Does corporate investment in stakeholder capital create value for shareholders? The importance of long-term investors

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Abstract

The effect of corporate investment in stakeholder capital on shareholder value is a matter of great debate. We argue that long-term investors are natural monitors that can ensure that managers choose stakeholder capital investment to maximize shareholder value. We find that long-term investors increase the value to shareholders of stakeholder capital investment, not as a result of higher cash flow but rather of lower cash flow risk. Numerous recent papers show empirically that indexing by investors has a causal effect on financial and real corporate outcomes. We use the same identification strategy to establish causality of our results. Also following prior work, we use the staggered adoption of state laws on stakeholder orientation for identification. Our findings suggest that firms can create value for shareholders by investing in stakeholder capital as long as managers are properly monitored by long-term investors.

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"Economists traditionally emphasize the firm's responsibility vis-à-vis its shareholders. … Opponents of the shareholder value concept point at various externalities imposed by profit maximizing choices on other stakeholders: on … management and workers who have invested their human capital as well as off-work related capital (housing, spouse employment, schools, social relationships, etc.) … ; on suppliers and customers who also have sunk investments in the relationship and foregone alternative investment opportunities; on communities who suffer from the closure of a plant; and so forth. … In a nutshell, the firm should internalize the *externalities* on the various stakeholders." (Tirole (2001))

1. Introduction

During the past decade, the audience interested in "corporate social responsibility" (CSR) has grown from a small minority of academics to a large majority of investors, firms, and, indeed, the general public. According to a report from The Economist, CSR is an "important" or "central" consideration for 81% of investors and 86% of managers (Economist Intelligence Unit (2005)). In 2012, assets managed in accordance with "socially responsible investing" totaled over $3.7 trillion in the U.S. or over 11% of all assets under management (Social Investment Forum Foundation (2012)). Globally, this figure rises to $13.6 trillion (Global Sustainable Investment Alliance (2012)). GE has been publishing an annual report on its CSR since 2005, and many other firms have been doing likewise in recent years. With so much attention being paid to CSR, stakeholders – customers, employees and other suppliers, community residents, and the natural environment (Clarkson (1995)) – no doubt benefit tremendously.

It is entirely another matter whether shareholders gain or lose from CSR, or "stakeholder capital investment" as we refer to it hereafter. Despite several decades of research, this debate thunders ever louder today (see the comprehensive surveys by Margolis, Elfenbein, and Walsh

(2009) and Kitzmueller and Shimshack (2012)). In this paper, we hypothesize that firms can create value for their shareholders by investing in their stakeholders – in the presence of long-term investors. We argue based on Bénabou and Tirole (2010) that long-term investors are natural monitors that can ensure that managers choose stakeholder capital investment to maximize shareholder value.[1]

Stakeholder capital is an asset that is intangible as well as long-term. As such, it is subject to three important problems between investors and managers: information asymmetry, incentive alignment, and investment myopia (e.g., Stein (1988)). These problems, in turn, affect the extent to which managers invest optimally in stakeholder capital (e.g., Edmans (2011)).

Long-term investors solve these problems through monitoring. Different investors have shorter or longer horizons for a variety of reasons, and, as a result, they differ in their monitoring of managers. Many hedge funds and mutual funds, for example, have short horizons as a result of their trading strategies whereas pension funds and insurance companies usually have long horizons as a result of the maturity of their liabilities. As Gaspar, Massa, and Matos (2005) and Chen, Harford, and Li (2007) argue, long-term investors generally have lower costs and higher benefits of both information production and influence exertion than short-term investors. Consequently, long-term investors engage in more monitoring than short-term investors.

Moreover, managers tend to choose real investments that have short-term albeit small profits instead of long-term yet large profits (Graham, Harvey, and Rajgopal (2005)). This can be a serious problem for investment in intangible assets such as stakeholder capital.[2] Long-term investors counter this tendency because they make financial investments – and engage in

[1] The Economist (2013), a representative example from the media, also emphasizes the importance of long-term investors in choosing the optimal amount of stakeholder capital investment.

[2] For example, decreasing the relatively small costs of better employee treatment or environmental maintenance may lead to an increase in profits in the short run, even for several years, but it may lead to much larger costs and a correspondingly larger decrease in profits in the long run.

monitoring – to maximize long-term profits from their portfolio firms. Indeed, the empirical evidence, which we describe below, suggests that long-term investors affect investment. The famous example of Unilever illustrates the importance of convincing investors to look to the long run when it comes to such intangible and long-term investments as stakeholder capital (The Economist (2014)).

We study whether long-term investors affect the value to shareholders of investment in stakeholder capital. Since long-term investors maximize long-term shareholder value, their effect on stakeholder capital investment should be value increasing. Moreover, the source of this increase in shareholder value can be higher cash flow, lower cash flow risk, or both.[3] In the next section, we discuss how stakeholder capital investment can affect shareholder value.

We use a large sample of firm-year observations in our analysis. To measure stakeholder capital investment, we follow a large literature and use data from KLD, which scores firms annually on a wide range of CSR dimensions. We construct an overall stakeholder capital investment proxy that captures the firm's investment (pecuniary and non-pecuniary) in workforce diversity, employee relations, community support, and the natural environment.

We measure investor horizons, following the literature (e.g., see Gaspar, Massa, and Matos (2005) and Chen, Harford, and Li (2007)), using data on the portfolios of institutional investors. Specifically, we first measure the investment horizons of investors based on their portfolio turnover. We then classify investors as short-term or long-term based on their investment horizons (high or low turnover, respectively). Finally, we measure the investor horizons of firms as the ownership of their long-term investors. To establish causality, we again

[3] This is the case in the standard discounted cash flow valuation framework, but it need not be the case in the options valuation framework (e.g., Merton (1974)).

take a popular approach in the literature and use indexing by investors. We explain this approach in detail below.

Our results are simple to summarize: long-term investors increase the value to shareholders of stakeholder capital investment, not as a result of higher cash flow but rather as a result of lower cash flow risk. In greater detail,[4] we find that firms with greater long-term investor ownership and stakeholder capital investment have higher stock valuations (market-to-book) by roughly 5%. Such firms do not have higher profitability (neither realized nor expected). Instead, their volatility of profitability (both realized and expected) is lower by roughly 5% (as is their volatility of sales and volatility of costs). This is corroborated by their stock performance: their volatility of stock returns is lower (both in terms of systematic and idiosyncratic volatility), and their future stock returns are also lower, by roughly 1.5 percentage points per year.

To establish causality of our results, we follow numerous recent papers that use indexing by investors to show empirically a causal effect on various corporate outcomes. These papers study the effect of the ownership of investors that are indexers and/or investors in index firms on securities prices and liquidity, profitability, investment, capital structure, payouts, governance, and innovation. Indexing by long-term investors is exogenous to corporate outcomes because investors that index their portfolio clearly cannot choose their portfolio firms, and it is relevant because indexers can affect corporate policies and thereby stock valuations (e.g., Matvos and Ostrovsky (2010)). We discuss the relevant literature in a later section. Our empirical approach is to split long-term investor ownership into a plausibly exogenous component and a possibly endogenous one. In our first split, we use indexers and non-indexers, and in our second split, we use index firms and non-index firms. Overall, our results are similar for long-term indexer and

[4] We present economic magnitudes in terms of the effect on the dependent variable of a one-standard deviation change in the independent variable. Moreover, we focus on the overall stakeholder capital investment proxy.

non-indexer ownership as well as for long-term index firm and non-index firm ownership. This supports a causal interpretation of our findings.

Additionally, we follow prior work and identify exogenous variation in stakeholder capital investment using the staggered adoption of state laws on stakeholder orientation. These "constituency statutes" allow corporate managers to make business decisions that take into account not only the interests of shareholders but also stakeholders. Using this approach, we confirm that the value to shareholders of stakeholder capital investment is increased by long-term investors. We also find similar results using the staggered adoption of state-level workforce diversity and wrongful discharge laws to identify exogenous variation in components of stakeholder capital investment.

Our paper contributes first to the literature on corporate social responsibility. This literature studies at great length whether CSR creates or destroys shareholder value (see the two aforementioned surveys). Our findings suggest that, as long as managers are properly monitored, ostensibly social objectives can further rational business objectives, which is consistent with Turban and Greening (1997) and Waddock and Graves (1997).

Moreover, Krüger (2014) finds that stock prices react in the same direction as corporate news about CSR activities. Flammer (2014) finds that shareholder proposals pertaining to CSR have a positive effect on shareholder value. Similarly, Kim and Ouimet (2014) find that employee stock ownership increases shareholder value. Hwang, Titman, and Wang (2012) find that the portfolios of institutional investors chosen based on stakeholder capital investment predict future stock returns. At the same time, Cheng, Hong, and Shue (2014) and Hong, Kubik, and Scheinkman (2012) find that financially constrained and better governed firms spend less on CSR, which they interpret to indicate that CSR spending decreases shareholder value. Our first

incremental contribution is that this conclusion depends on whether managers are properly monitored by long-term investors. Second, we go further than these two papers and provide evidence about the value implications of this monitoring. Third and finally, we provide evidence about the source of these valuation implications (cash flow versus cash flow risk). Our study, then, complements these aforementioned contemporaneous studies.

Second, there is a large literature on managerial myopia and corporate investment (e.g., Stein (1988)) to which our paper also contributes. Some papers in this literature study investment in intangible assets as well as its value implications (e.g., Eberhart, Maxwell, and Siddique (2004) and Edmans (2011)). Others study its governance outcomes (Gao, Harford, and Li (2014)). There is also a closely related literature on investor horizons and corporate investment (e.g., Bushee (1998), Gaspar, Massa, and Matos (2005), Chen, Harford, and Li (2007), and Gao, Hsu, and Li (2014)). We add to these two literatures with our study of stakeholder capital, a particular type of intangible asset.

Third, our paper also contributes to the literature on corporate risk management. Several papers provide evidence that various hedging activities increase shareholder value (e.g., Allayannis and Weston (2001) and Graham and Rogers (2002)). More generally, Rountree, Allayannis, and Weston (2008) find that lower cash flow risk is associated with higher firm value. We find that, under certain circumstances, stakeholder capital investment serves as a hedging activity that decreases risk and increases firm value.

Finally, our paper contributes to the literature on the real effects of financial markets. Some recent papers in this literature study the effects of financial market prices on corporate policies (Khan, Kogan, and Serafeim (2012)) and Edmans, Goldstein, and Jiang (2012)). Others study the effects of financial crises (Campello, Graham, and Harvey (2010), Duchin, Ozbas, and

Sensoy (2010), and Almeida, Campello, Laranjeira, and Weisbenner (2011)). Still others study the effects of information shocks (Sufi (2009) and Derrien and Kecskés (2013)). Our paper studies investor horizons shocks and their value implications.

The rest of this paper is organized as follows. Section 2 discusses the effect of stakeholder capital investment on shareholder value. Section 3 presents the sample and data. Section 4 presents the valuation results. Section 5 presents additional results. Section 6 concludes.

2. How Stakeholder Capital Can Affect Shareholder Value

We provide several examples of how investing in stakeholders can create value for shareholders. Hiring employees against which some firms discriminate can be profitable for those firms that do not discriminate (Becker (1957)). Moreover, greater employee satisfaction, whether through recruitment, retention, or motivation, can also increase profits (Edmans (2011) and Edmans, Li, and Zhang (2014)). Similarly, efficiency wage theory argues that generous compensation motivates greater employee productivity (Akerlof and Yellen (1990) and Hart and Moore (2008)). Corporate investment in reputation capital can also be profitable by attracting additional customers and suppliers (e.g., Klein and Leffler (1981)).

Alternatively, investing in stakeholders can decrease cash flow risk. Better relations between the firm and its various stakeholders can increase its operating flexibility, thus they can dampen real and financial shocks to cash flow and thereby decrease cash flow risk (Zhang (2005)). Moreover, they can decrease the likelihood and expense of legal action, regulation, or legislation against the firm (Thaler (2012) and Chava (2014)). Similarly, greater customer loyalty can decrease firm risk (Albuquerque, Durnev, and Koskinen (2013)). To use the recent example of Starbucks in the U.K., a farsighted manager might have anticipated the coffee drinkers'

outrage at the firm's low taxes. Instead of yielding to public pressure and paying more taxes than required by law after the fact, the firm could have incurred the same expense ahead of time and trumpeted its social conscience to its likeminded customers, as it does in many other areas of its business. In all of these examples, firms can accept small short-term costs in order to reap large long-term benefits. (For other similar examples, see Godfrey, Merrill, and Hansen (2009).)

In other instances, there can be both an increase in profitability and a decrease in risk. For example, shareholder orientation to the detriment of stakeholder orientation can destroy shareholder value in the long run (Popadak (2013)). Employee stock ownership can increase productivity as well as risk sharing between owners and employees (Kim and Ouimet (2014)). Finally, Allen, Carletti, and Marquez (2014) model firm value as a function of stakeholder versus shareholder orientation. They show that the former dominates the latter if input (supplier) uncertainty is greater than output (customer) uncertainty. Along all these avenues, long-term investors can create value for shareholders from investing in stakeholders.

3. Sample and Data

3.1. Sample Construction and Data Sources

We construct our sample as follows. We begin with all publicly traded U.S. firms in CRSP, Compustat, and KLD between 1991 and 2009. We use data from KLD because they are the most comprehensive and detailed data available, and consequently they are by far the most frequently used for research on corporate social responsibility (e.g., Landier, Nair, and Wolf (2009) and Bae, Kang, and Wang (2011)). We keep U.S. operating firms defined as firms with CRSP share codes of 10 or 11. We drop firms that are financials or utilities. Our resulting sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009.

Stakeholder capital investment data are from KLD, investor portfolio data are from Thomson's 13f filings, stock trading data are from CRSP, factor returns data are from Ken French's website, accounting data are from Compustat, and analyst data are from I/B/E/S. By "investors", we mean institutional investors in Thomson's 13f filings unless otherwise specified. We winsorize all continuous variables at the 1st and 99th percentiles.

3.2. Measuring Stakeholder Capital Investment

We use data from KLD to measure stakeholder capital investment. Each year, KLD uses public documents to rate firms on how well they meet the needs of their stakeholders. Specifically, their analysts score the firms that they cover on their corporate social performance along a wide range of dimensions (e.g., diversity, employee relations, community, environment, etc.). The ratings data comprise items each of which is a dummy variable that equals zero or one. Each data item measures the firm's performance along a particular dimension such as "retirement benefits". Good or bad performance is captured as a "strength" or "concern", respectively, for the dimension in question.

We use these dimensions to construct an "overall" stakeholder capital investment proxy that is our focus throughout the paper. We construct it as the aggregate of four other stakeholder capital investment proxies. We take this additive approach because we have no priors on the relative importance of the four proxies in capturing stakeholder capital investment. The four proxies, in turn, are constructed from the categories into which the KLD data items are organized: "diversity", "employee relations", "community", and "environment". As a validation of these proxies, Turban and Greening (1997) provide evidence that they have an economically and statistically significant relationship with the firm's reputation. We also include these four proxies alongside the overall proxy throughout the paper.

We explain the construction of each of these proxies in Appendix Table 1. In our construction, we follow KLD as closely as possible, and we explain the necessary changes that we make in the Appendix. Moreover, since some KLD data items are very similar (e.g., the strengths are the opposites of the concerns), we combine such components into a single component (e.g., "retirement benefits"). Doing so does not change our results, but it does make them easier to interpret.

3.3. Measuring Investor Horizons

To measure investor horizons, we use data from Thomson's 13f filings and we follow the methodology used in the literature (e.g., see Gaspar, Massa, and Matos (2005) and Chen, Harford, and Li (2007)). We begin by measuring the investment horizons of investors as their three-year portfolio turnover. Specifically, for each investor, each year, and each stock, we compare the stock held by that investor that year to the stock held by the investor three years before, and we compute the fraction of stock sold by the investor during those three years. This is the turnover of that stock, that year, for that investor, and it is ranges from zero to one. For each investor and each year, we then weight each stock's turnover by the stock's weight in the investor's portfolio three years before, and we compute the weighted average turnover of the investor's portfolio during the past three years. This is the portfolio turnover of that investor that year, and it also ranges from zero to one.

We then classify investors as short-term or long-term investors based on their investment horizons. Specifically, we classify investors with a portfolio turnover of 35% or less as "long-term investors" (see Froot, Perold, and Stein (1992)), and we classify all other investors as "short-term investors". We use a 35% cutoff because it roughly corresponds to the bottom quartile of investor turnover. By construction, short-term investors and long-term investors

together comprise all institutional investors. Finally, we measure the investor horizons of firms as the ownership of their long-term investors, and it, too, ranges from zero to one.

Our measure of investor horizons has several desirable properties as documented in the literature (e.g., see Derrien, Kecskés, and Thesmar (2013)). Our measure is persistent. This is because the portfolio turnover of investors tends to be stable over time, and, consequently, short-term and long-term investor ownership of firms tends to be stable over time. Moreover, our measure is accurate in classifying short-term and long-term investors as such. For example, our measure classifies Warren Buffett (Berkshire Hathaway) as a long-term investor and György Soros (Soros Fund Management) as a short-term investor.

3.4. Identifying Investor Horizons

To establish that investor horizons affect the value to shareholders of stakeholder capital investment, we use long-term investors that are indexers and long-term investors in index firms. The literature shows empirically that indexing by investors causes a wide range of corporate outcomes. These outcomes include: stock prices (Chang, Hong, and Liskovich (2013)); the pricing of bank loans (Lu (2013)); stock volatility and liquidity (Ben-David, Franzoni, and Moussawi (2014)); profitability (Denis, McConnell, Ovtchinnikov, and Yu (2003)); capital structure (Michaely and Vincent (2013)); payouts (Crane, Michenaud, and Weston (2014)); governance and investment (Mullins (2014)); and innovation (Aghion, Van Reenen, and Zingales (2013)). In the literature, these outcomes are the consequence of ownership of investors that are indexers and/or investors in index firms.

Indexing by long-term investors is both exogenous and relevant. First, investors that index their portfolio cannot choose their portfolio firms based on, for example, their stakeholder

capital investment or their stock valuations. Hence such investors are exogenous to our outcomes of interest.

Second, as several early papers argue, indexers can affect corporate policies and shareholder value (Carleton, Nelson, and Weisbach (1998), Del Guercio and Hawkins (1999), and Gillan and Starks (2000)).[5] They engage with firms, though most engagements are private rather than public (Becht, Franks, Mayer, and Rossi (2009)) and very few of them occur through proxy resolutions (Goldstein (2011)). As institutional investors, they have a fiduciary duty to vote their shares in the best interests of their clients, and they often vote as a block. Fund families usually vote together, investors frequently trade their votes (Christoffersen, Geczy, Musto, and Reed (2007)), and institutions typically vote as recommended by proxy advisors such as ISS (Alexander, Chan, Seppi, and Spatt (2010), Matvos and Ostrovsky (2010), and Iliev, Lins, Miller, and Roth (2014)). This is the case even for low cost index ETFs (Fenn and Robinson (2009)). These approaches minimize the costs of information production and influence exertion, which is especially important for indexers with a large number of firms in their portfolio. Finally, some indexers increase liquidity and thereby facilitate governance through trading (Ben-David, Franzoni, and Moussawi (2014)). These insights apply to both indexer ownership and index firm ownership.

Our approach is to split long-term investor ownership at each point in time into two components: one that is plausibly exogenous and another that is possibly endogenous. In our first split, we classify investors into indexers and non-indexers based on Cremers and Petajisto (2009)'s active share measure. Since we do not have returns data for our investors, we cannot classify them as indexers using a time-series approach, so we use a cross-sectional approach instead. Active share is the distance between the weights on each firm in the investor's portfolio

[5] The media regularly make this argument as well (e.g., The Economist (2012)).

and the weights in the relevant index. For the index, we use the CRSP value weighted index. We use the most general stock market index possible because the holdings of institutional investors combine holdings across many businesses (e.g., mutual funds, hedge funds, proprietary trading, etc.) and thus are best benchmarked against a diversified portfolio of stocks. We classify investors with active share of up to 25% as "indexers" (similar to Harford, Jenter, and Li (2011)), and we classify all other investors as "non-indexers".

In our second split, we classify firms into index and non-index firms based on whether they are in the S&P 500. However, we obtain similar results if we use a classification based on whether firms are in the Russell 1000 rather than the Russell 2000. We do not use a regression discontinuity design based on index reconstitutions because the best implementation of this methodology is still being explored (Mullins (2014)). Finally, after the two splits, we compute the ownership of firms by long-term indexers and non-indexers as well as the long-term investor ownership of index firms and non-index firms.

3.5. Descriptive Statistics

[Insert Table 1 about here]

Table 1 presents descriptive statistics for investor ownership variables, stakeholder capital investment variables, and dependent variables. We define all stakeholder capital investment variables in Appendix Table 1 and all other variables in Appendix Table 2. We multiply all variables by 100.

The firms in our sample are big: their mean market capitalization is $6.1 billion and the median is $1.2 billion. Therefore, it is not surprising that institutional ownership is a substantial 65.6% on average. Similarly, long-term investor ownership is substantial at 27.5% on average. In terms of indexer and non-indexer ownership, long-term investor ownership breaks down into

10.3% and 17.2%, respectively. In terms of index firm and non-index firm ownership, the breakdown is similar at 9.3% and 18.1%, respectively.

[Insert Figure 1 about here]

Our stakeholder capital investment variables are roughly centered upon zero. In addition to the descriptive statistics for these variables in Table 1, Figure 1 presents histograms for them. These variables are concentrated around zero, especially the community and environment proxies. Finally, in our analyses, we use our dependent variables in natural logarithm form and thus they are all approximately symmetric.

4. Valuation Results

We begin by examining the value implications of the effect of long-term investors on investment in stakeholder capital. Our prediction is that long-term investors increase the value to shareholders of stakeholder capital investment.

In our empirical analysis, for each stakeholder capital investment proxy, we regress market-to-book on long-term investor ownership, the stakeholder capital investment proxy, and their interaction. The interaction term is the focus of our analysis. We measure long-term investor ownership at the end of year t-1 (December 31st), stakeholder capital investment proxies in year t, and market-to-book at the end of year t (December 31st). We take this approach for our analysis of valuation to ensure that value relevant information about investor horizons and stakeholder capital investment is available to market participations at the time at which we measure valuation. Our specification includes institutional ownership as well as its interaction with the stakeholder capital investment proxy.[6,7]

[6] Institutional ownership equals short-term institutional ownership plus long-term investor ownership. Since we include both long-term institutional ownership and total institutional ownership in our regressions, long-term investor ownership isolates the effect of investor horizons.
[7] If we account for investor concentration, we obtain similar results.

We also include other controls used in the literature (e.g., see Allayannis and Weston (2001) and Shive (2012)): size (natural logarithm of total assets); market-to-book; cash flow (scaled by total assets); other types of tangible and intangible investment (capital expenditures, research and development expenditures, and advertising expenditures all scaled by total assets); asset intensity and asset tangibility (property, plant, and equipment scaled by total assets); leverage; and dividend payer status (dummy variable). Finally, we control for unobserved heterogeneity at the industry-year level using industry-year fixed effects. This latter choice is motivated by the literature.[8] We note that industry-year fixed effects capture mechanical changes over time in our stakeholder capital investment variables.[9]

We cluster standard errors by industry-year to capture clustering across industries and years at the same time. We multiply the dependent variables by 100 and measure them in natural logarithms. We standardize the independent variables. Consequently, the coefficient estimate for the interaction term captures the percentage change in market-to-book of a one-standard deviation increase in both long-term investor ownership and the stakeholder capital investment proxy.

[Insert Table 2 about here]

Table 2 presents the results. For expositional simplicity, we only tabulate selected results. The results are both economically and statistically significant. Panel A shows that, for the overall stakeholder capital investment proxy, a one-standard deviation increase in the interaction term is

[8] Giroud and Mueller (2011) use industry fixed effects because one of their variables of interest, the governance index, does not have sufficient variation across time at the firm level to allow the use of firm fixed effects. Our stakeholder capital investment variables likewise do not vary sufficiently across time at the firm level. However, rather than only using industry fixed effects, we use industry-year fixed effects to capture unobserved heterogeneity for similar businesses (industries) and at similar times (years). Gormley and Matsa (2014) show that using industry-year fixed effects is preferable on econometric grounds to adjusting by the industry-year mean. For an example of this approach, see Heider and Ljungqvist (2014).

[9] Our objective is to use a specification that is both standard (i.e., it includes the control variables motivated by the literature) and stable (i.e., it is similar across applications thereby eliminating data mining concerns).

associated with an increase in market-to-book of 4.7%. For the diversity, employee relations, and community proxies, the increase in market-to-book is similar: 4.5%, 1.8%, and 3.2%, respectively. For the environment proxy, the results are not statistically significant. We are careful to interpret only the interaction effect rather than its two constituent direct effects because these may be endogenous.[10]

We also find that our stock valuation results are similar in economic and statistical significance for the next several years (not tabulated). The persistence of our results suggests that the stock market reacts quickly and correctly to the value relevant information contained in investor horizons and stakeholder capital investment. We explore this further in our subsequent analyses.

Panel B and Panel C show that the results are similar for long-term indexer and non-indexer ownership (Panel B) as well as for long-term index firm and non-index firm ownership (Panel C). The effect of the interaction term is usually positive and significant: for example, their effect is +2.5% and +3.3% for indexers and index firms, respectively, for the overall proxy. This evidence allows us to establish causality. Our results suggest that long-term investors cause a significant increase in the value to shareholders of stakeholder capital investment.

We are also mindful of the possible endogeneity of stakeholder capital investment. Accordingly, we use the staggered adoption of state laws on stakeholder orientation to identify exogenous variation in stakeholder capital investment. However, given the limitations of this approach, we defer this analysis to a later section.

[10] Although both direct effects are significant in our valuation results, neither is significant in our asset pricing results below. The latter results are the least subject to endogeneity concerns even without using indexers/index firms and/or stakeholder orientation laws for identification.

5. Additional Results

We now examine the source of the increase in stock valuations. In the standard discounted cash flow valuation framework, higher stock valuations may arise from higher cash flow, lower cash flow risk, or both. We first examine this explanation and then we examine the alternative explanation of mispricing.

5.1. Is Higher Cash Flow the Source of the Higher Stock Valuations?

We begin by examining the implications for profitability of the effect of long-term investors on stakeholder capital investment. For each stakeholder capital investment proxy, we regress profitability on long-term investor ownership, the stakeholder capital investment proxy, and their interaction. The interaction term is the focus of our analysis. In this analysis as well as in subsequent analyses of the sources of higher stock valuations, we measure realizations (e.g., profitability) in year t+1 and expectations (e.g., earnings estimates) at the end of year t (December 31st). Our specification follows the literature (e.g., see Core, Guay, and Rusticus (2006) and Becker, Cronqvist, and Fahlenbrach (2011)) and is similar to that of Table 2.

[Insert Table 3 about here]

Table 3 presents the results. None of them are economically or statistically significant for all long-term investor ownership, long-term indexer ownership, and long-term index firm ownership. Moreover, they persist for the next several years (not tabulated). These non-results suggest that the source of the increase in stock valuations is not an increase in realized profitability, but it may be an increase in expected profitability.

To examine whether this is the case, for each stakeholder capital investment proxy, we regress analysts' earnings estimates on long-term investor ownership, the stakeholder capital investment proxy, and their interaction. The interaction term is the focus of our analysis. For our

specification, we follow the literature (see Core, Guay, and Rusticus (2006), Edmans (2011), and Giroud and Mueller (2011)). We control for institutional ownership and its interaction with the stakeholder capital investment proxy as well as market capitalization and book-to-market (both in natural logarithms). We also include industry-year fixed effects.

[Insert Table 4 about here]

Table 4 presents the results in the first set of regressions in each of the three panels. The interaction term is generally neither economically nor statistically significant. (The community proxy is statistically significant for long-term indexer ownership in Panel B and long-term index and non-firm ownership in Panel C, but it is economically insignificant.) To examine whether realizations of profitability are consistent with investors' expectations, we also examine stock returns around earnings announcements. The results are presented in the second set of regressions in each of the three panels in Table 4. The interaction term is never statistically or economically significant.

Taken together, the results in Table 3 and Table 4 suggest that the source of the increase in stock valuations is not an increase, whether in realizations or expectations, of profitability. In other words, profitability does not appear to change as a result of the effect of investor horizons on stakeholder capital investment, and investors appear to correctly anticipate this.

5.2. Is Lower Cash Flow Risk the Source of the Higher Stock Valuations?

Since an increase in cash flow is not the source of the increase in stock valuations, the source must be a decrease in cash flow risk. To examine whether this is indeed the case, we perform three analyses. In our first analysis, we examine whether there is a decrease in future stock returns. In our second and third analyses, we examine whether there is a decrease in two

measures of cash flow risk: the volatility of stock returns and the volatility of profitability, respectively. We draw conclusions from the collective results of all three analyses.

5.2.1. Stock Returns

We first examine the implications for stock returns of the effect of long-term investors on stakeholder capital investment. The premise of this analysis is that a decrease in cash flow risk is captured by a decrease in future stock returns (holding cash flow fixed). To this end, we perform both a cross-sectional and a time-series analysis. In our cross-sectional analysis, we follow the literature and use a Fama-MacBeth approach (e.g., see Gompers, Ishii, and Metrick (2003), Edmans (2011), and Giroud and Mueller (2011)). We run cross-sectional regressions for each month between January 1992 and December 2010, and then we compute the means and t-statistics of the resulting time-series of 228 monthly coefficient estimates. For each stakeholder capital investment proxy, we regress excess stock returns on long-term investor ownership, the stakeholder capital investment proxy, and their interaction. The interaction term is the focus of our analysis. We measure excess stock returns as raw returns minus industry returns. Our specification includes institutional ownership and its interaction with the stakeholder capital investment proxy. We also control for market capitalization, book-to-market, lagged returns, volume, the dividend yield, and the stock price, following Brennan, Chordia, and Subrahmanyam (1998). Insofar as these control variables capture the effect of investor horizons and/or stakeholder capital investment on stock valuations (i.e., the interaction term), we underestimate the magnitude of the interaction term.

We multiply the dependent variables by 100. We standardize the investor ownership variables and the stakeholder capital investment variables. Consequently, the coefficient estimate for the interaction term captures the change in excess stock returns in percentage points of a one-

standard deviation increase in both long-term investor ownership and the stakeholder capital investment proxy.

[Insert Table 5 about here]

Table 5 presents the results. Once again, we only tabulate selected results for expositional simplicity. The results are both economically and statistically significant for the overall stakeholder capital investment proxy: for all long-term investor ownership, long-term indexer ownership, and long-term index firm ownership. A one-standard deviation increase in the interaction term is associated with a decrease in excess returns of 12 basis points per month or about 1.5 percentage points per year. This evidence allows us to establish causality. For the other proxies, the results are similar but both economically and statistically less significant.

We continue with our time-series analysis. For each stakeholder capital investment proxy, we run monthly time-series regressions for portfolios that we form based on investor horizons and stakeholder capital investment and construct so as to capture their interaction. Our approach follows the literature (e.g., Giroud and Mueller (2011)). However, our objective is to capture not just the net effect of investor horizons (i.e., long horizons minus short horizons) or just the net effect of stakeholder capital investment (i.e., high stakeholder capital investment minus low stakeholder capital investment) but rather both (i.e., the net-net effect).

We sort firm-year observations into three groups based on investor horizons and also into three groups based on stakeholder capital investment.[11] Since we need a single investor horizons variable based upon which to sort, we measure investor horizons as the difference between long-term investor ownership and short-term investor ownership, and we sort observations into terciles. For stakeholder capital investment, we create three groups for each of our proxies. We

[11] We use independent sorts because our stakeholder capital investment proxies take on a small number of integer values (see Figure 1), so they do not lend themselves to the usual cutoffs based on quantiles.

choose cutoffs based on the histograms in Figure 1, which show that the distribution of the overall proxy is concentrated between -1 and +1 and the distributions of the other proxies tend to be concentrated at 0. For the overall proxy, we sort observations with two or more net negative points into the bottom (first) group, observations with two or more net positive points into the top (third) group, and the remaining observations in between into the middle (second) group.[12] For the other four proxies, we follow the same procedure but we use one net negative point, zero points, and one net positive point as the corresponding cutoffs, respectively.[13]

Each month during the year after portfolio formation, i.e., between January 1992 and December 2010, we compute mean raw returns for each of the resulting portfolios formed based on both investor horizons group and stakeholder capital investment group. Moreover, each month, we compute mean raw returns for the portfolio that is long the top stakeholder capital investment group and short the bottom stakeholder capital investment group, and we do this for both the top investor horizons group and the bottom investor horizons group. Finally, each month, we compute mean raw returns for the portfolio that is long the long-short stakeholder capital investment group in the top investor horizons group and is short the long-short stakeholder capital investment group in the bottom investor horizons group.

We run a time-series regression of the excess stock returns of this portfolio on the returns of the four factors. We do this for each stakeholder capital investment proxy. We measure excess stock returns as raw returns minus the risk-free rate. We measure all returns variables in percentages. We only examine long-term investor ownership because it is not practical to form

[12] As a result, about 15% of our observations are in each of the bottom and top groups, and the rest are in the middle group.

[13] The result for the diversity proxy is that about 30% of our observations are in each of the bottom and top groups; for the employee relations proxy, there are about 25% and 15% of our observations in the bottom and top groups, respectively; for the community proxy, about 5% and 10%, respectively; and for the environment proxy, about 10% and 5%, respectively. The remaining observations are in the middle group.

portfolios based on long-term investor ownership split into indexer and non-indexer ownership or index firm and non-index firm ownership.

[Insert Table 6 about here]

Table 6 presents the results.[14] For the overall stakeholder capital investment proxy, the net-net portfolio (net investor horizons and net stakeholder capital investment) has abnormal returns of -74 basis points per month. For the diversity proxy, the results are not statistically significant, and for the other three proxies, the results are also economically and statistically significant (ranging from -39 basis points to -94 basis points). Moreover, the factor loadings are generally not statistically significant except for the size factor, which suggests that our net-net portfolio is generally hedged with respect to the other three factors. (The results are similar if we use the one-factor model or the three-factor model.) Using monthly returns, the information ratio is roughly 0.19 for the overall stakeholder capital investment proxy and it ranges from 0.12 to 0.17 for the other three proxies that are statistically significant. This captures the return-risk tradeoff of this investor horizons-stakeholder capital investment trading strategy.

It is not surprising that our time-series returns results (Table 6) are substantially bigger than our cross-sectional returns results (Table 5). In the former, we examine the abnormal returns of portfolios formed based on opposite extremes of investor horizons and opposite extremes of stakeholder capital investment; in the latter, we examine the effect of a one-standard deviation change in the interaction of investor horizons and stakeholder capital investment on excess returns. Moreover, the firm characteristics in the cross-sectional returns regressions may capture systematic or idiosyncratic risk that is not captured by the risk factors in the time-series returns regressions (e.g., see Brennan, Chordia, and Subrahmanyam (1998)). In this case, the magnitude

[14] It is possible that long-term investor ownership lowers liquidity. In this case, our abnormal returns would merely be the premium that investors are paid for bearing liquidity risk. However, when we control for Pastor and Stambaugh (2003)'s traded liquidity factor, our results are similar.

of the abnormal returns in the time-series returns regressions may be overestimated relative to magnitude of the effect of the interaction term in the cross-sectional returns regressions on excess returns.

Overall, our results in Table 5 and Table 6 suggest that the effect of longer investor horizons on stakeholder capital investment causes a significant decrease in future stock returns.[15] Together with our results in Table 2 (an increase in stock valuations), our findings are consistent with a decrease in cash flow risk, which is reflected in a decrease in future stock returns.

Since no standard stakeholder capital risk factor exists, we cannot be more precise in attributing our negative abnormal returns to systematic or idiosyncratic risk. On the one hand, it is also possible that the standard asset pricing models completely capture systematic stakeholder capital risk (e.g., as in Fama and French (1996), the three-factor model may completely capture human capital risk). Consequently, our negative abnormal returns only capture a decrease in idiosyncratic stakeholder capital risk and not systematic stakeholder capital risk. This is consistent with the literature on the pricing of idiosyncratic risk (e.g., Merton (1987) and Goyal and Santa-Clara (2003)). On the other hand, it is possible that the standard asset pricing models do not completely capture systematic stakeholder capital risk because the standard risk factors do not span stakeholder capital risk and/or the quantity of this risk (i.e., covariance) is overestimated. Consequently, our negative abnormal returns capture systematic stakeholder capital risk that is not captured by the model and possibly also some idiosyncratic stakeholder capital risk. In summary, we cannot attribute our returns results to systematic versus idiosyncratic risk.

[15] In our cross-sectional returns regressions, neither investor horizons nor stakeholder capital investment on their own spread returns (see Table 5). This is also the case in our time-series returns regressions (not tabulated). Therefore, in our sample, stock returns do not change because of either investor horizons or stakeholder capital investment alone but rather because of the two.

5.2.2. Volatility of Stock Returns

Next, we examine whether there is a decrease in the volatility of stock returns. The premise of this second analysis is that the volatility of stock returns at least partly captures cash flow risk. For each stakeholder capital investment proxy, we regress the volatility of stock returns on long-term investor ownership, the stakeholder capital investment proxy, and their interaction. The interaction term is the focus of our analysis. We follow the literature for our specification (e.g., see Brown and Kapadia (2007) and Low (2009)). The theory is unclear about whether the decrease in total risk should be driven by systematic risk, idiosyncratic risk, or both. For example, a record of better employee safety and environmental measures can help a petroleum producer to soften the blow of a firm-specific oil spill as well as an industry-wide consumer backlash from higher oil prices triggered by a war abroad. Therefore, we examine total, systematic, and idiosyncratic volatility. We decompose total volatility into its systematic and idiosyncratic components using the four-factor model. We estimate this model for each firm-year using daily returns. Our specification is similar to that of Table 2.

We multiply the dependent variables by 100 and measure them in natural logarithms. We standardize the independent variables. Consequently, the coefficient estimate for the interaction term captures the percentage change in the volatility of stock returns of a one-standard deviation increase in both long-term investor ownership and the stakeholder capital investment proxy.

[Insert Table 7 about here]

Table 7 presents the results for total volatility. We again only tabulate selected results for expositional simplicity. The results are both economically and statistically significant for the overall stakeholder capital investment proxy: for all long-term investor ownership, long-term indexer ownership, and long-term index firm ownership. For example, Panel A shows that a one-

standard deviation increase in the interaction term is associated with a decrease in the total volatility of 1.3%. Panel B and Panel C show that the corresponding figures are roughly 0.9% and 1.1% for indexers and index firms, respectively. This evidence allows us to establish causality. (For long-term non-indexer ownership and long-term non-index firm ownership, the results are somewhat less and more significant, respectively.) For the other proxies, the results are similar, although they are generally concentrated in the diversity and community proxies in terms of both economic and statistical significance.

The results for systematic volatility and idiosyncratic volatility are presented in Appendix Table 3. They are similar to the results for total volatility and significant both economically and statistically. However, they are generally somewhat stronger for systematic volatility and somewhat weaker for idiosyncratic volatility. Given the lack of theoretical clarity about which type of risk should dominate, we simply conclude that the decrease in risk is driven by both systematic and idiosyncratic risk. In summary, our results suggest that the effect of longer investor horizons on stakeholder capital investment causes a significant decrease in the volatility of stock returns.

5.2.3. Volatility of Profitability

Finally, we examine whether there is a decrease in the volatility of profitability. The premise of this final analysis is that the volatility of profitability captures cash flow risk. For each stakeholder capital investment proxy, we regress the volatility of profitability on long-term investor ownership, the stakeholder capital investment proxy, and their interaction. The interaction term is the focus of our analysis. Our specification here for examining the volatility of profitability is similar to the specification that we use to examine profitability (Table 3), and it

follows the literature (e.g., see Minton and Schrand (1999) and Rountree, Weston, and Allayanis (2008)).

We also follow the literature for our definition of the volatility of profitability. Specifically, we measure the volatility of profitability as the coefficient of variation of quarterly earnings per share and we compute it using three years of forward looking quarterly data.[16] Being a coefficient of variation, it is a unitless measure. As in Table 7, we multiply the dependent variables by 100 and measure them in natural logarithms. We standardize the independent variables.

[Insert Table 8 about here]

Table 8 presents the results.[17] They are both economically and statistically significant in Panel A. For example, for the overall stakeholder capital investment proxy, a one-standard deviation increase in the interaction term is associated with a decrease in the volatility of profitability of 4.5%; for the diversity and community proxies, the results are similarly economically and statistically significant; and for the other two proxies, the results are negative but smaller and not statistically significant. Panel B and Panel C show that the results are similar for long-term indexer ownership (Panel B) as well as for long-term index firm ownership (Panel C).

To strengthen our evidence, we also examine whether there is a decrease in the volatility of sales and the volatility of costs. While it is the distribution of profitability – cash flow to shareholders – that determines stock valuations, profitability is, by definition, the difference between sales and costs – cash flow from customers and to suppliers. These customers and

[16] We choose three years as a compromise. With too few years, our measure would be much less precise. However, with too many years, our sample size would greatly decrease because roughly 10% of publicly traded firms disappear each year. For the same reason, we would create a significant survivorship bias.

[17] The results are similar if we run regressions using every third year to avoid overlapping observations, although the sample size decreases by roughly two-thirds for these regressions.

suppliers are important stakeholders that determine the residual claim of shareholders, and they are also important beneficiaries of stakeholder capital investment. Therefore, if the volatility of profitability decreases, it must be because there is a decrease in the volatility of sales and/or the volatility of costs (e.g., because the firm's customers buy more loyally or its employees work more dependably). We measure volatility for sales and costs like we do for profitability.

The results are presented in Appendix Table 4. They are economically and statistically significant for the overall proxy as well as the other proxies, for sales as well as costs. The evidence in Appendix Table 4 strongly supports the evidence in Table 8. The results suggest that the source of the increase in stock valuations is a decrease in the volatility of profitability. We now examine whether this is the case not only for realizations but also for expectations.

[Insert Table 9 about here]

To this end, we redo Table 8 using the volatility of analysts' earnings estimates as the dependent variable. Once again, the focus of our analysis is the interaction between investor horizons and stakeholder capital investment. Table 9 presents the results. They are similar to the corresponding results in Table 8 in terms of both economic and statistical significance. In other words, investors appear to roughly correctly anticipate the decrease in the volatility of profitability. Taken together, the results suggest that the effect of longer investor horizons on stakeholder capital investment causes a significant decrease in the volatility of profitability, both in realizations and expectations.

5.3. Mispricing as an Alternative Explanation

An alternative explanation for the increase in stock valuations may be mispricing. Specifically, the effect of long-term investors on stakeholder capital investment may be overvalued by investors. Our finding that realized profitability does not change (Table 3) does

support the mispricing explanation as does our finding that future stock returns decrease (Table 5 and Table 6). However, we also find that realized profitability materializes as expected by investors (Table 4), which does not support mispricing. Moreover, we find that risk does decrease: the volatility of stock returns (Table 7) is lower, and the volatility of profitability, both realized and expected (Table 8 and Table 9), is also lower. These findings similarly do not support the mispricing explanation.

5.4. Stakeholder Orientation Laws

Finally, we use the staggered adoption of state laws on stakeholder orientation to identify exogenous variation in stakeholder capital investment. Our analysis here is limited by a small sample size, a short sample period, and a simple (binary) stakeholder capital investment variable. Historically, directors and officers had a fiduciary duty only to the firm's shareholders, so they could only consider the interests of shareholders when making business decisions. Between 1984 and 2007, however, some 35 states passed legislation allowing (in some cases requiring) managers to consider the interests of both shareholders and stakeholders. (See Flammer and Kacperczyk (2013) for details.)

These constituency statutes are well suited for our analysis because they were enacted to encourage stakeholder orientation and not as a result of any subsequent increase in shareholder value or any anticipation thereof. Indeed, these laws were passed contemporaneously with, and as a complement to, the business combination laws of the 1980s and early 1990s, which were not motivated by lobbying from a broad range of economic interests within the states that passed them (Bertrand and Mullainathan (2003)). Indeed, since such legislation transfers wealth from shareholders to stakeholders, any endogeneity in its adoption works against us finding a positive effect of long-term investors on shareholder value through stakeholder capital investment.

We obtain data on constituency statutes from Barzuza (2009). Although a number of these laws predate our sample period (having been passed in the 1980s), six of them were passed in the 1990s (the last in 1999) and two at the end of our sample period. Given the large time gap and the small number of firms affected by the last two laws, we end our sample period in 2000, and our sample shrinks to about a quarter of its former size as a result. We redo Table 2, but instead of the stakeholder capital investment proxies, we use a dummy variable for whether a given firm in a given year is incorporated in a state that had enacted a constituency statute by that year.

This new analysis (not tabulated) confirms our earlier results. The coefficient estimate on the interaction term indicates a 2.3% increase in market-to-book caused by all long-term investors (p-value < 0.05); for long-term indexers and long-term index firms, the corresponding figures are 2.0% (p-value < 0.10) and 3.4% (p-value < 0.05), respectively. We also redo Table 5, running cross-sectional returns regressions, and find that the interaction term causes a decrease in excess returns of 6-10 basis points per month, depending on whether we examine all long-term investors or focus on indexers or index firms.

To strengthen our results, we also exploit the staggered adoption of state-level workforce diversity and wrongful discharge laws. These two types of laws focus on specific important stakeholders of firms (their employees), and they allow us to cleanly identify shocks to their component of stakeholder capital investment. Workforce diversity laws were passed by state legislatures to prohibit discrimination against employees based on sexual orientation and gender identity. Wrongful discharge laws are common law exemptions to the employment at will doctrine that limit the ability of the firm to terminate its workers. They were created by court rulings in various states. Both types of laws were adopted to protect employees in spite of the

potentially adverse effects on employers. As such, they constitute relevant and exogenous increases in stakeholder capital investment. (For details about workforce diversity laws, see Gao and Zhang (2014). For wrongful discharge laws, see Autor, Donohue, and Schwab (2006), Bird and Knopf (2009), and Acharya, Baghai, and Subramanian (2014).)

Our data on workforce diversity laws are from the Human Rights Campaign. The vast majority of workforce diversity laws were passed during our sample period (at roughly evenly spaced intervals), so we use our full sample for this analysis. Once again, we redo Table 2, but instead of the stakeholder capital investment proxies, we use a dummy variable for whether a given firm in a given year is headquartered in a state that had adopted a law by that year. As before, we focus on the interaction term. The results (not tabulated) indicate a 1.5% increase in market-to-book caused by all long-term investors (p-value < 0.05). Using long-term indexers and long-term index firms, the increase is 1.4% (p-value < 0.05) and 3.4% (p-value < 0.01), respectively. In the cross-sectional returns regressions in Table 5, excess returns are 4-6 basis points per month lower.

For wrongful discharge laws, our data are from Autor, Donohue, and Schwab (2006). Many of these judgments were passed before our sample period, but several occurred in the early 1990s; a few of them were ultimately reversed. All of the data end in 1999. Therefore, we end our sample period in 2000, shrinking our sample to roughly a quarter of its former size. We again redo Table 2, but instead of the stakeholder capital investment proxies, we use a categorical variable that counts for a given firm in a given year the number of exemptions to employment at will in effect in the state in which the firm is headquartered (possible values between 0 and 3). Focusing on the interaction term, market-to-book increases by 1.9% (p-value < 0.05) for all long-term investors and by 1.0% and 2.8% (p-value < 0.05) for long-term indexers and long-term

index firms (not tabulated). (However, excess returns in the cross-sectional returns regressions in Table 5 are not significant.)

Overall, using exogenous variation in both investor horizons and stakeholder capital investment, we find that long-term investors increase the value to shareholders of stakeholder capital investment.

6. Conclusion

In this paper, we examine whether corporate social responsibility creates or destroys shareholder value. We argue that long-term investors are natural monitors that can ensure that managers choose stakeholder capital investment to maximize shareholder value.

We find that firms that have longer investor horizons and invest more in stakeholder capital have significantly higher stock valuations: by about 5%. Such firms do not have higher realized or expected profitability, but their volatility of profitability, both realized and expected, is lower by roughly 5% (which is also the case for their volatility of sales and costs). Corroborating these findings, their stock returns volatility (both systematic and idiosyncratic) is lower as are their future stock returns. We establish causality of our results using long-term investor that are indexers and long-term investors in index firms as well as using changes across states in stakeholder orientation laws. We conclude that firms can create value for shareholders by investing in stakeholders as long as managers are properly monitored by long-term investors.

Appendix: Changes to KLD Data

- Diversity: We do not make any changes.
- Employee relations: We make two small changes. First, we exclude the "no layoff policy" strength because the data are available only during the first three years of our sample. Second, we exclude the "workforce reductions" concern because it is related to corporate investment policy and simply captures big decreases in the firm's workforce.
- Community: We do not make any changes. The "investment controversies" concern is excluded because it only applies to financial firms, which are excluded from our sample.
- Environment: We exclude the "property, plant, and equipment" and "management systems" strengths because the data are only available during the first four years and the last four years, respectively, of our sample. We also drop three concerns that are determined by the firm's industry: "ozone depleting chemicals", "agricultural chemicals", and "coal or oil products". We do so because a firm cannot change the industry in which it operates, and industry is anyway captured by our industry-year fixed effects.
- Corporate governance: We exclude all components because corporate governance is the very cause that we study, so we cannot also study its effect on itself. Moreover, the data are only available for many components during the last five years of our sample.
- Human rights: We exclude all components because none of them have data available each year. This is because most components are based on current events (e.g., South Africa in the early 1990s and Sudan in the late 2000s). It is impossible to aggregate these components to be even somewhat stable over time.
- Product: We exclude all components because they relate to shareholder value maximizing product market behavior and are unrelated to maximizing value for other stakeholders.

References

Acharya, Viral V., Ramin P. Baghai, and Krishnamurthy V. Subramanian, 2014, Wrongful discharge laws and innovation, *Review of Financial Studies* 27, 301-346.

Aghion, Philippe, John Van Reenen, and Luigi Zingales, 2013, Innovation and institutional ownership, *American Economic Review* 103, 277-304.

Akerlof, George A., and Janet L. Yellen, 1990, The fair wage-effort hypothesis and unemployment, *Quarterly Journal of Economics* 105, 255-283.

Albuquerque, Rui, Art Durnev, and Yrjö Koskinen, 2013, Corporate social responsibility and firm risk: Theory and empirical evidence, working paper.

Alexander, Cindy R., Mark A. Chan, Duane J. Seppi, and Chester S. Spatt, 2010, Interim news and the role of proxy voting advice, *Review of Financial Studies* 23, 4419-4454.

Allayannis, George, and James P. Weston, 2001, The use of foreign currency derivatives and firm market value, *Review of Financial Studies* 14, 243-276.

Allen, Franklin, Elena Carletti, and Robert Marquez, 2014, Stakeholder governance, competition and firm value, forthcoming *Review of Finance*.

Almeida, Heitor, Murillo Campello, Bruno Laranjeira, and Scott Weisbenner, 2011, Corporate debt maturity and the real effects of the 2007 credit crisis, *Critical Finance Review* 1, 3-58.

Autor, David H., John J. Donohue III, and Stewart J. Schwab, 2006, The costs of wrongful-discharge laws, *Review of Economics and Statistics* 88, 211-231.

Bae, Kee-Hong, Jun-Koo Kang, and Jin Wang, 2011, Employee treatment and firm leverage: A test of the stakeholder theory of capital structure, *Journal of Financial Economics* 100, 130-153.

Barzuza, Michal, 2009, The state of state antitakeover law, *Virginia Law Review* 95, 1973-2052.

Becht, Marco, Julian Franks, Colin Mayer, and Stefano Rossi, 2009, Returns to shareholder activism: Evidence from a clinical study of the Hermes UK Focus Fund, *Review of Financial Studies* 22, 3093-3129.

Becker, Bo, Henrik Cronqvist, and Rüdiger Fahlenbrach, 2011, Estimating the effects of large shareholders using a geographic instrument, *Journal of Financial and Quantitative Analysis* 46, 907-942.

Becker, Gary S., 1957, *The Economics of Discrimination* (University of Chicago Press, Chicago).

Bénabou, Roland, and Jean Tirole, 2010, Individual and corporate social responsibility, *Economica* 77, 1-19.

Ben-David, Itzhak, Francesco Franzoni, and Rabih Moussawi, 2014, Do ETFs increase volatility?, working paper.

Bertrand, Marianne, and Sendhil Mullainathan, 2003, Enjoying the quiet life? Corporate governance and managerial preferences, *Journal of Political Economy* 111, 1043-1075.

Bird, Robert C., and John D. Knopf, 2009, Do wrongful-discharge laws impair firm performance?, *Journal of Law and Economics* 52, 197-222.

Brennan, Michael J., Tarun Chordia, and Avanidhar Subrahmanyam, 1998, Alternative factor specifications, security characteristics, and the cross-section of expected returns, *Journal of Financial Economics* 49, 345-373.

Brown, Gregory, and Nishad Kapadia, 2007, Firm-specific risk and equity market development, *Journal of Financial Economics* 84, 358-388.

Bushee, Brian, J., 1998, The influence of institutional investors on myopic R&D investment behavior, *Accounting Review* 73, 305-333.

Campello, Murillo, John R. Graham, and Campbell R. Harvey, 2010, The real effects of financial constraints: Evidence from a financial crisis, *Journal of Financial Economics* 97, 470-487.

Carleton, Willard T., James M. Nelson, and Michael S. Weisbach, 1998, The influence of institutions on corporate governance through private negotiations: Evidence from TIAA-CREF, *Journal of Finance* 53, 1335-1362.

Chang, Yen-Cheng, Harrison Hong, and Inessa Liskovich, 2013, Regression discontinuity and the price effects of stock market indexing, working paper.

Chava, Sudheer, 2014, Environmental externalities and cost of capital, *Management Science* 60, 2223-2247.

Chen, Xia, Jarrad Harford, and Kai Li, 2007, Monitoring: Which institutions matter?, *Journal of Financial Economics* 86, 279-305.

Cheng, Ing-Haw, Harrison Hong, and Kelly Shue, 2014, Do managers do good with other people's money?, working paper.

Christoffersen, Susan E. K., Christopher C. Geczy, David K. Musto, and Adam V. Reed, 2007, Vote trading and information aggregation, *Journal of Finance* 62, 2897-2929.

Clarkson, Max B. E., 1995, A stakeholder framework for analyzing and evaluating corporate social performance, *Academy of Management Review* 20, 92-117.

Core, John H., Wayne R. Guay, and Tjomme O. Rusticus, 2006, Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations, *Journal of Finance* 61, 655-687.

Crane, Alan D., Sébastien Michenaud, and James P. Weston, 2014, The effect of institutional ownership on payout policy: Evidence from index thresholds, working paper.

Cremers, K. J. Martijn, and Antti Petajisto, 2009, How active is your fund manager? A new measure that predicts performance, *Review of Financial Studies* 22, 3329-3365.

Del Guercio, Diane, and Jennifer Hawkins, 1999, The motivation and impact of pension fund activism, *Journal of Financial Economics* 52, 293-340.

Denis, Diane K., John J. McConnell, Alexei V. Ovtchinnikov, and Yun Yu, 2003, S&P 500 index additions and earnings expectations, *Journal of Finance* 58, 1821-1840.

Derrien, François, Ambrus Kecskés, and David Thesmar, 2013, Investor horizons and corporate policies, *Journal of Financial and Quantitative Analysis* 48, 1755-1780.

Derrien, François, and Ambrus Kecskés, 2013, The real effects of financial shocks: Evidence from exogenous changes in analyst coverage, *Journal of Finance* 68, 1383-1416.

Duchin, Ran, Oguzhan Ozbas, and Berk A. Sensoy, 2010, Costly external finance, corporate investment, and the subprime mortgage credit crisis, *Journal of Financial Economics* 97, 418-435.

Eberhart, Allan C., William F. Maxwell, and Akhtar R. Siddique, 2004, An examination of long-term abnormal stock returns and operating performance following R&D increases, *Journal of Finance* 59, 623-650.

Economist Intelligence Unit, 2005, The importance of corporate responsibility.

Edmans, Alex, 2011, Does the stock market fully value intangibles? Employee satisfaction and equity prices, *Journal of Financial Economics* 101, 621-640.

Edmans, Alex, Itay Goldstein, and Wei Jiang, 2012, The real effects of financial markets: The impact of prices on takeovers, *Journal of Finance* 67, 933-971.

Edmans, Alex, Lucius Li, and Chendi Zhang, 2014, Employee satisfaction, labor market flexibility, and stock returns around the world, working paper.

Fama, Eugene F., and Kenneth R. French, 1996, Multifactor explanations of asset pricing anomalies, *Journal of Finance* 51, 55-84.

Fenn, Scott, and Bradley Robinson, 2009, *Proxy Voting by Exchange-Traded Funds: An Analysis of ETF Voting Policies, Practices, and Patterns,* IRRC Institute.

Flammer, Caroline, 2014, Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach, forthcoming *Management Science*.

Flammer, Caroline, and Aleksandra Kacperczyk, 2013, The impact of stakeholder orientation on innovation: Evidence from a natural experiment, working paper.

Froot, Kenneth A., Andre F. Perold, and Jeremy C. Stein, 1992, Shareholder trading practices and corporate investment horizons, *Journal of Applied Corporate Finance* Summer, 42-58.

Gao, Huasheng, Jarrad Harford, and Kai Li, 2014, Investor horizon and CEO turnover-performance sensitivity, working paper.

Gao, Huasheng, Po-Hsuan Hsu, and Kai Li, 2014, Managerial short-termism and corporate innovation strategies, working paper.

Gao, Huasheng, and Wei Zhang, 2014, Does workforce diversity pay? Evidence from corporate innovation, working paper.

Gaspar, José-Miguel, Massimo Massa, and Pedro Matos, 2005, Shareholder investment horizons and the market for corporate control, *Journal of Financial Economics* 76, 135-165.

Gillan, Stuart L., and Laura T. Starks, 2000, Corporate governance proposals and shareholder activism: The role of institutional investors, *Journal of Financial Economics* 57, 275-305.

Giroud, Xavier, and Holger M. Mueller, 2011, Corporate governance, product market competition, and equity prices, *Journal of Finance* 66, 563-600.

Global Sustainable Investment Alliance, 2012, Global Sustainable Investment Review.

Godfrey, Paul C., Craig B. Merrill, and Jared M. Hansen, 2009, The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis, *Strategic Management Journal* 30, 425-445.

Goldstein, Marc, 2011, *The State of Engagement between U.S. Corporations and Shareholders*, IRRC Institute.

Gompers, Paul, Joy Ishii, and Andrew Metrick, 2003, Corporate governance and equity prices, *Quarterly Journal of Economics* 118, 107-155.

Gormley, Todd A., and David A. Matsa, 2014, Common errors: How to (and not to) control for unobserved heterogeneity, *Review of Financial Studies* 27, 617-661.

Goyal, Amit, and Pedro Santa-Clara, 2003, Idiosyncratic risk matters!, *Journal of Finance* 58, 975-1007.

Graham, John R., and Daniel A. Rogers, 2002, Do firms hedge in response to tax incentives?, *Journal of Finance* 57, 815-839.

Harford, Jarrad, Dirk Jenter, and Kai Li, 2011, Institutional cross-holdings and their effect on acquisition decisions, *Journal of Financial Economics* 99, 27-39.

Hart, Oliver, and Moore, 2008, Contracts as reference points, *Quarterly Journal of Economics* 123, 1-48.

Heider, Florian, and Alexander Ljungqvist, 2014, As certain as debt and taxes: Estimating the tax sensitivity of leverage from exogenous state tax changes, forthcoming *Journal of Financial Economics*.

Hong, Harrison, Jeffrey D. Kubik, and José A. Scheinkman, 2012, Financial constraints on corporate goodness, working paper.

Hwang, Chuan-Yang, Sheridan Titman, and Ying Wang, 2012, Do institutions influence corporate behavior? An analysis of corporate social responsibility, working paper.

Iliev, Peter, Karl Lins, Darius Miller, and Lukas Roth, 2014, Shareholder voting and corporate governance around the world, working paper.

Khan, Mozaffar, Leonid Kogan, and George Serafeim, 2012, Mutual fund trading pressure: Firm-level stock price impact and timing of SEOs, *Journal of Finance* 67, 1371-1395.

Kim, E. Han, and Paige Ouimet, 2014, Broad-based employee stock ownership: Motives and outcomes, *Journal of Finance* 69, 1273-1319.

Kitzmueller, Markus, and Jay Shimshack, 2012, Economic perspectives on corporate social responsibility, *Journal of Economic Literature* 50, 51-84.

Klein, B., and Keith B. Leffler, 1981, The role of market forces in assuring contractual performance, *Journal of Political Economy* 89, 615-641.

Krüger, Philipp, 2014, Corporate goodness and shareholder wealth, forthcoming *Journal of Financial Economics*.

Landier, Augustin, Vinay B. Nair, and Julie Wolf, 2009, Trade-offs in staying close: Corporate decision making and geographic dispersion, *Review of Financial Studies* 22, 1119-1148.

Low, Angie, 2009, Managerial risk-taking behavior and equity-based compensation, *Journal of Financial Economics* 92, 470-490.

Lu, Ruichang, 2013, How does institutional ownership affect bank loan pricing? Evidence from a regression discontinuity design, working paper.

Margolis, Joshua D., Hillary Anger Elfenbein, and James P. Walsh, 2009, Does it pay to be good ... and does it matter? A meta-analysis of the relationship between corporate social and financial performance, working paper.

Matvos, Gregor, and Michael Ostrovsky, 2010, Heterogeneity and peer effects in mutual fund proxy voting, *Journal of Financial Economics* 98, 90-112.

Merton, Robert C., 1974, On the pricing of corporate debt: The risk structure of interest rates, *Journal of Finance* 29, 449-470.

Merton, Robert C., 1987, A simple model of capital market equilibrium with incomplete information, *Journal of Finance* 22, 483-510.

Michaely, Roni, and Christopher Vincent, 2013, Do institutional investors influence capital structure decisions?, working paper.

Minton, Bernadette A., and Catherine Schrand, 1999, The impact of cash flow volatility on discretionary investment and the costs of debt and equity financing, *Journal of Financial Economics* 54, 423-460.

Mullins, William, 2014, The governance impact of index funds: Evidence from regression discontinuity, working paper.

Pastor, Lubos, Robert F. Stambaugh, 2003, Liquidity risk and expected stock returns, *Journal of Political Economy* 111, 642-685.

Popadak, Jillian, 2013, A corporate culture channel: How increased shareholder governance reduces firm value, working paper.

Rountree, Brian, James P. Weston, and George Allayanis, 2008, Do investors value smooth performance?, *Journal of Financial Economics* 90, 237-251.

Shive, Sophie, 2012, Local investors, price discovery, and market efficiency, *Journal of Financial Economics* 104, 145-161.

Social Investment Forum Foundation, 2012, Report on Sustainable and Responsible Investing Trends in the United States.

Stein, Jeremy C., 1988, Takeover threats and managerial myopia, *Journal of Political Economy* 96, 61-80.

Sufi, Amir, 2009, The real effects of debt certification: Evidence from the introduction of bank loan ratings, *Review of Financial Studies* 22, 1659-1691.

Thaler, Richard H., 2012, Corporate citizens can do well by doing good: Richard H. Thaler, Bloomberg, January 25.

The Economist, 2012, Desperately seeking investors: If pension funds do not buy equities, who will?, December 1.

The Economist, 2013, Companies' moral compass: Some ideas for restoring faith in firms, March 2.

The Economist, 2014, Unilever: In search of the good business, August 9.

Tirole, Jean, 2001, Corporate governance, *Econometrica* 69, 1-35.

Turban, Daniel B., and Daniel W. Greening, 1997, Corporate social performance and organizational attractiveness to prospective employees, *Academy of Management Journal* 40, 658-672.

Waddock, Sandra A., and Samuel B. Graves, 1997, The corporate social performance-financial performance link, *Strategic Management Journal* 18, 303-319.

Zhang, Lu, 2005, The value premium, *Journal of Finance* 60, 67-103.

Table 1
Descriptive Statistics

This table presents descriptive statistics for investor ownership variables, stakeholder capital investment variables, and dependent variables. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. With the exception of excess stock returns, all variables are defined in Appendix Table 1 and Appendix Table 2. Excess stock returns are raw returns minus market returns, and they are annualized. All variables except market-to-book are multiplied by 100.

	Mean	Standard deviation	25th percentile	Median	75th percentile
Investor ownership variables					
- Long-term investor ownership	27.5	13.0	17.9	27.0	36.3
- Long-term indexer ownership	10.3	5.4	6.3	9.8	14.1
- Long-term non-indexer ownership	17.2	10.1	9.4	15.9	23.2
- Long-term index firm ownership	9.3	14.9	0.0	0.0	19.7
- Long-term non-index firm ownership	18.1	16.7	0.0	16.9	31.2
- Institutional ownership	65.6	23.1	50.7	67.8	82.2
Stakeholder capital investment variables					
- Overall	18.1	189.7	-100.0	0.0	100.0
- Diversity	23.8	116.3	-100.0	0.0	100.0
- Employee relations	-9.3	82.3	-100.0	0.0	0.0
- Community	11.2	46.5	0.0	0.0	0.0
- Environment	-9.1	59.0	0.0	0.0	0.0
Dependent variables					
- Market-to-book	3.3	3.4	1.5	2.3	3.8
- Profitability	1.9	15.0	0.7	4.7	8.6
- Earnings estimates	5.8	10.1	3.3	6.2	10.0
- Earnings announcement returns	0.2	4.1	-1.9	0.3	2.5
- Excess stock returns	4.5	41.0	-18.2	3.4	26.1
- Total volatility of stock returns	45.8	23.4	29.8	39.8	54.9
- Systematic volatility of stock returns	23.3	14.7	13.0	19.3	28.8
- Idiosyncratic volatility of stock returns	38.3	20.1	24.9	33.3	45.5
- Volatility of profitability	270.5	669.0	34.3	75.8	218.2
- Volatility of sales	19.4	18.9	9.4	14.1	21.7
- Volatility of costs	18.0	15.7	8.9	13.5	21.1
- Volatility of earnings estimates	50.8	100.2	11.4	20.6	43.0

Table 2
Investor Horizons, Stakeholder Capital Investment, and Stock Valuations

This table presents the results of regressions of market-to-book on long-term investor ownership, stakeholder capital investment proxies, and their interaction. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. All variables are defined in Appendix Table 1 and Appendix Table 2. The dependent variables are multiplied by 100. The independent variables are standardized. The regressions include control variables described in the text and industry-year fixed effects. Standard errors are clustered by industry-year. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. In Panel A, all results are tabulated, whereas in Panel B and Panel C, only selected results are tabulated.

Panel A: All Long-Term Investor Ownership

	Dependent variable is ln(market-to-book) (t)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term investor ownership (t-1)	4.69***	4.47***	1.75**	3.20***	0.03
× Stakeholder capital investment proxy (t)	(6.11)	(6.11)	(2.58)	(4.20)	(0.05)
Long-term investor ownership (t-1)	-7.30***	-7.32***	-7.22***	-7.02***	-7.22***
	(-8.58)	(-8.62)	(-8.51)	(-8.31)	(-8.56)
Stakeholder capital investment proxy (t)	5.06***	4.85***	2.41***	2.35***	1.02*
	(8.76)	(8.21)	(4.45)	(4.12)	(1.91)
Observations	20,388	20,388	20,388	20,388	20,388
Adjusted R^2	0.317	0.317	0.311	0.312	0.310

Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership

	Dependent variable is ln(market-to-book) (t)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term indexer ownership (t-1)	2.45***	3.28***	0.86	0.57	-0.36
× Stakeholder capital investment proxy (t)	(3.81)	(5.04)	(1.50)	(0.93)	(-0.61)
Long-term non-indexer ownership (t-1)	3.49***	2.85***	1.33**	3.05***	0.25
× Stakeholder capital investment proxy (t)	(5.33)	(4.68)	(2.21)	(4.50)	(0.44)
Observations	20,388	20,388	20,388	20,388	20,388
Adjusted R^2	0.317	0.317	0.311	0.313	0.310

Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership

	Dependent variable is ln(market-to-book) (t)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term index firm ownership (t-1)	3.25***	2.57***	1.26	2.27**	1.72**
× Stakeholder capital investment proxy (t)	(3.59)	(3.07)	(1.57)	(2.56)	(2.16)
Long-term non-index firm ownership (t-1)	3.19***	1.36	1.03	4.39***	1.75*
× Stakeholder capital investment proxy (t)	(2.87)	(1.28)	(1.04)	(3.79)	(1.89)
Observations	20,388	20,388	20,388	20,388	20,388
Adjusted R^2	0.339	0.339	0.337	0.338	0.336

Table 3
Investor Horizons, Stakeholder Capital Investment, and Profitability

This table presents the results of regressions of profitability on long-term investor ownership, stakeholder capital investment proxies, and their interaction. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. All variables are defined in Appendix Table 1 and Appendix Table 2. The dependent variables are multiplied by 100. The independent variables are standardized. The regressions include control variables described in the text and industry-year fixed effects. Standard errors are clustered by industry-year. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. In Panel A, all results are tabulated, whereas in Panel B and Panel C, only selected results are tabulated.

Panel A: All Long-Term Investor Ownership

	Dependent variable is ln(1+profitability) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term investor ownership (t-1)	-0.00	0.03	-0.08	0.05	0.06
× Stakeholder capital investment proxy (t)	(-0.02)	(0.18)	(-0.44)	(0.45)	(0.49)
Long-term investor ownership (t-1)	-0.10	-0.01	-0.07	-0.00	0.01
	(-0.35)	(-0.03)	(-0.25)	(-0.01)	(0.05)
Stakeholder capital investment proxy (t)	1.02***	0.52***	1.04***	0.52***	0.31***
	(5.51)	(2.81)	(6.13)	(4.94)	(2.67)
Observations	20,019	20,019	20,019	20,019	20,019
Adjusted R^2	0.270	0.269	0.270	0.268	0.269

Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership

	Dependent variable is ln(1+profitability) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term indexer ownership (t-1)	0.05	0.06	-0.04	0.14	0.08
× Stakeholder capital investment proxy (t)	(0.29)	(0.32)	(-0.24)	(1.44)	(0.73)
Long-term non-indexer ownership (t-1)	0.01	0.04	-0.04	-0.01	0.04
× Stakeholder capital investment proxy (t)	(0.09)	(0.24)	(-0.27)	(-0.14)	(0.38)
Observations	20,019	20,019	20,019	20,019	20,019
Adjusted R^2	0.271	0.270	0.271	0.270	0.270

Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership

	Dependent variable is ln(1+profitability) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term index firm ownership (t-1)	0.01	0.02	-0.06	0.03	0.12
× Stakeholder capital investment proxy (t)	(0.04)	(0.08)	(-0.26)	(0.21)	(0.79)
Long-term non-index firm ownership (t-1)	-0.20	-0.16	-0.33	0.32*	-0.01
× Stakeholder capital investment proxy (t)	(-0.80)	(-0.57)	(-1.30)	(1.79)	(-0.03)
Observations	20,019	20,019	20,019	20,019	20,019
Adjusted R^2	0.270	0.269	0.270	0.269	0.269

Table 4
Investor Horizons, Stakeholder Capital Investment, and Expected Profitability

This table presents the results of regressions of expected profitability on long-term investor ownership, stakeholder capital investment proxies, and their interaction. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. In the first set of regressions in each panel, expected profitability is earnings estimates, and in the second set, it is earnings announcement returns. The regressions include control variables described in the text and industry-year fixed effects. All variables are defined in Appendix Table 1 and Appendix Table 2. The dependent variables are multiplied by 100. The independent variables are standardized. Standard errors are clustered by industry-year. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Only selected results are tabulated.

Panel A: All Long-Term Investor Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(1+earnings estimates) (t)					
Long-term investor ownership (t-1)	0.02	-0.00	-0.03	0.11	0.02
× Stakeholder capital investment proxy (t)	(0.13)	(-0.00)	(-0.37)	(1.25)	(0.19)
Dependent variable is ln(1+earnings announcement returns) (t+1)					
Long-term investor ownership (t-1)	-0.02	-0.03	0.00	-0.02	0.04
× Stakeholder capital investment proxy (t)	(-0.31)	(-0.50)	(0.08)	(-0.65)	(1.08)
Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(1+earnings estimates) (t)					
Long-term indexer ownership (t-1)	0.01	-0.02	-0.01	0.14**	-0.06
× Stakeholder capital investment proxy (t)	(0.07)	(-0.18)	(-0.13)	(2.10)	(-1.04)
Long-term non-indexer ownership (t-1)	0.02	0.02	-0.03	0.03	0.07
× Stakeholder capital investment proxy (t)	(0.22)	(0.17)	(-0.41)	(0.53)	(0.82)
Dependent variable is ln(1+earnings announcement returns) (t+1)					
Long-term indexer ownership (t-1)	-0.03	-0.02	-0.01	-0.04	0.02
× Stakeholder capital investment proxy (t)	(-0.86)	(-0.60)	(-0.33)	(-1.38)	(0.49)
Long-term non-indexer ownership (t-1)	-0.00	-0.02	0.01	0.00	0.04
× Stakeholder capital investment proxy (t)	(-0.09)	(-0.44)	(0.14)	(0.09)	(1.09)
Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(1+earnings estimates) (t)					
Long-term index firm ownership (t-1)	0.21	0.23	0.05	0.18*	-0.05
× Stakeholder capital investment proxy (t)	(1.51)	(1.26)	(0.59)	(1.83)	(-0.43)
Long-term non-index firm ownership (t-1)	-0.01	0.02	-0.03	0.49***	-0.23
× Stakeholder capital investment proxy (t)	(-0.04)	(0.12)	(-0.29)	(4.03)	(-1.49)
Dependent variable is ln(1+earnings announcement returns) (t+1)					
Long-term index firm ownership (t-1)	0.01	-0.01	0.02	-0.02	0.04
× Stakeholder capital investment proxy (t)	(0.11)	(-0.13)	(0.35)	(-0.46)	(0.87)
Long-term non-index firm ownership (t-1)	-0.02	-0.02	0.01	-0.02	0.03
× Stakeholder capital investment proxy (t)	(-0.29)	(-0.26)	(0.23)	(-0.26)	(0.46)

Table 5
Investor Horizons, Stakeholder Capital Investment, and Stock Returns: Cross-Sectional Analysis

This table presents the results of Fama-MacBeth regressions of excess stock returns on long-term investor ownership, stakeholder capital investment proxies, and their interaction. Cross-sectional regressions are run for each month, and the means and t-statistics of the resulting time-series of monthly coefficient estimates are computed. The sample comprises 248,819 firm-month observations corresponding to 3,592 unique firms between January 1992 and December 2010. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. Excess stock returns are raw returns minus industry returns, and they are measured during month t. Industry is defined using two-digit SIC codes. Stakeholder capital investment variables are defined in Appendix Table 1, and investor ownership variables are defined in Appendix Table 2. They are measured as of the calendar year before the current year. The control variables are institutional ownership and its interaction with the stakeholder capital investment proxy as well as market capitalization, book-to-market, lagged returns, volume, the dividend yield, and the stock price. Market capitalization is the natural logarithm of market capitalization, and it is measured at the end of month t-2. Book-to-market is the natural logarithm of book-to-market. Returns 2-3, returns 4-6, and returns 7-12 are the natural logarithm of cumulative raw stock returns from month t-3 to month t-2, month t-6 to month t-4, and month t-12 to month t-7, respectively. Volume is the natural logarithm of the dollar value of trading during month t-2. Dividend yield is the ratio of dividends paid during the fiscal year to market capitalization at the end of the fiscal year. Stock price is the natural logarithm of the stock price, and it is measured at the end of month t-2. Both book-to-market and dividend yield are measured as of the most recent fiscal year. The dependent variables are multiplied by 100. Investor ownership variables and stakeholder capital investment variables are standardized. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. In Panel A, all results are tabulated, whereas in Panel B and Panel C, only selected results are tabulated.

Panel A: All Long-Term Investor Ownership					
	Dependent variable is excess stock returns				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term investor ownership	-0.12**	-0.05	-0.04	-0.10**	-0.05
× Stakeholder capital investment proxy	(-2.43)	(-0.87)	(-0.88)	(-2.33)	(-1.34)
Long-term investor ownership	0.06	0.04	0.06	0.05	0.04
	(1.02)	(0.73)	(0.96)	(0.74)	(0.67)
Stakeholder capital investment proxy	0.05	0.06	0.03	0.04	-0.02
	(1.49)	(1.36)	(0.91)	(1.43)	(-0.47)
Observations	239,100	239,100	239,100	239,100	239,100
Number of groups	228	228	228	228	228
Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership					
	Dependent variable is excess stock returns				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term indexer ownership	-0.12*	-0.10	-0.07	-0.16***	0.02
× Stakeholder capital investment proxy	(-1.77)	(-1.10)	(-1.12)	(-3.22)	(0.40)
Long-term non-indexer ownership	-0.06	-0.02	-0.01	-0.02	-0.04
× Stakeholder capital investment proxy	(-1.38)	(-0.35)	(-0.31)	(-0.67)	(-1.19)
Observations	239,100	239,100	239,100	239,100	239,100
Number of groups	228	228	228	228	228
Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership					
	Dependent variable is excess stock returns				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term index firm ownership	-0.13**	-0.06	-0.04	-0.11**	-0.06
× Stakeholder capital investment proxy	(-2.15)	(-0.85)	(-0.69)	(-2.24)	(-1.22)
Long-term non-index firm ownership	-0.15	-0.10	-0.01	-0.10	-0.14*
× Stakeholder capital investment proxy	(-1.54)	(-0.58)	(-0.14)	(-1.24)	(-1.69)
Observations	239,100	239,100	239,100	239,100	239,100
Number of groups	228	228	228	228	228

Table 6
Investor Horizons, Stakeholder Capital Investment, and Stock Returns: Time-Series Analysis

This table presents the results of four-factor model regressions. Monthly time-series regressions are run for portfolios formed based on investor horizons and stakeholder capital investment and constructed to capture their interaction. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. Observations are sorted into three groups based on investor horizons and into three groups based on stakeholder capital investment. Investor horizons are measured as the difference between long-term investor ownership and short-term investor ownership. Observations are sorted into investor horizon terciles. Three groups are created for each stakeholder capital investment proxy. For the overall proxy, observations with two or more net negative points are sorted into the bottom group, observations with two or more net positive points are sorted into the top group, and the remaining observations are sorted into the middle group. For the other four proxies, the same procedure is followed but one net negative point, zero points, and one net positive point are used as the corresponding cutoffs, respectively. Stakeholder capital investment variables are defined in Appendix Table 1, and investor ownership variables are defined in Appendix Table 2. Each month during the year after portfolio formation, mean raw returns are computed for each of the resulting portfolios formed based on both investor horizons group and stakeholder capital investment group. Moreover, each month, mean raw returns are computed for the portfolio that is long the top stakeholder capital investment group and short the bottom stakeholder capital investment group, and this is done for both the top investor horizons group and the bottom investor horizons group. Finally, each month, mean raw returns are computed for the portfolio that is long the long-short stakeholder capital investment group in the top investor horizons group and is short the long-short stakeholder capital investment group in the bottom investor horizons group. A time-series regression is run of the excess stock returns of this portfolio on the returns of the four factors, and the results are presented. Excess stock returns are raw returns minus the risk-free rate. All returns variables are measured in percentages. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent variable is excess stock returns				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
α	-0.74***	0.35	-0.39*	-0.94*	-0.74**
	(-2.86)	(1.23)	(-1.82)	(-1.97)	(-2.44)
β(MKT)	-0.05	-0.03	-0.01	0.15	0.19***
	(-0.81)	(-0.54)	(-0.16)	(1.29)	(2.94)
β(SMB)	-0.31***	-0.36***	-0.25***	-0.38***	-0.02
	(-3.32)	(-3.27)	(-3.45)	(-2.73)	(-0.24)
β(HML)	0.04	-0.18	-0.07	-0.09	0.13
	(0.51)	(-1.61)	(-0.92)	(-0.59)	(1.44)
β(UMD)	0.05	-0.05	-0.09*	-0.10	0.02
	(0.91)	(-0.75)	(-1.88)	(-1.03)	(0.31)
Observations	228	228	228	227	228

Table 7
Investor Horizons, Stakeholder Capital Investment, and the Total Volatility of Stock Returns

This table presents regressions of the total volatility of stock returns on long-term investor ownership, stakeholder capital investment proxies, and their interaction. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. All variables are defined in Appendix Table 1 and Appendix Table 2. The dependent variables are multiplied by 100. The independent variables are standardized. The regressions include control variables described in the text and industry-year fixed effects. Standard errors are clustered by industry-year. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. In Panel A, all results are tabulated, whereas in Panel B and Panel C, only selected results are tabulated.

Panel A: All Long-Term Investor Ownership

	Dependent variable is ln(total volatility of stock returns) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term investor ownership (t-1)	-1.26***	-1.64***	-0.08	-1.04***	0.35
× Stakeholder capital investment proxy (t)	(-3.59)	(-4.87)	(-0.27)	(-3.45)	(1.06)
Long-term investor ownership (t-1)	-3.17***	-3.24***	-3.15***	-3.20***	-3.11***
	(-8.34)	(-8.46)	(-8.20)	(-8.37)	(-8.15)
Stakeholder capital investment proxy (t)	-0.56**	-0.03	0.07	-0.27	-1.56***
	(-1.98)	(-0.12)	(0.29)	(-1.11)	(-4.87)
Observations	20,018	20,018	20,018	20,018	20,018
Adjusted R^2	0.652	0.652	0.651	0.651	0.652

Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership

	Dependent variable is ln(total volatility of stock returns) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term indexer ownership (t-1)	-0.92***	-1.27***	-0.07	-0.40	0.12
× Stakeholder capital investment proxy (t)	(-3.13)	(-4.56)	(-0.28)	(-1.62)	(0.53)
Long-term non-indexer ownership (t-1)	-0.81***	-1.01***	-0.03	-0.88***	0.27
× Stakeholder capital investment proxy (t)	(-2.68)	(-3.44)	(-0.13)	(-3.25)	(0.92)
Observations	20,018	20,018	20,018	20,018	20,018
Adjusted R^2	0.652	0.652	0.652	0.652	0.653

Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership

	Dependent variable is ln(total volatility of stock returns) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term index firm ownership (t-1)	-1.09***	-1.60***	0.27	-1.04***	0.41
× Stakeholder capital investment proxy (t)	(-2.73)	(-4.12)	(0.81)	(-3.01)	(1.08)
Long-term non-index firm ownership (t-1)	-3.08***	-2.70***	-1.41***	-2.37***	-0.79*
× Stakeholder capital investment proxy (t)	(-6.01)	(-5.20)	(-3.52)	(-5.09)	(-1.86)
Observations	20,018	20,018	20,018	20,018	20,018
Adjusted R^2	0.653	0.653	0.653	0.652	0.653

Table 8
Investor Horizons, Stakeholder Capital Investment, and the Volatility of Profitability

This table presents regressions of the volatility of profitability on long-term investor ownership, stakeholder capital investment proxies, and their interaction. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. All variables are defined in Appendix Table 1 and Appendix Table 2. The dependent variables are multiplied by 100. The independent variables are standardized. The regressions include control variables described in the text and industry-year fixed effects. Standard errors are clustered by industry-year. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. In Panel A, all results are tabulated, whereas in Panel B and Panel C, only selected results are tabulated.

Panel A: All Long-Term Investor Ownership

	Dependent variable is ln(volatility of profitability) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term investor ownership (t-1)	-4.54***	-4.85***	-0.74	-3.26**	-1.60
× Stakeholder capital investment proxy (t)	(-3.01)	(-3.49)	(-0.55)	(-2.26)	(-1.08)
Long-term investor ownership (t-1)	-1.93	-2.64	-1.73	-2.25	-1.79
	(-1.01)	(-1.37)	(-0.90)	(-1.17)	(-0.93)
Stakeholder capital investment proxy (t)	-4.76***	1.68	-5.00***	-3.92***	-8.41***
	(-3.91)	(1.33)	(-4.63)	(-3.21)	(-6.90)
Observations	17,581	17,581	17,581	17,581	17,581
Adjusted R^2	0.109	0.108	0.108	0.109	0.111

Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership

	Dependent variable is ln(volatility of profitability) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term indexer ownership (t-1)	-3.72***	-2.98**	-2.57**	-1.66	-1.14
× Stakeholder capital investment proxy (t)	(-2.87)	(-2.51)	(-2.14)	(-1.26)	(-0.86)
Long-term non-indexer ownership (t-1)	-1.77	-3.41***	2.76**	-2.96**	-0.78
× Stakeholder capital investment proxy (t)	(-1.34)	(-2.59)	(2.41)	(-2.31)	(-0.65)
Observations	17,581	17,581	17,581	17,581	17,581
Adjusted R^2	0.109	0.108	0.109	0.109	0.111

Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership

	Dependent variable is ln(volatility of profitability) (t+1)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term index firm ownership (t-1)	-3.68**	-4.01**	0.40	-2.95*	-2.48
× Stakeholder capital investment proxy (t)	(-2.07)	(-2.40)	(0.25)	(-1.75)	(-1.44)
Long-term non-index firm ownership (t-1)	-5.09**	-2.84	-3.50*	-7.38***	-4.18*
× Stakeholder capital investment proxy (t)	(-2.30)	(-1.34)	(-1.77)	(-3.46)	(-1.93)
Observations	17,581	17,581	17,581	17,581	17,581
Adjusted R^2	0.112	0.111	0.113	0.113	0.115

Table 9
Investor Horizons, Stakeholder Capital Investment, and the Expected Volatility of Profitability

This table presents regressions of the expected volatility of profitability on long-term investor ownership, stakeholder capital investment proxies, and their interaction. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. All variables are defined in Appendix Table 1 and Appendix Table 2. The dependent variables are multiplied by 100. The independent variables are standardized. The regressions include control variables described in the text and industry-year fixed effects. Standard errors are clustered by industry-year. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Only selected results are tabulated.

Panel A: All Long-Term Investor Ownership

	Dependent variable is ln(volatility of earnings estimates) (t)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term investor ownership (t-1)	-3.49***	-3.73***	0.12	-4.18***	0.18
× Stakeholder capital investment proxy (t)	(-3.54)	(-3.92)	(0.12)	(-4.02)	(0.16)
Long-term investor ownership (t-1)	1.07	0.79	1.69	1.00	1.49
	(0.68)	(0.51)	(1.07)	(0.65)	(0.96)
Stakeholder capital investment proxy (t)	-0.04	4.69***	-3.28***	-0.53	-4.16***
	(-0.05)	(5.81)	(-4.19)	(-0.59)	(-4.17)
Observations	17,720	17,720	17,720	17,720	17,720
Adjusted R^2	0.197	0.198	0.197	0.197	0.198

Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership

	Dependent variable is ln(volatility of earnings estimates) (t)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term indexer ownership (t-1)	-3.52***	-2.97***	-1.33	-3.62***	-0.22
× Stakeholder capital investment proxy (t)	(-3.94)	(-3.48)	(-1.51)	(-3.84)	(-0.21)
Long-term non-indexer ownership (t-1)	-0.60	-2.00**	2.59***	-1.84**	0.51
× Stakeholder capital investment proxy (t)	(-0.61)	(-2.16)	(3.00)	(-2.01)	(0.59)
Observations	17,720	17,720	17,720	17,720	17,720
Adjusted R^2	0.198	0.200	0.199	0.199	0.199

Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership

	Dependent variable is ln(volatility of earnings estimates) (t)				
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Long-term index firm ownership (t-1)	-3.17***	-3.47***	0.86	-4.45***	-0.36
× Stakeholder capital investment proxy (t)	(-2.83)	(-3.18)	(0.74)	(-3.68)	(-0.27)
Long-term non-index firm ownership (t-1)	-3.72**	-1.62	-1.80	-6.04***	-3.33**
× Stakeholder capital investment proxy (t)	(-2.29)	(-1.05)	(-1.15)	(-3.38)	(-1.99)
Observations	17,720	17,720	17,720	17,720	17,720
Adjusted R^2	0.199	0.201	0.200	0.199	0.200

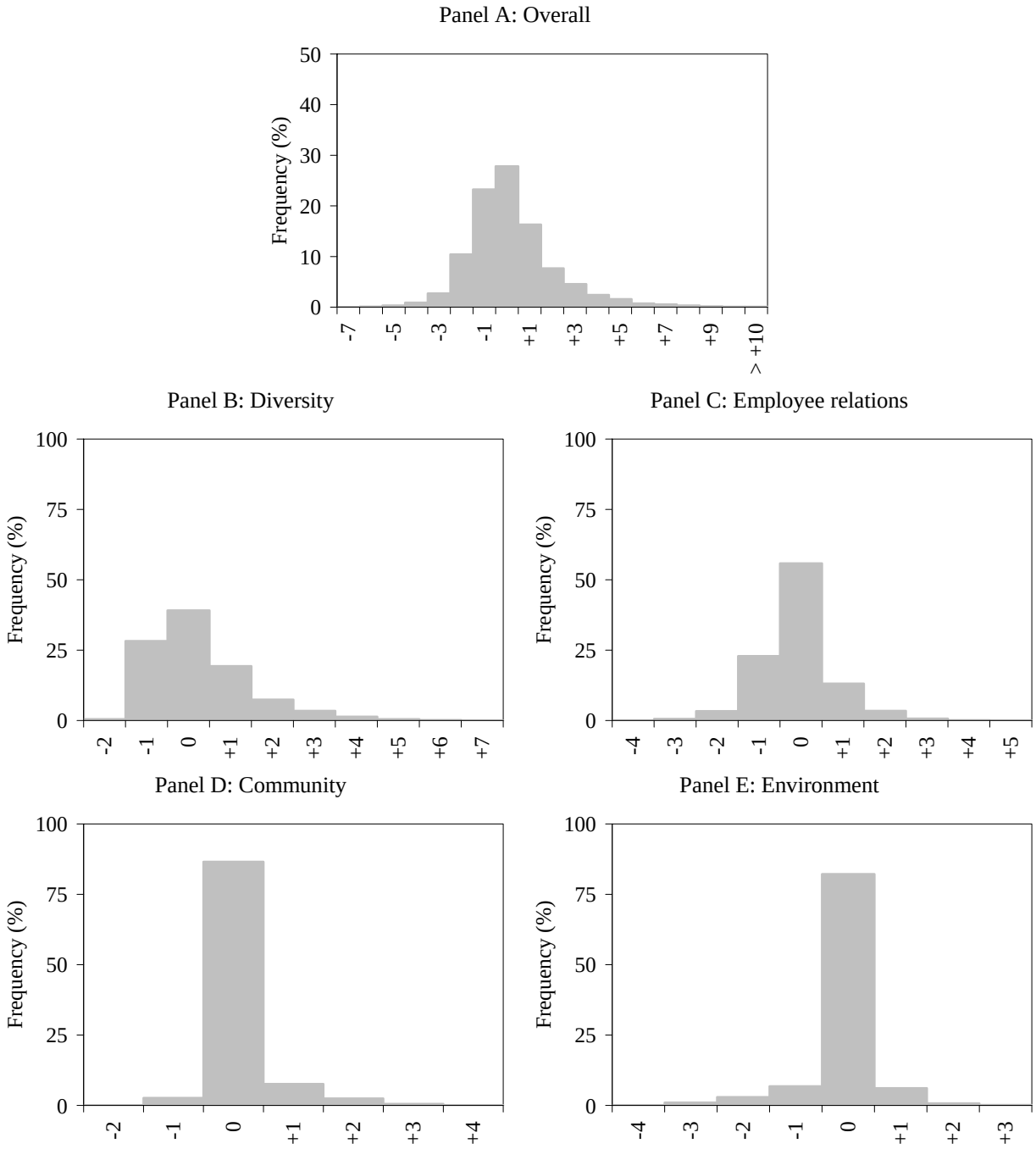

Figure 1. The distributions of stakeholder capital investment variables. This figure presents the distributions of stakeholder capital investment variables. The sample comprises 21,257 firm-year observations corresponding to 3,592 unique firms between 1991 and 2009. The firms in the sample are publicly traded U.S. operating firms excluding financials and utilities. Stakeholder capital investment variables are defined in Appendix Table 1.

Appendix Table 1
Definitions of Stakeholder Capital Investment Variables

This table presents the definitions of stakeholder capital investment variables. Variables are defined using KLD data items. Each KLD data item is a dummy variable that equals one or zero. Descriptions are from KLD. The overall stakeholder capital investment proxy is constructed as the sum of the diversity, employee relations, community, and environment proxies. The latter proxies are constructed as the sum of their components. Strengths components and strengths minus concerns components both enter the sum with a positive sign, and concerns components enter the sum with a negative sign.

Name	Definition	Description
Overall	"diversity"+"employee relations" +"community"+"environment"	n/a
Diversity		
- Strength: Women and minorities	(DIV_STR_A+DIV_STR_B +DIV_STR_C+DIV_STR_E -DIV_CON_A-DIV_CON_B)	Women and/or minorities are well represented among the firm's management officers and/or directors as well as other firms with which it does substantial business, and the firm is not involved in affirmative action controversies
- Strength: Work-life balance	DIV_STR_D	The firm supports employee work-like balance, e.g., with child care, elder care, flex time, etc.
- Strength: Disabled people	DIV_STR_F	The firm supports disabled employees, e.g., through innovative in hiring and retention of disable people
- Strength: Gays and lesbians	DIV_STR_G	The firm supports gays and lesbian employees by providing benefits to their partners
- Other strengths minus other concerns	(DIV_STR_X-DIV_CON_X)	Strengths minus concerns where both not elsewhere classified
Employee relations		
- Strength: Union relations	(EMP_STR_A-EMP_CON_A)	The firm has good relations with its unions
- Strength: Employee profit sharing	(EMP_STR_C+EMP_STR_D)	The firm offers cash profit sharing, stock ownership, or stock options to a majority of its employees, or workers participate in management decision making
- Strength: Retirement benefits	(EMP_STR_F-EMP_CON_D)	The firm offers generous retirement benefits
- Strength: Health and safety	(EMP_STR_G-EMP_CON_B)	The firm offers generous health benefits and/or maintains high safety standards
- Other strengths minus other concerns	(EMP_STR_X-EMP_CON_X)	Strengths minus concerns where both not elsewhere classified

Community		
- Strength: Charity	(COM_STR_A+COM_STR_B +COM_STR_F+COM_STR_G)	The firm gives generously to charities, it gives in innovative ways, it gives abroad, and it has an exceptionally strong volunteer program
- Strength: Support for housing	COM_STR_C	The firm supports housing for the poor
- Strength: Support for education	COM_STR_D	The firm supports primary and/or secondary education, and/or it supports job training for youth
- Other strengths minus other concerns	(COM_STR_X-COM_CON_X)	Strengths minus concerns where both not elsewhere classified
- Concern: Negative economic impact	COM_CON_B	The firm's is involved in controversies, financial or otherwise, in the communities in which it operates
Environment		
- Strength: Products and services	ENV_STR_A	The firm is an innovator in products and services that benefit the environment
- Strength: Pollution prevention	ENV_STR_B	The firm has strong pollution prevention programs
- Strength: Recycling	ENV_STR_C	The firm has strong recycling programs
- Strength: Clean energy usage	ENV_STR_D	The firm uses clean energy for a significant amount of its energy needs
- Other strengths minus other concerns	(ENV_STR_X-ENV_CON_X)	Strengths minus concerns where both not elsewhere classified
- Concern: Legal and regulatory problems	ENV_CON_A+ENV_CON_B	The firm has pollution problems, legal or regulatory, financial or otherwise
- Concern: Excessive pollution	ENV_CON_D	The firm's emission of toxic chemicals is excessive

Appendix Table 2
Definitions of All Other Variables

This table presents the definitions of all other variables. Variables are computed for each firm and each year. Industry is defined using two-digit SIC codes. * indicates that the variable is defined using Compustat data items.

Name	Definition
Dependent variables	
- Market-to-book	(PRCC_C×CSHO)/(TXDITC+CEQ) *
- Profitability	IB/AT *
- Earnings estimates	Mean of analysts' earnings estimates divided by total assets. For each firm, year, and analyst, the estimate used is the last one issued in the current calendar year for the first fiscal year ending in the next calendar year.
- Earnings announcement returns	Mean of quarterly earnings announcement returns. Earnings announcement returns are measured as raw returns minus market returns during the three days centered on the earnings announcement date.
- Volatility of stock returns	Estimated using the four-factor model with daily returns. Estimates of total, systematic, and idiosyncratic volatility are measured as the annualized standard deviations of daily returns.
- Volatility of profitability	Coefficient of variation of quarterly earnings per share computed using three years of quarterly data. Quarterly earnings per share is measured as EPSPXQ/AJEXQ. *
- Volatility of sales	Coefficient of variation of quarterly sales per share computed using three years of quarterly data. Quarterly sales per share is measured as (SALEQ/CSHOQ)/AJEXQ. *
- Volatility of costs	Coefficient of variation of quarterly costs per share computed using three years of quarterly data. Quarterly costs per share is measured as ((COGSQ+XSGAQ)/CSHOQ)/AJEXQ. *
- Volatility of earnings estimates	Mean of the coefficient of variation of analysts' earnings estimates for each firm-year. This is computed using three years of data on quarterly earnings per share estimates. For each firm, year, and analyst, the estimates used are the last ones issued in the current calendar year for the fiscal quarters ending in the next three calendar years.
Investor ownership variables	
- Long-term investor ownership	Fraction of shares owned by institutional investors that are long-term investors. Investors with three-year portfolio turnover of 35% or less are classified as "long-term investors". See Gaspar, Massa, and Matos (2005) and Chen, Harford, and Li (2007) for computing investor portfolio turnover.
- Long-term indexer ownership	Fraction of shares owned by institutional investors that are both long-term investors and indexers. Investors with active share of 25% or less are classified as "indexers". See Cremers and Petajisto (2009) for computing active share.
- Long-term non-indexer ownership	Fraction of shares owned by institutional investors that are both long-term investors and non-indexers
- Long-term index firm ownership	Fraction of shares owned by institutional investors that are long-term investors for S&P 500 firms, and zero for non-S&P 500 firms
- Long-term non-index firm ownership	Fraction of shares owned by institutional investors that are long-term investors for non-S&P 500 firms, and zero for S&P 500 firms
- Institutional ownership	Fraction of shares owned by institutional investors

Control variables	
- Total assets	AT *
- Market-to-book	(PRCC_F×CSHO)/(TXDITC+CEQ) *
- Cash flow-to-total assets	(IB+DP)/AT *
- Capital expenditures-to-total assets	CAPX/AT *
- Res. and dev. exp.-to-total assets	XRD/AT *
- Advertising expenditures-to-total assets	XAD/AT *
- Prop., plant, and equip.-to-total assets	PPENT/AT *
- Leverage	(DLC+DLTT)/AT *
- Dividend payer dummy variable	0<DVC *

Appendix Table 3
Investor Horizons, Stakeholder Capital Investment, and the Systematic and Idiosyncratic Volatility of Stock Returns

This table presents the same regressions as Table 7 except that in the first set of regressions in each panel, volatility is systematic volatility, and in the second set, it is idiosyncratic volatility. Only selected results are tabulated.

Panel A: All Long-Term Investor Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(systematic volatility of stock returns) (t+1)					
Long-term investor ownership (t-1)	-2.25***	-3.15***	-0.11	-2.13***	1.36***
× Stakeholder capital investment proxy (t)	(-4.66)	(-7.45)	(-0.26)	(-5.36)	(3.42)
Dependent variable is ln(idiosyncratic volatility of stock returns) (t+1)					
Long-term investor ownership (t-1)	-0.81**	-1.07***	-0.08	-0.70**	0.26
× Stakeholder capital investment proxy (t)	(-2.21)	(-3.01)	(-0.27)	(-2.09)	(0.73)
Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(systematic volatility of stock returns) (t+1)					
Long-term indexer ownership (t-1)	-2.13***	-2.87***	-0.33	-1.62***	0.81***
× Stakeholder capital investment proxy (t)	(-5.60)	(-7.97)	(-1.03)	(-4.90)	(2.85)
Long-term non-indexer ownership (t-1)	-1.13***	-1.69***	0.07	-1.25***	0.97**
× Stakeholder capital investment proxy (t)	(-2.65)	(-4.51)	(0.18)	(-3.45)	(2.57)
Dependent variable is ln(idiosyncratic volatility of stock returns) (t+1)					
Long-term indexer ownership (t-1)	-0.40	-0.78***	-0.00	-0.06	0.35
× Stakeholder capital investment proxy (t)	(-1.34)	(-2.74)	(-0.00)	(-0.22)	(1.41)
Long-term non-indexer ownership (t-1)	-0.64**	-0.69**	-0.07	-0.74**	0.01
× Stakeholder capital investment proxy (t)	(-2.04)	(-2.24)	(-0.27)	(-2.51)	(0.03)
Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(systematic volatility of stock returns) (t+1)					
Long-term index firm ownership (t-1)	-1.88***	-3.02***	0.38	-2.16***	1.34***
× Stakeholder capital investment proxy (t)	(-3.41)	(-6.10)	(0.80)	(-4.82)	(2.96)
Long-term non-index firm ownership (t-1)	-3.88***	-3.66***	-1.36**	-3.74***	0.06
× Stakeholder capital investment proxy (t)	(-5.30)	(-5.72)	(-2.22)	(-5.42)	(0.10)
Dependent variable is ln(idiosyncratic volatility of stock returns) (t+1)					
Long-term index firm ownership (t-1)	-0.58	-0.97**	0.27	-0.64*	0.40
× Stakeholder capital investment proxy (t)	(-1.41)	(-2.38)	(0.78)	(-1.67)	(0.98)
Long-term non-index firm ownership (t-1)	-2.82***	-2.29***	-1.56***	-2.19***	-0.92*
× Stakeholder capital investment proxy (t)	(-5.29)	(-4.19)	(-3.77)	(-4.44)	(-1.95)

Appendix Table 4
Investor Horizons, Stakeholder Capital Investment, and the Volatility of Sales and Costs

This table presents the same regressions as Table 8 except that in the first set of regressions in each panel, volatility is the volatility of sales, and in the second set, it is the volatility of costs. Only selected results are tabulated.

Panel A: All Long-Term Investor Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(volatility of sales) (t+1)					
Long-term investor ownership (t-1)	-3.91***	-2.60***	-1.90***	-2.40***	-1.85***
× Stakeholder capital investment proxy (t)	(-5.08)	(-3.38)	(-2.75)	(-3.36)	(-2.65)
Dependent variable is ln(volatility of costs) (t+1)					
Long-term investor ownership (t-1)	-3.72***	-3.23***	-1.61**	-1.53**	-1.34*
× Stakeholder capital investment proxy (t)	(-5.03)	(-4.40)	(-2.22)	(-2.12)	(-1.92)
Panel B: Long-Term Investor Ownership Split into Indexer Ownership and Non-Indexer Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(volatility of sales) (t+1)					
Long-term indexer ownership (t-1)	-2.95***	-1.20*	-1.74***	-2.49***	-2.08***
× Stakeholder capital investment proxy (t)	(-4.51)	(-1.78)	(-2.76)	(-4.13)	(-3.35)
Long-term non-indexer ownership (t-1)	-1.88***	-2.36***	-0.51	-0.15	-0.01
× Stakeholder capital investment proxy (t)	(-2.89)	(-3.79)	(-0.82)	(-0.25)	(-0.01)
Dependent variable is ln(volatility of costs) (t+1)					
Long-term indexer ownership (t-1)	-2.67***	-1.41**	-1.47**	-1.92***	-1.74***
× Stakeholder capital investment proxy (t)	(-4.16)	(-2.13)	(-2.28)	(-2.96)	(-2.73)
Long-term non-indexer ownership (t-1)	-1.98***	-3.10***	-0.48	0.41	0.38
× Stakeholder capital investment proxy (t)	(-3.08)	(-5.07)	(-0.73)	(0.65)	(0.62)
Panel C: Long-Term Investor Ownership Split into Index Firm Ownership and Non-Index Firm Ownership					
	Stakeholder capital investment proxy				
	Overall	Diversity	Employee relations	Community	Environment
Dependent variable is ln(volatility of sales) (t+1)					
Long-term index firm ownership (t-1)	-4.54***	-3.14***	-2.11***	-2.70***	-2.17***
× Stakeholder capital investment proxy (t)	(-5.10)	(-3.51)	(-2.59)	(-3.23)	(-2.62)
Long-term non-index firm ownership (t-1)	-3.99***	-1.73	-2.36**	-4.40***	-2.60**
× Stakeholder capital investment proxy (t)	(-3.47)	(-1.50)	(-2.33)	(-3.87)	(-2.47)
Dependent variable is ln(volatility of costs) (t+1)					
Long-term index firm ownership (t-1)	-4.17***	-3.76***	-1.74**	-1.61*	-1.53*
× Stakeholder capital investment proxy (t)	(-4.79)	(-4.28)	(-2.01)	(-1.90)	(-1.86)
Long-term non-index firm ownership (t-1)	-4.37***	-2.92***	-1.98*	-4.50***	-2.63**
× Stakeholder capital investment proxy (t)	(-3.93)	(-2.66)	(-1.88)	(-3.99)	(-2.39)