FIRMS' ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) CHOICES, PERFORMANCE AND MANAGERIAL MOTIVATION

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ABSTRACT

During the last decade there has been increased scrutiny of corporate performance on dimensions other than stock price. For example, many market participants now pay close attention to firms' environmental, social, and governance (ESG) or corporate social responsibility (CSR) policies. We examine the extent to which a widely-used measure of firms' ESG performance is related to firms' operating performance, efficiency, compensation practices, trading by institutional investors, and ultimately, valuation. Our goal is to better understand why firms typically adopt stronger ESG policies and the extent to which the market values or trades on these decisions. We find that operating performance, efficiency, and firm value tend to increase with stronger ESG performance. We also find that CEOs who adopt stronger ESG policies receive lower unexplained salary compensation than their peers. Taken together, these results suggest that firms with stronger ESG policies also enjoy increased efficiency and higher valuations than their peers. However, we find no evidence that the valuation effects are driven by institutional trading – if anything, it appears that institutional investors are less likely to own or buy more shares of stronger environmental or socially responsible firms. At the same time, however, we observe that institutions do appear to prefer firms with fewer corporate governance concerns.

Firms' Environmental, Social and Governance (ESG) Choices, Performance and Managerial Motivation

Investors, both individual and institutional, appear to be increasingly interested in corporations' activities that arguably extend beyond simply maximizing shareholder wealth. Three areas that are the subject of the most scrutiny are firms' environmental footprints, the degree to which they exhibit a sense of social responsibility, and their corporate governance. In fact, a new acronym has been developed to jointly capture firms' actions in these areas: *ESG* (Environmental, Social, and Governance).

Institutional investors, in particular, may be using ESG as a factor in their investment decisions. Their public stances suggest as much – for example, many institutional investors are signatories to the United Nations' "Principles for Responsible Investment" (UNPRI), which states, "As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social and corporate governance (ESG) issues can affect the performance of investment portfolios."[1] The UNPRI website reports over 800 signatories including both public and private pension funds and investment managers. Moreover, as of September 2010, these signatories managed assets in excess of $22 trillion, more than 10% of the UNPRI's estimated total value of global capital markets.[2]

As further indication of the increasing importance of ESG to institutional investors, several third-party data providers now rate companies on their ESG "performance," or activities, in these three areas. By tabulating companies' ESG practices and policies, ESG indices offer investors the ability to compare firms along the environmental, social, and governance dimensions. One of the leading such data providers, Kinder, Lydenberg, Domini (KLD), states

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[1] They add the caveat, "(to varying degrees across companies, sectors, regions, asset classes and through time)."
[2] See http://www.unpri.org/. Large institutional investors who are signatories include CalPERS, Goldman Sachs, JBWere Superannuation Fund (Australia), Swiss Reinsurance Company, TIAA-CREF, Black Rock, T. Rowe Price, and UBS Global Asset Management.

that 31 of the top 50 institutional money managers worldwide use their research to integrate ESG factors into their investment decisions.[3]

While at least some institutional investors appear to use ESG in investment decision-making, this begs the question as to whether or not ESG *should* be a factor in such decisions. Perhaps not surprisingly, opinions on this issue are split. Some argue that "doing good" is good for society, implying that firms should take a broader view of the long-run impact of their actions. However, others argue that judging firms based on metrics such as their ESG-related performance leads to a focus on the "wrong" corporate objective function. That is, firms should focus on profits or shareholder wealth rather than social responsibility (see, for example, Friedman, 1970; Reich, 2008; and Karnani, 2010).

We address several issues related to this controversy. First, we attempt to ascertain why firms undertake activities that improve their ESG performance. To do so, we examine the relation between firms' ESG performance and both their operating performance and CEO compensation. As we discuss further below, a positive relation between ESG performance and operating performance suggests that ESG activities may boost firms' profitability, but causality is difficult to assign based on these tests alone. Associations between ESG and CEO compensation practices may shed additional light on managerial motivations for pursuing ESG policies. For example, if CEOs are using ESG to extract personal rents, then one would expect stronger ESG performance in firms with higher unexplained CEO compensation. That is, rent extraction by CEOs likely occurs simultaneously along multiple dimensions.

We also examine whether or not institutional investors' holdings and trading practices are associated with firms' ESG performance. While many institutions have publicly stated a preference for firms that appear stronger on ESG measures, whether or not they follow through by holding more of these firms (or changing their holdings in response to changes in ESG activities) is an open empirical question. Even if institutions have a preference for firms with

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[3] See www.kld.com/about/index.html. This obviously does not imply that these institutional investors employ KLD research for *all* of their investment decisions.

stronger ESG ratings, all else equal, it might be the case that non-institutional (e.g., retail) investors care even more about firms' ESG practices. If so, the fractional institutional ownership in a firm might actually decrease with firm ESG performance.

Finally, we ask whether or not firm value is related to ESG performance. Such a relation could arise from two sources. First, ESG performance could be correlated with firms' fundamentals, or their expected future cash flows. For example, perhaps consumers prefer (or will eventually prefer) to buy products from firms that are viewed as environmentally conscious or socially responsible, implying that ESG performance could predict financial performance and firm value. Second, if many of the largest institutional investors are indeed using ESG in their investment decisions – as suggested by UNPRI in the first principle, "We will incorporate ESG issues into investment analysis and decision-making processes," then the prices of these firms could be driven up relative to those of otherwise comparable firms.

Given that the definition of, and terminology surrounding, ESG actions is imprecise, our study of ESG fits within a broader set of theoretical and empirical papers that examine related issues. Such related studies refer to ESG, corporate social responsibility (CSR), and corporate social performance (CSP). However, there is little consensus as to what is meant by corporate social responsibility. According to the World Bank's International Finance Corporation (IFC), "Corporate social responsibility is the commitment of businesses to contribute to sustainable economic development by working with employees, their families, the local community and society at large to improve their lives in ways that are good for business and for development."[4] A related concept is Sustainable and Responsible Investing, SRI, defined by Eurosif (the European Sustainable Investment Forum) as, "a generic term covering any type of investment process that combines investors' financial objectives with their concerns about Environmental, Social and Governance (ESG) issues."[5] However, even the acronym SRI does not have the same

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[4] http://www.ifc.org/ifcext/economics.nsf/content/csr-intropage
[5] See European SRI Study 2010. This technically does not include all assets managed in such a way because if legislation requires such investment those assets are not counted in the total. An example is that the Belgian Parliament in 2007 approved a law prohibiting the direct and indirect financing of the certain types of weapons

underlying meaning for everyone – some interpret this as Socially Responsible Investing or Socially Responsible Investments, which may or may not be viewed as the same as Eurosif's definition.

From a theoretical perspective, Benabou and Tirole (2010) develop three hypotheses as to why firms engage in corporate social responsibility (CSR): (1) CSR policies help the firm in the long-run by avoiding myopic decisions and strengthening their market position. (2) Shareholders have delegated their social responsibility to the corporation. (3) CSR is simply a matter of corporate executives and boards enhancing their own philanthropic abilities. The first two hypotheses imply that firm performance and value increases if firms adopt CSR practices. In contrast, the third hypothesis suggests that managers use CSR (or ESG, etc.) activities to capture rents and thus improve their own welfare rather than that of shareholders. This in turn implies that firm performance would be decreasing in the strength of CSR choices.

Baron's (2008) theory of CSR is similar to that of Benabou and Tirole (2010). Specifically, Baron argues that CSR could be a productive investment because 1) it attracts consumers who value such expenditures and would be willing to pay more for products offered by the firm, or 2) employees work harder (or better) for a firm with CSR, thus increasing productivity. At the same time, Baron suggests that investors may value CSR investments even if such investments are expected to lower financial returns because they receive satisfaction from purchasing shares in a firm that makes social expenditures. Finally, managers may choose corporate social responsibility as a consumption activity or for their own personal satisfaction and public acclaim. In related theoretical work, Besley and Ghatak (2007) suggest that firms caught cheating on CSR promises will earn lower profits, while more responsible firms will earn higher profits as a reputational premium to support good behavior.

Numerous studies have empirically examined the question of whether or not "doing good" translates into "doing well" for shareholders. These studies have tended to focus on CSR

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manufacture, According to the European SRI 2010 study those assets pertaining to the Belgian asset management market have not been counted towards the total SRI assets under management (AuM) in 2010.

rather than ESG, the difference between the two being the inclusion of the governance category in ESG.[6] As an example, in their survey of the management literature, Margolis and Elfenbein (2008) report that there is little evidence that CSR hurts shareholder value, because only two percent of the studies found a negative relation between CSR and performance. The authors point out, however, that any documented overall small positive correlation could be a result of reverse causality – companies that have had good financial performance are more able to contribute to society. Moreover, Fisher-Vanden and Thorburn (2010) suggest some CSR activities may adversely affect performance in that the market reacts negatively to news of companies joining the Environmental Protection Agency's Climate Leaders program (a program aimed at reducing greenhouse gas emissions).

The difficulty in testing the relation between CSR and firm performance is also noted by Benabou and Tirole (2010). In addition to reverse causality concerns, there are more general empirical issues. For example, firm performance and CSR (or ESG) decisions are likely endogenous. Moreover, it is likely that firms pursue CSR activities for all three hypothesized reasons. Given that the first two reasons outlined above are value enhancing, while the third detracts from value, tests of the average relation between CSR and performance may mask much of the richness of the data.

In light of this background, our study contributes to the literature in several ways. We use a third-party provider of ESG performance – data from KLD (Kinder, Lydenberg, Domini) – to test for associations between firms environmental, social, and governance choices and firm performance, institutional investors' behavior, and valuation.[7] Recognizing that the literature has

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[6] Many studies have examined a firm's governance and its relation to the firm's operating and return performance (e.g., Gompers, Ishii and Metrick, 2001; Cremers and Nair, 2005). See Bebchuk and Weisbach (2010) for a review of the literature. Studies have also examined whether investment companies that use SRI (socially responsible investing) as a primary principle for their investment policies have performed well. Renneboog, Ter Horst, and Zhang (2008) provide a review of the SRI literature. Several studies have used the KLD ratings to study empirical finance issues related to ESG (e.g., Statman and Glushkov (2008), Fernando, Sharfman, and Uysal (2010). We describe the differences in their analyses and ours later in this section.

[7] KLD is now part of Morgan Stanley's RiskMetrics division. It is also worth noting that they changed their methodology in 2008, so our sample stops in 2007 in order to allow for a sufficient time series to provide power for our tests. Thus, our results might change in the most recent few years to the extent that KLD now measures different aspects of firms' performance along these three dimensions.

struggled with identification issues, and without a perfect instrument or natural experiment, we analyze ESG behavior along multiple dimensions – operating performance, compensation policy, institutional investor behavior, and valuation – in order to gain a fuller understanding of which firms appear strong from an ESG perspective and how these strengths are viewed by, and acted upon, by market participants. While the literature has tended to focus on a single aspect of CSR or ESG, we study ESG as a whole, along with each of its components. Specifically, we use KLD's measures of environmental, social, and governance practices which they express as strengths, concerns about the firm in the area, and a net score of strengths less concerns. Given the importance of KLD as a market leader in this area, and their market share among institutional investors, our results also shed light on the degree to which their widely-used measures of ESG are correlated with firm performance, other firm governance choices, and institutions' observed trading behavior.

In examining the relation between ESG and operating performance, we find a consistent positive association between firms' returns on assets and their net scores for all three components – environmental, social, and governance. Decomposing the return on assets into asset turnover and operating expense ratios, we find that the positive association between ESG and operating performance stems from reductions in operating expenses for firms with higher ESG performance, as opposed to greater sales per dollar of assets. This suggests that high ESG performance firms are more efficient (e.g., through lower wages per dollar of assets), or that more efficient firms are more likely to adopt high-ESG practices. Generally, though, these results are inconsistent with the third motive for ESG/CSR behavior put forth by Benabou and Tirole (2010) and Baron (2008). That is, based on operating performance analyses it does not appear that managers adopt stronger ESG policies to pursue their own self interest.

To further test for the tendency of managers to adopt ESG practices for their own interests rather than those of the shareholders, we next focus on the association between CEO compensation and ESG performance. Measuring ESG by the net (strengths minus concerns) or by concerns alone we find consistent results across all three measures in that CEOs with greater

E, S, or G net performance (or fewer E, S, or G concerns) tend to have lower salaries, all else equal. In general, the results appear consistent with the operating performance results and inconsistent with the self-interest hypothesis. To the extent that ESG activities are a mechanism for CEOs to extract rents, they appear to act as a substitute for extracting rents through higher compensation rather than a complement (i.e., CEOs do not appear to extract rents through both ESG activities and higher pay).

Having shown that, on average, firms with stronger ESG also appear to have stronger operating performance and lower CEO pay, we next focus on how institutional investor ownership varies with firms' ESG policies. Surprisingly, we find that institutional ownership (as a fraction of shares outstanding) is *lower* for firms with higher S and G net scores. But, we find conflicting evidence based on E, S, and G strengths and concerns: firms' institutional ownership decreases in strengths and concerns for environmental and social activities, decreases in governance strengths, but increases in governance concerns. To better understand the causal links in these relations, we examine whether or not changes in E, S, and G predict future changes in institutional ownership or vice versa. We find some evidence that institutions hold fewer shares of firms that improve their social and environmental net scores. Further, although we find no evidence that firms change their environmental or social practices in response to increases in institutional ownership, their net governance scores tend to increase following increases in institutional ownership. Taken together, these results suggest that perhaps retail investors have a stronger preference for environmental or social strengths, that on average companies are not attracting greater institutional interest by increasing their ESG performance, and that there is little evidence that institutional owners successfully pressure firms into changing their environmental and social practices. However, institutional pressures may be successful in the area of corporate governance.

Finally, when we turn our attention to firm valuation, we find evidence that ESG practices are associated with differences in valuation (as measured by Tobin's q). Specifically, greater net environmental and governance scores are associated with higher qs.

In aggregate our findings suggest that strong E, S, and G performance (on average) comes from better performing firms (operating, or possibly, stock-market), and from firms with CEOs who appear less well paid, if anything. This is more consistent with firms "doing well by doing good" than with entrenched CEOs using ESG practices as one more way to extract the personal gains at the expense of shareholders. However, for all of the attention paid to institutional investors' preferences for strong ESG firms, we find little evidence that they change their holdings in response to changes in firms' practices along these lines – if anything, the results are the opposite, suggesting that institutions are net sellers of strong ESG firms.

Other papers have addressed finance issues using the KLD scores on individual companies (e.g., Barnea and Rubin, 2010; Statman and Glushkov, 2009; Fernando, Sharfman and Uysal, 2010). The focus and approach of these papers differ from our own. For example, Barnea and Rubin employ a dichotomous division across firms as being socially responsible or socially irresponsible and focus on the relation between being socially responsible and proxies for conflicts of interest, finding a negative relation between a firm's inclusion in the socially responsible group and the firm's insider ownership and leverage. Statman and Glushkov form year-end portfolios on the basis of KLD scores by buying equal-weighted amounts in the top-third of firms with such scores and shorting equal-weights in the bottom-third of stocks in each of the seven ESG categories. The only category that had statistically significant excess abnormal returns was the employee relations category, but this significance disappeared or became marginal when portfolios were formed using value weights. Fernando, Sharfman and Uysal focus on firms' environmental performance as judged by KLD and the relationship of that performance to institutional ownership, Tobin's q, and analyst coverage. They find that institutional investors hold less in both the best and the worst environmental performers. They also find that the worst environmental performers have lower Tobin's q and higher portfolio returns relative to firms with zero environmental strengths or concerns. Our contribution is to better understand why firms typically adopt stronger ESG policies and the extent to which the market values or trades n these decisions.

The remainder of the paper is organized as follows. The next section describes the data used in the study. Following that discussion we report documenting our empirical results. The final section concludes.

Data

We employ ESG measures developed by the KLD database from 1992 through 2007. Table I presents the number of firms assessed by KLD in each year. As the table shows, in the early years, there were relatively fewer firms being rated with the smallest number of firms (527) in 1999. The number of firms covered was expanded to more than 1,000 in 2003 and to over 2,000 in 2004. Our overall sample comprises 21,638 firm-year observations.

During our sample period, KLD analysts rated each firm individually on their ESG characteristics by rating their strengths and concerns (or weaknesses) in seven qualitative areas that they view as being part of ESG: environment, community, diversity, employee relations, human rights, product, and corporate governance. KLD also lists concerns for six "controversial business issues" – alcohol, gambling, tobacco, firearms, military and nuclear power. We focus on the ESG measures and not the controversial business issues that are typically used as proxies for exclusionary investment restrictions.[8]

Each of the three rating areas has a number of factors on which firms are rated, and the rating for each factor is a binary measure. If KLD analysts view a firm as having a strength for a factor – e.g., employee involvement as a part of the social responsibility characteristic – KLD assigns the firm a one on that aspect of ESG and a zero otherwise. On the other hand, if the analyst believes that a concern exists about the firm (e.g., in their union relations), KLD assigns the firm a one for the (union relations) concern and a zero otherwise. KLD combines the

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[8] The issues we examine, although related, differ from those of the "sin" stock literature. Studies have found that sin stocks, i.e., publicly traded stocks for companies that are involved in producing alcohol, tobacco, and gaming, tend to earn higher risk-adjusted returns. There is something of a debate on what causes the differences between these stocks and "otherwise comparable" stocks – different studies claim it is due to neglect, litigation risk or better accounting disclosure (See, for example, Fabozzi (2008), Hong and Kacperczyk (2009) or Statman and Glushkov (2008).

indicators in each of the three ESG areas to get an overall environmental, social or governance score. Each firm has nine subscores: a strength score, a concern score, and a net score (the difference between the total strength and the total concern scores) for E, S and G, respectively.

Figures 1-3 show the histograms for firm-year observations for each of the ESG strengths and concerns with environmental in Figures 1a and 1b, social responsibility in Figures 2a and 2b and governance in Figures 3a and 3b. For all of the categories, the mode is zero, resulting in highly skewed distributions. For example, for the social responsibility characteristics there are over 30 strength factors (the individual factors are listed in the Appendix), but the maximum strength score that we observe any firm having in the data is 17. As Figure 2a shows, the distribution of the social strength scores is quite skewed, with almost half of the firm-year observations (48.8%) in our sample having a score of 0 on a given social strength. Only 10 observations had a social strength score greater than 13. We observe a similar level of skewness in the histogram of firm-year observations for the social weakness scores in Figure 2b.

Figures 4a, 4b, and 4c show the net scores for each of the ESG categories when for each firm-year, the concerns have been subtracted from the strengths. These distributions are very leptokurtic with again the mode being zero.

Empirical Results

As discussed earlier, Benabou and Tirole's (2010) first two hypotheses are: 1) CSR policies are beneficial in the long-run in that such policies help firms avoid short-termism while strengthening their market position, and 2) shareholders have effectively delegated the implementation of their social responsibility preferences to corporations. The empirical implication of these hypotheses is that firm performance is positively related to a firm's CSR policies. Similarly, Besley and Ghatak's (2007) model supports the first proposition of both Baron (2008) and Benabou and Tirole (2010). Specifically, Besley and Ghatak argue that their

model is consistent with the contention that firms caught cheating on CSR promises will earn lower profits, while more responsible firms will earn higher profits as a reputational premium to support good behavior. In contrast, the third Benabou and Tirole (2010) hypothesis is that CSR develops because corporate executives and boards are engaged in these policies for their own benefits. This implies a negative association between firm performance and CSR policies.

Of course, as noted by Benabou and Tirole (2010), empirical analyses of such issues are subject to the problems of endogeneity, reverse causation, and non-mutual exclusivity of the hypotheses. Keeping these caveats in mind, as a first step in this line of inquiry, we focus on the associations between ESG and firm performance.

In Table II we report the results of tests examining the association between a firm's operating performance and its net KLD scores based on the individual components, E, S, and G. Our proxy for firm performance is return on assets, measured as the ratio of *Earnings Before Interest and Taxes* (*EBIT*) to *Total Assets*. We also include indicators for each Fama-French (1993) 48-industry classification, so the estimated effects are industry-adjusted. The primary focus is on the firm's net KLD scores for environmental policies in Model (1), social responsibility policies in Model (2), and governance policies in Model (3). In all specifications, we control for firm size and the book-to-market ratio, include fixed year effects, and cluster standard errors by firm. Specifically, we test the following model:

(1) *EBIT/Assets*$_t$ = α + β_1(*ESG score*)$_{it}$ + β_2 ln(*Market Value of Equity*$_{it-1}$) +ln(*Market-to-Book*)$_{it-1}$ +$\delta_{i,t}$ + $\varepsilon_{i,t}$

The results indicate a significant positive association between operating performance and both the net environmental and governance scores. That is, firms that have stronger environmental and governance polices in place tend to have better operating performance −

11

results that are consistent with the first two hypotheses of Baron (2008) and Benabou and Tirole (2010) and the central empirical implication of Besley and Ghatak (2007). The coefficient on net Environmental score indicates that, holding environmental concerns constant, each additional environmental strength is associated with an additional 0.77% return on assets. The relationship between the net Governance score and operating performance is also economically significant. A one unit increase in net Governance is associated with an additional 1.15% return on assets. For comparison, the unconditional average return on assets in our sample is 6.94%. We hesitate to draw strong conclusions from these tests alone, however, as it could be the case that more profitable firms can "afford" to adopt policies that are viewed more favorably, or that revenue is increasing in such policies, or that costs are decreasing (e.g., due to lower wages at such firms).

Motivation for ESG

In order to provide further insights into how ESG might be linked to operating performance, and to further examine motivations for firms to engage in adopt stronger ESG policies, we decompose operating performance into revenues and expenses. In particular, in Table III, we employ an approach similar to that of Table II, and report results modeling the link between 1) *Revenue/Assets* and then 2) *Operating Expenses/Assets* and net E, S, and G scores (along with control variables). For completeness and ease of comparison, we also include the relevant specification from Table II.

In Panel A of Table III we focus on the net environmental score, while in Panels B and C, we focus on the net Social and Governance scores, respectively. In Models 1, 3, and 5 of each panel we report results for base specifications modeling dependent variables *Revenue/Assets*, *Operating Expenses/Assets*, and *EBIT/Assets* (the latter as reported in Table II) as a function of

industry and year fixed effects plus control variables. Models 2, 4, and 6 of each panel incorporate the respective individual net ESG scores. As before, for all regressions, we cluster the standard errors at the firm level.

At a fundamental level, if ESG policies are effective in attracting consumers, then we should observe a positive association between a firm's net ESG scores and its revenues. Although some prior work, particularly on corporate philanthropy, suggests that this could be the case, the evidence is contradictory. For example, Lev, Petrovits, and Radhakrishnan (2010) find that charitable contributions are associated with future revenues and that this association is strongest in consumer industries, a result that they interpret as indicating that corporate philanthropy is indeed a way to attract consumers. They test for reverse causation (i.e., companies with higher revenues contribute more to charity, but find that relationship to be only marginally significant. Similarly, Elfenbein and McManus (2007) present evidence that consumers will pay more if a product is part of a charity auction. However, Fich, Garcia, Robinson and Yore (2009) find that corporate philanthropy proxies for residual agency problems and that companies with more charitable contributions have lower Tobin's q, sales margins, and market-adjusted returns.[9].

Focusing on *Revenue/Assets* in Model 2 of each panel, we find little support for the hypothesis that ESG is revenue enhancing. In fact, we find some evidence to suggest the opposite in that there is a significant negative association between a firm's net governance score and *Revenue/Assets* (Panel C). Of note, however, the coefficients for environmental and social responsibility scores are not statistically different from zero, suggesting that these aspects of ESG are not associated with differences in firm revenues.

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[9] See, also, Brown, Helland, and Smith (2006) who conclude, that while their results provide some support for the theory that corporate philanthropy enhances shareholder value, they also find evidence that agency costs play a prominent role in explaining corporate giving.

Recall that Benabou and Tirole's (2010) third hypothesis is that corporate social responsibility develops because corporate executives and boards engage in such policies for their own benefit. If so, then one possible outcome is that these policies result in costs to the firm, costs that are borne by shareholders. An alternative hypothesis with the opposite prediction is that firms that appear stronger in terms of ESG experience costs savings – for example, through lower wages to employees who (all else equal) would prefer to work for firm that is perceived to be "good." To study this question, in Model 4 of each Panel, we examine whether or not firms' operating costs (scaled by assets) are related to the ESG scores. Specifically, if managers incur costs associated with ESG policies then we would expect to observe a positive association between ESG and operating costs. In contrast, if ESG strength translates into costs saving (e.g., lower wages), then we would expect to see a negative relation. The data suggest that the latter hypothesis is true on average: firms with higher net environmental and governance scores have significantly lower expenses relative to their assets. The coefficient on net social scores is not significantly different from zero. Together with the regressions in Model 6 (or Table II), these results suggest that stronger ESG (especially E and G) practices are associated with improved operating performance, and that this improvement stems from relations with operating expenses rather than asset turnover or increased revenues. The governance result is broadly consistent with the findings of Core, Guay, and Rusticus (2006) using the Gompers, Ishii, and Metrick (2003) governance index.

The tests focusing on operating expenses do not support the contention that the average firm engages in ESG practices in order to facilitate managerial rent extraction. To the extent that managers are extracting rents at shareholders' expense, then this would likely manifest itself in other ways. More specifically, we would expect managers who engage in positive ESG policies

for their own benefit to capture rents from the firm in other ways, for example, through excess compensation. Thus, we turn to an examination of how the level of CEO compensation is associated with ESG scores. To do so, we estimate following specification:

(2) $CEO\ compensation_{it} = \beta_1 \Delta(Shareholder\ Wealth)_{it} + \beta_2 \Delta(Shareholder\ Wealth)_{it-1} + \beta_3 (ESG\ score_{it-1}) + \Sigma\beta_k (Control\ Variables_{it}),$

where the level of compensation is measured by either salary or total direct compensation (the sum of salary, bonus, option and stock grants, long-term incentive plan payouts, and other compensation). The control variables in these models are the change in shareholder wealth for the years ending at times t and t-1, the firm's book-to-market ratio, the log of the firm's market value of equity, and the firm's ROA (*EBIT/Assets*).   These regressions are pooled using data from the 1992-2007 time period, and include industry fixed effects with standard errors clustered by firm.[10]   Moreover, in this analysis we focus on ESG in two ways. First, as in our prior analyses, we include the net score on each of the three aspects of corporate social responsibility. Second, we focus on how the individual ESG concerns (or weaknesses) along each dimension of ESG are associated with compensation.

In Table IV, Panel A, we find consistent results across all three ESG components, measured as the net score (strengths minus concerns), or as concerns alone. Firms with greater E, S, or G performance (or fewer E, S, or G concerns) tend to have CEOs who receive lower salaries, all else equal. Such findings are inconsistent with arguments that managers engaging in positive ESG activities capture rents by way of higher base pay. In Model 2, we focus on the link between CEO compensation and the presence of ESG concerns, rather than the net ESG scores. Interestingly, we find that the greater the number of ESG concerns, the higher the CEO's salary.

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[10] Using the Fama-MacBeth (1973) technique for cross-sectional regressions over the entire time period produces similar results.

On average, firms with 1 unit net E (S,G) pay their CEO 42 (7,52) thousand dollars less in salary than firms with net values of zero. These results imply that firms with greater degrees of unexplained compensation tend to be also those with what are perceived as problematic ESG practices.

In Panel B of Table IV, we examine the association between total direct compensation and ESG scores. The results are somewhat mixed in that total direct compensation is positively associated with the net environmental score (consistent with the rent extraction hypothesis), but negatively associated with the net governance score, and we find no association with the net social responsibility score. When focusing on total direct compensation and ESG concerns in Model 2, we observe a significant negative association between pay and environmental concerns, a result opposite to that of the salary specification. However, consistent with our findings for salary, we find positive and significant associations between total direct compensation and social responsibility and governance concern scores.

Overall, the results on the motivation for ESG activities provide little support for the hypothesis that managers engage in these activities in order to pursue their own interests at the expense of the shareholders. Instead, the results suggest that managers at firms engaging in positive ESG activities are more careful with expenses, and have lower salaries. At the same time, our results suggest that substantial variation exists in how the different measures are associated with proxies for both firm performance and compensation. Put somewhat differently, our results suggest that different types of ESG policies may have very different costs and benefits, and thus different effects on firm value. More generally, this implies that caution is warranted when aggregating such measures into a single ESG score.

To provide further insights into this issue, Table V reports the correlations among the ESG scores. With regard to the net scores, which consider both positive and negative aspects of the three ESG classifications, there is a 17.9% correlation between the net environmental and social responsibility scores, but little correlation between either of these and the net governance score. As a basis for comparison, and because of the idiosyncrasies of the KLD governance ratings pre-2008, we also include the Gompers, Ishii, and Metrick (2003) G index in this correlation table and find little to no association between the KLD ESG scores and the G index[11].

ESG and Institutional Investors

As noted above, both conventional wisdom and the UNPRI webpage imply that large institutional investors tend to use ESG considerations in at least some of their investment decisions. If institutions are taking these factors into consideration, then we would expect to observe associations between measures of ESG and institutional ownership. To investigate this issue, we model the fractional institutional ownership in a firm as a function of each of the component E, S, and G scores individually, while controlling for other firm characteristics as in Bennett, Sias, and Starks (2003). The regressions are pooled panel data, with industry and year fixed effects and standard errors clustered by firm using data from the 1992-2007 time period.[12]

Table VI reports the coefficients for each of the ESG scores. Using the KLD ratings as proxies for ESG factors of interest to institutions we find little evidence that, in aggregate, institutional investors are attracted to firms with high net ESG scores. In fact, we find no association between fractional institutional ownership and the net environmental score. In

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[11] We also plan to examine the relation between each of the KLD ESG scores and another widely employed measure of firm governance, the entrenchment index developed by Bebchuk, Cohen and Ferrell (2009).
[12] Using the Fama-MacBeth (1973) technique for cross-sectional regressions over the entire time period produces similar results.

contrast, we find significant negative associations between fractional institutional ownership and the net social responsibility and governance scores. The ownership relationship is strongest both statistically and economically for the net score. One additional unit net G is associated with 3.36% less ownership measured as the percent of shares outstanding. When we decompose the net ESG scores into their strengths and concerns, we find a negative association between fractional institutional ownership and each of the strengths. That is, proportional institutional ownership appears lower for firms that "do good." At the same time, we find negative associations between fractional institutional ownership and concern scores for both environmental and social classifications suggesting that institutions are, in aggregate, avoiding firms with ESG concerns. In contrast, we observe a statistically significant positive association between governance concerns and proportional institutional ownership.   Thus, our results suggest that institutions hold less of firms with more environmental or social strengths or concerns. However, ownership is higher in firms with more governance concerns. Again, the strongest relationships between ownership and ESG strengths or concerns are with governance. Each additional unit of governance strength is associated with institutions owning 6.82% less of the shares outstanding.   Each additional unit governance concern is associated with 1.14% greater ownership.   The net results are mixed in that net environmental strength is not significantly related to institutional ownership (as a fraction), while net social responsibility and governance scores are negatively related.   These results provide no support for the idea that institutional investors prefer firms with better ESG scores – if anything, the opposite case appears to be true.

Of course, the pooled tests in Table VI utilize both cross-sectional and time-series variation in the data, and omitted variables are a concern in interpreting these results. To obtain

better identification of the relation between firms' ESG scores and institutional ownership, we next examine within-firm (time-series) variation in the data. Specifically, we ask whether or not changes in ESG policies predict subsequent changes in institutional ownership (suggesting that institutions' investment decisions reflect ESG practices), and vice versa – if changes in institutional ownership predict changes in ESG practices (suggesting that institutions might affect the behavior of firms in which they have a larger presence). Such tests also have the advantage that any firm-specific omitted variables are swept out of the data by virtue of using first differences (to the extent that the omitted variables differ across firms but not over time).

To begin, we first document the degree to which we observe time-series variation in ESG policies as measured by the KLD indices. Table VII reports the number of firms with changes in ESG scores from one year to the next for each sample year, for each of the E, S, and G categories, where a firm must be rated in the previous year for a change to be calculated. For most years there are positive and negative score changes for both strengths and concerns. However, it also appears that a larger number of firms increased strengths or concerns relative to those that decreased strengths or concerns.

To utilize this time-series variation, we model 1) the change in institutional ownership on lagged changes in ESG scores and 2) the change in ESG scores on lagged changes in institutional ownership. In all specifications, we control for other firm characteristics that might affect institutional ownership, including firm size (natural logarithm of the market value of equity), stock price (also in natural log form), stock-price volatility (measured as the natural log of the standard deviation of monthly returns), the natural log of dividend yield, the natural log of share turnover, and the firm's stock returns over the previous six months.

In Table VIII, we report the results for strengths, concerns, and net scores for environmental issues in Panel A, social responsibility issues in Panel B, and governance issues in Panel C. In each panel, the first three columns report the coefficients from regressions of the change in institutional ownership on lagged changes in ESG scores (strength, concerns, and net scores). As the results show, increased environmental (Panel A) or social (Panel B) net scores are associated with lower institutional ownership going forward. We find no significant relation between lagged changes in governance scores and changes in future institutional ownership.

These results suggest that over our time period on average, institutional investors are not increasingly attracted to firms that strengthen their ESG policies as captured by the KLD ratings. Moreover, the negative and significant coefficient between changes in institutional ownership and lagged changes in the social strength scores suggest that institutional ownership declines for firms that move up in their social scores. This is consistent with the pooled results for the level of (fractional) institutional ownership, but inconsistent with the argument that institutions are using ESG in their investment decisions – at least, in terms of institutions buying more shares of firms with better ESG performance. We note that our time period extends from 1992 through 2007, and ESG issues have become increasingly important during the latter part of our sample. Thus the association between ownership and ESG might differ across time, an issue that we will study further.

Focusing on Models 4-6, in which we regress changes in ESG scores on lagged changes in institutional ownership, we find no association between changes in environmental and social scores and institutional ownership changes. This provides little support for the contention that institutional investors pressure firms for changes on these issues. However, we do find that governance concerns decrease with increased institutional ownership, and net governance scores

improve, consistent with intuitional investors pressuring firms to improve their governance practices. Although this measure of governance and is quite different from other measures of governance used in the literature, it is consistent with earlier studies.

ESG and valuation

Finally, we address the issue of whether or not firms' ESG strategies have broader valuation consequences. Prior work has examined this issue. For example, Ioannou and Serafeim (2010) argue that if CSR strategies are value-creating, they should be reflected in valuations, and then test for such a relation. Their focus is on how financial analysts perceive CSR activities by firms. The authors report that analyst perceptions have changed over time. In the early years of their sample, it appears that CSR strategies were perceived as value-destroying, and thus had a negative impact on investment recommendations. However, in the latter years of their sample, Ioannou and Serafeim report that CSR strategies were perceived as value enhancing, and positively associated with investment recommendations. In contrast, Fernando, Sharfman and Uysal (2010) find that green environmental strategies do not increase the market valuation, but that toxic environmental strategies are associated with reduced valuations.

Consistent with prior work, we examine whether or not ESG scores are associated with value by estimating the relation between Tobin's q and ESG scores. Specifically, we model Tobin's q as a function of the net score on each of the ESG measures, along with controls including firm size, leverage, and the ratio of advertising to total assets. As in our previous tests, the regressions include industry and year fixed effects, with standard errors that are clustered at the firm level.

The results of this analysis are reported in Table IX. We find that Tobin's q is positively related to all three components of net ESG – that is, higher net ESG scores are associated with increased firm value. Of note, while the coefficients are similar for both E and G scores, that for S is an order of magnitude lower. Specifically, firms with an additional unit of net S have Tobin's q that is on average 0.02 higher. By comparison, an additional unit of net E or G is associated with 0.14 higher Tobin's q.

While such tests suffer from well-known endogeneity concerns and causality is difficult to assign, the results are consistent with the first two hypotheses of Benabou and Tirole (2010), and with previous work on the impact of governance on firm value (e.g., Gompers, Ishii and Metrick (2003) and Bebchuk, Cohen and Farrell (2009)). They are also consistent with the earlier evidence on operating performance and expenses, and with the lack of evidence that high-ESG firms also tend to "overpay" their CEOs. Interestingly, the results on institutional ownership suggest that the valuation impact we estimate may not come through that investor channel

Conclusion

While the maximizing shareholder wealth is the canonical objective function taught in most corporate finance courses, many have argued for a broader view of corporate management's goals. Some of the most prominent areas being put forward as worthy objectives are firms' environmental, social and governance (ESG) or corporate social responsibility (CSR) policies. However, we still know little about the extent to which maximizing shareholder wealth subsumes such policies – as represented by the "doing well by doing good" slogan – or, about the impact of these policies on investors' decisions. As articulated and modeled by Benabou and Tirole's (2010), it could be that firms undertake CSR or ESG activities in order to maximize

their value (and to avoid myopic behavior), or because investors simply place higher valuations on such firms, or because it is in the managers' own self interests. These possibilities differ in terms of their predictions for relations between ESG or CSR performance and firm's operating performance, operational efficiency or revenues, managerial compensation, trading by institutional investors, and ultimately, firm value.

We examine these relations in a sequence of tests in hopes of better understanding the typical motive behind firms' ESG decisions and the market's response to those decisions. Using KLD's important index of firms' environmental, social and governance strengths, concerns, and the net of those two, we find little evidence that "good" ESG behaviors are typically pursued by self-interested managers at the expense of shareholders. Instead, it appears that ESG firms operate more efficiently, generate greater returns on assets, and have higher valuations. Further, it does not seem to be the case that managers implementing stronger ESG policies are more highly compensated than their peers, after controlling for standard determinants of compensation. This suggests that if CEOs are using ESG policies to extract rents, it is not linked to average profitability and expenses, and they are not also extracting rents via higher compensation.

Interestingly, while these results are consistent with the idea that firms benefit from investing in stronger ESG policies, the mechanism by which these practices are reflected in stock prices is unclear. One natural candidate, increased institutional investment, does not appear to be borne out in the data. If anything, it appears that on aggregate institutions own less, and sell more, of firms that have greater scores along the environmental, social, and governance dimensions, at least as measured by KLD through 2007. We do find some exceptions to these overall finding in the case of KLDs governance rankings. Specifically, there is evidence

suggesting that institutional investors may avoid firms with more governance concerns, and that institutions may also successfully pressure some firms into adopting more shareholder-friendly policies.

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Table I

Firms assessed by KLD each year

This table shows the number of firms with ESG scores in each year from 1992 through 2007.

Year	Firms
1992	586
1993	577
1994	560
1995	563
1996	556
1997	550
1998	540
1999	527
2000	545
2001	554
2002	886
2003	1001
2004	2328
2005	2342
2006	2278
2007	2247

Table II

Firm Operating Performance and ESG Net Scores

This table shows the relation between a firm's operating performance and its ESG net scores for each attribute separately, with the environmental net scores in column (1), the social responsibility net scores in column (2) and the governance net scores in column (3). The dependent variables are Earnings Before Interest and Taxes (EBIT)/Assets. All regressions include industry and year effects, where industry is defined using Fama-French (1993) 48-industry classification. Standard errors are clustered at the firm level.

	[1] EBIT/Assets	[2] EBIT/Assets	[3] EBIT/Assets
Environmental net score	0.00771***		
	(4.62)		
Social responsibility net score		0.000687	
		(0.87)	
Governance net score			0.0115***
			(5.81)
ln (market equity)	0.0240***	0.0231***	0.0257***
	(15.68)	(15.07)	(16.13)
ln (book-to-market)	-0.00233	-0.00288	-0.00223
	(-0.61)	(-0.75)	(-0.58)
Observations	20960	20960	20960
R-squared	0.07	0.07	0.07

t-statistics in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table III

Decomposition of Operating Performance and ESG scores

This table shows the relation between the decomposition of a firm's operating performance and its ESG scores for each attribute separately. The decomposition of operating performance for the environmental score is shown in Panel A, for the social score in Panel B, and for the governance score in Panel C. The dependent variables are Revenue/Assets in the first two columns, Operating Expenses/Assets in columns (3) and (4) and Earnings Before Interest and Taxes (EBIT)/Assets in columns (5) and (6). All regressions include industry and year effects, where industry is defined using Fama-French (1993) 48-industry classification. Standard errors are clustered at the stock level.

Panel A. Environmental Net Score

	[1]	[2]	[3]	[4]	[5]	[6]
	Revenue/Assets		Op Expense/Assets		EBIT/Assets	
Environ. net score		-0.0200		-0.0277**		0.00771***
		(-1.62)		(-2.33)		(4.62)
ln (market equity)	-0.0420***	-0.0438***	-0.0634***	-0.0659***	0.0233***	0.0240***
	(-6.79)	(-7.13)	(-10.79)	(-11.23)	(15.34)	(15.68)
ln (booktomkt)	-0.111***	-0.112***	-0.105***	-0.107***	-0.00294	-0.00233
	(-8.46)	(-8.61)	(-8.57)	(-8.78)	(-0.77)	(-0.61)
Observations	21274	21274	21277	21277	20960	20960
R-squared	0.02	0.02	0.03	0.03	0.07	0.07

Panel B. Social Net Score

	[1]	[2]	[3]	[4]	[5]	[6]
	Revenue/Assets		Op Expense/Assets		EBIT/Assets	
Social net		-0.000192		-0.00124		0.000687
		(-0.04)		(-0.30)		(0.87)
ln (market equity)	-0.0420***	-0.0419***	-0.0634***	-0.0631***	0.0233***	0.0231***
	(-6.79)	(-6.48)	(-10.79)	(-10.26)	(15.34)	(15.07)
ln (booktomkt)	-0.111***	-0.111***	-0.105***	-0.105***	-0.00294	-0.00288
	(-8.46)	(-8.45)	(-8.57)	(-8.56)	(-0.77)	(-0.75)
Observations	21274	21274	21277	21277	20960	20960
R-squared	0.02	0.02	0.03	0.03	0.07	0.07

Panel C. Governance Net Score

	[1]	[2]	[3]	[4]	[5]	[6]
	Revenue/Assets		Op Expense/Assets		EBIT/Assets	
Govern. net		-0.0233**		-0.0334***		0.0115***
		(-2.17)		(-3.20)		(5.81)
ln (market equity)	-0.0420***	-0.0468***	-0.0634***	-0.0703***	0.0233***	0.0257***
	(-6.79)	(-7.22)	(-10.79)	(-11.47)	(15.34)	(16.13)
ln (booktomkt)	-0.111***	-0.112***	-0.105***	-0.107***	-0.00294	-0.00223
	(-8.46)	(-8.60)	(-8.57)	(-8.78)	(-0.77)	(-0.58)
Observations	21274	21274	21277	21277	20960	20960
R-squared	0.02	0.02	0.03	0.03	0.07	0.07

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table IV

Relation between CEO Compensation and ESG Scores

This table shows the relation between a firm's CEO compensation and its ESG scores.. The dependent variables are respectively salary in Panel A and total direct compensation in Panel B. The independent variables are Change in shareholder wealth at time t and at time t-1; book-to-market, ln (market equity), ROA (Ebit/Assets) at time t-1. All regressions are pooled cross-sectional time series with industry fixed effects.

Panel A: Salary

	1	2
Change in shareholder wealth at t	-0.000254	-0.000252
Change in shareholder wealth at t-1	-0.000542	-0.000478
Book-to-market	126.01***	113.92***
Ln (market equity)	136.07***	123.31***
ROA	-139.73***	-90.37***
Environmental net score	-41.84***	
Social net score	-7.45***	
Governance net score	-52.4***	
Environmental concerns score		49.03***
Social concerns score		28.61***
Governance concerns score		44.8***
#obs	9336	9336

Panel B: Total Direct Compensation

	1	2	3
Change in shareholder wealth at t	0.098**	0.098**	0.098**
Change in shareholder wealth at t-1	0.022	0.023	0.024
Book-to-market	441*	406*	299
Ln (market equity)	2751***	2608***	2425***
ROA	-2416*	-1767	-1147
Environmental net score		201*	
Social net score		-114	
Governance net score		-1249***	
Environmental concerns score			-506***
Social concerns score			415***
Governance concerns score			1694***
#obs	9291	9291	9291

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table V

Correlations between ESG Scores

This table shows the Spearman rank correlation coefficients between the KLD ESG scores as well as the Gompers, Ishii, and Metrick (2003) G index.

	Env. Net Score	Soc. Net Score	Gov. Net Score	Env. Strength	Soc. Strength	Gov. Strength	Env. Concerns	Soc. Concerns	Gov. Concerns	G Index
Env. Net Score	1.000									
Soc. Net Score	0.179	1.000								
Gov. Net Score	0.041	-0.049	1.000							
Env. Strength	0.351	0.147	0.028	1.000						
Soc. Strength	0.052	0.753	-0.193	0.208	1.000					
Gov. Strength	0.042	0.029	0.463	0.104	0.065	1.000				
Env. Concerns	-0.749	-0.086	-0.018	0.287	0.081	0.032	1.000			
Soc. Concerns	-0.197	-0.529	-0.166	0.044	0.062	0.064	0.230	1.000		
Gov. Concerns	-0.031	0.072	-0.917	0.021	0.250	-0.086	0.043	0.218	1.000	
G Index	-0.040	0.039	0.013	0.077	0.035	-0.099	0.096	-0.023	-0.050	1.000

Table VI

Relation between Fraction of Shares Owned by Institutions and ESG Scores

This table shows the relation between institutional ownership in a firm and its ESG scores. The dependent variable is the fraction of shares owned by institutions in the firm as of March 31 in year t+1. The independent variables shown are the firm's E, S, or G score as of December 31 of year t. The regressions also include a number of firm characteristic control variables that are not shown: log size, log price, log standard deviation of monthly returns, log dividend yield, log stock turnover, and stock return over the previous 6 months. The regressions are pooled over the 1992-2007 sample period with industry and year fixed effects and standard errors clustered by firm. Panel A reports the coefficients for the ESG net scores and Panel B reports the coefficients for the ESG strength and concern scores.

Panel A. ESG net scores

Variables	[1]	[2]	[3]
Environmental Net Score	0.001200		
	(0.33)		
Social Net Score		-0.00283*	
		(-1.67)	
Governance Net Score			-0.0336***
			(-8.40)
Market equity	0.00818**	0.00898***	0.000476
	(2.54)	(2.83)	(0.15)
Price	0.0468***	0.0466***	0.0508***
	(6.50)	(6.45)	(6.95)
Standard deviation	-0.0624***	-0.0627***	-0.0629***
	(-5.79)	(-5.80)	(-5.83)
Firm age	0.0231***	0.0232***	0.0226***
	(6.04)	(6.08)	(5.98)
Dividend yield	-6.434***	-6.437***	-6.364***
	(-4.20)	(-4.20)	(-4.16)
Turnover	0.190***	0.190***	0.184***
	(18.46)	(18.49)	(18.04)
Past return	-0.00323	-0.00342	0.00140
	(-0.44)	(-0.47)	(0.19)
Number of observations	15103	15103	15103
R-squared	0.37	0.37	0.38

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B. ESG Strength and Concern Scores

Variables	[1]	[2]	[3]	[4]	[5]	[6]
Environmental Strength	-0.0143**					
	(-2.38)					
Social Responsibility Strength		-0.0064***				
		(-3.07)				
Governance Strength			-0.0682***			
			(-9.00)			
Environmental Concern				-0.0082*		
				(-1.88)		
Social Responsibility Concern					-0.0048**	
					(-2.02)	
Governance Concern						0.0114**
						(2.37)
Market equity	0.0090***	0.01250***	0.0060**	0.00929***	0.00987***	0.00584*
	(2.80)	(3.79)	(1.97)	(2.81)	(2.98)	(1.75)
Price	0.0463***	0.0444***	0.0479***	0.0464***	0.0455***	0.0480***
	(6.41)	(6.11)	(6.38)	(6.45)	(6.30)	(6.62)
Standard deviation	-0.0634***	-0.0614***	-0.0615***	-0.0625***	-0.0612***	-0.0628***
	(-5.89)	(-5.71)	(-5.68)	(-5.81)	(-5.69)	(-5.83)
Firm age	0.02330***	0.0235***	0.0234***	0.0232***	0.0232***	0.0229***
	(6.09)	(6.16)	(6.22)	(6.06)	(6.07)	(5.98)
Dividend yield	-6.410***	-6.334***	-6.617***	-6.255***	-6.404***	-6.401***
	(-4.19)	(-4.14)	(-4.38)	(-4.08)	(-4.19)	(-4.17)
Turnover	0.1890***	0.1890***	0.183***	0.189***	0.189***	0.189***
	(18.44)	(18.47)	(18.10)	(18.41)	(18.42)	(18.35)
Previous return	-0.00354	-0.00464	-0.00159	-0.00400	-0.00378	-0.00185
	(-0.48)	(-0.64)	(-0.22)	(-0.55)	(-0.52)	(-0.25)
Number of observations	15103	15103	15103	15103	15103	15103
R-squared	0.37	0.37	0.39	0.37	0.37	0.37

Table VII

Changes in ESG Scores over Time

This table shows the changes in each of the KLD ESG net scores over time with strengths in panel A and concerns in Panel B. The number of firms represents the number of unique firms in the sample each year.

Panel A: Changes in Strengths

Year	# firms	ΔE>0	ΔS>0	ΔG>0	ΔE<0	ΔS<0	ΔG<0	ΔE>0 Less ΔE<0	ΔS>0 Less ΔS<0	ΔG>0 Less ΔG<0
1992	586	25	136	22	34	37	3	-9	99	19
1993	577	23	110	16	9	56	6	14	54	10
1994	560	41	159	17	27	52	16	14	107	1
1995	563	25	124	9	15	72	11	10	52	-2
1996	556	23	100	27	26	131	7	-3	-31	20
1997	550	20	119	28	15	68	10	5	51	18
1998	540	13	117	17	20	81	12	-7	36	5
1999	527	7	116	11	18	60	13	-11	56	-2
2000	545	10	129	14	17	86	17	-7	43	-3
2001	554	10	113	6	8	57	14	2	56	-8
2002	886	13	120	14	10	52	7	3	68	7
2003	1001	11	221	54	22	111	22	-11	110	32
2004	2328	15	403	156	39	163	92	-24	240	64
2005	2342	102	321	160	18	162	315	84	159	-155
2006	2278	73	212	247	11	125	119	62	87	128
2007	2247	49	319	39	10	135	16	39	184	23

Panel B: Changes in Concerns

.

Year	# firms	ΔE>0	ΔS>0	ΔG>0	ΔE<0	ΔS<0	ΔG<0	ΔE>0 Less ΔE<0	ΔS>0 Less ΔS<0	ΔG>0 Less ΔG<0
1992	586	49	118	70	19	42	3	30	76	67
1993	577	42	176	49	24	53	16	18	123	33
1994	560	60	145	63	30	89	39	30	56	24
1995	563	29	99	71	49	128	22	-20	-29	49
1996	556	28	87	3	56	106	164	-28	-19	-161
1997	550	21	83	203	15	68	6	6	15	197
1998	540	21	95	70	26	83	36	-5	12	34
1999	527	54	96	26	12	38	44	42	58	-18
2000	545	24	108	58	31	78	41	-7	30	17
2001	554	56	139	38	19	37	26	37	102	12
2002	886	27	196	76	45	41	16	-18	155	60
2003	1001	24	327	140	27	88	53	-3	239	87
2004	2328	91	660	385	28	265	56	63	395	329
2005	2342	88	473	313	36	337	316	52	136	-3
2006	2278	82	291	534	39	178	132	43	113	402
2007	2247	61	328	60	42	213	32	19	115	28

Table VIII

Changes in ESG Scores and Changes in Institutional Ownership

This table shows the relation between changes in institutional ownership and changes in ESG scores, with the environmental scores in Panel A, the social responsibility scores in Panel B and the governance scores in Panel C. In each panel the first three columns report the coefficients from regressions of the change in institutional ownership on lagged changes in ESG scores. The next three columns report the coefficients from regressions of the change in ESG scores (strength, concerns, and net scores) on lagged changes in institutional ownership. All regressions include controls for log size, log price, log standard deviation of monthly returns, log dividend yield, log stock turnover and the return over the previous six months. All regressions include industry and year effects, where industry is defined using Fama-French (1993) 48-industry classification. Standard errors are clustered at the stock level.

Environmental

	(1) Lead chg. in % instl. ownership	(2) Lead chg. in % instl. ownership	(3) Lead chg. in % instl. ownership	(4) Lead chg. in strength score	(5) Lead chg. in strength score	(6) Lead chg. in net score
Lag change in strength score	-0.00392					
	(-1.39)					
Lag change in concerns score		0.00200				
		(1.09)				
Lag change in net score			-0.00274*			
			(-1.72)			
Lag change in instl.ownership				-0.00983	0.0199	-0.0297
				(-0.48)	(0.71)	(-0.89)
Market equity	0.000371	0.000294	0.000330	0.0177***	0.0071***	0.0105***
	(0.66)	(0.53)	(0.59)	(8.56)	(4.56)	(4.59)
Price	-0.00408***	-0.00406***	-0.00409***	-0.0129***	0.00678	-0.0197***
	(-2.65)	(-2.64)	(-2.66)	(-3.10)	(1.61)	(-3.38)
Std . deviation	-0.00966***	-0.00962***	-0.00966***	-0.00893	-0.000995	-0.00793
	(-3.12)	(-3.11)	(-3.12)	(-1.30)	(-0.12)	(-0.76)
Firm age	-0.00264*	-0.00263*	-0.00263*	0.000263	-0.00295	0.00321
	(-1.91)	(-1.91)	(-1.91)	(0.11)	(-1.02)	(0.84)
Dividend yield	-1.027**	-1.041**	-1.034**	2.269***	0.386	1.883
	(-2.15)	(-2.17)	(-2.16)	(2.77)	(0.27)	(1.20)
Turnover	-0.0156***	-0.0156***	-0.0156***	-0.00536	0.00278	-0.00813
	(-4.69)	(-4.69)	(-4.69)	(-0.96)	(0.43)	(-0.99)
Previous return	0.00733*	0.00733*	0.00737*	-0.00890	-0.00526	-0.00364
	(1.75)	(1.76)	(1.76)	(-1.16)	(-0.53)	(-0.29)
Observations	11767	11767	11767	12213	12213	12213
R-squared	0.10	0.10	0.10	0.03	0.02	0.02

B. Social Responsibility

	(1) Lead chg. in % instl. ownership	(2) Lead chg. in % instl. ownership	(3) Lead chg. in % instl. ownership	(4) Lead chg. in strength score	(5) Lead chg. in strength score	(6) Lead chg. in net score
Lag change in strength score	-0.00303***					
	(-2.96)					
Lag change in concerns score		0.000369				
		(0.35)				
Lag change in net score			-0.00177**			
			(-2.36)			
Lag change in instl.ownership				-0.0249	-0.0681	0.0432
				(-0.36)	(-0.94)	(0.43)
Market equity	0.000493	0.000304	0.000387	0.0568***	0.0148***	0.0420***
	(0.88)	(0.55)	(0.69)	(11.02)	(3.25)	(6.21)
Price	-0.00403***	-0.00404***	-0.00401***	0.00970	-0.0121	0.0218
	(-2.63)	(-2.63)	(-2.61)	(0.81)	(-1.01)	(1.28)
Std . deviation	-0.00953***	-0.00961***	-0.00956***	0.0336	-0.00943	0.0430
	(-3.08)	(-3.11)	(-3.09)	(1.53)	(-0.40)	(1.36)
Firm age	-0.00279**	-0.00263*	-0.00269*	-0.0350***	0.00285	-0.0379***
	(-2.03)	(-1.91)	(-1.95)	(-4.72)	(0.38)	(-3.59)
Dividend yield	-1.049**	-1.037**	-1.034**	2.530	-5.375	7.905
	(-2.19)	(-2.16)	(-2.16)	(0.70)	(-1.43)	(1.62)
Turnover	-0.0156***	-0.0156***	-0.0156***	0.00606	0.00660	-0.000539
	(-4.70)	(-4.69)	(-4.69)	(0.33)	(0.37)	(-0.02)
Previous return	0.00711*	0.00727*	0.00713*	-0.0312	0.00790	-0.0391
	(1.70)	(1.74)	(1.70)	(-1.23)	(0.27)	(-0.97)
Observations	11767	11767	11767	12213	12213	12213
R-squared	0.10	0.10	0.10	0.02	0.02	0.02

C. Governance

	(1) Lead chg. in % instl. ownership	(2) Lead chg. in % instl. ownership	(3) Lead chg. in % instl. ownership	(4) Lead chg. in strength score	(5) Lead chg. in strength score	(6) Lead chg. in net score
Lag change in strength score	-0.000522					
	(-0.22)					
Lag change in concerns score		-0.000946				
		(-0.53)				
Lag change in net score			0.000427			
			(0.30)			
Lag change in instl.ownership				0.0243	-0.106**	0.130**
				(0.72)	(-2.11)	(2.11)
Market equity	0.000315	0.000324	0.000313	0.0105***	0.0103***	0.000270
	(0.57)	(0.58)	(0.56)	(4.93)	(4.16)	(0.08)
Price	-0.00405***	-0.00404***	-0.00404***	-0.00876*	0.0243***	-0.0330***
	(-2.64)	(-2.63)	(-2.63)	(-1.80)	(4.00)	(-4.15)
Std . deviation	-0.00961***	-0.00961***	-0.00961***	0.00496	0.0225*	-0.0175
	(-3.11)	(-3.11)	(-3.11)	(0.50)	(1.87)	(-1.09)
Firm age	-0.00264*	-0.00265*	-0.00264*	-0.00338	-0.0158***	0.0124**
	(-1.92)	(-1.93)	(-1.92)	(-0.96)	(-3.59)	(2.16)
Dividend yield	-1.038**	-1.041**	-1.041**	1.256	1.971	-0.716
	(-2.17)	(-2.17)	(-2.17)	(0.57)	(1.00)	(-0.26)
Turnover	-0.0156***	-0.0156***	-0.0156***	-0.0227***	0.0485***	-0.0712***
	(-4.69)	(-4.67)	(-4.67)	(-2.69)	(4.44)	(-5.10)
Previous return	0.00729*	0.00724*	0.00726*	-0.0133	-0.000226	-0.0131
	(1.75)	(1.73)	(1.74)	(-1.09)	(-0.01)	(-0.64)
Observations	11767	11767	11767	12213	12213	12213
R-squared	0.10	0.10	0.10	0.02	0.06	0.04

Table IX

Tobin's *q* and ESG Scores

This table shows the relation between a firm's Tobin's *q* and its ESG scores for each attribute separately, with the environmental scores in columns (1) and (2), the social scores in columns (3) and (4), and the governance scores in columns (5) and (6). The dependent variables are Tobin's *q*, defined as the market value of assets over book value of assets, where market value of assets equals book value of assets plus market value of equity minus the sum of equity book value of deferred taxes. Controls are log market equity, log book-to-market, book leverage and advertising expenses scaled by assets. If advertising expense is missing it is set equal to zero. We include a dummy variable equal to 1 if advertising expense is missing, zero otherwise. All regressions include industry and year effects, where industry is defined using Fama-French (1993) 48-industry classification. Standard errors are clustered at the stock level.

| | Model | | |
	(1)	(2)	(3)
Environmental net	0.140***		
	(9.10)		
Social net		0.0247***	
		(2.68)	
Governance net			0.145***
			(5.61)
ln(market equity)	0.177***	0.154***	0.187***
	(11.96)	(10.28)	(12.10)
Leverage	-1.831***	-1.826***	-1.789***
	(-13.39)	(-13.28)	(-13.12)
Advertising /Assets	2.910***	2.923***	2.938***
	(3.75)	(3.73)	(3.78)
Advert. missing dummy	0.0049	0.0089	-0.0023
	(0.11)	(0.19)	(-0.05)
Observations	12113	12113	12113
R-squared	0.20	0.18	0.18

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

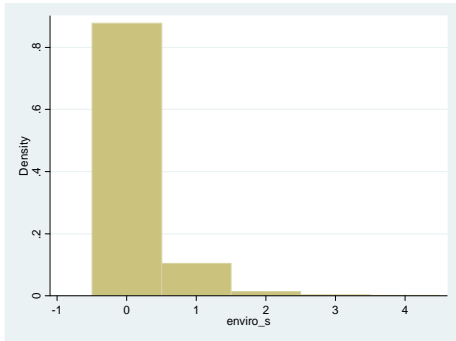**Figure 1a: Histogram of Environmental Strengths**

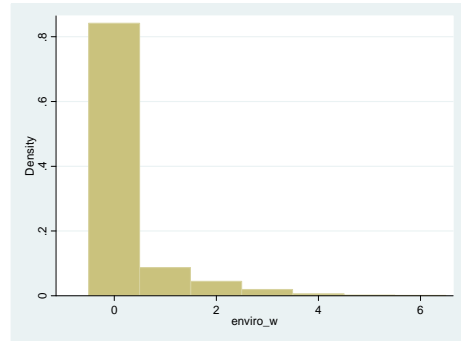**Figure 1b: Histogram of Environmental Concerns**

Figure 2a: Histogram of Social Strengths
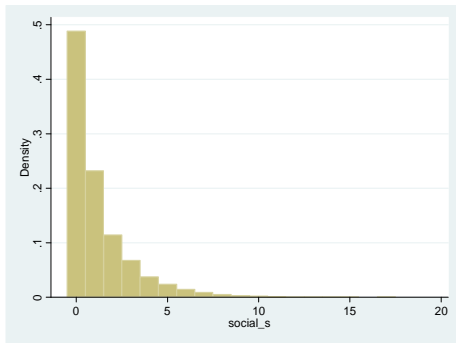

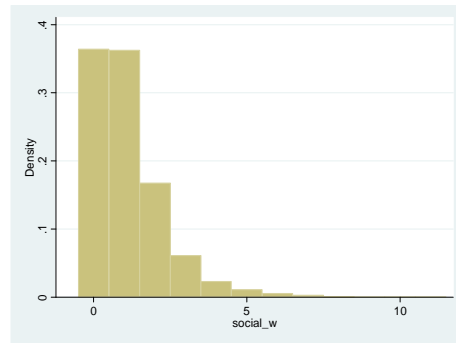**Figure 2b: Histogram of Social Concerns**

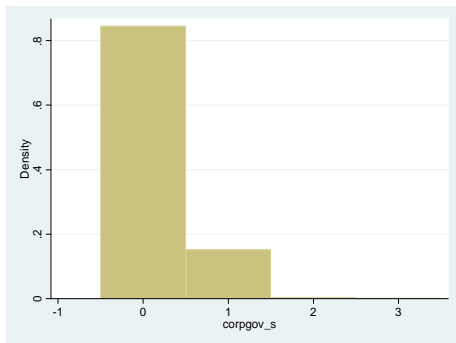**Figure 3a: Histogram of Governance Strengths**
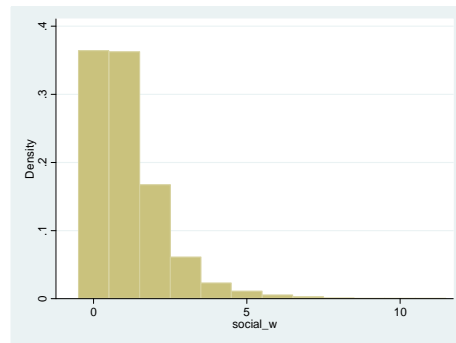

Figure 3b: Histogram of Governance Concerns

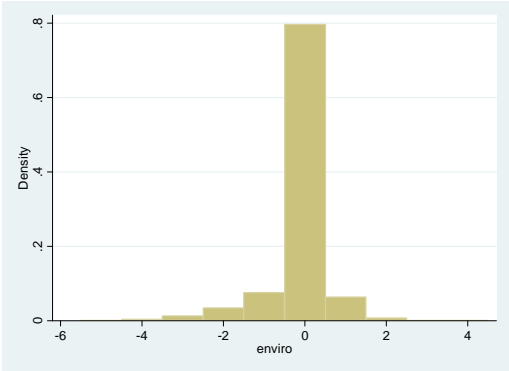**Figure 4a: Histogram of Net Environment (Strengths-Concerns)**

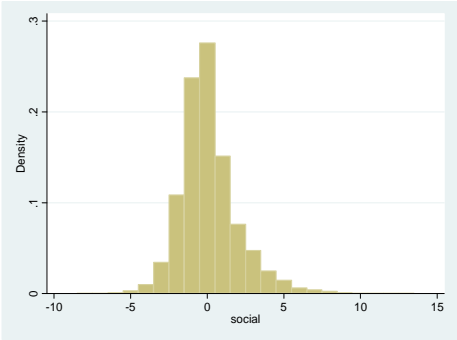**Figure 4b: Histogram of Net Social Responsibility (Strengths-Concerns)**

Figure 4c: Histogram of Net Governance (Strengths-Concerns)