

**Investor Tastes, Corporate Behavior and Stock Returns: An Analysis of
Corporate Social Responsibility**

Chuan-Yang Hwang

Nanyang Business School
Nanyang Technological University
cyhwang@ntu.edu.sg

Sheridan Titman

McCombs School of Business
The University of Texas at Austin
titman@mail.utexas.edu

Ying Wang

School of Finance
Central University of Finance and Economics
yywang@cufe.edu.cn

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Abstract

Utilizing the revealed preference of institutions, we classify institutions into socially responsible institutions (SRI) and non-socially-responsible institutions (NSRI) by the value weighted Corporate Social Responsibility (CSR) scores of their portfolio holdings. Stocks that experience an increase in SRI ownership (SRIO) tend to increase CSR, especially for those with high current CSR. We also find that increased SRI holdings are associated with negative excess stock returns when the SRI holding information first becomes public, which is consistent with the hypothesis that an anticipated increase in CSR harms shareholders. Our evidence also reveals important differences between hedge funds and other institutional investors. In particular, we find that hedge funds are less likely to be classified as SRI, and that hedge fund holdings tend to be associated with lower CSR growth even when they are classified as SRI.

Keywords: Corporate Social Responsibility, institutional ownership, shareholders activism

JEL Classification: M14

There is a large and growing literature that examines how institutional investors evaluate and influence corporations.¹ The premise of most of this literature is that institutions encourage firms to make value-enhancing choices. However, a number of institutions also attempt to influence the social responsibility of the firms in which they invest. Indeed, according to the US Social Investment Forum, \$6.57 trillion in assets, or over 17.8% of total investment assets, were managed using Socially Responsible Investing guidelines at the beginning of 2014, and a global survey by the CFA institute (2015) found that 73% of portfolio managers and research analysts consider environmental, social, and governance issues during investment analyses and decisions. This paper is part of a large and growing literature that examines whether the recent increase in socially responsible investing and corporate social responsibility (CSR) activities help or hurt shareholders.²

Detecting the empirical relation between these CSR activities and firm values is challenging for a number of reasons. First, the increased presence of socially responsible investors decreases the required rate of return of high CSR stocks, which should give an initial boost to their stock prices but will cause their subsequent risk adjusted returns to be lower. Hence, the relation between socially responsible investing and future returns can be either positive or negative depending on whether returns are measured in the interval in which socially responsible investors are accumulating the stock or in the period subsequent to the accumulation. Second, this challenge is further complicated by the difficulty in observing the timing of expected CSR policy changes. Kinder, Lydenberg, and Domini (KLD) STATS, the most popular CSR database, reports CSR scores only once a year. Moreover, KLD STATS does not disclose the CSR policy change date or the ratings release date.

¹ See Gompers and Metrick (2001) and Sias, Starks, and Titman (2006) for evidence on the relation between institutional ownership and future stock returns and Karpoff (2001) and Gillan and Starks (2007) for a review of the literature on institutional activism.

² It is clearly the case that some of the activities classified as socially responsible contribute to corporate profitability, i.e., firms can do well by doing good. See, for example, Hong and Liskovich (2015) for a discussion of how firms benefit from their corporate social responsibility. The question is whether or not the social agenda promoting corporate social responsibility leads firms to go beyond the value-maximizing levels of these activities.

Third, the endogeneity of CSR policy choices causes an inference problem if firms feel that they can afford the luxury of adopting strong CSR policies when their businesses are otherwise performing well and are less financially constrained.³ Perhaps, because of these measurement issues, the results of existing studies of the relation between CSR activities and stock returns are inconclusive.⁴ Similarly, the evidence on the performance of socially responsible investors is mixed.⁵

To understand our strategy for identifying the valuation and performance effects of social responsibility, it is useful to think in terms of two types of firms: the sole objective of the first type is to maximize firm value, while the second type includes social responsibility in its objective function. Similarly, consider two types of institutional investors: the sole objective of the first type is maximizing portfolio performance, while the second type has a broader objective that also includes social responsibility. The first type, which we refer to as the not socially responsible investor, NSRI, only collects private information about firm cash flows, so the revelation of its portfolio holdings conveys information about cash flows. In contrast, the second type, the socially responsible investor, SRI, has a preference for CSR and tends to hold positions in firms that either share their preference or can be influenced to increase CSR activities. Our null hypothesis is that the holdings of neither type convey information to investors. We test this null against the alternative that NSRI holdings

³ Hong, Kubik, and Scheinkman (2012) argue that firms tend to engage more in CSR when they are less financially constrained, and show that during the “Internet bubble” period, when firms’ financial constraints were less binding, that previously constrained firms increased their CSR activities. Cheng, Hong and Shue (2016) examine the 2003 decline in the tax on dividends, which resulted in greater payouts and reductions in CSR spending, and concluded that CSR spending is at least partly due to agency issues. Masulis and Reza (2014) look explicitly at corporate philanthropy, and provide evidence that the tendency of some managers to give away corporate resources is greater when they are less constrained. It should be noted that this evidence does not imply that engaging in CSR is a sign of poor governance. Indeed, Ferrell, Liang and Renneboog (2016) find that well-governed firms, as represented by less cash hoarding and higher payouts, are more likely to have higher CSR ratings.

⁴ Flammer (2015) finds that the adoption of CSR proposals leads to positive announcement returns and superior accounting performance. Deng, Kang and Low (2013) show that higher CSR firms that are involved in acquisitions perform better than their lower CSR counterparts, while Dhaliwal, Li, Tsang and Yang (2011) document a drop in cost of capital after they voluntarily disclose CSR activities. On the other hand, Brammer, Brooks and Pavelin (2006) find lower returns for UK stocks with higher social performance scores. Hong and Kacperczyk (2009) find that sin stocks, (those involved in producing alcohol, tobacco, and gaming) tend to have higher returns. More recent evidence includes Di Giuli and Kostovetsky (2014), which show that increases in CSR ratings are associated with negative future stock returns, and Krüger (2015), which shows that investors respond negatively to both positive and negative CSR news.

⁵ Bialkowski and Starks (2015) review this literature and also examine the relation between socially responsible investing and performance. They find no significant difference between the performance of socially responsible funds and other mutual funds. Findt

convey positive information about future cash flows and SRI holdings convey negative information about future cash flows because of the costs associated with CSR.

To test these hypotheses, we use a combination of the KLD data and the portfolio holdings of institutional investors. We depart from the existing literature, which focuses mainly on institutions that identify themselves as SRI⁶, and rely on the revealed preference of the institutions. Specifically, we rank institutional investors by the weighted corporate social responsibility scores of their portfolio holdings, as measured by the scores reported in the KLD STATS database. The institutions ranked among the top half of the weighted score are classified as SRI and the bottom half are classified as Not Socially Responsible Investors (NSRI). Based on these classifications, we calculate the ownership percentage by SRIs (SRIO) at the stock level and examine its ability to capture future CSR behavior.⁷

We find SRI and NSRI are persistent fund characteristics – funds that are classified as SRI or NSRI in one quarter tend to be classified as such in future quarters. More importantly, firms with higher holdings by SRIs tend to have higher KLD scores in the future. One interpretation of this finding is that the revealed preferences of SRIs provide information about CSR activities not contained in actual KLD scores. This is plausible given that our revealed preference scores are measured quarterly, while KLD scores are released annually on unspecified dates. Moreover, KLD scores are only based on past behavior, whereas the holdings of SRIs also reflect future expectations. Indeed, socially responsible investors often try to influence CSR choices, so their holdings may both cause and predict future KLD scores. Hence, changes in SRI holdings are likely to provide a much

⁶ Anecdotal evidences suggest that self-claimed SRIs may not be SRIs. For example, on August 16 2016 a major newspaper in UK *Independent* featured a story with the headline “The “ethical’ investment funds pumping millions into oil firms and big tobacco”.

⁷ In September 2016, Morningstar launched Morningstar Sustainability Ratings, which rates how well a mutual fund’s holdings are managing their environmental, social, and governance risks and opportunities relative to their Morningstar Category peers. The methodology adopted by Morningstar to construct these ratings is similar to ours.

better proxy for expected changes in CSR activities than changes in KLD scores. Moreover, if the SRIs have no private information other than information about future CSR activities then this proxy should only be associated with stock returns if CSR activities influence firm values.

To learn more about the distinction between SRIs and NSRIs, we divide our sample of institutions into hedge funds and non-hedge funds. Consistent with the belief that hedge funds tend to value social issues less than other investors, we find that hedge funds are less likely to be classified as SRIs. We also find that higher hedge fund holdings tend to be associated with lower CSR growth, even for hedge funds that are classified as SRIs, which provides further support for our prior beliefs about hedge fund incentives.

Our main tests can be viewed as an event study. We are interested in learning how a change in the composition of institutions that hold a firm's stock in a given quarter affects the firm's stock returns when these holdings are publicly revealed. In particular, we examine whether the revelation of higher SRI holdings, which we show is associated with future increases in CSR activities, increases or decreases stock prices. If increased CSR activities tend to hurt firm values, we expect to observe a negative relation between the revelation of SRI holdings and stock returns. To clarify our measures and tests, Figure 1 illustrates the timing associated with KLD scores, SRI holdings, and returns. At the end of each quarter (q), institutions are identified as SRI if they hold stocks with high KLD scores, which are measured in the previous year. In the middle of next quarter ($q+1$), the end of quarter (q) holdings are revealed to investors. Hence, the information contained in these holdings will be reflected in the stock returns realized between quarter (q) and quarter ($q+1$), which we will refer to as the quarterly ($q+1$) return of year t ($Qret_{q+1,t}$). Furthermore, given that institutional investors have up to 45 days after the quarter end to file their holdings information with the SEC, the

$q+1$ excess returns should occur in either the first or second month of the quarter.

These event study tests indicate that positive changes in SRI holdings do in fact convey negative information to investors. Specifically, after controlling for firm characteristics that are associated with excess returns (e.g., book-to-market ratios, size, momentum, etc.), changes in SRI holdings in quarter (q) are reliably negatively related to quarter ($q+1$) stock returns. Moreover, when we look more closely at monthly returns, most of the excess returns are generated in the second month of quarter ($q+1$), when the previous quarter's holdings are typically revealed. Under our maintained assumption that SRIs do not have private firm specific information other than information about CSR, this evidence indicates that CSR activities hurt shareholders. It should be noted that the alternative explanation, that SRIs have private information about future profits, requires that the SRIs respond perversely to their private information, i.e., they buy those stocks with unfavorable information.

While our analysis is related to the large literature on socially responsible investing that we described in footnote 4, our focus is especially close to Di, Giuli, and Kostovetsky (2014), which makes a number of contributions. Most notably, they show that the tendency of a portfolio manager to prefer socially responsible investing can be viewed as an individual trait, correlated with political preferences. These traits are persistent, and plausibly exogenous, with respect to the investors' risk/return calculations. While we do not consider the personal characteristics of the portfolio managers, the persistence of our revealed preference is consistent with and complements this observation. Di, Giuli, and Kostovetsky (2014) identify a significant negative relation between changes in KLD scores and future stock returns, which they interpret as evidence that CSR hurts firm value. As we show, this relation is not nearly as robust as the relation between SRI holdings and stock returns in the following quarter, which is not surprising given the greater measurement

frequency and the forward-looking nature of this measure.⁸

As we mentioned at the outset, this research also contributes to the broader literature that links institutional investor holdings to corporate behavior. An early contributor, Bushee (1998), finds a relation between the amounts held by different types of institutional investors and R&D expenditures. Subsequent work considers the effect of concentrated institutional ownership; e.g., Hartzell and Starks (2003) find stronger pay for performance sensitivity at firms with more concentrated institutional ownership and Chen, Harford and Li (2007) show that the concentrated holdings of independent long-term institutions are related to the performance of firms following major acquisitions. In contrast to these studies, we examine potentially non-value-enhancing choices that some institutions may favor and provide evidence of cross-sectional differences in investor preferences for these choices.⁹

We also contribute to the hedge fund literature that suggests that hedge funds tend to outperform other institutional investors.¹⁰ Our evidence suggests that part of their superior performance is due to their greater focus on generating excess returns, which is in contrast to many other institutional investors that have broader objectives. Indeed, hedge funds are less likely than other institutions to hold stocks with high KLD scores, and their holdings are negatively correlated with future increases in KLD scores.

The rest of paper is organized as follows. Section 2 describes the data and methods to calculate

⁸ A recent paper, Fernando, Sharfman and Uysal (2017) examine the relation between institutional holdings and corporate environmental policy. They show that institutional investors tend to avoid what they characterize as environmental risk, i.e., they underweight polluters, but also tend to underweight firms that invest in “greenness” beyond what is legally required. Also, consistent with the analysis in this paper and Di, Giuli, and Kostovetsky (2014), they show that different types of institutions have different tastes regarding their exposure to different environmental policies.

⁹ There is also a related literature that explicitly looks at the purchases of activist hedge funds. For example, Brav, Jiang, Partnoy, and Thomas (2008) and Klein and Zur (2009) show that stock prices respond positively to hedge funds’ filing of 13D, which signifies that an activist hedge fund has accumulated at least 5% of the firm’s stock.

¹⁰ See Agarwal, Mullally, and Naik (2015) for a review of the hedge fund literature. Swem (2016) provides further information about how hedge funds generate superior performance. Specifically, he finds that hedge fund trades tend to anticipate analyst upgrade and downgrade reports, while mutual funds tend to trade after the analyst reports are released.

the key variables and provides some summary statistics. Section 3 presents the main empirical results. Section 4 concludes the paper.

2. Data

2.1. Data and Sample

Our sample includes quarterly institutional holdings for all common stocks traded on NYSE, AMEX, and NASDAQ from the first quarter of 1980 to the fourth quarter of 2013. This data, obtained from Thomson Financial, come from the Securities and Exchange Commission (SEC) Form 13-F, which must be filed by all U.S. institutions with over \$100 million in assets. Institutional ownership for each stock is defined as the number of shares held by institutional investors divided by the total number of shares outstanding.¹¹ The stock price, stock return, shares outstanding, and turnover are from the Center for Research in Security Prices (CRSP) monthly database. The book value of equity, total assets, and cash dividends are from COMPUSTAT.

The subsample of institutions that are classified as hedge funds are identified in the Swem (2016) study. Specifically, the funds are identified by manually matching over 2,500 hedge fund names listed in the FactSet LionShares holdings data from 2004-2015 against each of the over 14,000 names of 13-F filings institutions from the Thomson Reuters S34 file over the same period.¹²

Corporate social responsibility data is from the Kinder, Lydenberg, and Domini (KLD) STATS database. KLD annually reports approximately 80 indicators of corporate social responsibility that cover seven major areas that include strengths and concerns about Community, Corporate Governance, Diversity, Employee Relations, Environment, Human Rights, and Product issues.¹³

¹¹ The observations with total institutional ownership greater than 100% are deleted.

¹² See Swem (2016) for further details. We thank Nathan Swem for generously sharing his data.

¹³ Details of the KLD strength indicators are presented in the appendix B.

KLD provides CSR data starting in 1991 with a sample of about 650 firms that are in either the S&P 500 or Domini 400 Social Index. In 2003, KLD added full coverage of the Russell 3000, increasing their coverage to about 3100 firms. Because our analysis requires a broad cross-section of firms and available information about future changes in KLD scores, our sample starts in 2003 and ends in 2013.¹⁴

Most of the concerns that are reported by KLD relate to potential legal problems that are associated with environmental damages, product safety, marketing and contracting disputes, and potential anti-trust violations. Since we do not think it is likely that institutions will target firms for having too few concerns of this type, our focus is on the strengths that are reported by KLD. Henceforth, we will use CSR, KLD and KLD strength interchangeably. Appendix C reports the number of KLD strength indicators, and the minimum, median and maximum strength scores for the seven categories respectively. KLD strength ratings include 71 indicators. Although the median KLD strength score is only 1, some firms have very high strength scores. The maximum KLD strength score is 22 and the minimum score is 0 in our sample.

We plot the value of average KLD in our sample over the years in Figure 2. As the figure indicates, average KLD scores have increased over time, which is consistent with the growing popularity of social responsible investments we mentioned earlier. Interestingly, despite a generally upward trend, KLD scores declined during the financial crisis in 2008 and 2009, which is consistent with the hypothesis that corporate social responsibility is viewed as a luxury good, i.e., firms tend to

¹⁴ Di Giuli and Kostovetsky (2014) examine the sample starting in 1991, when KLD initiated their coverage of corporate social responsibility. The analysis in this paper does not require a broad cross-section, and because it is an earlier study, they have fewer years of the broader post 2003 data. Our experimental design benefits from a broad cross-section of stocks that includes smaller companies that tend to have more dispersion in KLD scores. We are particularly interested in identifying NSRIs, which invest in firms with zero or small KLD scores, which are not common in the sample of S&P500 firms. A related consideration is that socially responsible investing became much more popular after 2000. In any event, our results are similar when we extend our sample back to 1991, and when we directly compare our results to the Di Giuli and Kostovetsky (2014) results we will account for differences in the sample.

increase KLD scores when they are more profitable.

2.2. Socially-Responsible Institutional (SRI) Ownership Measures

We measure the taste for social responsibility (SR) of institutional investors by aggregating the KLD ratings of the firms whose stocks they hold to determine the SR rating for each institution. Since there is a strong positive relation between firm size and KLD ratings,¹⁵ an institution's SR rating is strongly determined by the average size of the firms in the institution's portfolio. To purge this size effect, we use size-adjusted KLD ratings (*ADKLD*). Each quarter, we sort the stocks into 10 deciles based on size and calculate the average KLD rating for each size decile. A firm's size-adjusted KLD rating is its raw KLD rating minus the average KLD rating of stocks in its decile.

Specifically, institutional social responsibility ratings (SR) are calculated as follows:

$$SR_{i,q} = \sum_{j \in i} \omega_{j,q} ADKLD_j, \quad (1)$$

where $SR_{i,q}$ is the social responsibility rating for institution i at the end of quarter q , $\omega_{j,q}$ is the weight of stock j in institution i 's portfolio at the end of quarter q , and $ADKLD_j$ is the size-adjusted social responsibility strength rating for stock j at the previous year end. Stocks with missing ratings are removed when calculating the institutional SR ratings. Each quarter, we divide institutions into two groups based on their institutional SR ratings, those with above median SR are classified as SRIs and those with below the median SR are classified as NSRIs. Finally, for each stock in each quarter, we measure the SRI (NSRI) ownership percentage as the number of shares held by SRIs (NSRIs) divided by the total number of shares outstanding. We use this measure of SRI ownership as our

¹⁵ The correlation between KLD and logsize is about 0.529 reported in Panel B of Table 1.

forward-looking measure of a firm's expected social responsibility.

2.3. Control Variables

Our return regressions include controls for a number of characteristics that are associated with expected stock returns. These include size, B/M, Age, Cash Dividend, Price, Turnover, Past Returns ($Ret_{q-3,q}$, $Ret_{q-12,q-3}$), Volatility, and an indicator of whether or not the stock is in the S&P 500. All variables except institutional ownership, returns, and the S&P500 dummy are expressed in natural logarithms.¹⁶ In our CSR regressions, we control for factors that potentially affect firm CSR activities such as size and past ROA.

2.4. Summary Statistics

Table 1 Panel A reports the time-series mean, median, standard deviation, minimum, and maximum of the variables of the institutional ownership variables that we include in our regressions. The average institutional ownership (IO) is 67.168%, the ownership of SRI ($SRIO$) is 36.665% and that of NSRI ($NSRIO$) is 30.503%. The quarterly change in total institutional ownership for each stock tends to be small on average, about 0.01%, indicating the level of institutional ownership in our sample period is quite stable.

Panel B reports the time-series averages of the cross-sectional correlations. These correlations reveal that KLD scores are negatively correlated with hedge fund ownership (IO_{HF}) but are positively correlated with other institutional ownership (IO_{NONHF}). This evidence is consistent with our conjecture that social considerations have less of an influence on hedge fund portfolio choices. By construction, SRIs hold firms with more CSR activities, so of course we find a positive

¹⁶ Details of variable constructions are in Appendix A.

correlation between KLD and SRI ownership of non-hedge funds (*SRIO_NONHF*). The correlation between KLD and SRI ownership of hedge funds (*SRIO_HF*) is slightly positive.

Panel C divides the sample by whether or not the institution is a hedge fund. Specifically, it reports the percent of our total sample that are classified as SRI hedge funds, NSRI hedge funds, SRI non-hedge funds and NSRI non-hedge funds. In our sample, only 22% of the hedge funds are classified as SRIs, which contrasts sharply with the 60% of the non-hedge funds that are classified as SRIs.

2.5 The Persistence of SRI and NSRI

In Table 2, we examine the persistence of our SRI and NSRI classifications. Panel A shows the transition matrix between SRI and NSRI. Among all SRIs in a given quarter, approximately 89.15% are still classified as SRI after one quarter, 80.35% after one year and 71.71% after 2 years. Similarly, the percentage of NSRI that continue to be NSRI is about 89.31% after one quarter, 78.71% after one year and 68.21% after 2 years. In Panel B, we split the sample by hedge fund status and repeat the persistency investigation of SRI and NSRI. We find SRI non-hedge funds and NSRI hedge funds are most persistent, 83.54% of the former and 81.16% of the latter remains in the same classification after one year. In contrast, SRI hedge funds are the least persistent; only 51.16% of the SRI hedge funds remain SRI after one year.

Consistent with these observations, as shown in Panel C, hedge funds tend to buy stocks with lower KLD ratings than non-hedge funds. This is true for the average KLD ratings for the new stocks added to their portfolios as well as for the average KLD ratings of additions to their existing holdings. (These numbers are calculated as time series averages of the value-weighted average KLD

ratings of the stocks added to the respective portfolios.)

3. Empirical Results

3.1. Do SRIs' holdings predict changes in KLD scores?

We start by examining whether the composition of a firm's ownership predicts changes in KLD scores. As we mentioned in the introduction, we conjecture that the interactions between corporate executives and SRIs are likely to help these investors forecast future changes in CSR activities as well as influence these activities. In this section, we test this directly.

Because KLD scores are only reported annually and their release dates are unknown, we measure the composition of ownership at the end of the second quarter in year t (i.e., $SRIO_{q,t}$ and $IO_{q,t}$ in Figure 1) and compare it to changes in KLD scores over the following calendar year (i.e., ΔKLD_{t+1} in Figure 1). For robustness, we replicate our analysis using SRI ownership at the end of year t . We estimate these relationships for our full sample as well as for the high KLD and low KLD subsamples constructed based on the KLD scores at the end of year t , KLD_t .¹⁷

Table 3 examines the relation between ownership composition and future changes in KLD scores for a number of different subsamples. Specifically, we first sort firms into three groups based on total institutional ownership, and then further sort into high and low KLD subsamples. We then separately sort firms by their SRI hedge fund and non-hedge fund ownership percentages.

As shown in the first panel of Table 3, firms with higher institutional ownership have a slightly stronger tendency to increase their KLD scores – this tendency appears to be driven by the firms with high KLD scores. However, as seen in the second and third panel, changes in KLD scores seems to

¹⁷ These regressions consider the level rather than the changes in SRI holdings because we conjecture that the level is a better indicator of pressure on management and changes in SRI holdings may influence CSR activities with a lag. In unreported regressions we decompose the ownership in quarter q into the level in quarter $q-1$ and the change in quarter q and find that both change and level affect future KLD score changes.

be more influenced by the institutions we classify as socially responsible that are not hedge funds. The relationship between SRI holdings and future changes in KLD is strongest in the high KLD subsample, where the difference in the yearly KLD change between firms ranked in the top and bottom tercile of SRIO of non-hedge funds is 0.398. Economically, this difference is very significant given that the level of KLD for an average firm in our sample period is 1.411 (as noted in Table 1).

Table 4 examines these same relations with regressions that control for other factors that may influence CSR activities. In particular, we control for lagged asset size and ROA because larger and more profitable firms tended to increase their CSR activities over our sample period. We also control for the lagged level of KLD to capture the possibility of mean reversion in a firm's KLD scores. In all regressions, we control for industry fixed effects and year fixed effects to control for upward trend of KLD scores in our sample period as clearly shown in Figure 2. All the t -statistics are calculated with standard errors clustered by firm.

A number of the control variables are significant. For example, the coefficient of KLD_t in both the full sample and the high KLD subsample is highly significant negative, indicating that high KLD firms tend to reduce their KLD scores in the following year, which is consistent with the mostly negative KLD change in the high KLD subsample in Table 3. Note that we do not include KLD_t in the regression in the low KLD subsample since all firms have zero KLD in this subsample. It should also be noted that the strong size and profitability effect mentioned earlier holds in our multiple regression and that firms that realize higher stock returns in the prior year tend to increase their KLD scores.

The regression reported in Column (1) reveals a strong positive coefficient estimate for SRI ownership and a strong negative coefficient estimate for IO. Since IO is the sum of SRIO and NSRIO,

the coefficient of *IO* measures the impact of NSRIO on the change in KLD scores, while the coefficient of *SRIO* measures the differential impact of *SRIO* over *NSRIO*. Thus, the negative coefficient of *IO* indicates that NSRI ownership tends to decrease a firm's KLD scores in the future, while the significantly positive coefficient of *SRIO* indicates that relative to NSRI ownership, SRI ownership has a significantly positive impact on the tendency to increase KLD.

The regression reported in Column (2) estimates the differential effects of hedge fund and non-hedge fund ownership. Since we are controlling for non-hedge fund ownership, the negative coefficient of *IO* indicates that hedge fund ownership is negatively associated with future increases in KLD scores while the significantly positive coefficient of *IO_NONHF* indicates that relative to *IO_HF*, non-hedge fund ownership is positively associated with future KLD increases. These results together with those from Column (1) are consistent with our earlier observation that hedge funds tend to be NSRIs, and are thus less likely to support increased CSR expenditures and non-hedge funds tend to be SRIs, and are thus more supportive of increased CSR expenditures.

In Column (3), we further separate *SRIO* and *IO* by hedge fund status. Note that since *IO_NONHF* is the sum of *SRIO_NONHF* and *NSRIO_NONHF* that the coefficient of *IO_NONHF* captures the impact of *NSRIO_NONHF*, and the coefficient of *SRIO_NONHF* captures the differential impact of *SRIO_NONHF* over that of *NSRIO_NONHF*. Similar interpretations apply to the coefficient of *SRIO_HF* and *IO_HF*. First, focusing on the SRI and NSRI ownership of non-hedge funds, we find NSRI ownership has a negative impact on increases in KLD scores and SRI has a positive impact relative to that of NSRI. These results are consistent with the results reported in Column (1). Turning to the impact of SRI and NSRI ownership of hedge funds, we find that the impact of NSRI ownership of hedge funds (i.e., the coefficient of *IO_HF*) is similar both in

sign and magnitude to that of the NSRI ownership of non-hedge funds (i.e., the coefficient of *IO_NONHF*). However, the coefficient of *SRIO_HF* is negative but insignificant, which is in contrast to the significantly positive coefficient of *SRIO_NONHF*, indicating that after controlling for everything else, we cannot reliably distinguish between the effect of NSRI and SRI hedge funds on future changes in KLD scores. The most striking result from this multiple regression is that SRI ownership of hedge fund (*SRIO_NONHF*) is the only type of institutional ownership that is positively associated with changes in KLD scores. Hedge fund ownership seems to be negatively associated with changes in KLD scores regardless of how the hedge funds are classified.

We repeat the above analyses separately for the high KLD and low KLD subsamples. We find the results are much stronger in the high KLD subsample. In particular, the negative effect of *IO_HF* is very strong in the high KLD subsample, but is negligible in the low KLD subsample. This is not surprising, given that low KLD firms initially have zero KLD scores. The much stronger positive impact of *SRIO_NONHF* in the high KLD subsample is also consistent with the notion that managers of high KLD firms are likely to have a preference for high CSR and may thus be more receptive to the pressure of SRIs.

3.2. Change in SRI Ownership ($\Delta SRIO$) and Future Stock Returns

In previous sections, we showed that firms with high SRI ownership tended to have higher future KLD scores. In this section, we examine the relation between changes in SRI ownership and stock returns. Implicitly, we are using observed changes in SRI ownership as a proxy for expected future changes in CSR activities. Our conjecture is that if the valuation effect of increased CSR activities is viewed positively by the market, then the revelation of increased SRI ownership should result in higher stock prices. In contrast, if the valuation effect of increased CSR activities is viewed

negatively by the market, then the revelation of increased SRI ownership should result in negative stock return.

This experiment provides relatively clean identification because the end of quarter holdings of the funds is publicly revealed sometime in the middle of the following quarter.¹⁸ Thus, the return measured over the following quarter can be viewed in part as a price reaction to the revelation of news about expected future CSR activities. Of course, the revelation of institutional investor holdings will also result in a price reaction if institutions have private information about other aspects of firms' businesses. However, we expect the relation between institutional holdings and future returns to be positive if the dominant channel linking holdings to returns comes from the institutional investors' private information or other sources of special insights. Indeed, this latter channel is the focus of the existing literature that examines the relation between holdings and returns.

To be more specific about our tests, for each quarter q in year t , we run the following Fama-MacBeth (1973) regression of returns on lagged institutional ownership and other firm characteristics:

$$Qret_{i,q+1} = \alpha_q + \beta_q SRIO_{i,q-1} + \theta_q \Delta SRIO_{i,q} + \delta_q IO_{i,q-1} + \varphi_q \Delta IO_{i,q} + \gamma_q X_{i,q} + \varepsilon_{i,q}, \quad (2)$$

where $Qret_{i,q+1}$ is the one quarter ahead return of stock i , $IO_{i,q-1}$ and $SRIO_{i,q-1}$ are total institutional ownership and SRI ownership of stock i at the end of quarter $q-1$, and $\Delta IO_{i,q}$ and $\Delta SRIO_{i,q}$ are the quarterly changes in total and SRI ownership respectively from quarter $q-1$ to quarter q . Finally, $X_{i,q}$ is a vector of characteristics measured at the end of quarter q described in Section 2.3. We also include both the contemporaneous and lag of KLD change in year t that Di,

¹⁸ Institutional investment manager with investment discretion over 100 million or more is required to file form 13-F with the SEC within 45 days at the end of a calendar quarter on the number of shares they hold of stocks.

Giuli, and Kostovetsky (2014) hypothesized would capture investors' reaction to CSR policy.

Table 5 reports these Fama-MacBeth (1973) regressions where our t -statistics are calculated with Newey-West standard errors. As in Table 4, the coefficient of ΔIO measures the impact of a change in NSRI ownership and the coefficient of $\Delta SRIO$ measures the differential impact of a change in SRI ownership relative to that of a change in NSRI ownership. The results reported in the first column indicate that the average coefficient of $\Delta SRIO$ is -0.1222, which is statistically significant at the 1% level. This indicates a strong and negative relation between the next quarter's return and changes in SRI ownership, relative to that of a change in NSRI ownership. These results, which also hold when we control for industry fixed effects, indicate that holding other things constant, including changes and the level of total institutional ownership, returns tend to be negatively affected by the revelation of an increase in SRI holdings. It is also worth pointing out that the significant negative coefficient of the lags of KLD change reported in Di, Giuli, and Kostovetsky (2014) become positive and insignificant in our regression estimates.¹⁹

Column (2) reports a similar regression that separates the institutional holdings into those held by hedge funds and non-hedge funds. As this regression illustrates, the negative returns associated with the revelation of SRI holdings are mainly driven by the change in SRIO of non-hedge funds ($\Delta SRIO_NONHF$). Indeed, the revelation of an increase in the SRIO of hedge funds ($\Delta SRIO_HF$) is not associated with significantly lower returns. We also observe a significantly positive coefficient of (ΔIO_HF), which indicates that the revelation of an increase in the NSRI holdings of hedge funds is

¹⁹ We replicated the Di, Giuli, and Kostovetsky (2014) result that lagged changes in KLD scores predict returns using the sample of S&P500 firms during the 1991 to 2009 sample period of their study. We also examined the relation between changes in SRIO and returns in this sample and found results that are qualitatively similar to the results in our 2003 to 2013 sample period.

associated with significant excess returns. This finding is consistent with the idea that the revelation of increased holdings by hedge funds is viewed favorably by the market because higher ownership by these investors tends to be associated with lower increases in CSR activities.²⁰ Of course, we cannot separate this hypothesis from the more general hypothesis that hedge funds are better able to collect and interpret information that is relevant for firm valuation.

To gauge the economic importance of SRI ownership, we consider a hypothetical portfolio strategy that is based on the end of quarter holdings. It should be noted that this is a hypothetical strategy because it assumes that although trades are executed after the institutions trade, they are executed before the holdings are actually revealed. Specifically, at the end of each quarter, we allocate stocks into 10 equally-weighted portfolios based on the change in NSRI ownership ($\Delta NSRIO$) and the change in SRI ownership ($\Delta SRIO$). We report the holding period returns of each portfolio as well as the return of a High-Low portfolio from an investment strategy that buys stocks with the largest increase in SRI (NSRI) ownership (Group 10) and shorts stocks with largest decrease in SRI (NSRI) ownership (Group 1). In addition to raw returns, we report DGTW adjusted returns that control for the size, B/M and momentum of the individual stocks. We do this separately for portfolios formed based on just hedge fund holdings and non-hedge fund holdings.

The raw returns of these portfolios are reported in Panel A of Table 6. The column under $\Delta SRIO_{HF}$ ($\Delta NSRIO_{HF}$) reports returns portfolios constructed based on changes in SRI (NSRI) ownership of hedge funds while their non-hedge fund counterparts are reported in column under $\Delta SRIO_{NONHF}$ ($\Delta NSRIO_{NONHF}$). The most striking observation from this table is that the portfolio returns increase almost monotonically with changes in NSRI hedge fund holdings.

²⁰ In unreported regressions we also consider the relation between levels of lagged ownership and stock returns and get very similar results.

Moreover, portfolio returns decrease almost monotonically with changes in SRI non-hedge fund ownership. We also find that the return difference between stocks with the largest increase and smallest increase in NSRI non-hedge fund (SRI hedge fund) ownership, reported as High-Low, is insignificantly negative (positive). When we estimate the differential effect of an increase in NSRI and SRI ownership, which we report as the diff-in-diff at the bottom of the table, we find that SRI ownership has a significantly more negative effect for non-hedge funds, but the effect is insignificantly negative for hedge funds. In Panel B we replicate these tests with DGTW adjusted returns and get similar results. Although a bit weaker, we continue to observe that changes in SRI ownership has a significantly more negative effect than changes in NSRI ownership for non-hedge funds.

3.3. Analysis of monthly returns

Up to this point, we have indirectly explored the effect of CSR activities on firm values by relating changes in SRI ownership in quarter q to returns in quarter $q+1$ when those holdings are revealed. In this section, we provide what may be more precise estimates using monthly returns.

Institutional investors have up to 45 days after the quarter end to file their holdings information with the SEC. This means that institutional holdings information from quarter q is generally revealed during the first two months of quarter $q+1$, which means that the $q+1$ excess return in our tests should occur in either the first or second month of the quarter. Funds may strategically reveal their holdings early, if they expect to unwind their trades and believe the holdings will positively affect prices, and they may delay the revelation of holdings if they believe the holdings will negatively influence prices or if they want to continue to accumulate shares.

In Table 7, we repeat the regressions reported in Table 5, but we replace the quarterly return by each of the monthly returns in that quarter as the dependent variables. In other words, we run three separate monthly return regressions on the same independent variables we used in the Table 5 regressions. These regressions are denoted as *Mret1*, *Mret2* and *Mret3* representing the first, second and third monthly return in quarter $q+1$ respectively.

Comparing the three monthly regressions in Column (1) reveals that the change in SRI ownership has the greatest negative impact in the second month, which is when we expect the majority of holdings to be revealed. Moreover, as we expect, there is no significant impact in the third month, since the holdings should have been revealed prior to the start of that month.²¹ Comparing across Column (2), we find the negative impact of an increase in SRI ownership comes mainly from non-hedge funds, and that the impact is also greatest in the second month; and more importantly, no price impact in the third month.

4. Conclusion

Almost all corporate executives and portfolio managers have a preference for higher returns and at least a weak preference for choices that are believed to be socially responsible. Those corporate executives with a strong preference for social responsibility face tradeoffs and are willing to make socially responsible choices that sacrifice firm value. Similarly, portfolio managers with a strong preference for social responsibility are willing to accept lower rates of return to hold the stocks of socially responsible firms. The question that is of interest is whether one can identify evidence that these choices have a meaningful effect on returns and firm values.

²¹ In unreported analysis we also looked beyond the first quarter after the revelation of the holdings and found no long-term relation between holdings and future returns.

The approach taken in this paper at least partially circumvents the measurement and endogeneity problems that make this a difficult question to address empirically. Our approach, which uses a revealed preference measure of socially responsible institutions, exploits cross-sectional differences in investor preferences for socially responsible investing to classify firms according to their CSR tendencies. Specifically, we show that changes in the holdings of socially responsible investors predict changes in KLD scores, and that these holdings do in fact influence stock prices during the quarter in which the holdings are publicly revealed. Consistent with the view that, on the margin, higher CSR activities are costly to shareholders, we find that the stock returns of firms tend to be negative when it is revealed that the holdings of socially responsible investors increased in the prior quarter.

Before concluding, it should be stressed that our analysis does not address the literature that explores how firms can benefit from being socially responsible, for example, by improving their reputations in various ways.²² Indeed, there is nothing in our analysis that would rule out significant benefits from being socially responsible. We have simply established that some firms are willing to “over invest” in CSR, which means that they are willing to sacrifice firm value for a broader agenda, and likewise, there exist institutions with broader agendas that are willing to accept a lower expected rate of return. A better understanding of these firms and institutions, and how they view these tradeoffs, clearly warrants additional research.

²² For example, Dimson, Karakas, and Li (2015) suggest that firms that benefit more from a favorable reputation tend to have higher CSR scores and Chen, Chen, and Nguyen (2015) who find that socially responsible firms have a more positive media image. There is also evidence of tangible benefits associated with the better reputations. For example, Hong and Liskovich (2015) find that firms prosecuted for bribery pay lower fines if they have high CSR ratings, Werner (2105) provides evidence that firms with higher KLD ratings tend to have greater access to Congress and Deng, Kang and Low (2013) show that firms with higher CSR ratings realize higher gains from merger activities.

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Appendix A: Variable Definitions

This appendix presents the detailed definitions of the variables used in the analyses and regressions.

Variables	Definitions
<u>Institutional Ownership Variables</u>	
IO_q	Total institutional ownership at the end of quarter q , which is defined as shares held by all institutions divided by total shares outstanding.
ΔIO_q	Change in total institutional ownership from quarter $q-1$ to q .
$SRIO_q$	SRI ownership at the end of quarter q , which is defined as shares held by all SRIs divided by total shares outstanding.
$\Delta SRIO_q$	Change in SRI ownership from quarter $q-1$ to q .
$NSRIO_q$	NSRI ownership at the end of quarter q , which is defined as shares held by all NSRIs divided by total shares outstanding.
$\Delta NSRIO_q$	Change in NSRI ownership from quarter $q-1$ to q .
IO_HF_q	Hedge fund ownership at the end of quarter q , which is defined as shares held by all hedge funds divided by total shares outstanding.
ΔIO_HF_q	Change in hedge fund ownership from quarter $q-1$ to q .
IO_NONHF_q	Non-hedge fund ownership at the end of quarter q , which is defined as shares held by all non-hedge funds divided by total shares outstanding.
ΔIO_NONHF_q	Change in non-hedge fund ownership from quarter $q-1$ to q .
$SRIO_HF_q$	Hedge fund SRI ownership at the end of quarter q , which is defined as shares held by all hedge fund SRIs divided by total shares outstanding.
$\Delta SRIO_HF_q$	Change in hedge fund SRI ownership from quarter $q-1$ to q .
$SRIO_NONHF_q$	Non-hedge fund SRI ownership at the end of quarter q , which is defined as shares held by all non-hedge fund SRIs divided by total shares outstanding.
$\Delta SRIO_NONHF_q$	Change in non-hedge fund SRI ownership from quarter $q-1$ to q .
$NSRIO_HF_q$	Hedge fund NSRI ownership at the end of quarter q , which is defined as shares held by all hedge fund NSRIs divided by total shares outstanding.
$\Delta NSRIO_HF_q$	Change in hedge fund NSRI ownership from quarter $q-1$ to q .
$NSRIO_NONHF_q$	Non-hedge fund NSRI ownership at the end of quarter q , which is defined as shares held by all non-hedge fund NSRIs divided by total shares outstanding.
$\Delta NSRIO_NONHF_q$	Change in non-hedge fund NSRI ownership from quarter $q-1$ to q .
<u>Stock Return and Turnover Variables</u>	
$Qret_{q+1}$	Firm's buy and hold stock returns in quarter q .
$Mret1$	Firm's buy and hold stock returns in the first month of quarter $q+1$.
$Mret2$	Firm's buy and hold stock returns in the second month of quarter $q+1$.
$Mret3$	Firm's buy and hold stock returns in the third month of quarter $q+1$.
$RET_{t-3,t}$	Firm's 3-month gross stock returns from month $t-3$ to t .
$RET_{t-12,t-3}$	Firm's 9-month gross stock returns from month $t-12$ to $t-3$.
$Yret_t$	Firm's buy and hold stock returns from July in year $t-1$ to June in year t .
$Logturnover$	The log of average monthly stock turnover over previous quarter.
$Logprice$	The log of quarter end stock price.
$Logvol$	The log of stock return volatility, which is calculated as the variance of monthly returns over previous two years.
<u>Firm Characteristics Variables</u>	
KLD_t	Firm's KLD strengths score at the end of year t .
ΔKLD_t	Change of firm's KLD from year $t-1$ to t .

Logage The log of the number of months since the first return of the stock appears in CRSP.
SP500 A dummy variable indicating S&P 500 membership.

Financial Variables

Logbm The log of firm's book-to-market value (B/M), which is defined as the book value of the firm for the fiscal year ended before the most recent Jun 30, divided by firm size as of Dec 31 during that fiscal year.

Logsize The log of firm size (MV), which is defined as the quarter end market capitalization.

LogCDV The log of scaled cash dividend, which is defined as the cash dividends for the fiscal year ended before the most recent Jun 30, scaled by firm size as of Dec 31 in that fiscal year.

LogAssets The log of firm's total assets.

ROA Return on asset, which is defined as $EBITDA_t$ divided by $Total\ Assets_{t-1}$.

Appendix B: Indicators of KLD Qualitative Issue Areas

This Appendix provides detailed definitions of KLD strength indicators in all seven major KLD Qualitative Issue Areas with 2008 scores for Coca-Cola Company and PepsiCo, Inc. for illustration purpose.²³ KLD indicates a score of positive one for a strength of a company in a particular issue. If the company did not have a strength in that issue, a score of zero will be indicated. A company's KLD strength score is the summation of all positive ones in the qualitative issues.

Indicators	Definitions	Coca-Cola	Pepsi
<u>Community Indicators</u>		2	2
Charitable Giving	The firm has consistently given over 1.5% of trailing three-year net EBT to charity, or has otherwise been notably generous in its giving.	0	0
Innovative Giving	The firm has a notably innovative giving program that supports nonprofit organizations.	0	0
Non-US Charitable Giving	The firm must make at least 20% of its giving, or have taken notably innovative initiatives in its giving program outside the US.	1	1
Support for Housing	The firm is a prominent participant in public/private partnerships that support housing initiatives for the economically disadvantaged.	0	0
Support for Education	The firm has been notably innovative in its support for primary or secondary school education, or job-training programs for youth.	1	1
Volunteer Programs	The firm has an exceptionally strong volunteer program.	0	0
Other Strength	The firm has either an exceptionally strong in-kind giving program or engages in other notably positive community activities.	0	0
<u>Corporate Governance Indicators</u>		2	2
Limited Compensation	Recently, total annual compensation is less than \$500,000 for a CEO or \$30,000 for outside directors.	0	0
Ownership	The firm owns between 20% and 50% of another firm KLD has cited as having an area of social strength, or is more than 20% owned by a firm that KLD as having social strengths.	0	0
Transparency	The firm is effective in reporting on social and environmental performance measures.	1	1
Political Accountability	The firm has shown markedly responsible leadership on public policy issues and/or has an exceptional record of transparency and accountability concerning its political involvement in state or federal-level U.S. politics, or in non-U.S. politics.	1	1
Other Strength	The firm has a unique and positive corporate culture, or has undertaken a noteworthy initiative not covered by KLD's other corporate governance ratings.	0	0
<u>Diversity Indicators</u>		4	4
CEO	The firm's CEO is a woman or a member of a minority group.	0	1
Promotion	The firm has made notable progress in the promotion of women and minorities.	1	0
Board of Directors	Women, minorities, and/or the disabled hold 4 seats or more on the board, or 1/3 or more if the board size less than 12.	0	1
Work/Life Benefits	The firm has outstanding employee benefits programs addressing work/life concerns like childcare, elder care or flextime.	1	0
Women & Minority Contracting	The firm does at least 5% of its subcontracting, or has a strong record on contracting with women/minority-owned businesses.	1	1
Employment of the Disabled	The firm has taken hiring programs for the disabled, or has a superior reputation as an employer of the disabled	0	0

²³More information on KLD indicators of qualitative issue areas can be found in the manual provided in WRDS database.

<https://wrds-web.wharton.upenn.edu/wrds/support/Data/001Manuals%20and%20Overviews/070KLD/index.cfm>

Appendix B (Continued)

Indicators	Definitions	Coca-Cola	Pepsi
Diversity Indicators (continue)			
Gay & Lesbian	The firm has implemented notably progressive policies toward its gay and lesbian employees.	1	1
Other Strength	The firm has made a notable commitment to diversity not covered by other KLD ratings.	0	0
Employee Relations Indicators		0	2
Union Relations	The firm has taken exceptional steps to treat its unionized workforce fairly.	0	0
Cash Profit Sharing	The firm has a cash profit-sharing program and has recently made distributions to a majority of its workforce.	0	0
Employee Involvement	The firm strongly encourages worker involvement and/or ownership through stock options available to a majority of its employees.	0	1
Retirement Benefits	The firm has a notably strong retirement benefits program.	0	0
Health and Safety	The firm has strong health and safety programs.	0	1
Other Strength	The firm has strong employee relations initiatives not covered by other KLD ratings.	0	0
Environment Indicators		3	3
Beneficial Products & Services	The firm derives substantial revenues from innovative remediation products, environmental services, or products that promote the efficient use of energy, or it has developed innovative products with environmental benefits.	0	0
Pollution Prevention	The firm has notably strong pollution prevention programs including both emissions reductions and toxic-use reduction programs.	0	0
Recycling	The firm is a substantial user of recycled materials as raw materials in its manufacturing processes, or a major factor in the recycling industry.	1	0
Clean Energy	The firm has taken significant measures to reduce its impact on climate change and air pollution through use of renewable energy and clean fuels.	0	1
Management Systems	The firm has demonstrated a superior commitment to management systems through ISO 14001 certification and other voluntary programs.	1	1
Other Strength	The firm has demonstrated a superior commitment to management systems, voluntary programs, or other environmentally proactive activities.	1	1
Human Rights Indicators		1	0
Indigenous Peoples Relations	The firm has established relations with indigenous peoples near its proposed or current operations.	0	0
Labor Rights	The firm has great transparency on overseas sourcing disclosure and monitoring, or has particularly good union relations outside the U.S., or has undertaken labor rights-related initiatives.	0	0
Other Strength	The firm has undertaken exceptional human rights initiatives, or has shown industry leadership on human rights issues not covered by other KLD ratings.	1	0
Product Indicators		0	0
Quality	The firm has a long-term, well-developed, company-wide quality program, or it has a quality program recognized as exceptional in U.S. industry.	0	0
R&D/Innovation	The firm is a leader in its industry for R&D particularly by bringing notably innovative products to market.	0	0
Economically Disadvantaged	The firm has as part of its basic mission the provision of products or services for the economically disadvantaged.	0	0
Other Strength	The firm's products have notable social benefits that are highly unusual or unique for its industry.	0	0
Total		12	13

Appendix C: Summary of KLD Scores

This appendix presents the distribution of KLD strength indicators and scores of all the firms covered in KLD STATS from 2003 to 2013 across seven major qualitative issues.

KLD Strength Scores Summary	No. of Indicators	KLD strength Scores		
		Min	Median	Max
Community Issues	8	0	0	5
Corporate Governance Issues	8	0	0	3
Diversity Issues	9	0	0	7
Employee Relations Issues	13	0	0	9
Environment Issues	17	0	0	5
Human Rights Issues	4	0	0	2
Product Issues	12	0	0	3
All Strength Issues	71	0	1	22

Figure 1: Timeline

Variables highlighted in blue are used in the return regression. Variables highlighted in red are used in the change of KLD regression.

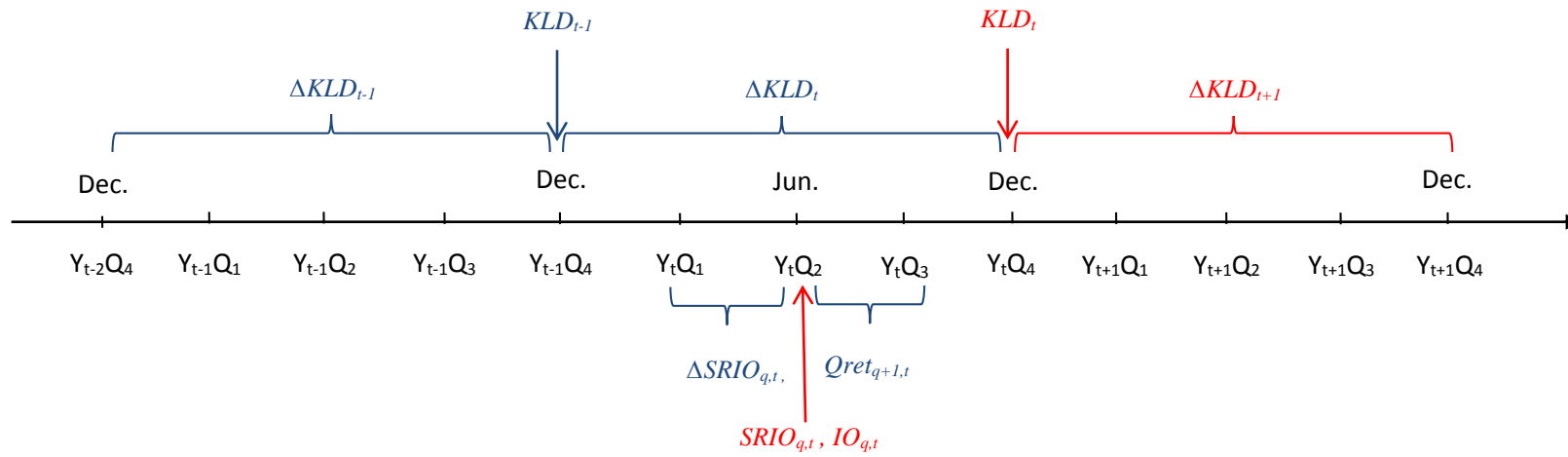


Figure 2: Trend of KLD

This figure shows the trend of average KLD strength scores of firms in our sample from 2003 to 2013.

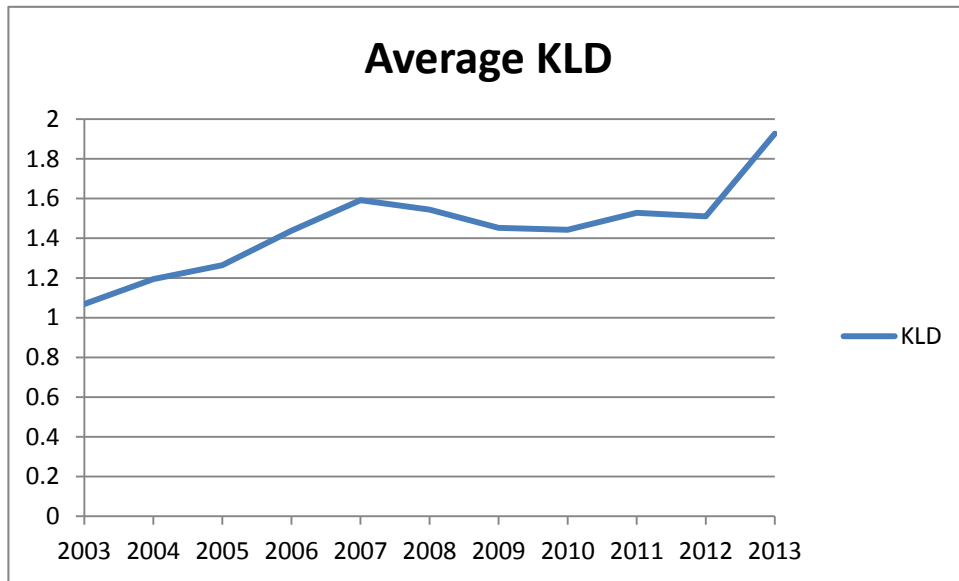


Table 1: Summary Statistics

This table shows the summary statistics, correlations and distributions of our sample from 2003:Q1 to 2013:Q4. Panel A presents the time-series average of cross-sectional mean, median, standard deviation, minimum and maximum of the variables and Panel B presents the time-series average of cross-sectional correlations between each variable. Each quarter, we divide institutions into two groups based on value weighted social responsibility scores of their portfolio holdings. Institutions with scores below the median are classified as Non-Socially Responsible Institutions (NSRIs) and those with scores above the median are classified as Socially Responsible Institutions (SRIs). Panel C presents a 2x2 distribution matrix which reports the time-series average of the percentages of Hedge Funds and Non-Hedge Funds in SRI and NSRI groups. The detailed definitions of all the variables are described in Appendix A. Superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Time-Series Average of Cross-Sectional Values

	Mean	Median	Standard Deviation	Minimum	Maximum
<i>IO</i> (%)	67.168	72.167	22.054	1.027	99.938
ΔIO (%)	0.010	0.005	5.525	-64.741	62.688
<i>SRIO</i> (%)	36.665	37.127	15.582	0.468	84.872
$\Delta SRIO$ (%)	-0.202	-0.131	5.068	-47.457	44.800
<i>NSRIO</i> (%)	30.503	30.114	15.340	0.110	91.771
$\Delta NSRIO$ (%)	0.212	0.121	5.053	-46.296	45.899
<i>IO_HF</i> (%)	6.880	4.462	7.366	0.000	68.495
ΔIO_HF (%)	0.161	0.005	2.659	-23.379	28.917
<i>IO_NONHF</i> (%)	60.288	64.323	21.324	0.756	98.577
ΔIO_NONHF (%)	-0.151	-0.039	5.419	-59.487	56.101
<i>SRIO_HF</i> (%)	0.862	0.291	1.938	0.000	38.124
$\Delta SRIO_HF$ (%)	0.026	0.006	1.468	-22.525	22.623
<i>SRIO_NONHF</i> (%)	35.802	36.227	15.345	0.446	83.632
$\Delta SRIO_NONHF$ (%)	-0.228	-0.148	4.832	-43.547	41.001
<i>NSRIO_HF</i> (%)	6.018	3.685	6.894	0.000	67.630
$\Delta NSRIO_HF$ (%)	0.135	0.002	2.795	-29.200	32.392
<i>NSRIO_NONHF</i> (%)	24.485	23.325	13.497	0.084	89.353
$\Delta NSRIO_NONHF$ (%)	0.077	0.089	4.506	-41.524	39.388
<i>KLD</i>	1.411	0.721	2.279	0.000	18.674
<i>MV</i> (\$mil.)	6003.650	1128.040	20665.090	14.785	401499.190
<i>B/M</i>	0.612	0.511	0.516	0.003	7.688
<i>Price</i> (\$)	35.115	23.117	258.072	0.465	12219.950
<i>Volatility</i>	0.019	0.011	0.046	0.001	1.748
<i>Turnover</i>	1.502	1.144	1.457	0.029	22.330
<i>SP500</i>	0.209	0.000	0.399	0.000	1.000
<i>Age</i> (months)	251.821	186.837	209.171	17.116	994.000
<i>CDV</i> (%)	0.016	0.001	0.040	0.000	0.806

Table 1: Summary Statistics (Continued)

Panel B: Time-Series Average of Cross-Sectional Correlations

	IO_HF_q	ΔIO_HF_q	IO_NONHF_q	ΔIO_NONHF_q	$SRIO_HF_q$	$\Delta SRIO_HF_q$	$SRIO_NONHF_q$	$\Delta SRIO_NONHF_q$	KLD	$Logbm$	$Logsize$	$Logvol$	$Logturnover$	$RET_{t-3,t}$
ΔIO_HF_q	0.242***													
IO_NONHF_q	-0.065***	-0.031***												
ΔIO_NONHF_q	-0.067***	-0.209***	0.127***											
$SRIO_HF_q$	0.368***	0.105***	0.004	-0.030***										
$\Delta SRIO_HF_q$	0.067***	0.217***	-0.006	-0.038***	0.411***									
$SRIO_NONHF_q$	-0.101***	-0.020***	0.774***	0.087***	0.057***	-0.001								
$\Delta SRIO_NONHF_q$	-0.037***	-0.106***	0.081***	0.618***	-0.014***	-0.012**	0.145***							
KLD	-0.136***	-0.006	0.082***	-0.007	0.069***	0.005	0.334***	-0.005						
$Logbm$	-0.006	0.002	-0.040***	-0.004	0.026***	0.003	-0.043***	-0.005	-0.086***					
$Logsize$	-0.155***	-0.005	0.379***	0.033*	0.045***	-0.002	0.592***	0.025	0.529***	-0.204***				
$Logvol$	0.285***	0.029***	-0.149***	-0.023*	0.072***	0.012	-0.249***	-0.020*	-0.219***	-0.028	-0.437***			
$Logturnover$	0.204***	0.063***	0.457***	-0.039***	0.138***	0.027***	0.489***	-0.019	0.111***	-0.094***	0.354***	0.210***		
$RET_{t-3,t}$	0.036***	0.043***	0.044***	0.133***	0.012	0.009	0.026**	0.064***	-0.001	0.019	0.111***	0.017	0.034**	
$RET_{t-12,t-3}$	0.009	-0.001	0.108***	0.086***	-0.007	0.001	0.079***	0.067***	-0.003	0.015	0.182***	-0.021	0.093***	-0.003

Panel C: 2x2 SRI (NSRI) Classifications of Hedge Funds and Non-Hedge Funds

	HF	NONHF
NSRI	18.27%	30.36%
SRI	5.06%	46.31%
All	23.33%	76.67%

Table 2: Persistence of SRI and NSRI

This table shows the persistence of our SRI and NSRI classifications. Panel A shows the transition matrix between SRI and NSRI over time. There are three types of institutional status at the end of each quarter. Status ‘NSRI’ indicates a particular institution is a non-social responsible institution at the quarter end while status ‘SRI’ indicates a particular institution is a social responsible institution at the quarter end. Status ‘Drop Off’ indicates the data for a particular institution is no longer available. ‘State 1’ indicates the status of institutions at the end of quarter q . ‘State 2’ indicates the status of institutions at the end of quarter $q+n$ ($n=1, 2, 3, 4$ and 8). The percentage of institutions is calculated as the number of institutions that transition from initial status X ($X=NSRI$ or SRI) at state 1 to status Y ($Y=NSRI, SRI$ or $Drop\ Off$) at state 2, divided by the number of institutions with initial status X at state 1. In Panel B, we repeat the same persistency investigation of SRI and NSRI but distinguishing them by their hedge fund/non-hedge fund status. Status ‘SRI HF’ indicates a social responsible hedge fund at the quarter end; Status ‘NSRI HF’ indicates a non-social responsible hedge fund at the quarter end; Status ‘SRI NONHF’ indicates a social responsible non-hedge fund at the quarter end; and Status ‘NSRI NONHF’ indicates a non-social responsible non-hedge fund at the quarter end. At state 2, institutions are classified into 3 groups. First group includes institutions whose status remains the same as that at State 1. The second group ‘Others’ include institutions which have different status from that at State 1. The last group ‘Drop Off’ includes institutions which data is no longer available at State 2. Panel C shows the time-series average KLD scores of stocks purchased by Hedge Funds (HF) and Non-Hedge Funds (NONHF) and their differences from 2003:Q1 to 2013:Q4. ‘Existing KLD’ is the time-series value-weighted average KLD scores of existing stocks held by Hedge Funds and Non-Hedge Funds. ‘Newly Purchased Stocks’ is defined as the stocks an institution does not hold at quarter $q-1$ but holds at quarter q . ‘Additional Purchase of Existing Stocks’ is defined as the stocks an institution already holds at quarter $q-1$ and increases the holding at quarter q . The t -statistics are presented in the parenthesis and superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: The Transition Matrix of SRI and NSRI

State1	State2	Number	Number of Institutions					Percentage of Institutions				
			1 quarter	2 quarters	3 quarters	4 quarters	8 quarters	1 quarter	2 quarters	3 quarters	4 quarters	8 quarters
SRI	SRI	1361	1212	1162	1123	1091	953	89.15	85.46	82.66	80.35	71.71
SRI	NSRI	1361	93	123	141	154	178	6.81	8.98	10.29	11.25	13.15
SRI	Drop off	1361	56	76	97	116	320	4.04	5.56	7.05	8.40	21.83
NSRI	SRI	1290	98	131	151	166	192	7.62	10.23	11.78	12.97	15.29
NSRI	NSRI	1290	1152	1096	1051	1014	864	89.31	84.95	81.53	78.71	68.21
NSRI	Drop off	1290	40	63	88	110	315	3.07	4.82	6.69	8.33	22.77

Table 2: Persistence of SRI and NSRI (continued)

Panel B: The Transition Matrix of SRI- and NSRI-Hedge Funds

State1	State2	Number	Number of Institutions					Percentage of Institutions				
			1 quarter	2 quarters	3 quarters	4 quarters	8 quarters	1 quarter	2 quarters	3 quarters	4 quarters	8 quarters
SRI NONHF	SRI NONHF	1226	1118	1079	1047	1022	900	91.31	88.15	85.58	83.54	75.15
	Others	1226	60	81	96	106	127	4.87	6.59	7.78	8.58	10.38
	Drop off	1226	47	65	82	97	278	3.83	5.26	6.65	7.88	21.15
SRI HF	SRI HF	136	94	82	76	69	54	69.30	60.78	56.02	51.18	41.13
	Others	136	33	42	45	48	51	24.86	31.24	33.63	36.13	39.34
	Drop off	136	8	12	15	19	42	5.84	7.99	10.35	12.69	27.58
NSRI NONHF	NSRI NONHF	799	710	673	643	620	525	88.84	84.22	80.47	77.53	66.79
	Others	799	63	88	104	116	139	7.86	10.95	13.02	14.53	17.83
	Drop off	799	27	39	53	64	185	3.30	4.83	6.52	7.94	21.73
NSRI HF	NSRI HF	491	442	423	408	395	339	90.12	86.33	83.61	81.16	71.48
	Others	491	35	44	47	50	54	7.26	8.97	9.60	10.11	10.94
	Drop off	491	13	24	35	46	129	2.62	4.69	6.79	8.73	24.03

Panel C: Average KLD of Stocks Purchased by Hedge Funds and Non-Hedge Funds

	Additional Purchase of Existing		
	Existing KLD	Stocks	Newly purchased stocks
HF	2.88	2.86	2.73
NONHF	4.96	4.26	3.19
HF - NONHF	-2.08*** (-27.80)	-1.40*** (-19.50)	-0.46*** (-6.03)

Table 3: Change in KLD Ratings and SRI Ownership

The table reports the change of KLD ratings in year $t+1$ for portfolios sorted on the $IO_{q,t}$, $SRIO_NONHF_{q,t}$, and $SRIO_HF_{q,t}$, respectively. $IO_{q,t}$ is the ownership of all the institutions at the end of the second quarter q in the current calendar year t . $SRIO_NONHF_{q,t}$ ($SRIO_HF_{q,t}$) is the SRI ownership of non-hedge funds (hedge funds) in a particular stock at the end of the second quarter q in the current calendar year t . KLD_t is the KLD strength score of a particular stock at the end of year t . Each year, we sort all stocks into 3 equally weighted portfolios based on $IO_{q,t}$, $SRIO_NONHF_{q,t}$, and $SRIO_HF_{q,t}$, respectively. Stocks in Portfolio 1 have the smallest ownership and stocks in Portfolio 3 have the largest ownership. A firm is classified as a low KLD firm if its KLD_t is lower than the cross-sectional median at the end of year t . Otherwise, it is classified as a high KLD firm. The Full portfolio includes all stocks. We calculate and report the time-series average of the change in KLD from the end of year t to the end of year $t+1$ (ΔKLD_{t+1}) for all portfolios. ‘High-Low’ is the average change of KLD for the hedge portfolio that purchases portfolio 3 and shorts portfolio 1. ‘ $SRIO_NONHF_{q,t} - SRIO_HF_{q,t}$ ’ is the average difference between the change in KLD for the respective portfolios formed based on $SRIO_NONHF_{q,t}$ and $SRIO_HF_{q,t}$. The Newey-West adjusted t -statistics are presented in the parenthesis and superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

		Change in KLD (ΔKLD_{t+1})		
		Full	Low	High
$IO_{q,t}$	1(Low)	0.018	0.217	-0.241
	2	0.121	0.265	-0.015
	3(High)	0.114	0.277	-0.045
	High-Low	0.096* (1.91)	0.060 (0.90)	0.196* (2.18)
			<hr/>	
$SRIO_NONHF_{q,t}$	1(Low)	0.022	0.211	-0.267
	2	0.021	0.236	-0.230
	3(High)	0.205	0.354	0.131
	High-Low	0.183 (1.73)	0.143 (1.69)	0.398** (3.01)
			<hr/>	
$SRIO_HF_{q,t}$	1(Low)	0.001	0.199	-0.303
	2	0.116	0.276	-0.026
	3(High)	0.132	0.302	0.001
	High-Low	0.131 (1.48)	0.104* (1.96)	0.304** (2.55)
			<hr/>	
$SRIO_NONHF_{q,t} - SRIO_HF_{q,t}$	1(Low)	0.021	0.012	0.036
	2	-0.095	-0.040	-0.204
	3(High)	0.073	0.051	0.130
	High-Low	0.052** (2.57)	0.039 (1.02)	0.096*** (4.94)
			<hr/>	

Table 4: The Effects of SRI Ownership on Firm's CSR Policy

This table reports pooled regressions of changes in CSR activities on SRI ownership and other control variables. $IO_{q,t}$ ($SRIO_{q,t}$) is the ownership of all institutions (SRIs) in a particular stock at the end of the second quarter q in the current calendar year t . $SRIO_HF_{q,t}$ ($SRIO_NONHF_{q,t}$) is the SRI ownership of hedge funds (non-hedge funds) in a particular stock at the end of the second quarter q in the current calendar year t . $IO_HF_{q,t}$ ($IO_NONHF_{q,t}$) is the ownership of hedge funds (non-hedge funds) in a particular stock at the end of the second quarter q in the current calendar year t . KLD_t is the KLD strength score of a particular stock at the end of year t . The dependent variable is the change in a firm's KLD strength score from the end of year t to the end of year $t+1$ (ΔKLD_{t+1}). A firm is classified as a low KLD firm if its KLD score is lower than the cross-sectional median at the end of year t ; otherwise, it is classified as a high KLD firm. Fama-French 48 industries and year dummies are controlled and all the other control variables are defined in Appendix A. Standard errors are clustered by firms. The t -statistics are presented in the parenthesis and superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	Full sample			Low KLD subsample			High KLD subsample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$IO_{q,t}$	-0.5097*** (-10.70)	-0.6278*** (-7.05)		-0.1069** (-2.31)	-0.0224 (-0.27)		-0.5608*** (-6.81)	-0.9428*** (-5.44)	
$SRIO_{q,t}$	0.7120** (8.52)			0.2139** (2.75)			0.7978*** (5.90)		
$IO_NONHF_{q,t}$		0.4915*** (5.30)	-0.5055*** (-9.27)		0.0063 (0.07)	-0.1234** (-2.28)		0.8599*** (4.63)	-0.4948*** (-5.13)
$SRIO_NONHF_{q,t}$			0.7421*** (8.05)			0.2334*** (2.63)			0.7612*** (5.13)
$IO_HF_{q,t}$			-0.5395*** (-6.07)			-0.0470 (-0.53)			-0.8024*** (-4.49)
$SRIO_HF_{q,t}$			-0.6456 (-1.45)			0.2276 (0.74)			-0.7575 (-0.90)
$Yret_t$	0.0228** (2.34)	0.0234** (2.40)	0.0234** (2.40)	0.0056 (0.69)	0.0049 (0.61)	0.0052 (0.63)	0.0296 (1.57)	0.0305 (1.61)	0.0304 (1.61)
ROA	0.2124*** (4.81)	0.1965*** (4.39)	0.1959*** (4.43)	0.0321 (0.88)	0.0348 (0.95)	0.0358 (0.98)	0.3909*** (4.68)	0.3553*** (4.17)	0.3507*** (4.16)
$Logasset$	0.1782*** (22.80)	0.1987*** (26.65)	0.1781*** (22.76)	0.0898*** (11.91)	0.0951*** (12.93)	0.0897*** (11.89)	0.2381*** (20.37)	0.2621*** (25.03)	0.2383*** (20.35)
KLD_t	-0.1426*** (-23.09)	-0.1380*** (-22.79)	-0.1427*** (-23.08)				-0.1269*** (-17.60)	-0.1239*** (-17.25)	-0.1271*** (-17.58)
$Intercept$	-0.7286*** (-16.72)	-0.4421*** (-8.52)	-0.3718*** (-7.15)	1.6121*** (30.93)	1.6038*** (30.76)	1.6144*** (30.85)	-1.8006*** (-16.93)	-2.0791*** (-23.59)	-1.7768*** (-16.76)
Year-Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,806	20,806	20,806	9,337	9,337	9,337	11,469	11,469	11,469
R-squared	0.151	0.149	0.151	0.196	0.195	0.196	0.225	0.224	0.226

Table 5: SRI Ownerships and Future Returns ($Qret_{q+1}$)

This table examines the effects of change in SRI ownerships in quarter q ($\Delta SRIO_q$) on future returns using Fama-MacBeth regressions from 2003:Q1 to 2013:Q4. The dependent variables are one-quarter-ahead returns in quarter $q+1$ ($Qret_{q+1}$). $SRIO_{q-1}$ is the SRI ownership in a particular stock at the end of quarter $q-1$. IO_{q-1} is the total institutional ownership in a particular stock at the end of quarter $q-1$ and ΔIO_q is the change in total institutional ownership in quarter q . $SRIO_HF_{q-1}$ ($SRIO_NONHF_{q-1}$) is the SRI ownership of hedge funds (non-hedge funds) in a particular stock at the end of quarter $q-1$ and $\Delta SRIO_HF_q$ ($\Delta SRIO_NONHF_q$) is the change in corresponding institutional ownership in quarter q . IO_HF_{q-1} (IO_NONHF_{q-1}) is the ownership of hedge funds (non-hedge funds) in a particular stock at the end of quarter $q-1$ and ΔIO_HF_q (ΔIO_NONHF_q) is the change in corresponding institutional ownership in quarter q . ΔKLD_t and ΔKLD_{t-1} represents current and past year change in KLD strengths. Other variables including $Logbm$, $Logsize$, $Logvol$, $Logturnover$, $Logprice$, $Ret_{t-3,t}$, $Ret_{t-12,t-3}$, $Logage$, $SP500$, and $LogCDV$ are also controlled and their definitions can be found in Appendix A. The Newey-West adjusted t -statistics are presented in the parenthesis and superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	$Qret_{q+1}$	
	(1)	(2)
$\Delta SRIO_q$	-0.1222*** (-3.81)	
$SRIO_{q-1}$	-0.0244 (-1.66)	
ΔIO_q	0.0209 (0.71)	
IO_{q-1}	0.0201 (1.51)	
$\Delta SRIO_HF_q$		-0.1402 (-1.38)
$SRIO_HF_{q-1}$		0.0139 (0.17)
$\Delta SRIO_NONHF_q$		-0.0820*** (-2.78)
$SRIO_NONHF_{q-1}$		-0.0149 (-1.11)
ΔIO_HF_q		0.3099*** (4.08)
IO_HF_{q-1}		0.0497 (1.59)
ΔIO_NONHF_q		-0.0449 (-1.13)
IO_NONHF_{q-1}		0.0122 (1.05)
ΔKLD_t	0.0014 (0.73)	0.0009 (0.53)
ΔKLD_{t-1}	0.0003 (0.27)	0.0003 (0.28)
<i>Intercept</i>	0.0438 (1.06)	0.0382 (0.94)
Control variables	Yes	Yes
Observations	78,655	78,655
Adjusted R ²	0.077	0.082

Table 6: Portfolio Returns ($Qret_{q+1}$) for SRI and NSRI

The table reports the average holding period returns in quarter $q+1$ ($Qret_{q+1}$) of portfolios constructed based on the quarterly change in the SRI ownership of hedge funds ($\Delta SRIO_HF_q$), SRI ownership of non-hedge funds ($\Delta SRIO_NONHF_q$), NSRI ownership of hedge funds ($\Delta NSRIO_HF_q$), and NSRI ownership of non-hedge funds ($\Delta NSRIO_NONHF_q$) from 2003:Q1 to 2013:Q4. At the end of each quarter, we sort all stocks into 10 equally weighted portfolios based on $\Delta SRIO_HF_q$, $\Delta SRIO_NONHF_q$, $\Delta NSRIO_HF_q$ and $\Delta NSRIO_NONHF_q$ respectively. Stocks in Portfolio 1 have the smallest change in ownership and stocks in Portfolio 10 have the largest change in ownership. Then we calculate and report the time-series average of raw returns in Panel A and DGTW benchmark adjusted returns in Panel B for all the 10 portfolios. ‘High-Low’ is the average hedge portfolio return by purchasing portfolio 10 and shorting portfolio 1. ‘Diff in Diff’ is the average difference in hedge portfolios’ returns. The Newey-West adjusted t -statistics are presented in the parenthesis and superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Raw returns

	$\Delta SRIO_HF_q$	$\Delta NSRIO_HF_q$	$\Delta SRIO_NONHF_q$	$\Delta NSRIO_NONHF_q$
1(Low)	3.849	3.324	5.318	4.504
2	3.482	3.546	4.213	4.233
3	3.233	3.102	4.036	3.995
4	3.123	3.171	3.870	3.555
5	4.083	2.859	3.802	3.403
6	4.229	2.732	3.685	3.584
7	3.385	4.012	2.975	3.374
8	3.720	4.299	3.238	3.403
9	3.650	4.830	3.079	3.458
10 (High)	4.891	5.272	2.978	3.601
High-Low	1.042 (1.57)	1.948*** (3.86)	-2.339** (-2.59)	-0.903 (-0.91)
Diff in Diff		-0.906 (-1.14)		-1.436*** (-2.80)

Panel B: DGTW adjusted returns

	$\Delta SRIO_HF_q$	$\Delta NSRIO_HF_q$	$\Delta SRIO_NONHF_q$	$\Delta NSRIO_NONHF_q$
1(Low)	0.319	-0.443	1.318	0.880
2	0.062	-0.066	0.687	0.537
3	-0.125	-0.320	0.487	0.496
4	-0.401	-0.190	0.360	0.154
5	0.549	-0.417	0.487	-0.048
6	0.381	-0.567	0.258	0.225
7	0.242	0.641	-0.363	-0.086
8	0.302	0.891	-0.166	-0.055
9	0.200	1.253	-0.326	0.018
10 (High)	1.119	1.471	-0.509	0.090
High-Low	0.799 (1.39)	1.913*** (3.72)	-1.826*** (-3.87)	-0.790 (-0.95)
Diff in Diff		-1.114 (-1.50)		-1.036* (-1.90)

Table 7: SRI Ownerships and Future Monthly Returns

This table examines the effects of change in SRI ownerships in quarter q ($\Delta SRIO_q$) on future returns using Fama-MacBeth regressions from 2003:Q1 to 2013:Q4. The dependent variables are stock returns in the first ($Mret1$), the second ($Mret2$) and the third ($Mret3$) month of quarter $q+1$. $SRIO_{q-1}$ is the SRI ownership in a particular stock at the end of quarter $q-1$. IO_{q-1} is the total institutional ownership in a particular stock at the end of quarter $q-1$ and ΔIO is the change in total institutional ownership in quarter q . $SRIO_HF_{q-1}$ ($SRIO_NONHF_{q-1}$) is the SRI ownership of hedge funds (non-hedge funds) in a particular stock at the end of quarter $q-1$ and $\Delta SRIO_HF_q$ ($\Delta SRIO_NONHF_q$) is the change in corresponding institutional ownership in quarter q . IO_HF_{q-1} (IO_NONHF_{q-1}) is the ownership of hedge funds (non-hedge funds) in a particular stock at the end of quarter $q-1$ and ΔIO_HF_q (ΔIO_NONHF_q) is the change in corresponding institutional ownership in quarter q . ΔKLD_t and ΔKLD_{t-1} represents current and past year change in KLD strengths. Other variables including $Logbm$, $Logsize$, $Logvol$, $Logturnover$, $Logprice$, $Ret_{t-3,t}$, $Ret_{t-12,t-3}$, $Logage$, $SP500$, and $LogCDV$ are also controlled and their definitions can be found in Appendix A. The Newey-West adjusted t -statistics are presented in the parenthesis and superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	<i>Mret1</i>		<i>Mret2</i>		<i>Mret3</i>	
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta SRIO_q$	-0.0408** (-2.27)		-0.0635*** (-4.11)		-0.0117 (-1.08)	
$SRIO_{q-1}$		-0.0045 (-0.75)		-0.0147** (-2.24)		0.0004 (0.05)
ΔIO_q		0.0034 (0.17)		0.0160 (1.29)		-0.0041 (-0.45)
IO_{q-1}		-0.0008 (-0.11)		0.0093** (2.14)		0.0074 (1.19)
$\Delta SRIO_HF_q$		-0.1108* (-1.74)		-0.0327 (-0.63)		0.0113 (0.21)
$SRIO_HF_{q-1}$		-0.0021 (-0.05)		0.0380 (1.11)		-0.0034 (-0.08)
$\Delta SRIO_NONHF_q$		-0.0184 (-0.95)		-0.0469*** (-2.81)		-0.0151 (-1.36)
$SRIO_NONHF_{q-1}$		0.0005 (0.07)		-0.0105* (-1.75)		-0.0032 (-0.48)
ΔIO_HF_q		0.1279*** (3.27)		0.1310*** (3.06)		0.0264 (1.05)
IO_HF_{q-1}		0.0202 (1.43)		0.0187 (1.20)		-0.0048 (-0.28)
ΔIO_NONHF_q		-0.0253 (-1.14)		-0.0141 (-0.84)		-0.0067 (-0.55)
IO_NONHF_{q-1}		-0.0045 (-0.56)		0.0050 (0.94)		0.0103* (1.80)
ΔKLD_t	-0.0016 (-1.54)	-0.0018 (-1.58)	0.0013 (1.21)	0.0012 (1.18)	0.0007 (1.05)	0.0006 (0.96)
ΔKLD_{t-1}	0.0009 (1.35)	0.0009 (1.31)	-0.0000 (-0.07)	-0.0000 (-0.08)	-0.0009 (-1.42)	-0.0009 (-1.42)
<i>Intercept</i>	0.0059 (0.30)	0.0036 (0.17)	-0.0037 (-0.17)	-0.0073 (-0.34)	0.0342** (2.21)	0.0358** (2.32)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	78,655	78,655	78,655	78,655	78,655	78,655
Adjusted R ²	0.081	0.084	0.063	0.067	0.062	0.066