retail investors along and influence their participation in engagement. In the Cracker Barrel case, for example, the shareholder lawsuit by the NYCERS paved the way for individual investors who attended the meeting and voted alongside NYCERS. Thus, research concerning institutional investors' impact on CSR has implications that reach beyond this setting.

The current study contributes to three inter-related streams of literature. First, there is a growing literature linking investment horizon to corporate behavior, such as R&D expenditures (e.g. Bushee, 1998; David et al., 2001), mergers and acquisitions (Gaspar et al., 2005), cost of debt (Elyasiani et al., 2010), corporate payout policy (Gaspar et al., 2012; Dutta et al. 2015), and investment to cash flow sensitivity (Attig et al., 2012). As noted by Hartzell and Starks (2003), though long-term investors could affect corporate policies by active monitoring, short-term investors could affect corporate policies through their trading strategies and preferences. We extend the extant literature by investigating whether institutional investment horizon influences corporate social responsibility.

Second, the literature is inconclusive about the type of institutional investors that is more suitable to a firm (e.g. Brancato, 1997; Bushee, 1998; 2001; 2004; Burns et al., 2010; Porter, 1992; Yan and Zhang, 2009). For instance, Bushee (2004) and Gaspar et al. (2005) argue that long-term institutional investors are more desirable than ownership by short-term ones because of their superior monitoring role which has a positive effect on firm's value in the long run. However, Yan and Zhang (2009) argue that a firm is better off attracting short-term institutional investors because they are more informed than long-term institutional investors, which translate into better

price discovery and lower cost of equity capital. More recently, however, Attig et al. (2013) find that holding by long-term institutional investors leads to a lower firm's cost of equity capital than short-term institutional ownership. Moreover, McCahery et al. (2016) find that long-term institutional investors tend to engage more intensively in shareholder activism and monitor corporate managers than short-term institutional investors. Recently, the "Calpers effect", so named for the potential for institutional pension fund shareholder engagement to impact firm value, has been investigated (Nelson, 2006; English, Smythe and McNeill, 2004).

Motivated by the importance of better understanding not only the actions of institutional investors, but the increasing presence of transient investors juxtaposed with the need for "patient" capital to effectively engage with companies, the study develops in the next section the conceptual framework and hypotheses before turning to results. Section 3 presents the sample and data sources. The empirical design is outlined in Section 4. Sections 5 and 6 present the descriptive statistics and the regression results. Section 7 is devoted to the robustness tests. The last section concludes the paper.

2. Conceptual background and hypothesis development

One of the primary reasons for increased shareholder activism beginning in the late 1980s and early 1990s was the emergence of the institutional investor. Before the advent of the institutional investor, the lack of adequate means of communication among individual shareholders and the unresponsiveness to individual shareholder activism served as a barrier to most shareholder participation (Mueller, 1998). But the nature and structure of the institutional investment field has changed since the emergence of this powerful investor block. Now increasingly dominated by investors whose time horizons are shortening at a rapid pace, today's markets are changing the very nature of the institutional investor's propensity and ability to engage.

Research has investigated whether there are links between the type of investor and the CSR activities of firms in which they invest. Such research has differentiated, for instance, between pension funds versus investment firms, finding increased influence on people and product quality dimensions of CSR for pension plan asset managers (Johnson and Greening, 1999). Kim, et al., (2014) find that *local* (geographically) institutional ownership reduces the amount of toxic chemicals released by local facilities into the environment. Cox, et al. (2008) find that whether a pension plan is public (and facing political pressure) or private, as well as where the fund management decisions are made (whether external to the pension fund or made internally) matters, and influences the types of CSR factors that firms in their portfolios exhibit.

Research has also investigated the nature of the investor that CSR-intensive firms attract. Graves and Waddock (1994) find that CSR activities tend to lead to an increase in the number of institutional investors holding a given stock. One of the reasons why pension funds and related institutional investors (e.g., universities, and religious, charitable, and not-for-profit institutional investors) may seek out higher-CSR performing firms is that such funds are exposed to social norms and public scrutiny. Cahan et al. (2015), for instance, find that firms with superior CSR performance have greater ownership by what they define as “norm-constrained institutions”, consistent with positive screening. Faccio and Lasfer (2000), on the other hand, find that occupational pension funds are not effective monitors of firms in which they hold large shareholdings over the long term.

A limited amount of research has investigated whether the investment horizon influences CSR activity. An older stream of literature suggested two conflicting characterizations of institutional owners. The first claim theorized that institutional owners are myopic investors who are only interested in maximizing their own short-term financial performance (Porter, 1992), while the

second suggested that they are long-term, active, and vigilant investors (Useem, 1996). Other research on time horizon has examined the effect of institutional investors on the relationship between corporate expenditure and R&D (e.g. David et al., 2001) and innovation (Kochhar and David, 1996). Neubaum and Zahra (2006), however, suggest that institutional investors' investment horizons (as well as the frequency and coordination of institutional owners' activism), affect the salience of their demands on firm management. Cox and Wicks (2011) examine the extent to which corporate responsibility influences the demand for a firm's shares. Following Bushee (1998) in categorizing institutional investors as dedicated or transient, Cox and Wicks (2011) find that transient institutional investors are least motivated by corporate responsibility, but that evidence of corporate responsibility influences the demand for shares by dedicated institutional investors. Apart from this limited body of work, CSR researchers have overlooked the influence of institutional investors' time horizon on CSR, focusing instead on investor type. Thus, literature has still offered no definitive links to the ability of time horizon to systematically influence CSR.

Investors differ in their needs for liquidity, and in their willingness to trade in the short-term. Those with longer term capital needs and ability to hold investments over longer time periods thus have the flexibility to develop a long-term perspective on their investments (Monks and Minow, 1996). The forms of institutional investor engagement that are required to influence CSR involve time. These methods take the shape of medium term actions such as attending meetings with management and exercising voting rights, to longer term actions like submitting shareholder resolutions and developing joint institutional investor engagement, wherein other investors are sought out to form alliances to undertake engagement practices (Gong, 2013; Martin et al. 2007). The issues on which engagement practices, specifically shareholder resolutions, have tended to

focus include all aspects of environmental, social responsibility, and governance concerns. Consequently, there is the potential for increased influence from institutional investors with sufficient time to work within the institutional, regulatory and structural conditions required for particular forms of engagement to influence CSR.

We thus prioritize investment horizon as an important determinant in the *ability* for an investor to influence the firms comprising its portfolio. We distinguish time, rather than type, since type can comprise different horizons. For instance, pension funds who outsource fund management to external asset managers are argued to have shorter time horizons than those who manage portfolios internally; mutual fund managers with value style orientations are suggested to have longer term horizons than those with growth orientations, and mutual funds are a distinctly non-homogenous group, with a range of products encompassing a wide spectrum of investment styles to meet the different market niches presented by the retail investment market they operate in (see Cella et al. (2013) for examples of these arguments). Drawing on the above discussion, we posit the following hypothesis:

H₁: Institutional investors with long-term investment horizon have a positive effect on CSR.

By contrast, the very nature of the trading process of transient investors means that they are likely unmotivated to participate in the forms of corporate engagement that are intended to produce changes to CSR-related activities in their portfolio companies. Not only does this barrier exist because of the nature of the process of shareholder engagement (which prioritizes long term, ‘patient’ capital), but the very nature of the time horizon changes the potential interest in long-term fundamentals of the company and its social, environmental, and governance issues. Shorter timescales for considering performance, and the inherent relatively slower changes in

market prices in response to changes in the fundamental value of a company's securities, creates an incentive for the investor to focus on the behavior of other market participants to determine trading decisions, rather than on understanding and having an influence on the underlying value of the business, and its impact in society (Kay, 2012). Prior studies show that short-term investors push for actions that are profitable in the short term but are detrimental to firm value in the long term. For instance, Bushee (2001) finds that transient institutions have a strong preference for near-term earnings. Burns et al. (2010) document that institutional investors with short investment horizons are positively associated with both the use of discretionary accruals and the likelihood and severity of financial restatements. This line of reasoning leads to the following hypothesis:

H₂: Institutional investors with short-term investment horizon have a negative effect, if any, on CSR.

Our study is also interested in public pension funds (PPS), which with their high political profile, large asset values, and the active participation of workers and the labor movement in their investment activities, have become a natural target for their participation in CSR promotion (Arnold and Hammond, 1994; Neu and Taylor, 1996). Pension funds have been identified in research as a highly active site for the importance of investing along CSR-related lines (Cumming and Johan, 2007; Hebb, 2006; Sethi, 2005; Sievänen, et al., 2013). Though the fiduciary duty of pension funds to focus on financial factors alone during the investment process was the main barrier to their becoming more involved into shareholders activisms, this legal barrier has been at least partially removed since the publication of the Freshfield's legal report in 2005 which concluded that the integration of environmental, social, and governance (ESG) principles in investment analysis was legally acceptable (Freshfields, 2005; UNEPFI2009). The

features of this investor type, and the loosening of legal restrictions, lead us to conclude that public pension funds have a positive influence on CSR practices of the firms they hold.

However, although a “natural” target, it is puzzling why pension funds have not induced greater change than expected (Eurosif, 2012). To address this puzzle, we further develop our analysis along the time horizon of public plans. Pension funds that use external investment managers are thought to risk investing with short term results in mind (Cox, et al., 2008). Guyatt (2005), for instance, shows that fund managers may have long-term investment plans, however “are pushed towards managing against shorter-term goals since that is the basis upon which their performance is measured and assessed.” (p. 142). In addition, because of how their results are externally reported, pension funds, both private and public, are becoming more concerned with short-term goals. The move to accounting treatments introduces new forms of volatility in earnings and balance sheet values. For example, the IFRS recent focus on fair value measurements has been adapted for public plans with recent changes by the Governmental Accounting Standards Board (GASB),⁵ creating additional incentives to shorten the time horizon of investment portfolios (see Franzen (2010) for a discussion of accounting regulations and investment focus for pension plans). We expect, then, that pension funds, in contrast to acting as a single cohort in their interest in, or influence on, CSR objectives, will exhibit difference according to their behavior as either long-term or short-term investors. Those acting on a long-term investment horizon should, according to their role as engaged, long-term capital providers with political and social motivations, have a positive influence on CSR practices. By contrast, those influenced by short-term results should have no particular influence.

⁵ GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*

H_{3a}: Public pension funds with long-term investment horizons will have a positive effect on CSR.

H_{3b}: Public pension funds with short-term investment horizons will have no effect on CSR.

3. Sample and data sources

We gather information on firms' CSR practices from the Kinder, Lydenberg, and Domini (KLD) database. We obtain data on institutional ownership from the Thomson Financial database. Financial statement, and stock market data come from Compustat and CRSP databases, respectively. As in Di Giuli and Kostovetsky (2014), we restrict our time period to 2003–2009 and this is for two reasons: First, the MSCI ESG Research, the successor of sustainability pioneers KLD, introduced significant ratings methodology changes in 2010.⁶ Second, it is only in 2003 that KLD's coverage expanded to the Russell 3000. After merging the four databases, we end up with 14,403 observations relative to 3,440 unique firms.

KLD rates companies along six dimensions of corporate social responsibility: community, diversity, employee relations, environment, human rights, and product.⁷ In each issue area, KLD provides ratings, of either a zero or one, for a number of “strengths” and “concerns”. Consistent with previous studies in CSR (e.g., Borghesi et al., 2014; Di Giuli and Kostovetsky, 2014), we first calculate CSR scores for each issue area where each strength adds one point to the score while each concern subtracts a point from the score. Then, we add up the CSR scores across the six issue areas to get the aggregate CSR Score.

⁶ See MSCI ESG STATS User Guide & ESG Ratings Definition June 2011.

⁷ We exclude KLD's corporate governance category in computing our CSR score.

For our sample period, KLD ratings are available for 61 categories. Two of these categories, the community-related “Volunteer Programs Strength” and the environment-related “Management Systems Strength” are not available for the entire sample period and are dropped from the analysis.⁸ The total CSR index ranges between -9 and +13.

We categorize institutional investors into those with long investment horizon and those with short investment horizon using the classification in Bushee (2001) and Bushee and Noe (2000). These two studies classify institutional investors into three categories: transient, quasi-indexer and dedicated. Dedicated institutional investors have low turnover and more concentrated portfolio holdings. Quasi-indexer institutional investors have low turnover and diversified portfolio holdings. Transient institutional investors have high portfolio turnover and diversified portfolios (Bushee, 2001). Both quasi-indexer and dedicated institutional investors have low turnover, we classify them as long term institutional investors. Transient institutional investors are classified as short term institutional investors.

4. Research Design

To test our hypotheses, we estimate the following model:

$$CSR_{i,t} = a_0 + a_1 Long_IO_{i,t-1} + a_2 Short_IO_{i,t-1} + \sum_{j>2} a_j Firm\ Controls_{j,t-1} + \psi_i f_i + \varepsilon_{i,t} \quad (1)$$

where *CSR* is total Kinder, Lydenberg, and Domini (KLD) Score; *Long_IO* is ownership by institutional investors with long investment horizon (dedicated and quasi-indexers); *Short_IO* is ownership by institutional investors with short investment horizon (transient); *f_i* stands for year fixed and industry fixed effects. Firm controls are variables that have been shown in prior literature to affect CSR (e.g. Borghesi et al., 2014; Di Giuli and Kostovetsky, 2014), and include

⁸ “Volunteer Programs Strength” was added in 2005 and the environment-related “Management Systems Strength” was added in 2006.

firm size, return on assets (*ROA*), cash, dividends, debt, and book-to-market (*BTM*). We expect positive coefficients for firm size, *ROA*, cash, dividends and negative coefficients for debt and *BTM*.

We defined firm size as the natural logarithm of total assets, *ROA* as the ratio of income before extraordinary items to total assets, and *BTM* as the ratio of book value of equity over the market value of equity, where market value of equity is measured as absolute value of price times the number of shares outstanding. *Cash* is the ratio of cash balances over total assets, *Dividends* is the ratio of cash dividends over total assets, and *Debt* is the ratio of total debt (the sum of long term and short term debt) over total assets. Appendix B presents the definitions of all variables that are used in the analysis. All the independent variables are measured with one year lag to reduce endogeneity problems. To mitigate the influence of potential outliers, we winsorize all continuous variables at 1st and 99th percent levels. Also, we cluster the standard errors at the firm level to control for the common variance among observations within a particular firm.

In estimating model (1), we focus on the coefficients a_1 and a_2 capturing the effect of ownership by institutional investors with long and short investment horizon on CSR score, respectively. We expect a positive coefficient for a_1 and a negative coefficient for a_2 .

5. Descriptive statistics

We report summary statistics of the variables used in the regression analysis in Table 1. Panel A provides descriptive statistics for the dependent variables: Aggregate CSR score as well as CSR attributes. The average CSR score is -0.379 and its standard deviation is 1.926 . Our statistics are similar to those reported by Cahan et al. (2015) who document an average CSR score of -0.2517 with a standard deviation of 1.8809 over the period 1991–2011. The mean CSR score for the product dimension, the environment dimension, the employee relations dimension, and the

human rights dimension is -0.166 , -0.108 and -0.241 , -0.052 respectively. The negative measures indicate that within these categories, the average firm has more weaknesses than strengths. In contrast, we find that the average measure is positive for the community dimension (0.019) and the diversity dimension (0.169).

Panel B reports descriptive statistics for the main independent variables. It shows that, on average, institutional investors hold 55.1% of firm stock, with 38.6% held by institutional investors with long investment horizon and 15.2% held by institutional investors with short investment horizon. Panel C reports descriptive statistics for the control variables. The average firm has a book to market ratio of 0.77 and a debt to total assets ratio of 0.22. On average cash represents 19.6% of total assets and dividends represent 1% of total assets. These descriptive statistics are comparable to the ones reported by Di Giuli and Kostovetsky (2014).

Table 2 reports Pearson correlations between the independent variables used in the main analysis. It generally reports low correlation coefficients among these variables, which mitigates the concern that multicollinearity could affect our regression results. In addition, we compute the variance inflation factor (VIF) of the regression variables. The VIF scores range from 1.05 and 1.65 with a mean of 1.24, indicating the absence of a multicollinearity issue.

6. Empirical results

For ease of interpretation of regression coefficients, we standardise the CSR score to have a mean equal to 0 and a standard deviation equals to 1. Table 3 reports the regression results of institutional ownership on the overall CSR score. In Panel A, we report results for total institutional ownership. In Panel B we distinguish between institutional investors with long

investment horizon and those with short investment horizon. Panel C reports the results for each KLD issue area.

In column 1 and 2 of Panel A, we use *OLS* and control for year fixed effects while in column 3 we report the results using *Fama MacBeth*. The results show that the estimated coefficient on total institutional ownership is not statistically significant. This is consistent with Barnea and Rubin (2010) who find no correlation between CSR and institutional ownership. Our results conflict however with the findings of Harjoto and Jo (2011) and Borghesi et al. (2014). The former study documents a positive link, while the latter concludes that companies with stronger institutional ownership are less likely to invest in CSR.

With respect to control variables, consistent with the previous findings in the literature, our results show that firms with large size, more cash (Borghesi et al. 2014, Di Giuli and Kostovetsky, 2014) and those with higher dividend distribution (Di Giuli and Kostovetsky, 2014) have higher CSR scores, while firms with more debt and larger book to market ratio have lower CSR scores (Di Giuli and Kostovetsky, 2014).

In Panel B, we present the results after classifying institutional investors according to their investment horizon. Consistent with our first hypothesis, we find that ownership by institutional investors with long investment horizon is positively associated with CSR score. The positive association between long term institutional ownership and CSR score is not only statistically significant, but also economically meaningful. The estimated coefficient on long term institutional ownership is 0.2415 which means that a one-standard deviation increase in ownership by long term institutional investors is associated with an increase of 0.2415 standard deviations in the CSR Score.

We also find that ownership by institutional investors with short investment horizon is negatively associated with CSR score. The estimated coefficient on short term institutional ownership is 0.3811 which means that a one-standard deviation increase in ownership by short term institutional investors is associated with a decrease of 0.3811 standard deviations in the CSR Score. This result is consistent with Gaspar et al. (2005) findings that ownership by institutional investors with a short-term investment horizon diminishes the bargaining power of target firms during merger negotiations as well as with Burns et al.'s (2010) findings that institutional investors with short investment horizons are positively associated with both the use of discretionary accruals and the likelihood and severity of financial restatements. Nevertheless, in the robustness check section we show that the association between ownership by institutional investors with short investment horizon and CSR score becomes statistically insignificant when we add firm fixed effects to our regression model to lessen the concern of omitted correlated variables problem.

In Panel C, we examine the effect of long versus short institutional ownership for each KLD issue area. We find a positive effect of long term institutional ownership on the product, human and environment issue areas and no association for the other issue areas, while we find a negative coefficient of short term institutional ownership on community and diversity issue areas. These results suggest that during our sample period, long term institutional investors prioritized the product, human and environment issue areas.

Our findings along each of the six issue areas for long investment horizon investors suggest that institutional investors may devote their efforts in concentrated areas, rather than simply across the board. As indicated in the introduction to this study, the process of influencing the CSR activities of investee firms is costly and involves effort (time and resources). Investors may be

unable to devote focused resources to all areas of CSR, and at any given time period, certain issue areas may be given more priority (SHARE, 2014). In addition, institutional investors do not always act individually in pursuing their aims for CSR. Institutional investor coalitions frequently act together to achieve the needed votes on shareholder resolutions (a recent example is the *Aiming for a* coalition which acted in concert with the express purpose to “amplify longer-term investor voices”⁹ to achieve changes at British Petroleum), and thus the universe of CSR issues may be narrowed according to those deemed most pressing in a given period, and may be influenced by an isomorphic effect in the group. This provides interesting avenues for future research, since to-date the coordinated activities of institutional investors, as well as the idea that issue areas may come in “cycles”, has been left largely unexplored.

In Table 4, we restrict our analysis to a particular type of institutional investors – public pension funds (PPS) – and examine whether their investment horizon matter to CSR. In Panel A, we examine the effect of PPS on overall CSR score, while in Panel B we examine the effect for each KLD issue area. In the first column of Panel A, we regress CSR on total ownership by public pension funds, and in Column 2 we split public pension funds into those with long investment horizon and those with short investment horizon. Consistent with the prior literature (Cahan, et al. 2015, Di Giuli and Kostovetsky, 2014), the results reported in Column 1 show a positive association between public pension fund ownership and CSR score. The estimated coefficient using OLS is 3.4821 meaning that that a one-standard deviation increase in ownership by PPS is associated with a decrease of 3.4821 standard deviations in the CSR score. More importantly, we find that this positive association stems from PPS with long investment horizon. Indeed, the results, reported in column 2, show that ownership by PPS with short investment horizon is not

⁹ *Aiming for A Shareholders Resolution*, available at: <http://www.bp.com/en/global/corporate/investors/annual-general-meeting/notice-of-meeting/shareholder-resolution.html>

associated with CSR score, while ownership by PPS with long investment horizon is positively and significantly associated with CSR score. Since CSR Score is standardized, the OLS estimated coefficient of 4.1896 on long term PPS ownership implies that a one-standard deviation increase in institutional ownership by such investors is associated with an increase of 4.1896 standard deviations in the CSR Score. We report similar results in columns 3 and 4 using *Fama MacBeth* instead of *OLS*. In Panel B, we examine the effect of PPS ownership for each KLD issue area. We find that long term PPS have a positive effect on all KLD issue areas except diversity while short term PPS do not affect any of the KLD issue areas.

Despite having a theoretically long-term investment horizon due to the long-term nature of their liabilities, PPS may still *behave* like transient investors. The presence of short-term monitoring cycles for accounting regulations (Franzen, 2010), and the hiring and termination processes for external investment managers (Cox, et al., 2008) may shorten the investing strategies of PPS. As our findings suggest, it is the presence of PPS who behave and invest as long term, patient capital that positively influences the CSR activities of the firms in which they invest.

7. Robustness

We acknowledge that endogeneity, particularly omitted variables and reverse causality, is an issue in our setting. We conduct additional analyses to address these concerns. We also conduct other robustness tests such as the use of alternative classification of institutional investors, and decile-rank of CSR instead of the standardized CSR score.

Omitted correlated variable problem

To address the concern that our results suffer from an omitted correlated variable problem, we add firm fixed effects to our regression model. The results are reported in Table 5. We find that

short term horizon institutional ownership is not associated with CSR score. In comparison to our main regression results, short term institutional loses its statistical significance when we introduce firm fixed effects. This is due to the fact that by adding firm fixed effects, we are looking at the time series variation only which is expected to be much lower than the cross sectional variation. However, consistent with our hypothesis, we find that long term institutional ownership continues to be positively associated with CSR scores. The second column of the table reports the results for PPS. Similar to our previous findings, only PPS with long investment horizon have a positive effect on CSR score, while those with short investment horizon do not impact CSR. Overall our results are consistent with McCahery et al. (2016) findings that long term investors intervene more intensively than short term investors.

Reverse causality

Reverse causality is a potential concern. For instance, Cox and Wicks (2011) find evidence that corporate responsibility influences the demand for shares by dedicated institutional investors. To draw conclusions on whether long term institutional investors affect CSR or vice versa, we perform Granger causality test. Following Cvijanovic et al. (2015) and Dyck et al. (2015), we include firm fixed effects to ensure that we only exploit within firm time series heterogeneity in our panel data set. First, we regress CSR score on lagged long term institutional ownership, lagged CSR score, and lagged control variables. Second, we regress long term institutional ownership on lagged CSR score, lagged long term institutional ownership, and lagged control variables. The results, reported in Table 6, indicate that lagged long term institutional ownership affects CSR score even after controlling for lagged CSR score. However, after controlling for lagged long term institutional ownership, lagged CSR score does not affect long term institutional ownership. These results are consistent with the interpretation that long term

institutional ownership drives CSR score and not the opposite. We find similar results when we restrict our analysis to public pension funds.

Other robustness tests

We conducted three more robustness tests to check the validity of our results. First, we transform the CSR score into decile ranks. The results reported in Table 7 show that long term institutional ownership is positively associated with the CSR decile rank while there is a negative association between short term institutional ownership and CSR decile rank. Second, Bushee provides an alternative classification of institutional investors, the Permanent Transient/Quasi-indexer/Dedicated classification. We repeat our analyses using this alternative measure. The results, reported in Table 8, show that our inferences remain the same. In particular, ownership by institutional investors with long investment horizon is positively associated with CSR scores and ownership by institutional investors with short investment horizon is either negatively or not associated with CSR scores. Third, in unreported results, we repeat all our analyses after controlling for industry fixed effects using the (1) Fama French 49–industry classification as well as (2) Campbell’s (1996) classification, instead of the Fama French 12–industry classification, and find that our inferences remain qualitatively the same. .

8. Conclusion

Several studies examine the effect of aggregate institutional ownership on corporate policies. However, a more recent stream of literature shows that short and long-term institutional investors exhibit different behavior. This paper extends the extant literature by investigating whether institutional investment horizon influences corporate social responsibility. Using a large sample of U.S. listed firms we find that ownership by institutional investors with long investment horizons is positively associated with CSR scores, while ownership by institutional investors

with short investment horizons is either negatively or not associated with CSR scores. Further, we restrict our analysis to public pension funds and find that only those with long investment horizons are associated with higher CSR scores.

We thus begin to fill the gap in our knowledge of whether, and to what extent, time horizon impacts the influence that institutional investors can have on CSR. This is an important gap to fill, given the resources dedicated to responsible investment worldwide. Assuming the desirability of CSR, if time horizon is indeed a mitigating factor in whether investee firms operate according to the aims of CSR, then efforts need to be devoted to understanding how to encourage longer term investment horizons, or to avoid the shortening of already-long investment horizons. These conclusions support the call by Kay (2012) to work within all parts of the investment chain to remove incentives for short term investment behaviors. Our study is consistent with work that has explored investment horizon on investee firms' decisions on, for example, expenses related to R&D and innovation. But focusing on CSR has also opened up other areas for potential future research. We have identified the potential for work that examines CSR-related engagement in cohorts, and have found evidence that CSR is applied selectively, and not across the board, by institutional investors.

Our findings are in line with the stream of literature showing that a firm is better off attracting institutional investors with long-term investment horizon (Porter, 1992; Brancato, 1997; Bushee, 2004). Our study also stresses the importance of distinguishing the institutional investors' investment horizon in the empirical analyses. Public pension plans, in particular, do not act as a single, monolithic entity, despite the popular view that they are a natural "site" for CSR-related investing activities. Given the priority recently placed on the problems associated

with short-termism in the markets (Kay, 2012), our finding suggests the need for more work to disentangle and identify the factors at work which produce short-termism.

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Appendix A

Corporate social responsibility: KLD Scores

The paper considers six corporate social responsibility areas: Community, Diversity, Employee relations, Environment, Human rights, and Product characteristics. The strengths and concerns of each area are detailed below. The KLD Strengths (Concerns) score for a given area is equal to the number of strengths (concerns) in that area. The KLD area score is equal to the number of area strengths minus the number of area concerns. The overall KLD score is equal to the sum of all areas' KLD scores.

KLD component	Strengths	Concerns
Community	– Charitable giving	– Investment controversies
	– Innovative giving	– Negative economic impact
	– Non-US charitable giving	– Tax disputes
	– Support for housing	– Community other concerns
	– Support for education	
	– Community other strength	
Diversity	– Promotion	– Controversies
	– Work/life benefits	– Diversity other concerns
	– Women and minority contracting	
	– Employment of the disabled	
	– Gay and lesbian policies	
	– Diversity other strength	
Employee relations	– Union relations	– Union relations
	– Cash profit sharing	– Health and safety concern
	– Employee involvement	– Workforce reductions
	– Retirement benefits strength	– Retirement benefits concern
	– Health and safety strength	– Employee relations other concerns
	– Employee relations other strength	
Environment	– Beneficial products and services	– Hazardous waste
	– Pollution prevention	– Regulatory problems
	– Recycling	– Ozone depleting chemicals
	– Clean energy	– Substantial emissions
	– Environment other strength	– Agricultural chemicals
		– Climate change
	– Environment other concerns	
Human rights	– Indigenous peoples relations strength	– Burma concern
	– Labor rights strength	– Labor rights concern
	– Human rights other strength	– Indigenous peoples relations concern
Product characteristics	– Quality	– Human rights other concerns
	– R&D/Innovation	– Product safety
	– Benefits to economically disadvantaged	– Marketing/contracting concern
	– Product other strength	– Antitrust
		– Product other concerns

Appendix B

Variable, Definitions, and Sources

Variable	Definitions	Source
Panel A. CSR variable		
<i>CSR</i>	The sum of the community, diversity, employee, environment, human rights, and product characteristics qualitative issues areas scores	Authors' calculations based on KLD data
<i>CSR-COM</i>	The community score equals the number of strengths minus the number of concerns in the community issues area.	As above
<i>CSR-DIV</i>	The diversity score equals the number of strengths minus the number of concerns in the diversity issues area.	As above
<i>CSR-EMP</i>	The employee relations score equals the number of strengths minus the number of concerns in the employee relations issues area.	As above
<i>CSR-ENV</i>	The environment score equals the number of strengths minus the number of concerns in the environment issues area.	As above
<i>CSR-HUM</i>	The human rights score equals the number of strengths minus the number of concerns in the human rights issues area.	As above
<i>CSR-PRO</i>	The product score equals the number of strengths minus the number of concerns in the product issues area.	As above
Panel B. Institutional investors variables		
<i>Total_IO</i>	The fraction of firm stock held by institutional investors.	Thomson Financial database
<i>Long_IO</i>	The fraction of firm stock held by institutional investors with long investment horizon.	As above
<i>Short_IO</i>	The fraction of firm stock held by institutional investors with short investment horizon.	As above
<i>Total_PPS</i>	The fraction of firm stock held by public pension funds.	As above
<i>Long_PPS</i>	The fraction of firm stock held by public pension funds with long investment horizon	As above
<i>Short_PPS</i>	The fraction of firm stock held by public pension funds with short investment horizon	As above
Panel C. Control variables		
<i>Size</i>	The natural logarithm of total assets.	Compustat
<i>ROA</i>	The ratio of income before extraordinary items to total assets.	As above
<i>Cash</i>	The ratio of cash balances over total assets.	As above
<i>Dividends</i>	The ratio of cash dividends over total assets	As above
<i>BTM</i>	The ratio of book value of equity over the market value of equity measured as absolute value of stock price times shares outstanding.	Compustat and CRSP

Table 1. Descriptive statistics

Panel A.					
Variable	Mean	Standard deviation	25th percentile	Median	75th percentile
Panel A: CSR variables					
<i>CSR</i>	-0.379	1.926	-1.000	0.000	0.000
<i>CSR-COM</i>	0.019	0.460	0.000	0.000	0.000
<i>CSR-DIV</i>	0.169	1.211	-1.000	0.000	1.000
<i>CSR-EMP</i>	-0.241	0.826	-1.000	0.000	0.000
<i>CSR-ENV</i>	-0.108	0.597	0.000	0.000	0.000
<i>CSR-HUM</i>	-0.052	0.243	0.000	0.000	0.000
<i>CSR-PRO</i>	-0.166	0.569	0.000	0.000	0.000
Panel B: Institutional ownership variables					
<i>Total_IO</i>	0.551	0.289	0.316	0.583	0.795
<i>Long_IO</i>	0.386	0.233	0.193	0.377	0.567
<i>Short_IO</i>	0.152	0.123	0.054	0.126	0.222
<i>Total_PPS</i>	0.016	0.014	0.004	0.013	0.027
<i>Long_PPS</i>	0.015	0.013	0.004	0.011	0.024
<i>Short_PPS</i>	0.001	0.003	0.000	0.000	0.001
Panel C: Control variables					
<i>Size</i>	6.702	1.950	5.333	6.620	7.930
<i>ROA</i>	-0.019	0.209	-0.009	0.026	0.070
<i>BTM</i>	0.770	1.214	0.300	0.501	0.792
<i>Cash</i>	0.196	0.229	0.030	0.095	0.285
<i>Dividends</i>	0.010	0.023	0.000	0.000	0.010
<i>Debt</i>	0.220	0.285	0.022	0.165	0.331

This table presents summary statistics for CSR attributes and aggregate CSR score (Panel A), institutional ownership variables (Panel B) and control variables (Panel C). The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. The aggregate corporate social responsibility (CSR) score is the sum of six attributes: community (*CSR-COM*), diversity (*CSR-DIV*), employee relations (*CSR-EMP*), environment (*CSR-ENV*), human rights (*CSR-HUM*), and product (*CSR-PRO*). Panel B provides descriptive statistics of institutional ownership variables. *Total_IO* is the fraction of firm stock held by institutional investors, *Long_IO* is the fraction of firm stock held by institutional investors with long investment horizon, *Short_IO* is the fraction of firm stock held by institutional investors with short investment horizon. *Total_PPS* is the fraction of firm stock held by public pension funds. *Long_PPS* is the fraction of firm stock held by public pension funds with long investment horizon. *Short_PPS* is the fraction of firm stock held by public pension funds with short investment horizon. *Size* is the natural logarithm of total assets. *ROA* is the ratio of income before extraordinary items to total assets. *BTM* is the ratio of book value of equity over the market value of equity, measured as absolute value of stock price times shares outstanding. *Cash* is the ratio of cash balances over total assets. *Dividends* is the ratio of cash dividends over total assets. *Debt* is the ratio of total debt over total assets.

Table 2. Correlation matrix

	<i>Total_IO</i>	<i>Long_IO</i>	<i>Short_IO</i>	<i>Total_PPS</i>	<i>Long_PPS</i>	<i>Short_PPS</i>	<i>Size</i>	<i>ROA</i>	<i>BTM</i>	<i>Cash</i>	<i>Dividends</i>	<i>Debt</i>
<i>Total_IO</i>	1.0000											
<i>Long_IO</i>	0.9010	1.0000										
	0.0000											
<i>Short_IO</i>	0.5896	0.2106	1.0000									
	0.0000	0.0000										
<i>Total_PPS</i>	0.6004	0.5677	0.3416	1.0000								
	0.0000	0.0000	0.0000									
<i>Long_PPS</i>	0.1706	0.0661	0.2785	0.4138	1.0000							
	0.0000	0.0000	0.0000	0.0000								
<i>Short_PPS</i>	0.6162	0.6076	0.3056	0.9440	0.1699	1.0000						
	0.0000	0.0000	0.0000	0.0000	0.0000							
<i>Size</i>	0.2767	0.3122	0.0562	0.3492	0.1772	0.3491	1.0000					
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
<i>ROA</i>	0.2265	0.2296	0.0947	0.2045	0.0411	0.2234	0.3409	1.0000				
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
<i>BTM</i>	-0.2381	-0.1937	-0.1630	-0.1710	-0.0318	-0.1801	0.1959	-0.0034	1.0000			
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5214				
<i>Cash</i>	-0.0541	-0.1069	0.0739	-0.1219	-0.0660	-0.1236	-0.4394	-0.3463	-0.1351	1.0000		
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			
<i>Dividends</i>	-0.0703	-0.0299	-0.1050	-0.0146	0.0059	-0.0133	0.0507	0.0872	-0.0044	-0.0390	1.0000	
	0.0000	0.0000	0.0000	0.0125	0.3154	0.0229	0.0000	0.0000	0.4062	0.0000		
<i>Debt</i>	0.0315	0.0313	0.0086	-0.0074	0.0272	-0.0129	0.1585	-0.1083	0.0767	-0.2636	0.0585	1.0000
	0.0000	0.0000	0.1419	0.2028	0.0000	0.0268	0.0000	0.0000	0.0000	0.0000	0.0000	

This table presents Pearson correlations among all independent variables used in the regression analysis. The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. *Total_IO* is the fraction of firm stock held by institutional investors, *Long_IO* is the fraction of firm stock held by institutional investors with long investment horizon, *Short_IO* is the fraction of firm stock held by institutional investors with short investment horizon. *Total_PPS* is the fraction of firm stock held by public pension funds. *Long_PPS* is the fraction of firm stock held by public pension funds with long investment horizon. *Short_PPS* is the fraction of firm stock held by public pension funds with short investment horizon. *Size* is the natural logarithm of total assets. *ROA* is the ratio of income before extraordinary items to total assets. *BTM* is the ratio of book value of equity over the market value of equity, measured as absolute value of stock price times shares outstanding. *Cash* is the ratio of cash balances over total assets. *Dividends* is the ratio of cash dividends over total assets. *Debt* is the ratio of total debt over total assets. *p*-values are reported below the coefficients.

Table 3. Effect of institutional ownership on CSR score

Panel A. Effect of institutional ownership on overall CSR score			
Variables	<i>OLS</i> CSR	<i>OLS</i> CSR	<i>Fama MacBeth</i> CSR
<i>Constant</i>	-0.4984*** (0.0000)	-0.4984*** (0.0042)	-0.7491*** (0.0000)
<i>lag_Total_IO</i>	0.0430 (0.2275)	0.0430 (0.5249)	0.0445 (0.2834)
<i>lag_Size</i>	0.1030*** (0.0000)	0.1030*** (0.0000)	0.1068*** (0.0001)
<i>lag_ROA</i>	0.0397 (0.4945)	0.0397 (0.5702)	0.0547 (0.6178)
<i>lag_BTM</i>	-0.0715*** (0.0000)	-0.0715*** (0.0004)	-0.1624*** (0.0035)
<i>lag_Cash</i>	0.1743*** (0.0004)	0.1743** (0.0413)	0.1651** (0.0120)
<i>lag_Dividends</i>	1.1954*** (0.0017)	1.1954* (0.0989)	1.0457** (0.0146)
<i>lag_Debt</i>	-0.2701*** (0.0000)	-0.2701*** (0.0054)	-0.2975*** (0.0001)
Adjusted R ² /average R ²	0.0821	0.0821	0.0908
Observations	14,403	14,403	14,403
Industry dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	No
Firm clustering	No	Yes	No
Panel B. Effect of institutional ownership (long versus short investment horizon) on overall CSR score			
Variables	<i>OLS</i> CSR	<i>OLS</i> CSR	<i>Fama MacBeth</i> CSR
<i>Constant</i>	-0.4025*** (0.0000)	-0.4025** (0.0210)	-0.7075*** (0.0002)
<i>lag_Long_IO</i>	0.2415*** (0.0000)	0.2415*** (0.0022)	0.2928*** (0.0020)
<i>lag_Short_IO</i>	-0.3811*** (0.0000)	-0.3811*** (0.0007)	-0.6537** (0.0178)
<i>lag_Size</i>	0.0949*** (0.0000)	0.0949*** (0.0000)	0.0937*** (0.0000)
<i>lag_ROA</i>	0.0424 (0.4654)	0.0424 (0.5433)	0.0560 (0.5942)
<i>lag_BTM</i>	-0.0787*** (0.0000)	-0.0787*** (0.0002)	-0.1968*** (0.0037)
<i>lag_Cash</i>	0.2019*** (0.0000)	0.2019** (0.0178)	0.1990*** (0.0045)
<i>lag_Dividends</i>	1.0411*** (0.0064)	1.0411 (0.1482)	0.7485* (0.0507)
<i>lag_Debt</i>	-0.2556*** (0.0000)	-0.2556*** (0.0085)	-0.2707*** (0.0001)
Adjusted R ² /average R ²	0.0844	0.0844	0.0963
Observations	14,403	14,403	14,403
Industry dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	No
Firm clustering	No	Yes	No

Panel C. Effect of institutional ownership (long versus short investment horizon) for each KLD issue area						
VARIABLES	COM	PRO	HUM	ENV	EMP	DIV
<i>Constant</i>	-0.3537* (0.0600)	1.6688*** (0.0000)	0.3205* (0.0932)	1.1149*** (0.0000)	-0.4780*** (0.0005)	-1.5781*** (0.0000)
<i>lag_Long_IO</i>	-0.0019 (0.9800)	0.1469** (0.0435)	0.2332*** (0.0009)	0.3036*** (0.0000)	0.0566 (0.4382)	0.0808 (0.2817)
<i>lag_Short_IO</i>	-0.2630*** (0.0037)	-0.0108 (0.9116)	0.1469 (0.1302)	0.0377 (0.7116)	-0.1510 (0.1812)	-0.4463*** (0.0000)
<i>lag_Size</i>	0.0883*** (0.0000)	-0.2614*** (0.0000)	-0.1659*** (0.0000)	-0.1458*** (0.0000)	0.0461*** (0.0034)	0.3140*** (0.0000)
<i>lag_ROA</i>	-0.0163 (0.7631)	-0.0481 (0.4558)	0.0624 (0.2729)	0.0389 (0.4499)	0.3128*** (0.0001)	-0.1488** (0.0414)
<i>lag_BTM</i>	-0.0342** (0.0368)	0.0126 (0.4854)	0.0313* (0.0556)	-0.0215 (0.2565)	-0.0440** (0.0209)	-0.0838*** (0.0000)
<i>lag_Cash</i>	0.1036 (0.1375)	-0.2564*** (0.0008)	-0.2192*** (0.0013)	-0.2072*** (0.0003)	0.0533 (0.5044)	0.5122*** (0.0000)
<i>lag_Dividends</i>	1.3439 (0.1245)	-2.3673** (0.0103)	-1.4375** (0.0325)	-1.1167* (0.0579)	1.0503* (0.0969)	2.3805*** (0.0002)
<i>lag_Debt</i>	-0.1229 (0.2001)	0.3052*** (0.0006)	0.2458*** (0.0078)	0.0723 (0.3482)	-0.2208*** (0.0059)	-0.4377*** (0.0000)
Adjusted R ²	0.0402	0.1813	0.1008	0.2026	0.0356	0.2419
Observations	14,403	14,403	14,403	14,403	14,403	14,403
Industry dummies	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES
Firm clustering	YES	YES	YES	YES	YES	YES

This table reports estimated coefficients from regressing CSR score (standardized) on institutional ownership. Panel A reports the regression results for total institutional ownership. Panel B reports the results after separating institutional investors based on their investment horizon (long versus short). Panel C reports the results for each KLD issue area. The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. The aggregate corporate social responsibility (CSR) score is the sum of six attributes: community (*CSR-COM*), diversity (*CSR-DIV*), employee relations (*CSR-EMP*), environment (*CSR-ENV*), human rights (*CSR-HUM*), and product (*CSR-PRO*). *Total_IO* is the fraction of firm stock held by institutional investors, *Long_IO* is the fraction of firm stock held by institutional investors with long investment horizon, *Short_IO* is the fraction of firm stock held by institutional investors with short investment horizon. *Size* is the natural logarithm of total assets. *ROA* is the ratio of income before extraordinary items to total assets. *BTM* is the ratio of book value of the equity over the market value of equity, measured as absolute value of stock price times shares outstanding. *Cash* is the ratio of cash balances over total assets. *Dividends* is the ratio of cash dividends over total assets. *Debt* is the ratio of total debt over total assets. Year dummies and industry dummies are included in all regressions. Industry dummies are based on the Fama French 12–industry classification. The standard errors are clustered at the firm level. Robust p-values, in parentheses, are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4. Effect of PPS ownership on CSR

Panel A. Effect of PPS ownership (long versus short investment horizon) on overall CSR score						
Variables	<i>OLS</i> CSR	<i>OLS</i> CSR	<i>Fama MacBeth</i> CSR	<i>Fama MacBeth</i> CSR		
Constant	-0.4740*** (0.0074)	-0.4614*** (0.0092)	-0.7533*** (0.0002)	-0.7177*** (0.0002)		
<i>lag_Total_PPS</i>	3.4821*** (0.0015)		3.1663*** (0.0014)			
<i>lag_Long_PPS</i>		4.1896*** (0.0006)		3.5343*** (0.0006)		
<i>lag_Short_PPS</i>		-0.2171 (0.9525)		44.1422 (0.1765)		
<i>lag_Size</i>	0.0914*** (0.0000)	0.0909*** (0.0000)	0.0967*** (0.0000)	0.0886*** (0.0001)		
<i>lag_ROA</i>	0.0177 (0.7945)	0.0118 (0.8615)	0.0212 (0.8564)	0.0132 (0.9099)		
<i>lag_BTM</i>	-0.0744*** (0.0003)	-0.0750*** (0.0003)	-0.1758*** (0.0024)	-0.1629*** (0.0011)		
<i>lag_Cash</i>	0.1743** (0.0390)	0.1769** (0.0364)	0.1654** (0.0145)	0.1618** (0.0119)		
<i>lag_Dividends</i>	1.1690 (0.1112)	1.1868 (0.1059)	1.0258** (0.0198)	1.0205** (0.0209)		
<i>lag_Debt</i>	-0.2512** (0.0112)	-0.2476** (0.0126)	-0.2780*** (0.0001)	-0.2590*** (0.0001)		
Adjusted R ² /average R ²	0.0837	0.0855	0.0921	0.0934		
Observations	14,403	14,403	14,403	14,403		
Industry dummies	Yes	Yes	Yes	Yes		
Year dummies	Yes	Yes	No	No		
Firm clustering	Yes	Yes	No	No		
Panel B. Effect of PPS ownership (long versus short investment horizon) for each KLD issue area						
Variables	COM	PRO	HUM	ENV	EMP	DIV
Constant	-0.4230** (0.0266)	1.6677*** (0.0000)	0.3902** (0.0492)	1.1531*** (0.0000)	-0.5019*** (0.0003)	-1.6616*** (0.0000)
<i>lag_Long_PPS</i>	0.2670 (0.8032)	2.9115*** (0.0092)	3.7403*** (0.0001)	3.9293*** (0.0003)	2.3338** (0.0454)	0.9160 (0.4405)
<i>lag_Short_PPS</i>	5.0427 (0.2324)	6.8594* (0.0508)	-5.8037 (0.2091)	-1.6265 (0.6602)	1.0475 (0.7761)	-4.2326 (0.1940)
<i>lag_Size</i>	0.0848*** (0.0001)	-0.2678*** (0.0000)	-0.1658*** (0.0000)	-0.1452*** (0.0000)	0.0402** (0.0127)	0.3157*** (0.0000)
<i>lag_ROA</i>	-0.0458 (0.3855)	-0.0506 (0.4217)	0.0869 (0.1230)	0.0623 (0.2193)	0.2876*** (0.0003)	-0.1843** (0.0101)
<i>lag_BTM</i>	-0.0311* (0.0560)	0.0151 (0.4006)	0.0300* (0.0673)	-0.0210 (0.2687)	-0.0422** (0.0266)	-0.0815*** (0.0000)
<i>lag_Cash</i>	0.0795 (0.2522)	-0.2572*** (0.0007)	-0.1985*** (0.0027)	-0.1963*** (0.0005)	0.0424 (0.5933)	0.4799*** (0.0000)
<i>lag_Dividends</i>	1.4887* (0.0943)	-2.4269*** (0.0097)	-1.5888** (0.0238)	-1.2521** (0.0399)	1.1340* (0.0763)	2.6253*** (0.0001)
<i>lag_Debt</i>	-0.1415 (0.1438)	0.3252*** (0.0003)	0.2895*** (0.0023)	0.1132 (0.1531)	-0.2180*** (0.0074)	-0.4582*** (0.0000)
Adjusted R ²	0.0397	0.1820	0.1001	0.2013	0.0360	0.2403
Observations	14,403	14,403	14,403	14,403	14,403	14,403
Industry dummies	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES

Firm clustering	YES	YES	YES	YES	YES	YES
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This table reports estimated coefficients from regressing CSR score (standardized) on PPS institutional ownership. Panel A reports the results for overall CSR score. Panel B reports the results for each KLD issue area. The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. The aggregate corporate social responsibility (CSR) score is the sum of six attributes: community (*CSR-COM*), diversity (*CSR-DIV*), employee relations (*CSR-EMP*), environment (*CSR-ENV*), human rights (*CSR-HUM*), and product (*CSR-PRO*). *Total_PPS* is the fraction of firm stock held by public pension funds. *Long_PPS* is the fraction of firm stock held by public pension funds with long investment horizon. *Short_PPS* is the fraction of firm stock held by public pension funds with short investment horizon. *Size* is the natural logarithm of total assets. *ROA* is the ratio of income before extraordinary items to total assets. *BTM* is the ratio of book value of the equity over the market value of equity, measured as absolute value of stock price times shares outstanding. *Cash* is the ratio of cash balances over total assets. *Dividends* is the ratio of cash dividends over total assets. *Debt* is the ratio of total debt over total assets. The standard errors are clustered at the firm level in the last column. Year dummies and industry dummies are included in all regressions. Industry dummies are based on the Fama French 12-industry classification. Robust p-values, in parentheses, are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5. Firm fixed effects regression results

Variables	CSR	CSR
Constant	0.0713 (0.7027)	0.1105 (0.5518)
<i>lag_Long_IO</i>	0.1218** (0.0429)	
<i>lag_Short_IO</i>	0.1302 (0.1062)	
<i>lag_Long_PPS</i>		3.0735*** (0.0002)
<i>lag_Short_PPS</i>		-0.8682 (0.7615)
<i>lag_Size</i>	-0.0107 (0.7125)	-0.0121 (0.6671)
<i>lag_ROA</i>	0.1026* (0.0927)	0.1089* (0.0731)
<i>lag_BTM</i>	0.0199 (0.1193)	0.0157 (0.2143)
<i>lag_Cash</i>	-0.1442** (0.0460)	-0.1347* (0.0599)
<i>lag_Dividends</i>	-0.3274 (0.3140)	-0.3752 (0.2496)
<i>lag_Debt</i>	0.0759 (0.3281)	0.0812 (0.2949)
Observations	14,403	14,403
Number of firms	3,438	3,438
Year dummies	Yes	Yes
Firm fixed effects	Yes	Yes
Firm clustering	Yes	Yes

This table reports estimated coefficients from regressing overall CSR score (standardized) on institutional ownership using a fixed effect modeling approach. The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. The aggregate corporate social responsibility (CSR) score is the sum of six attributes: community (*CSR-COM*), diversity (*CSR-DIV*), employee relations (*CSR-EMP*), environment (*CSR-ENV*), human rights (*CSR-HUM*), and product (*CSR-PRO*). *Total_IO* is the fraction of firm stock held by institutional investors, *Long_IO* is the fraction of firm stock held by institutional investors with long investment horizon, *Short_IO* is the fraction of firm stock held by institutional investors with short investment horizon. *Total_PPS* is the fraction of firm stock held by public pension funds. *Long_PPS* is the fraction of firm stock held by public pension funds with long investment horizon. *Short_PPS* is the fraction of firm stock held by public pension funds with short investment horizon. *Size* is the natural logarithm of total assets. *ROA* is the ratio of income before extraordinary items to total assets. *BTM* is the ratio of book value of the equity over the market value of equity, measured as absolute value of stock price times shares outstanding. *Cash* is the ratio of cash balances over total assets. *Dividends* is the ratio of cash dividends over total assets. *Debt* is the ratio of total debt over total assets. Year dummies are included in all regressions. The standard errors are clustered at the firm level. Robust *p*-values, in parentheses, are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6. Granger causality test results

Variables	<i>CSR</i>	<i>Long_IO</i>	<i>CSR</i>	<i>Long_PPS</i>
Constant	0.2354* (0.0564)	0.2514*** (0.0000)	0.2350* (0.0566)	0.0038** (0.0336)
<i>lag_CSR</i>	0.4145*** (0.0000)	-0.0009 (0.6421)	0.4140*** (0.0000)	-0.0001 (0.4406)
<i>lag_Long_IO</i>	0.0840** (0.0444)	0.2242*** (0.0000)		
<i>lag_Long_PPS</i>			1.7277** (0.0125)	0.3257*** (0.0000)
<i>lag_Size</i>	-0.0411** (0.0219)	0.0286*** (0.0000)	-0.0415** (0.0197)	0.0020*** (0.0000)
<i>lag_ROA</i>	0.1338** (0.0109)	0.0511*** (0.0000)	0.1300** (0.0134)	0.0023*** (0.0023)
<i>lag_BTM</i>	0.0056 (0.5936)	-0.0217*** (0.0000)	0.0043 (0.6835)	-0.0009*** (0.0000)
<i>lag_Cash</i>	-0.1470** (0.0119)	0.0202 (0.1097)	-0.1480** (0.0114)	0.0018** (0.0322)
<i>lag_Dividends</i>	-0.2682 (0.4156)	-0.0722 (0.3101)	-0.2854 (0.3853)	-0.0082* (0.0854)
<i>lag_Debt</i>	0.0789 (0.1876)	-0.0095 (0.4622)	0.0796 (0.1834)	-0.0006 (0.4818)
Observations	11,231	11,231	11,231	11,231
R-squared	0.2073	0.2597	0.2076	0.3234
Number of firms	2,949	2,949	2,949	2,949
Year dummies	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

This table reports Granger causality tests. The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. The aggregate corporate social responsibility (CSR) score is the sum of six attributes: community (*CSR-COM*), diversity (*CSR-DIV*), employee relations (*CSR-EMP*), environment (*CSR-ENV*), human rights (*CSR-HUM*), and product (*CSR-PRO*). The CSR score is standardized. *Total_IO* is the fraction of firm stock held by institutional investors, *Long_IO* is the fraction of firm stock held by institutional investors with long investment horizon, *Short_IO* is the fraction of firm stock held by institutional investors with short investment horizon. *Total_PPS* is the fraction of firm stock held by public pension funds. *Long_PPS* is the fraction of firm stock held by public pension funds with long investment horizon. *Short_PPS* is the fraction of firm stock held by public pension funds with short investment horizon. The classification of institutional ownership is based on the Permanent Transient/Quasi-indexer/Dedicated classification. *Size* is the natural logarithm of total assets. *ROA* is the ratio of income before extraordinary items to total assets. *BTM* is the ratio of book value of equity over the market value of equity, measured as absolute value of stock price times shares outstanding. *Cash* is the ratio of cash balances over total assets. *Dividends* is the ratio of cash dividends over total assets. *Debt* is the ratio of total debt over total assets. Year dummies are included in all regressions. The standard errors are clustered at the firm level. Robust *p*-values, in parentheses, are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7. Regression results using CSR decile rank

Variables	OLS	OLS	Fama MacBeth	Fama MacBeth
	<i>CSR_rank</i>	<i>CSR_rank</i>	<i>CSR_rank</i>	<i>CSR_rank</i>
Constant	2.8153*** (0.0000)	2.6911*** (0.0000)	1.8454*** (0.0004)	1.9073*** (0.0002)
<i>lag_Long_IO</i>	0.7771*** (0.0003)		0.9264*** (0.0017)	
<i>lag_Short_IO</i>	-0.8430*** (0.0084)		-1.5337** (0.0218)	
<i>lag_Long_PPS</i>		12.5263*** (0.0004)		10.4907*** (0.0001)
<i>lag_Short_PPS</i>		6.0182 (0.5916)		148.7601 (0.1626)
<i>lag_Size</i>	0.3460*** (0.0000)	0.3337*** (0.0000)	0.3441*** (0.0000)	0.3227*** (0.0000)
<i>lag_ROA</i>	-0.0706 (0.7601)	-0.1258 (0.5789)	-0.0565 (0.8518)	-0.1460 (0.6699)
<i>lag_BTM</i>	-0.1775*** (0.0022)	-0.1668*** (0.0037)	-0.4327*** (0.0027)	-0.3307*** (0.0018)
<i>lag_Cash</i>	0.7150*** (0.0056)	0.6617** (0.0101)	0.7227*** (0.0040)	0.6360*** (0.0065)
<i>lag_Dividends</i>	2.8852 (0.1216)	3.0946* (0.0999)	2.2270*** (0.0035)	2.7305*** (0.0045)
<i>lag_Debt</i>	-1.1062*** (0.0000)	-1.0593*** (0.0000)	-1.1604*** (0.0000)	-1.0918*** (0.0000)
Adjusted R ² /average R ²	0.0818	0.0815	0.0928	0.0912
Observations	14,403	14,403	14,403	14,403
Number of firms	3,438	3,438	3,438	3,438
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

This table reports estimated coefficients from regressing the decile rank of the standardized overall CSR score (*CSR_rank*) on institutional ownership. The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. The aggregate corporate social responsibility (CSR) score is the sum of six attributes: community (*CSR-COM*), diversity (*CSR-DIV*), employee relations (*CSR-EMP*), environment (*CSR-ENV*), human rights (*CSR-HUM*), and product (*CSR-PRO*). *Total_IO* is the fraction of firm stock held by institutional investors, *Long_IO* is the fraction of firm stock held by institutional investors with long investment horizon, *Short_IO* is the fraction of firm stock held by institutional investors with short investment horizon. *Total_PPS* is the fraction of firm stock held by public pension funds. *Long_PPS* is the fraction of firm stock held by public pension funds with long investment horizon. *Short_PPS* is the fraction of firm stock held by public pension funds with short investment horizon. *Size* is the natural logarithm of total assets. *ROA* is the ratio of income before extraordinary items to total assets. *BTM* is the ratio of book value of the equity over the market value of equity, measured as absolute value of stock price times shares outstanding. *Cash* is the ratio of cash balances over total assets. *Dividends* is the ratio of cash dividends over total assets. *Debt* is the ratio of total debt over total assets. Year dummies and industry dummies are included in all regressions. Industry dummies are based on the Fama French 12–industry classification. The standard errors are clustered at the firm level. Robust *p*-values, in parentheses, are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8. Alternative proxies for key independent variables

Variables	OLS	OLS	Fama MacBeth	Fama MacBeth
	CSR	CSR	CSR	CSR
Constant	-0.4625*** (0.0075)	-0.4553*** (0.0098)	-0.7274*** (0.0002)	-0.7234*** (0.0003)
<i>lag_Long_IO</i>	0.2905*** (0.0003)		0.3005*** (0.0006)	
<i>lag_Short_IO</i>	-0.5356*** (0.0000)		-0.5358*** (0.0010)	
<i>lag_Long_PPS</i>		3.4053*** (0.0020)		2.9739*** (0.0036)
<i>lag_Short_PPS</i>		74.3638 (0.1700)		36.9206 (0.2159)
<i>lag_Size</i>	0.0916*** (0.0000)	0.0886*** (0.0000)	0.0946*** (0.0000)	0.0917*** (0.0001)
<i>lag_ROA</i>	0.0544 (0.4361)	0.0170 (0.8024)	0.0604 (0.5675)	0.0230 (0.8439)
<i>lag_BTM</i>	-0.0818*** (0.0001)	-0.0730*** (0.0004)	-0.1955*** (0.0029)	-0.1715*** (0.0033)
<i>lag_Cash</i>	0.2334*** (0.0068)	0.1698** (0.0441)	0.2196*** (0.0024)	0.1578** (0.0250)
<i>lag_Dividends</i>	0.9054 (0.2077)	1.1185 (0.1276)	0.7323* (0.0621)	0.9646** (0.0210)
<i>lag_Debt</i>	-0.2392** (0.0140)	-0.2502** (0.0115)	-0.2649*** (0.0001)	-0.2773*** (0.0001)
Adjusted R ² /average R ²	0.0862	0.0839	0.0956	0.0929
Observations	14,403	14,403	14,403	14,403
Number of firms	3,438	3,438	3,438	3,438
Year dummies	Yes	Yes	No	No
Industry dummies	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	No	No

This table reports estimated coefficients from regressing overall CSR score (standardized) on institutional ownership using the alternative Bushee classification method. The sample includes 14,403 firm-year observations representing 3,440 unique US listed firms over the period 2003–2009. The aggregate corporate social responsibility (CSR) score is the sum of six attributes: community (CSR-COM), diversity (CSR-DIV), employee relations (CSR-EMP), environment (CSR-ENV), human rights (CSR-HUM), and product (CSR-PRO). *Total_IO* is the fraction of firm stock held by institutional investors, *Long_IO* is the fraction of firm stock held by institutional investors with long investment horizon, *Short_IO* is the fraction of firm stock held by institutional investors with short investment horizon. *Total_PPS* is the fraction of firm stock held by public pension funds. *Long_PPS* is the fraction of firm stock held by public pension funds with long investment horizon. *Short_PPS* is the fraction of firm stock held by public pension funds with short investment horizon. Size is the natural logarithm of total assets. ROA is the ratio of income before extraordinary items to total assets. BTM is the ratio of book value of equity over the market value of equity, measured as absolute value of stock price times shares outstanding. Cash is the ratio of cash balances over total assets. Dividends is the ratio of cash dividends over total assets. Debt is the ratio of total debt over total assets. The standard errors are clustered at the firm level. Year dummies and industry dummies are included in all regressions. Industry dummies are based on the Fama French 12-industry classification. Robust p-values, in parentheses, are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.