

Do Institutional Investors Transplant Social Norms? International Evidence on Corporate Social Responsibility

Alexander Dyck
University of Toronto

Karl V. Lins
University of Utah

Lukas Roth
University of Alberta

Hannes F. Wagner
Bocconi University

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Abstract

Using a decade of firm-level environmental and social (E&S) performance data from 41 countries, we find that institutional ownership is positively associated with firm-level E&S performance, with multiple tests suggesting a causal relationship. An investor's impact in its foreign investments depends on its country-of-domicile and its type, with European investors and pension plans having the largest impact. Theoretically, such variation could arise if certain countries care more about E&S and investment managers domiciled in these countries are influenced by their social norms. Using measures of country-level E&S norms, we find such evidence. Investors in general, and independent investment advisors in particular, increase E&S performance when they come from countries where there is strong community belief in the importance of E&S, but not otherwise. Overall, our results indicate that institutional investors transplant their social norms into the firms they hold around the world.

Keywords: Corporate Social Responsibility, Institutional Investors, Social Norms

JEL Classification: G15, G23, G30, M14

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1. Introduction

In making investment decisions, shareholders today are asked to assess, and can easily track, not only measures of a firm's financial performance, but also metrics covering a firm's environmental and social (E&S) performance—two components of corporate social responsibility. Whether E&S performance is beneficial to the average shareholder remains controversial.

Investments that improve E&S performance could be a signal of agency problems in firms. Outside pressure groups with no financial stake do not need to consider the associated costs of such commitments and will advocate for improvements. If a firm's managers care about these pressures, or obtain other private benefits from E&S investments, they will over-invest (Masulis and Reza (2015), Cheng, Hong, and Shue (2016), Cronqvist and Yu (2016)). Alternatively, E&S investment could be value enhancing by providing a form of insurance against event risk and/or product market differentiation (Servaes and Tamayo (2013), Hong and Liskovich (2016), Albuquerque, Durnev, and Koskinen (2016), Lins, Servaes, and Tamayo (2016)). Thus, the evidence detailing the financial costs and benefits of investment to increase E&S performance is mixed.

In this paper, we take a different tack to shed light on the importance of E&S performance to shareholders. We test for a relationship between ownership and firms' E&S performance. It is hard to dismiss the hypothesis that E&S investments benefit shareholders if owners are a driving force behind firms' E&S choices. After all, it is their money that is being spent. Tests featuring institutional investor ownership should be the most compelling. These investors own and vote the bulk of the world's equity capital, are sophisticated, and face legal obligations to primarily consider firms' financial returns in their investment and voting decisions.

We examine whether institutional investors drive firms' E&S performance around the world. The majority of work to date has focused on E&S choices within U.S. firms, yet pressure for improved E&S performance is truly a global phenomenon. We use the Thomson Reuters' ASSET4 database that provides detailed line-item data across many firms and countries for over a decade. We construct environmental and social performance measures for each firm and year by scoring firms based on these detailed data items (e.g., covering areas such as CO₂ emissions, renewable energy use, human rights violations, and employment quality). These data are combined with institutional ownership data from Factset and firm characteristic data from Worldscope to build a sample of 3,277 non-U.S. firms from 41 countries over the period 2004 through 2013. We perform robustness tests using Bloomberg and Sustainalytics data, two alternative sources for E&S measurement that are popular with investors.

We first explore whether institutional investors are a driving force behind firms' E&S performance around the world. We test whether lagged total institutional ownership is associated with firms' E&S performance, controlling for observable factors that may affect E&S directly. We find that when institutional ownership is higher, firm-level E&S scores are greater in the subsequent year. Not only is this result statistically significant, it is economically meaningful. For instance, a move from the first to the third quartile in institutional ownership is associated with a 5.7% increase in environmental performance and a 2.6% increase in social performance.

More convincingly, to support a causal interpretation, we take advantage of a quasi-natural experiment provided by the BP Deepwater Horizon oil spill in 2010. This costly environmental disaster represents an unexpected shock that increased the perceived importance of having in place robust environmental policies and procedures, particularly for firms in extractive industries. If institutional ownership drives changes in firms' environmental policies, then we expect that firms

with greater institutional ownership at the time of the shock will be more reactive in the years following this shock. We find precisely this result.

Other robustness tests support this causal interpretation. These tests include: statistical Granger-causality-style tests; an instrumental variable specification that follows Aggarwal, Erel, Ferreira, and Matos (2011) and Bena, Ferreira, Matos, and Pires (2016); and a firm fixed effect specification as suggested by Gormley and Matsa (2014). We address the potential concern that our results could be influenced by firms' governance or transparency levels by controlling for these factors and our results are unaffected. Overall, our results show that, in aggregate, sophisticated owners with a fiduciary duty to focus primarily on financial returns are asking for, and getting, improvements in E&S at the firms they own—this constitutes *prima facie* evidence that supports the beneficial view of improved E&S performance.

However, these initial tests do not explore the possibility that institutional investors may also be motivated by their own preferences for firms' E&S performance. Thus, in the second part of the paper we introduce and test a simple framework featuring a utility maximizing investment manager with social preferences. In that setting, the investment manager faces a tradeoff. She derives utility not only from financial returns on her portfolio but from the closeness of her firms' E&S performance to the ideal of those in her community. Investment managers that live in communities with high ideals regarding firms' desired E&S performance demand greater firm-level E&S performance. In other words, if community social norms call for firms to look beyond profits and to consider broader environmental and social impacts, investment managers may choose to steer firms to comply with such norms, thus reaping societal benefits and avoiding sanctions that come at the cost of reduced financial returns.

To test this view of investment manager behavior, we first introduce proxies for community ideals for E&S performance. We exploit our global sample and focus on country-level norms regarding environmental and social issues. We use several types of cross-country data, including observed behavior captured by scores on the Environmental Performance Index and stated values regarding E&S issues captured by the World Values Survey. Social norms towards E&S differ significantly across countries and these differences are persistent.

To facilitate identification, we focus on a firm's foreign institutional investors. These investors are unlikely to obtain private benefits other than through the social norm channel, given that there is a geographic separation between them and firm headquarters. In our sample, these investors account for two-thirds of institutional ownership and there is significant heterogeneity in national social norms across these investors.

Our findings are consistent with institutional investors being motivated at least in part by their own preferences for firms' E&S performance. Specifically, foreign institutional investors impact firms' E&S performance only when these investors are from countries where there is greater demand (above-median) for E&S performance. Our analysis suggests firms' environmental and social performance levels would improve by 7.4% and 2.2%, respectively, if a firm's foreign investors are from countries with strong instead of weak norms towards E&S performance. These results are obtained for various measures of national social norms and hold when we control for other country characteristics, such as GDP per capita.

Geography is also highly correlated with levels of social norms. European countries occupy the top 17 positions in rankings of countries by E&S social norms. We find that, as a group, only European institutional investors impact firms' E&S performance. Investors have no impact on

firms' E&S performance if they come from any other geographic region, including the United States.

The framework described above also predicts that an investment manager's impact on firms' E&S performance will be influenced by the utility the investment manager receives from financial returns relative to social conformity. When an investment manager places a lower weight on financial returns, she will more aggressively bridge the gap between her community's E&S ideals and a portfolio firm's E&S performance. A variable that captures this weight on financial returns is the degree to which an investment manager's flow of funds likely depends on financial performance—which varies significantly across investor type. Managers of pension plans, for example, do not typically face the threat of outflows if firms in their portfolios underperform. Conversely, since they can experience outflows, hedge funds and independent investment managers have more to fear from short-term underperformance, which could potentially arise if the costs of firms' increasing E&S commitments are not offset by a quick payoff.

Consistent with this framework, we find that the weight an investment manager places on financial returns (as captured by investor type) influences its impact on firms' E&S performance. Pension funds have the most significant positive impact on firms' E&S performance, and their strong impact obtains when they come from both high- and low-E&S social norm countries. On the contrary, hedge funds (who represent only a small fraction of our total foreign institutional investor ownership) appear to lessen the E&S performance of firms they invest in, and this is generally true regardless of the E&S social norms where they are domiciled.

Most interestingly, we find that the impact of market-sensitive independent institutional investors (e.g., mutual funds) depends on social norms. These independent investors account for the majority of foreign institutional investor capital and, thus, are more likely to play a pivotal role

regarding E&S issues. They have a small and usually insignificant impact on firm E&S performance if they are from countries where E&S social norms are relatively weak—e.g., in the U.S. However, when independent institutional investors come from countries with strong social norms towards E&S issues—e.g., from the Netherlands—they have a significantly positive impact on firms’ E&S performance. Strong enough social norms can overcome market pressures to solely focus on financial returns.

Our paper most directly contributes to the literature that explores why firms invest in corporate social responsibility (CSR).¹ In contrast to papers that focus on firm managers’ private benefits to explain firms’ CSR investments (Masulis and Reza (2015), Cronqvist and Yu (2016)), we focus on the role of investors. This complements other research on how CSR performance is influenced by investors, such as CSR-related shareholder proposals and voting in the U.S. (Del Guercio and Tran (2012)) and an investor’s impact through private engagements on CSR issues (Dimson, Karakas, and Li (2015)).

Our paper also contributes to the literature that explores institutional investors’ impact on corporate finance in general (see, e.g., Gillan and Starks (2000, 2003)). Aggarwal, Erel, Ferreira, and Matos (2011) and Ferreira and Matos (2008) show that investors most exposed to market forces, and foreign investors in particular, are more active in improving firms’ governance. Our paper shows that institutional investors’ push for greater E&S performance differs in important ways from governance activism. For E&S, we find that foreign pension plans (which are least exposed to market forces) are the most active in driving firms to increase E&S performance. Foreign independent institutional investors are only consistently active in driving firms to increase E&S performance if they are from countries with strong E&S social norms.

¹ Margolis, Elfenbein, and Walsh (2009), Kitzmueller and Shimshack (2012), and Ferrell, Liang, and Renneboog (2015) document the way in which CSR has been perceived and provide overviews of the CSR literature.

Viewed broadly, this paper contributes to the literature on the impact of informal ‘rules of the game’ for finance. Guiso, Sapienza, and Zingales (2009), for example, suggest the importance of a society’s culture for a range of economic outcomes. We complement these findings. We document both substantial cross-country variation in social norms regarding the extent to which E&S matters and show that institutional investors carry these cultural attributes when they invest abroad, transplanting their social norms. In a similar vein, Barber, Morse and Yasuda (2016) also find that investor demand for E&S attributes is strongest in Europe, but they do not focus on the social norm channel and investigate investor demand for the specific case of impact funds rather than for all institutional investors.

The remainder of the paper proceeds as follows. Section 2 describes our sample and shows summary statistics, Section 3 tests whether institutional investors drive firms’ E&S performance, Section 4 assesses whether investors’ E&S social norms play a role. Section 5 concludes the paper.

2. Sample and Summary Statistics

2.1 Data Sources

We obtain data on firms’ E&S commitments from the Thomson Reuters ASSET4 ESG database. Thomson Reuters acquires information from annual reports, corporate sustainability reports, NGOs, and news sources for large, publicly traded companies from over 45 countries. Thomson Reuters states that reported data items are chosen to maximize company coverage, timeliness of reporting, data availability, quality, and perceived materiality for investors. E&S scores, based on commitments against criteria, are available at annual frequency. Consistent coverage of firms begins in 2004 for most countries, with coverage for a few countries starting in 2009. We use data from the first year of coverage through year-end 2013 for our analysis.

ASSET4 evaluates firms' environmental commitments in three areas: Emission Reduction, Product Innovation, and Resource Reduction. Social commitments are evaluated in seven areas: Community, Diversity & Opportunity, Employment Quality, Health & Safety, Human Rights, Product Responsibility, and Training & Development. Within each area, ASSET4 analysts identify specific line items (e.g., "Are the firm's greenhouse gas emissions/sales below the industry median in that year?"), with 148 items in total (see Appendix A for details). For our empirical tests, we transform all line items into indicator variables such that a 'one' corresponds to better E or S performance (e.g., a below-median greenhouse gas emission firm would get a 'one').²

To construct summary statistics of firms' E&S performance, an investor can weight all line items (and areas) equally, or apply proprietary weights; there is no obvious 'right' weighting scheme. Our approach is to use two types of scores for our main tests. First, we weight all three environmental and all seven social areas equally, and then sum across the areas to produce aggregate E&S performance scores. Second, we use the proprietary aggregate scores that ASSET4 provides to investors (ASSET4 z-scores) for E&S.³ These rank-based scores range from 0 to 100 and measure the E&S performance relative to all other companies in a given year. ASSET4 also produces a transparency score which is defined as the number of data items reported by the company out of all items tracked as part of the ASSET4 scoring system.

Thomson Reuters is one of several providers that measure firms' E&S performance, with no obvious market leader. For robustness, we also obtain E&S data from Sustainalytics and

² Specifically, for questions with a positive direction (i.e., a "yes" answer or a greater number is associated with better environmental or social performance), we translate the answers to Y/N questions into 0 (N) and 1 (Y); the answers to double Y/N questions into 0 (NN), 0.5 (YN or NY), and 1 (YY); and the answers to numerical questions into 0 (value is less (or equal) than zero; or value is less (or equal) than the median) and 1 (value is greater than zero; or value is greater than the median). For questions with a negative direction (i.e., a "no" answer or a lower number is associated with better environmental or social performance), the opposite coding applies.

³ The ASSET4 ESG database was first created in 2003. The data we use is based on their optimization released in 2014 which reports raw data only for 'strategic' items, which were collected beginning in 2003.

Bloomberg. All three firms provide data they believe is material for investors, and all three cover publicly traded firms worldwide. Differences arise with respect to which items of E&S choices are considered by each data provider and how they are weighted. Our results are robust to these alternative ways to measure firms' E&S performance.

To measure institutional ownership we use detailed information from the Factset Ownership database. These data have been widely used (e.g., Ferreira and Matos (2008), Aggarwal Erel, Ferreira, and Matos (2011)) and report institutional investors' equity holdings collected directly from fund reports, regulatory authorities (e.g., 13F reports in the U.S.), fund associations, and the fund management companies themselves.⁴ The data also allow us to identify investors by country of domicile and by investor type.

Finally, we obtain from Worldscope financial statement and stock market valuation data as well as a firm's percentage of closely held shares, which we use as a proxy for the degree of insider entrenchment. Our final sample consists of 19,849 firm-year observations and covers 3,277 firms from 41 countries during the period 2004-2013.

2.2 Descriptive Statistics

There is significant variation in firms' E&S performance across countries, across industries, and across time. Table 1 and Figure 1 provide basic summary statistics. As we describe in the tests to follow, we control for most of these sources of variation with fixed effects.

Panel A of Table 1 shows E&S scores for our entire sample. The mean (median) E score, when we weight each sub-area equally, is 35.4 (31.8) where a perfect score would be 100, and the mean (median) S score is 51.7 (51.1). In Panel B of Table 1, average E&S scores show significant

⁴ The equity positions reflect stakes over which institutional managers exercise investment discretion and include ordinary shares, preferred shares, American Depositary Receipts (ADRs), Global Depositary Receipts (GDRs), and dual listings.

variation across all 41 countries in the sample (we show data for the year 2010 to facilitate comparisons). The countries where firms have the highest E&S performance are all European (France and Spain for example are ranked in the top three for both E&S). Countries where firms' E&S scores are lowest are in Asia and Africa.⁵

Figure 1 shows E&S performance over time. Because time trends are influenced by sample composition, Panel A shows plots for a constant panel of firms for which uninterrupted data in all years between 2004 and 2013 are available (805 firms), and Panel B plots a larger but shorter constant panel of firms with uninterrupted coverage between 2009 and 2013 (1,662 firms). Firms increase both their E and S commitments over the sample period.

Further, Figure 1 shows an increase in institutional ownership during the first years of the sample period. We provide more detail on institutional ownership levels across countries in Panel B of Table 1. The mean level of institutional ownership is 22%, with average levels highest at around 40% in Canada, Ireland, and Sweden, and lowest at below 10% in Colombia, Chile, and Malaysia. In this global sample foreign institutions dominate, and account for more than two thirds of all institutional ownership. The sample is unevenly distributed, with 50% of the observations concentrated in just four countries—Japan, U.K., Canada, and Australia.⁶

3. Do Institutional Investors Drive Firms' Environmental and Social Performance?

In this section, we assess whether there is global evidence that institutional investors are a driving force behind firms' E&S performance. Before we start with our analysis, we note that if institutional investors also pursue strategies such as negative or positive screening based on firms'

⁵ We also find significant variation across industries (not reported). Perhaps not surprisingly, the industries with the lowest performance for both E&S are mining (which includes oil and gas) and agriculture, forestry, and fishing (industries based on SIC divisions).

⁶ Summary statistics for all control variables used in our regressions are provided in Table B1 of Appendix B.

E&S practices, this would bias against finding our results. Under positive screening, there is less scope for institutions to improve E&S performance once they become owners, while under negative screening institutions would not even be present to do so.⁷

3.1 Total Institutional Ownership and Firms' E&S Performance

Our baseline tests examine the relation between (lagged) total institutional ownership and firms' E&S performance using the following specification:

$$\text{Log}(\text{Score}_{it}) = \alpha + \beta X_{it-1} + \gamma' Y_{it-1} + \Lambda + \varepsilon_{it}, \quad (1)$$

where the dependent variable is the log of one of the environmental or social scores of firm i in year t , X_{it-1} is the percentage of total institutional ownership in year $t-1$, Y_{it-1} are a set of firm-level control variables in year $t-1$, and Λ are year, country, and industry fixed effects.⁸ We use logs of E&S scores to obtain better distributional properties and to reduce the impact of outliers.⁹ For firm-level control variables we use firm size (log of total assets), asset tangibility, leverage, Tobin's q , and profitability. We include firm size as prior literature has shown it to predict institutional ownership, and larger firms are subject to more external pressures. Hong, Kubik, and Scheinkman (2012) suggest that financial slack also predicts E&S adoption. Following them, we include leverage and asset tangibility to capture credit constraints, and Tobin's q and profitability

⁷ While a number of mutual funds rely on negative screening (e.g., socially responsible investing funds), most institutional investors do not, and when they do, they exclude few companies. For example, as of December 31, 2015, the Norwegian Global Pension Fund had investments in more than 9,050 firms around the world, and blacklisted only 66 firms. Hong and Kacperczyk (2009) show that excluded stocks have higher expected returns than comparable stocks, making it difficult for investors with fiduciary obligations to justify such an investment approach.

⁸ In terms of timing, E&S variables reflect data available to ASSET4 analysts that covers the firm's fiscal year. A score for fiscal year 2010, for example, would reflect items that occurred during the 2010 fiscal year as well as information contained in the company annual report and any company sustainability reports published after the fiscal-year end early 2011. Thus, our baseline model with 2010 E&S scores would have fiscal-year-2009 right-hand-side variables.

⁹ Our main results are unaffected if we use the raw scores rather than the log scores.

to capture the impact of performance. We also include a dummy variable indicating whether a firm is cross-listed on a major U.S. exchange to capture likely higher overall institutional ownership. All right-hand side variables are lagged by one year, and standard errors are clustered by country.

In Table 2 we report the results of these tests. The positive and significant coefficient on the fraction of a firm's shares owned by institutional investors (*Total IO*) in columns 1 and 3 indicates a positive relation between (lagged) institutional ownership and firms' E&S performance, each significant at the 1% level. These results are not only statistically significant, but also economically meaningful. To illustrate, a move from the first to the third quartile in total institutional ownership (0.213) is associated with a 5.7% increase in environmental performance (calculated as 0.213×0.268) and a 2.6% increase in social performance (calculated as 0.213×0.124).

The results are very similar in columns 2 and 4, where we use the standardized relative-rank ASSET4 *z*-Scores. This gives us confidence that the relationship between institutional ownership and firms' E&S performance is not an artefact of the specific aggregation approach we use to calculate overall E&S scores.¹⁰ Our results also show that larger firms and those with higher *q* values generally have better E&S performance.¹¹

¹⁰ We also decompose environmental and social scores and consider the three components of environmental and the seven components of social scores separately as dependent variables. Institutional ownership is positively and significantly related to nine out of ten E&S sub-scores (*p*-value < 1%). Thus, our results are not driven by one particular E&S component, and the impact of institutional ownership appears to be broad and affects a wide and diverse range of firm-specific E&S commitments (results are not reported for brevity but available upon request).

¹¹ In further tests, we find that institutional ownership has a more pronounced effect on E&S performance for the subsample of firms with E&S scores below the sample median compared to firms with above-median scores. This indicates that institutional investors are particularly able to force through changes in firms that have relatively low levels of E&S performance.

3.2 Additional Tests: Causality and Robustness

Our results could be influenced by reverse causality or unobserved firm characteristics. To address these concerns, we a) use a quasi-natural experiment, b) perform Granger-causality-style tests, c) use instrumental variables regressions, and d) use firm fixed effects specifications.

Our first tests use the BP Deepwater Horizon oil spill on May 24, 2010 as a quasi-natural experiment. This unexpected event serves as an exogenous shock to the importance that institutional investors assign to firms' environmental commitments. While the immediate negative economic effect of the oil spill was on BP, the event arguably focused investors' attention on all extractive industries, and the potential risks of weak environmental policies even in the most developed countries. If institutional ownership drives changes in firms' environmental performance, we expect that firms with greater institutional ownership at the time of the Deepwater Horizon disaster will subsequently display higher environmental performance levels, as these institutional owners are better able to force through policy changes.

For our tests, we follow a difference-in-differences approach using the years 2009-2012 to have balance on each side of the event. To address serial correlation (Bertrand, Duflo, and Mullainathan (2004)), we collapse the two-year pre- and post-event periods each into one observation. Further, to ensure that the estimated effect in the post-event period is not driven by changes in institutional ownership, *Total IO* is measured as of the pre-event period.

Panel A of Table 3 reports regression results for treated firms only (firms belonging to several categories of extractive industries) for which we estimate:

$$\text{Log}(\text{Score}_{it}) = \alpha + \beta_1 \text{Total IO}_i + \beta_2 \text{Post Event} + \beta_3 \text{Total IO}_i \times \text{Post Event} + \gamma' Y_{it} + \Lambda + \varepsilon_{it}, \quad (2)$$

where the dependent variables are the log of firms' environmental scores and *Post Event* equals one for the years 2011 and 2012, and zero otherwise (all other variables are as in Eq. 1). The

coefficient of interest is β_3 for the interaction term $Total\ IO \times Post\ Event$. We use three alternative industry classifications to identify treated firms in extractive industries: two-digit SIC code in column 1 (SIC 13, Oil and Gas Extraction), Fama-French industry in column 2 (FF 17, Oil and Petroleum Products), and SIC division in column 3 (SIC Division B, Mining). For all subsamples, the coefficient estimate of β_3 is positive and significant at the 5% level or better, indicating that the relation between institutional ownership and firms' environmental performance has strengthened post the Deepwater Horizon shock.

In Panel B of Table 3, we report difference-in-differences estimates, where we use the entire sample and therefore estimate the triple interaction coefficient for $Total\ IO \times Post\ Event \times Treated\ Firm$ to capture the difference of the effect of $Total\ IO$ for treated relative to control firms after the event. Our findings are very similar, and confirm the positive and significant effect of the unexpected Deepwater Horizon event on the relation between institutional ownership and firms' E&S performance.¹²

In addition, we estimate both Granger-causality-style tests and instrumental variables regressions to draw conclusions about the direction of causality between institutional ownership and firms' E&S performance. Further, we estimate firm-fixed-effects models to address whether time-invariant unobserved firm characteristics are driving our results (Gormley and Matsa (2014)). For the sake of brevity, these tests are discussed in detail in Sections B1 through B3 in Appendix B. Consistent with the quasi-natural experiment results, the evidence from all tests indicates that the direction of causality likely flows from institutional ownership to firms' E&S performance.

¹² In unreported results, we do not find such an impact on these firms' social performance, consistent with the environmental shock sharpening institutions' focus on environmental rather than social performance, which were not subject to such a shock.

In further tests of robustness, we explore whether our results are influenced by the choice of a specific E&S data provider. Specifically, we obtain firm-level data on E&S performance from Sustainalytics and Bloomberg and re-estimate our baseline models. These tests show that institutional ownership remains positively and significantly related to firms' E&S performance (see Section B4 in Appendix B). Finally, to ensure that our results are not driven by a firm's E&S transparency or by its corporate governance, we explicitly control for transparency using ASSET4 transparency scores and for a firm's governance using a measure of insider control. We find that all of our results continue to hold (see Section B5 in Appendix B).

Collectively, our results show that, in aggregate, sophisticated owners with a fiduciary duty to focus primarily on financial returns play an important role in improving E&S performance in firms across the world, and the evidence suggests that the direction of the observed effects goes from institutional ownership to E&S performance.

4. Institutional Investors' Social Norms and Firms' E&S Performance

The results from Section 3 do not directly explore whether institutional investors are potentially motivated by their own preferences for firms' E&S performance levels. In this section, we explore the extent to which an investor's social norms affect firms' E&S performance.

4.1 'Rules of the Game' and Social Norms

The 'rules of the game' clearly impact investors' actions and firms' choices. Regarding formal rules that determine behaviour of institutional investors, perhaps one of the most important is fiduciary duty, which acts as constraint on investment managers' pursuit of non-financial objectives. To illustrate with a U.S. example, the Department of Labor's 2008 Interpretative Bulletin clarifies whether the fiduciary duties of investors allow considering environmental and

social factors and concludes “[...] that fiduciary consideration of collateral, non-economic factors in selecting plan investments should be rare and, when considered, should be documented in a manner that demonstrates compliance with ERISA’s rigorous fiduciary standards.”

Regarding *informal* rules, a growing literature recognizes that these can likewise influence investor actions. Guiso, Sapienza, and Zingales (2006) show pervasive effects of culture, a broad term that captures beliefs, values, and norms of a group or society, on a range of economic outcomes. Akerlof and Kranton (2005) focus on preferences that include social norms, which are peoples’ views of how they should or should not behave. These norms depend on social categories (such as national origin), with ideals as to how an individual from each category should behave. Because an individual loses utility if they fail to live up to ideals, they predict social norms to change behaviors. Thus, applied to our context, an investment manager living in a community that cares deeply about firms’ E&S performance is predicted to push firms to improve E&S performance.

Differences across countries or regions in social norms are persistent, changing across generations rather than years. This does not mean that norms do not change—for example if individuals acquire new information about the salience of risks, such as data on rising global temperatures or the costs of poor environmental practices as in the BP Deepwater Horizon case, they may put greater weight on such issues. But such changes affect all countries, and cross-country differences will be preserved to the extent that social norms are based on deeper institutional features of economies, such as their industrial composition.

A hypothesis that social norms matter requires no commitment to whether norms are Pareto-improving or not—prior research in other contexts shows that it could be either (Arrow (1971), Akerlof (1980), Elster (1989)). In the E&S context that means we take no stand on whether

the E&S social norms are either a good way to correct for market failure or reflect a misperception pushed effectively by a pressure group. We simply record the social norms and test whether these influence investors' impact on firms' E&S performance.

4.2 A Simple Framework for Testing the Importance of E&S Social Norms

The objective of this section of the paper is to test the hypothesis that social norms in the country of domicile of the institutional investor influence the institutional investor's impact on firms' E&S performance. To set ideas we first introduce a simple framework that captures the potential impact of social norms that builds on the models of Akerlof and Kranton (2005) as extended in Benjamin, Choi, and Strickland (2010).

For simplicity, consider a situation where an investment manager owns one firm and chooses x , which is the E&S performance of that firm. There is a level x_o , which maximizes firm value. There is also a level x_c , which is the preferred level of E&S performance for that firm based on the views of members in the community in which the investment manager lives. Investment managers differ in the utility they derive from living up to such social norms, which we capture through a weight $w(s)$, where $w(o) = 0$ and $w' > 0$. Thus, in making a choice about x an investment manager trades off the loss from deviating from the ideal investment choice, and the loss from deviating from the ideal social choice in her community. Specifically the investment manager chooses x to maximize:

$$\text{Max } E[U] = -(1 - w(s))(x - x_o)^2 - (w(s))(x - x_c)^2. \quad (3)$$

For an investment manager that derives no utility from social norms, $w(s) = 0$ and the manager chooses x_o , the E&S performance that maximizes firm financial performance. If the investment manager lives in a community that places a high value on E&S performance, so that

$x_c > x_o$, the investment manager minimizes disutility loss by raising firm E&S performance towards community norms, with the intensity dependent upon $w(s)$, how much the manager cares about living up to community norms, and x_c the strength of the community norms regarding firms' E&S performance. In reality, institutional investors own shares in portfolio of firms, but the same logic carries that those investors who live in communities that prefer higher E&S performance, and those investors that care more about conformity with their community norms, are predicted to actively push firms to increase their E&S performance.

To facilitate identification in our empirical tests, we take several steps. First, we include country fixed effects for a firm's domicile in our regressions to capture any time-invariant effects of domestic social norms on firms' E&S choices. Second, we focus on foreign investors' social norms rather than those of domestic investors. To the extent that a firm's board and management team and its domestic institutional investors both reflect the same country-of-domicile E&S social norms, it would be challenging to isolate whether firm managers or domestic investors are behind a firm's E&S performance. Foreign investors, however, are unlikely to obtain private benefits other than through the social norm channel, given that there is a geographic separation between them and firm headquarters. Therefore, we use the social norms of foreign institutional owners, who account for two thirds of institutional ownership in the data, to test whether investor social norms influence firm-level E&S performance—such a finding would indicate that institutional investors are, in effect, transplanting their social norms across countries.

4.3 Country-level Data on Social Norms

Our data for social norms across countries come from several sources. Social norms can be measured as observed policies and outcomes in a society or as expressed values and aspirations of individuals. We use both approaches. To measure a country's social norms toward the

environment, we use the Environmental Performance Index (EPI), obtained from the Yale Center for Environmental Law (Yale University) and Center for International Earth Science Information Network (Columbia University) for the year 2004. The EPI is an observed-outcome metric that aggregates country-level data on environmental health and eco-system vitality. Higher index values indicate better environmental performance in a country.

To measure social norms towards worker rights and other social issues, we use the Employment Laws Index from Botero, Djankov, La Porta, Lopez de Silanes, and Shleifer (2004). This index is an observed-outcome metric for a country's protection of labor which captures the "cost to the employer of deviating from a hypothetical rigid contract." Many of the line items in ASSET4's social commitment data are related to worker rights, making this a plausible proxy for social norms.¹³ Higher index values indicate stronger protection of labor.

Because a society's attitudes and beliefs towards E&S issues may be different from observed outcomes, we also use data from the extensive World Values Survey (WVS) to construct an aggregate E&S social norm measure. WVS data come from interviews with representative samples of 1,000 to 4,000 individuals in more than 100 countries, conducted in waves over several years, assessing peoples' values and beliefs using common questionnaires. Survey questions from the WVS have been used to measure social norms in prior work (e.g., La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997), Glaeser, Laibson, Scheinkman, and Soutter (2000), Guiso, Sapienza, and Zingales (2003)). Our World Values E&S Index uses 12 questions from the WVS that assess a society's values regarding environmental activism, lifestyle liberty, gender equality, personal autonomy, and the voice of the people. We aggregate responses to these questions following the

¹³ The results are similar in magnitude and significance when we use the Collective Relations Laws Index (obtained from Botero et al. (2004)) that measures the extent to which employees are protected by collective bargaining and labor relations laws.

methodology of Welzel (2013)).¹⁴ Higher index values indicate stronger values and beliefs towards E&S. The Environmental Performance Index, Employment Laws Index, and World Values E&S Index measures are available for 85%, 75%, and 79% of investors' countries in our sample, respectively, representing between 96% and 99% of total institutional ownership.

Table 4 reports descriptive statistics of our measures of E&S social norms across countries, where countries are sorted by the average of the three indices. As the table shows, European countries rank high in social norms towards E&S, holding the top 17 spots; the top 5 countries include Sweden, Norway, the Netherlands, Germany, and Finland. Countries in Asia, Australasia, and Africa are at the bottom of the list. The lowest ranked are Hong Kong, South Africa, India, Malaysia, and China.

E&S social norm differences across countries are strongly persistent to the extent we can measure these in the available data. To illustrate, for the EPI index, a comparison of country rankings in 2004 and 2014 yields a rank correlation of 0.99. We find similarly strong persistence of social norms when we use the World Values E&S Index.¹⁵

4.4 Institutional Investors' Social Norms and Firms' E&S Performance

For our primary tests of whether social norms in the country of domicile of foreign institutional investors influence investors' E&S impact, we sort foreign institutional ownership into high and low-social-norm groups. More specifically, we rank all institutional investors by

¹⁴ The aggregation combines data from the World Value Survey (WVS; Waves 4 and 5, 1999-2009) and the European Value Study (EVS; Waves 3 and 4, 1999-2010), to obtain the widest possible country coverage. See also www.worldvaluessurvey.org and www.europeanvaluesstudy.eu.

¹⁵ Note that the EPI index in 2004 is called the Environmental Sustainability Index. The WVS provides data from six survey waves, with Wave 2 being the first to involve a larger number of countries, and Wave 3 providing coverage for most of our sample countries. The rank correlation of countries comparing Wave 2 and 5 is 0.91, and Wave 3 and 5 is 0.94.

their countries' social norms and sort them into two groups using the median of the social norm measures as cutoff points.

Panels A and B of Table 5 report the results for environmental and social scores, respectively, in each case showing the impact of both an output-based and a survey-based measure of E&S norms. For both E&S scores, and for both measures of social norms, foreign institutional ownership of the high-social-norm group is positively and significantly associated with E&S scores, whereas the ownership of the low-social-norm group is not significantly related to E&S scores (with the exception of model 3 in Panel B). Further, in seven out of eight models, the coefficient estimate on foreign institutional ownership of the high group is significantly larger than the corresponding one for the low group.¹⁶ We also note that these results are obtained even though the low-social-norm group generally consists of higher ownership stakes than the high-social-norm group.

The impact of social norms is also economically meaningful. For example, based on the results of column 1 in Panels A and B of Table 5, if foreign institutional investors from countries with low social norms were to pressure firms on E&S in the same manner as investors from countries with high social norms, firms' environmental performance would increase by 7.4% (calculated as $(0.948 - (-0.001)) \times 0.078$) and social performance would increase by 2.2% (calculated as $(0.315 - 0.028) \times 0.078$). Overall, these results on social norms carry a significant implication for global capital markets as they show that high-social-norm foreign institutional investors, in effect, transplant their social norms to the foreign firms they hold. This 'color of

¹⁶ To rule out that these results are driven primarily by Anglo-American institutions, who represent the majority of institutional ownership in the data, we drop all U.S. and U.K. institutional investor stakes, and our results remain unchanged.

money' effect is unlikely to be without conflict—for example, executives of firms from low-social-norm countries would have both social norm and fiduciary duty incentives to push back.

One concern is that our measures of E&S social norms are correlated with other country level factors that may drive firms' E&S performance. For example, it could be that investors from wealthy countries are the ones pushing for more E&S at firms or that activism experience from being domiciled in countries with strong investor protection laws is behind our results. Therefore, we use alternative measures of social norms that are orthogonal to wealth and investor protection. To construct these alternative measures, we regress the original social norm measures on GDP/capita (as of 2004, measured in US\$) and investor protection laws (measured with Legal, calculated as the product of the Revised Anti-director Rights Index (Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008)) and Rule of Law (La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998)), used in Doidge, Karolyi, and Stulz (2007)), and retain the residuals from that regression. These residuals are, by construction, orthogonal to wealth and investor protection. We use these alternative measures to sort foreign investor ownership into high and low-social-norm groups and replicate the models of Table 5. Across all models, the effect of foreign investor ownership on firms' E&S performance is significantly greater in the high compared to the low-social-norm group (see Table B7 in Appendix B).

Our tests so far place foreign investors into two broad categories based on their country-of-domicile social norms. We can further test the social norm hypothesis by considering investors' geographic location, as geographic proximity can indicate similarity of norms. As we reported in Table 4, for example, European countries rank high in social norms—do they also have the greatest impact on firms' E&S performance?

In Table 6 we group institutional ownership by geography, and repeat our regressions. Our findings show that it is the European investors who drive firms' E&S performance; their coefficient estimate is positive and significant in all models. In contrast, investors domiciled in the Americas or in Asia and Australasia do not significantly impact E&S performance. While African institutional ownership is negatively related to E&S performance, it is modestly significant in only one model.

In an additional set of tests, we run identical regressions as in Tables 5 and 6, but instead of estimating the impact by social norm group or geographic region, we estimate the coefficient of foreign institutional ownership for each country in our sample. To facilitate interpreting these results, we present them graphically in Figure 2. As both panels show, there is a positive relationship between social norms (on the vertical axis) and the country-level coefficient estimates of foreign owners' impact on firms' E&S performance (on the horizontal axis). European countries, colored green, cluster in the top right part of the figure, consistent with both high norms and high E&S impacts. Among them, the Netherlands have the largest estimated impact on E&S scores. Within the Americas, colored red, the U.S. is far to the left on the E score and middle of the pack on the S score, indicating that U.S. investors do not play a leading role in driving firms' E&S performance.

Overall, our findings suggest that institutional investors reflect the social norms of their countries when they invest abroad. It is the investors from countries that rank high on measures of E&S social norms that affect firms' E&S performance, whereas investors from countries that are relatively unsupportive toward E&S issues do not drive firms' E&S performance.

4.5 Differences in Institutional Investors' Exposure to Market Forces and Firms' E&S Performance

The simple model in Eq. (3) suggests that another important variable driving investors' incorporation of social preferences for E&S into their decision making is the weight placed on social norms relative to financial returns. We hypothesize that investor type captures cross-sectional variation in the weight on social norms, as investors of different types face different market pressures to generate short-term returns. This allows us to test both whether market forces influence an investor's pursuit of E&S objectives ($w(s)$) and whether social norms (x_c) either override or are subsumed by such market forces.

Generally, we expect market forces to reduce investors' push for greater E&S performance. Asset managers that face a strong fund-flow-performance relationship may shy away from E&S engagements, since firms that enhance their E&S performance incur costs upfront for benefits potentially far in the future. For precisely those investors, analyzing the impact of social norms is especially interesting. If social norms regarding E&S are strong, they might override market forces. Thus, even investors mindful of the fund-flow-performance relationship would push firms towards greater E&S performance. In contrast, if social norms are weak, competitive concerns could dominate and there could be relatively little push for greater E&S performance. We examine this tradeoff between social norms and competitive pressures using regressions that split foreign institutional investors both by the strength of their country-of-domicile E&S social norms and by their investor type.

We use Factset's classification of investors for these tests. Four of their investor categories account for 99.3% of our total institutional ownership: investment advisors (66.9% of institutional ownership), investment companies (22.2%), pension funds (8.1%), and hedge funds (2.2%).¹⁷ We expect pension fund investors to face relatively low competitive pressure whereas the other

¹⁷ We exclude the remaining categories (banks, insurance companies, government agencies) that represent less than 0.7% of total institutional ownership.

categories should all face such pressure. To facilitate comparison with the literature on corporate governance activism, we group investment advisors and investment companies into a category called ‘independent institutional investors’ following Ferreira and Matos (2008).

Table 7 shows the results. We focus our discussion on independent institutional investors, who are both subject to competitive pressure and represent by far the largest investor category. In Panel A, the dependent variables measure firms’ environmental performance. The coefficient on independent institutional investor ownership is consistently economically large and statistically significant in the high-social-norm group. In contrast, the coefficient on independent institutional investors in the low-social-norm group has a lower magnitude and is never statistically significant (the differences in coefficients between the high and low group are also statistically significant). Among this large group of investors, strong social norms appear to dominate concerns about competitive market forces potentially leading to losses in AUM.

Panel B reports the results where the dependent variables measure firms’ social commitments. We find similar patterns that social norms affect independent institutional investors’ E&S impacts, but they are less pronounced. Consistently, the coefficient on independent institutional investors is higher in the high-social-norm group than the low-social-norm group and it is always statistically significant. In the low-social-norm group, in two of the four models, the coefficient on independent institutional investors is also significant, and in only one of the four models is the difference between the coefficient on independent institutional investors in the high and low-social-norm groups significant.

Pension funds, with less *ex ante* pressure to worry about fund-flow-performance relationships are, not surprisingly, largely unaffected by their domestic social norms regarding

E&S impacts. Regardless of social norms, they consistently influence firms to strengthen E&S performance, with positive and significant coefficients in 15 of the 16 models.

Finally, hedge funds face perhaps the greatest competitive pressures. We find in all 16 models that the coefficient on hedge funds is negative, and in nine of these models this coefficient is significant. Hedge funds appear to pressure firms to reduce their E&S performance, and hedge funds also appear to be largely immune to social norms.

These findings show that both market forces and social norms influence investor actions regarding firms' E&S performance. Pension funds, that do not face short-term market pressure to generate returns, consistently push firms towards greater E&S performance, whereas hedge funds, that certainly face such pressure, appear to consistently push against them. We also find that independent institutional investors trade off concerns regarding market forces with a desire to reflect their communities' social norms toward E&S. Overall, our findings are consistent with the idea that institutional investors believe there are long-term benefits but short-term costs to improving firms' E&S performance.

It is interesting to compare the impact of institutional investor types with respect to E&S with their impact on traditional governance (G). There is a growing tendency to discuss ESG activism as if it is all the same. Aggarwal, Erel, Ferreira, and Matos (2011), for example, find that independent institutional investors, which are most subject to market forces, and foreign investors in particular are most engaged in corporate governance activism. We complement their results by showing that for E&S, pension plans, which are least exposed to market forces, are most active. We also find that independent institutional investors are active in driving firms to make greater E&S performance only if they are from countries with strong E&S social norms.

5. Conclusion

Executives of firms today face increasing pressure to look beyond their firms' profits and to consider their firms' environmental and social impacts. Additionally, firm-level E&S measurement has evolved such that investors and other outsiders can easily track firms' E&S performance. Yet, whether improved E&S performance is beneficial to the average shareholder remains controversial.

Our paper tests for a relationship between ownership and firms' E&S performance. If a firm's owners drive the firm's E&S investments this could indicate that E&S investment benefits shareholders because it is their money that is being spent. Using a comprehensive sample of publicly traded firms across more than 40 countries and the institutional investors who own them, we provide new evidence that institutional investors push for stronger firm-level E&S performance around the world. Viewed in isolation, this evidence suggests that better E&S performance is desirable for shareholders.

We next assess whether a desire to obtain personal benefits from moving firms' E&S choices toward the ideal of those in the investor's local community might also drive investors to advocate for greater E&S performance in their portfolio of firms. Fiduciary duty allows only financial returns to be considered and the evidence to date on the financial benefits of E&S investment is mixed. If money is all the same, and all are interested only in financial returns, then the cultural origin and norms of investors should not matter. We instead find that cultural origin does matter—foreign investors domiciled in countries with social norms supportive of strong E&S commitments are the ones that impact firms' E&S performance. This result suggests that a society's values flow through the channel of portfolio investment which, from a CEO and firm management standpoint, adds an additional dimension to the importance of institutional investors.

The success of foreign institutional investors in transplanting their E&S social norms informs the debate about increasing investor power by, for example, giving investors enhanced access to the proxy. This ‘color of money’ effect is unlikely to be without conflict—executives of firms from low-social-norm countries would have both social norm and fiduciary duty incentives to push back. To the extent that domestic social norms place less value on E&S improvement, calls for enhanced investor power are likely to be challenged by management and domestic regulators.

The welfare consequences of our results depend on the net societal value arising from firms’ increased E&S performance levels. Our findings are consistent with institutional investors believing that there are long-term benefits but short-term costs to improving E&S performance. Further research on the net value effect of E&S is required, however, given the conflicting academic evidence to date. Additional research may also consider whether specific mechanisms, such as investors signing on to the UN Principles for Responsible Investment or the Carbon Disclosure Project or firms signing on to the UN Global Compact, facilitate greater E&S performance.

References

- Aggarwal, Reena, Isil Erel, Miguel A. Ferreira, and Pedro Matos, 2011, Does governance travel around the world? Evidence from institutional investors, *Journal of Financial Economics* 100, 154-181.
- Akerlof, George, 1980, A theory of social custom, of which unemployment may be one consequence, *Quarterly Journal of Economics* 94, 749-75.
- Akerlof, George, and Rachel E. Kranton, 2005, Identity and the economics of organizations, *Journal of Economic Perspectives* 19, 9-32.
- Albuquerque, Rui, Art Durnev, and Yrjö Koskinen, 2016, Social responsibility and firm risk: Theory and empirical evidence, Working paper, Boston College.
- Appel, Ian, Todd A. Gormley, and Donald B. Keim, 2016, Passive investors, not passive owners, *Journal of Financial Economics*, forthcoming.
- Arrow, Kenneth, 1971, Political and economic evaluation of social effects and externalities, in Intriligator, M., ed., *Frontiers of Quantitative Economics*, Amsterdam: North-Holland, 3-25.
- Barber, Brad M., Adair Morse, And Ayako Yasuda, 2016, Impact investing, Working paper, University of California, Davis.
- Bena, Jan, Miguel A. Ferreira, Pedro Matos, and Pedro Pires, 2016. Are foreign investors locusts? The long-term effects of foreign institutional ownership, Working paper, University of British Columbia.
- Benjamin, Daniel J., James J. Choi, and A. Joshua Strickland, 2010, Social identity and preferences, *American Economic Review* 100, 1913-1928.
- Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan, 2004. How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics* 119, 249-275.
- Botero, Juan, Simeon Djankov, Rafael La Porta, Florencio Lopez de Silanes, and Andrei Shleifer, 2004, The regulation of labor, *Quarterly Journal of Economics* 119, 1339-1382.
- Cheng, Ing-Haw, Harrison Hong, and Kelly Shue, 2015, Do managers do good with other peoples' money? Working paper, Dartmouth College.
- Crane, Alan D., Sebastien Michenaud, and James Weston, 2014, The effect of institutional ownership on payout policy: Evidence from index thresholds, Working paper, Rice University.
- Cronqvist, Henrik, and Frank Yu, 2016, Shaped by their daughters: Executives, female socialization, and corporate social responsibility, *Journal of Financial Economics*, forthcoming.

- Del Guercio, Diane, and Hai Tran, 2012, Institutional investor activism, In: *Socially Responsible Finance and Investing: Financial Institutions, Corporations, Investors, and Activists*, Eds. H. Kent Baker and John Nofsinger, 359-380, John Wiley & Sons.
- Dimson, Elroy, Oğuzhan Karakaş, and Xi Li, 2015, Active ownership, *Review of Financial Studies* 28, 3225-3268.
- Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2008, The law and economics of self-dealing, *Journal of Financial Economics* 88, 430-465.
- Doidge, Craig, Alexander Dyck, Hamed Mahmudi, and Aazam Virani, 2015, Can institutional investors improve corporate governance through collective action? Rotman School of Management Working Paper No. 2635662.
- Doidge, Craig, Andrew G. Karolyi, and René M. Stulz, 2007, Why do countries matter so much for corporate governance? *Journal of Financial Economics* 86, 1-39.
- Elster, Jon, 1989, Social norms and economic theory, *Journal of Economic Perspectives* 3, 99-117.
- Ferreira, Miguel A., and Pedro Matos, 2008, The color of investors' money: The role of institutional investors around the world, *Journal of Financial Economics* 88, 495-533.
- Ferrell, Allen, Hao Liang, and Luc Renneboog, 2015, Socially responsible firms, *Journal of Financial Economics*, forthcoming.
- Gillan, Stuart, and Laura Starks, 2000, Corporate governance proposals and shareholder activism: The role of institutional investors, *Journal of Financial Economics* 57, 275-305.
- Gillan, Stuart, and Laura Starks, 2003, Corporate governance, corporate ownership, and the role of institutional investors: A global perspective, *Journal of Applied Finance* 13, 4-22.
- Glaeser, Edward L., David I. Laibson, Jose A. Scheinkman, and Christine L. Soutter, 2000, Measuring trust. *Quarterly Journal of Economics* 65, 811-846.
- 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.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2003, People's opium? Religion and economic attitudes, *Journal of Monetary Economics* 50, 225-282.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2006, Does culture affect economic outcomes? *Journal of Economic Perspectives* 20, 23-48.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2009, Cultural biases in economic exchange? *Quarterly Journal of Economics* 124, 1095-1131.

- Hogg, Michael A., and Dominic Abrams, 1988, *Social identifications: A social psychology of intergroup relations and group processes*, London & New York: Routledge.
- Holtz-Eakin, Douglas, Whitney Newey, and Harvey S. Rosen, 1988, Estimating vector autoregressions with panel data, *Econometrica: Journal of the Econometric Society* 56, 1371-1395.
- Hong, Harrison, and Marcin Kacperczyk, 2009, The price of sin: The effects of social norms on markets, *Journal of Financial Economics* 93, 15-36.
- Hong, Harrison, Jeffrey Kubik, and Jose Scheinkman, 2012, Financial constraints on corporate goodness, Working paper, Princeton University.
- Hong, Harrison, and Inessa Liskovich, 2016, Crime, punishment, and the value of corporate social responsibility, NBER Working Paper.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1997, Legal determinants of external finance, *Journal of Finance* 52, 1131-1150.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113-1155.
- Lins, Karl V., Henri Servaes, and Ane Tamayo, 2016, Social capital, trust, and firm performance during the financial crisis, ECGI Working Paper 446/2015.
- Kitzmueller, Markus, and Jay Shimshack, 2012, Economic perspectives on corporate social responsibility, *Journal of Economics Literature* 50, 51-84.
- Margolis, Joshua D., Hillary A. 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, Harvard University.
- Masulis, Ron W., and Syed Walid Reza, 2015, Agency problems of corporate philanthropy, *Review of Financial Studies* 28, 592-636.
- Servaes, Henri, and Ane Tamayo, 2013, The impact of corporate social responsibility on the value of the firm: The role of customer awareness, *Management Science* 59, 1045-1061.
- Welzel, Christian, 2013, *Freedom rising: Human empowerment and the quest for emancipation*, Cambridge University Press, New York.

Table 1
Summary Statistics of Environmental and Social Scores

This table shows summary statistics of environmental and social scores and institutional ownership. Panel A shows environmental and social scores for the full sample. The category scores are calculated as the sum of all indicator variables in one category divided by the number of reported items times 100. The overall score is the average of the category scores. Appendix A describes the indicator variables used to calculate the environmental and social scores. The ASSET4 z-scores are standardized scores, calculated by and obtained from ASSET4 ESG, and measure firms' environmental and social commitments relative to other companies in a given year. Panel B shows means of environmental and social scores and institutional ownership by country for year 2010. The data are from the ASSET4 ESG database and Factset and are obtained for the years 2004-2013. All variables are winsorized at the 1st and 99th percentiles.

Panel A: Full Sample

| | Number of Indicators | Mean | Median | SD | Obs |
|----------------------------|----------------------|------|--------|------|--------|
| A. Environmental | | | | | |
| 1) Emission Reduction | 28 | 39.1 | 35.7 | 21.4 | 19,849 |
| 2) Product Innovation | 25 | 27.9 | 16.7 | 23.1 | 19,849 |
| 3) Resource Reduction | 17 | 39.3 | 37.5 | 22.5 | 19,849 |
| Overall Score | 70 | 35.4 | 31.8 | 20.2 | 19,849 |
| B. Social | | | | | |
| 1) Community | 14 | 63.6 | 64.3 | 12.4 | 19,849 |
| 2) Diversity & Opportunity | 10 | 45.9 | 38.9 | 19.9 | 19,849 |
| 3) Employment Quality | 17 | 53.1 | 53.3 | 13.5 | 19,849 |
| 4) Health & Safety | 9 | 57.8 | 57.1 | 19.1 | 19,849 |
| 5) Human Rights | 8 | 51.8 | 43.8 | 16.3 | 19,849 |
| 6) Product Responsibility | 10 | 50.2 | 50.0 | 13.8 | 19,849 |
| 7) Training & Development | 10 | 39.4 | 37.5 | 26.1 | 19,849 |
| Overall Score | 78 | 51.7 | 51.1 | 13.5 | 19,849 |
| C. ASSET4 z-Score | | | | | |
| Environmental Score | | 53.7 | 56.2 | 31.6 | 19,785 |
| Social Score | | 52.6 | 54.4 | 31.6 | 19,785 |

Panel B: Summary Statistics by Country

| Country | Overall Scores | | ASSET4 z-Scores | | Institutional Ownership | | | Obs (Year 2010) | Firms (Total) | Obs (Total) |
|--------------|------------------|--------|------------------|--------|-------------------------|--|-------------------|-----------------------|------------------|----------------|
| | Environ- ment | Social | Environ- ment | Social | Total (%) | Foreign as a Fraction of Total (%) | Coverage Start | | | |
| Australia | 26.3 | 46.8 | 35.9 | 34.1 | 10.8 | 70.1 | 2004 | 267 | 385 | 1,739 |
| Austria | 40.2 | 57.3 | 62.6 | 62.8 | 18.4 | 88.3 | 2004 | 16 | 18 | 147 |
| Belgium | 39.4 | 51.6 | 59.2 | 51.5 | 16.4 | 82.6 | 2004 | 28 | 29 | 237 |
| Brazil | 36.0 | 58.2 | 52.0 | 65.6 | 22.5 | 86.8 | 2004 | 75 | 88 | 342 |
| Canada | 27.6 | 47.9 | 39.5 | 39.4 | 42.0 | 41.0 | 2004 | 254 | 309 | 1,807 |
| Chile | 28.0 | 48.5 | 41.0 | 39.9 | 6.1 | 93.5 | 2007 | 17 | 19 | 83 |
| China | 21.4 | 41.7 | 29.4 | 28.5 | 14.3 | 71.9 | 2004 | 109 | 126 | 514 |
| Colombia | 25.2 | 45.0 | 32.0 | 34.9 | 4.1 | 49.5 | 2009 | 9 | 12 | 37 |
| Denmark | 43.1 | 57.6 | 66.2 | 61.8 | 22.9 | 58.3 | 2004 | 24 | 27 | 225 |
| Egypt | 17.1 | 44.5 | 21.9 | 30.3 | 8.4 | 98.6 | 2008 | 10 | 11 | 36 |
| Finland | 52.3 | 60.5 | 79.0 | 70.4 | 31.4 | 58.4 | 2004 | 26 | 27 | 230 |
| France | 53.5 | 65.0 | 78.5 | 79.5 | 25.6 | 64.0 | 2004 | 92 | 99 | 820 |
| Germany | 49.4 | 62.9 | 72.0 | 71.0 | 27.9 | 76.5 | 2004 | 78 | 90 | 694 |
| Greece | 36.3 | 52.8 | 51.8 | 52.3 | 13.2 | 89.9 | 2004 | 20 | 24 | 192 |
| Hong Kong | 24.3 | 45.0 | 34.1 | 35.6 | 16.7 | 82.0 | 2004 | 102 | 119 | 728 |
| India | 36.9 | 55.6 | 51.6 | 59.4 | 15.8 | 69.8 | 2007 | 58 | 88 | 347 |
| Indonesia | 30.4 | 54.2 | 41.4 | 60.2 | 10.9 | 96.9 | 2008 | 24 | 29 | 108 |
| Ireland | 35.8 | 48.3 | 47.5 | 39.1 | 39.6 | 93.9 | 2004 | 16 | 20 | 152 |
| Israel | 29.5 | 49.5 | 42.2 | 46.2 | 24.7 | 81.7 | 2004 | 15 | 16 | 68 |
| Italy | 40.6 | 60.9 | 55.2 | 66.5 | 14.4 | 84.5 | 2004 | 46 | 57 | 437 |
| Japan | 44.7 | 51.7 | 63.0 | 49.7 | 13.5 | 62.5 | 2004 | 389 | 417 | 3,594 |
| Luxembourg | 42.8 | 56.0 | 70.8 | 64.0 | 35.6 | 84.7 | 2004 | 6 | 9 | 59 |
| Malaysia | 26.4 | 50.0 | 36.7 | 43.4 | 8.1 | 87.0 | 2008 | 41 | 45 | 178 |
| Mexico | 32.0 | 52.0 | 46.2 | 52.4 | 18.6 | 98.1 | 2007 | 21 | 29 | 118 |
| Netherlands | 46.9 | 61.8 | 71.7 | 73.1 | 35.7 | 88.0 | 2004 | 32 | 49 | 319 |
| New Zealand | 34.7 | 51.4 | 52.1 | 46.6 | 14.0 | 69.2 | 2004 | 10 | 13 | 94 |
| Norway | 45.1 | 61.4 | 68.7 | 70.0 | 35.6 | 61.1 | 2004 | 15 | 19 | 165 |
| Philippines | 27.2 | 49.1 | 37.5 | 43.9 | 12.6 | 95.7 | 2008 | 18 | 23 | 76 |
| Poland | 26.1 | 47.5 | 36.2 | 42.7 | 30.5 | 24.9 | 2007 | 20 | 24 | 88 |
| Portugal | 48.2 | 65.5 | 73.1 | 84.2 | 10.6 | 79.4 | 2004 | 13 | 13 | 104 |
| Russia | 28.5 | 52.1 | 41.3 | 53.2 | 14.4 | 99.5 | 2004 | 29 | 31 | 158 |
| Singapore | 28.1 | 48.6 | 39.6 | 44.2 | 19.3 | 81.1 | 2004 | 42 | 47 | 365 |
| South Africa | 40.8 | 62.8 | 62.0 | 77.2 | 21.4 | 65.3 | 2008 | 44 | 127 | 372 |
| South Korea | 41.6 | 52.0 | 58.2 | 53.0 | 11.6 | 99.0 | 2004 | 93 | 105 | 411 |
| Spain | 52.0 | 66.6 | 75.6 | 81.0 | 13.4 | 79.0 | 2004 | 42 | 55 | 413 |
| Sweden | 49.8 | 59.8 | 76.1 | 67.9 | 39.4 | 33.0 | 2004 | 47 | 53 | 459 |
| Switzerland | 38.2 | 54.2 | 56.6 | 55.1 | 26.8 | 74.1 | 2004 | 63 | 72 | 524 |
| Taiwan | 30.1 | 43.9 | 41.1 | 33.2 | 14.7 | 79.8 | 2004 | 123 | 134 | 460 |
| Thailand | 32.8 | 53.4 | 43.9 | 53.3 | 13.6 | 74.8 | 2007 | 20 | 29 | 103 |
| Turkey | 34.7 | 54.5 | 51.0 | 56.8 | 14.0 | 99.4 | 2008 | 22 | 25 | 111 |
| U.K. | 41.3 | 58.8 | 64.7 | 65.7 | 34.3 | 40.4 | 2004 | 285 | 365 | 2,735 |
| Total | 36.4 | 52.7 | 52.6 | 51.5 | 21.4 | 67.3 | | 2,661 | 3,277 | 19,849 |

Table 2
Institutional Investors and Firms' E&S Performance

This table reports regression estimates of environmental and social scores on institutional ownership and control variables. The dependent variables are the natural logarithm of environmental and social scores. Total IO is total institutional ownership, Log (Total Assets) is the natural logarithm of a firm's total assets, Tangibility is property, plant, and equipment to total assets, Leverage is total debt to total assets, Tobin's q is market capitalization of equity plus total debt divided by total assets, Profitability is net income plus after-tax interest expenses to total assets, and Cross-list is a dummy variable equal to one if the firm is cross-listed on a major U.S. exchange, and zero otherwise. The data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Standard errors are clustered at the country-level and p -values are reported in parentheses.

| | Environmental Scores | | Social Scores | |
|-----------------------------------|----------------------|------------------|------------------|------------------|
| | Overall Score | ASSET4 z-Score | Overall Score | ASSET4 z-Score |
| | (1) | (2) | (3) | (4) |
| Total IO _{t-1} | 0.268 (0.00) | 0.403 (0.00) | 0.124 (0.00) | 0.491 (0.00) |
| Log (Total Assets) _{t-1} | 0.214 (0.00) | 0.255 (0.00) | 0.084 (0.00) | 0.274 (0.00) |
| Tangibility _{t-1} | 0.194 (0.00) | 0.228 (0.00) | 0.031 (0.16) | 0.116 (0.16) |
| Leverage _{t-1} | -0.116 (0.13) | -0.141 (0.21) | -0.041 (0.14) | -0.133 (0.22) |
| Tobin's q _{t-1} | 0.033 (0.00) | 0.027 (0.00) | 0.015 (0.00) | 0.032 (0.03) |
| Profitability _{t-1} | 0.082 (0.43) | 0.176 (0.18) | 0.068 (0.11) | 0.350 (0.04) |
| Cross-list _{t-1} | -0.027 (0.23) | -0.071 (0.06) | 0.004 (0.73) | -0.040 (0.38) |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R^2 | 0.543 | 0.446 | 0.523 | 0.393 |
| Obs | 19,849 | 19,785 | 19,849 | 19,785 |

Table 3
Institutional Investors and Firms' E&S Performance: Deepwater Horizon Oil Spill

This table reports regression estimates of environmental scores on institutional ownership and control variables for years 2009 through 2012, which correspond to the four years surrounding the Deepwater Horizon oil spill that occurred on May 24, 2010. The dependent variables are the natural logarithm of environmental scores. The Post Event dummy is equal to one for the years 2011 and 2012, and zero otherwise. The two-year pre- and post-event periods are each collapsed into one observation, and Total IO is the total institutional ownership measured over the pre-event period. In Panel A, we report within-industry results for firms in extractive industries. The coefficient estimate of Total IO \times Post Event shows the differential effect of institutional ownership on environment scores after the event. In Panel B, we report difference-in-differences regression results. The coefficient estimate of Total IO \times Post Event \times Treated Firm shows the differential effect of institutional ownership on the environment scores for firms in extractive industries compare to the rest of the sample firms. The data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and p -values are reported in parentheses.

Panel A: Within-industry Regressions

| | Overall Environmental Score | | | Environmental ASSET4 z -Score | | |
|------------------------------|---------------------------------------|---|-------------------------------|---------------------------------------|---|-------------------------------|
| | Oil and Gas Extraction (SIC 13) | Oil and Petroleum Products (FF 17) | Mining (SIC Division B) | Oil and Gas Extraction (SIC 13) | Oil and Petroleum Products (FF 17) | Mining (SIC Division B) |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Total IO | 0.100 (0.32) | 0.093 (0.46) | 0.168 (0.12) | 0.394 (0.05) | 0.252 (0.17) | 0.337 (0.01) |
| Post Event | -0.007 (0.88) | 0.028 (0.40) | 0.008 (0.78) | -0.154 (0.07) | -0.099 (0.13) | -0.125 (0.03) |
| Total IO \times Post Event | 0.216 (0.02) | 0.150 (0.02) | 0.120 (0.00) | 0.332 (0.03) | 0.240 (0.03) | 0.235 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted R^2 | 0.722 | 0.727 | 0.616 | 0.667 | 0.677 | 0.586 |
| Obs | 222 | 302 | 606 | 222 | 302 | 606 |
| # Treated Firms | 111 | 151 | 303 | 111 | 151 | 303 |

Panel B: Difference-in-differences Regressions

| | Treatment Effect (Coefficient Estimate of Total IO \times Post Event \times Treated Firm) | | |
|---------------------------------|--|--|----------------------------|
| | Oil and Gas Extraction (SIC 13) | Oil and Petroleum Products (FF 17) | Mining (SIC Division B) |
| | (1) | (2) | (3) |
| Overall Environmental Scores | 0.156 (0.06) | 0.091 (0.12) | 0.116 (0.01) |
| Environmental ASSET4 z -Score | 0.247 (0.08) | 0.149 (0.17) | 0.222 (0.01) |
| Obs | 5,172 | 5,172 | 5,172 |
| # Treated Firms | 111 | 151 | 303 |
| # Control Firms | 2,475 | 2,435 | 2,283 |

Table 4
Measures of Country-level E&S Social Norms

This table reports means of social norm measures by country. Countries in which institutional investors hold on average less than 0.001% in foreign firms are not reported in this table but they are included in our analysis. The Environmental Performance Index is obtained from the Yale Center for Environmental Law (Yale University) and the Center for International Earth Science Information Network (Columbia University) for 2004. The Employment Laws Index is obtained from Botero et al. (2004). The World Value E&S Index is obtained from the World Value Survey and European Value Study (Welzel (2013)) for 1999-2010. The table is sorted by the average value across the three measures.

| Country | Environmental Performance Index | Employment Laws Index | World Value E&S Index |
|----------------|---------------------------------|-----------------------|-----------------------|
| Sweden | 0.67 | 0.74 | 0.71 |
| Norway | 0.70 | 0.69 | 0.67 |
| Netherlands | 0.64 | 0.73 | 0.58 |
| Germany | 0.66 | 0.70 | 0.57 |
| Finland | 0.62 | 0.74 | 0.57 |
| France | 0.67 | 0.74 | 0.49 |
| Slovenia | 0.61 | 0.74 | 0.55 |
| Spain | 0.57 | 0.74 | 0.51 |
| Denmark | 0.62 | 0.57 | 0.64 |
| Switzerland | 0.77 | 0.45 | 0.60 |
| Italy | 0.68 | 0.65 | 0.47 |
| Luxembourg | 0.68 | na | 0.51 |
| Portugal | 0.53 | 0.81 | 0.41 |
| Austria | 0.68 | 0.50 | 0.53 |
| Poland | 0.62 | 0.64 | 0.40 |
| Czech Republic | 0.62 | 0.52 | 0.51 |
| Belgium | 0.62 | 0.51 | 0.48 |
| Brazil | 0.56 | 0.57 | 0.44 |
| Australia | 0.58 | 0.35 | 0.59 |
| U.K. | 0.68 | 0.28 | 0.53 |
| Chile | 0.55 | 0.47 | 0.44 |
| South Korea | 0.55 | 0.45 | 0.45 |
| Taiwan | 0.57 | 0.45 | 0.41 |
| Estonia | 0.56 | na | 0.40 |
| Canada | 0.57 | 0.26 | 0.60 |
| Hungary | 0.55 | 0.38 | 0.45 |
| New Zealand | 0.63 | 0.16 | 0.58 |
| Philippines | 0.52 | 0.48 | 0.37 |
| Israel | 0.55 | 0.29 | 0.51 |
| Japan | 0.63 | 0.16 | 0.55 |
| Ireland | 0.56 | 0.34 | 0.43 |
| U.S. | 0.55 | 0.22 | 0.53 |
| Singapore | 0.56 | 0.31 | 0.38 |
| China | 0.42 | 0.43 | 0.37 |
| Malaysia | 0.61 | 0.19 | 0.39 |
| India | 0.36 | 0.44 | 0.34 |
| South Africa | 0.35 | 0.32 | 0.41 |
| Hong Kong | na | 0.17 | 0.43 |

Table 5
Foreign Institutional Investors' Social Norms and Firms' E&S Performance

This table reports regression estimates of environmental and social scores on domestic institutional ownership, foreign institutional ownership grouped by social norms of institutional investors' home countries, and control variables. The dependent variables are the natural logarithm of environmental and social scores. Foreign institutional ownership is sorted into high and low-social-norm groups based on the social norms concerning environmental and social issues of the foreign investors' country of domicile. We measure a country's social norms concerning environmental issues with a) the Environmental Performance Index (obtained from Yale Center for Environmental Law (Yale University) and Center for International Earth Science Information Network (Columbia University), 2004, median split); and b) the World Value E&S Index (obtained from the World Value Survey and European Value Study, 1999-2010, Welzel (2013), median split). We measure a country's social norms concerning social issues with a) the Employment Laws Index (obtained from Botero et al. (2004), median split); and b) the World Value E&S Index. The other data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and *p*-values are reported in parentheses. The last row reports *p*-values of a test of equality of the coefficient estimates on Foreign IO, High-social-norm Group and Foreign IO, Low-social-norm Group.

Panel A: Environmental Scores

| Splits by | Overall Score | | ASSET4 z-Score | |
|---|---------------------------------|-----------------------|---------------------------------|-----------------------|
| | Environmental Performance Index | World Value E&S Index | Environmental Performance Index | World Value E&S Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO _{t-1} | | | | |
| High-social-norm Group | 0.948 (0.00) | 0.885 (0.00) | 1.265 (0.00) | 1.171 (0.00) |
| Low-social-norm Group | -0.001 (1.00) | 0.065 (0.59) | 0.051 (0.75) | 0.132 (0.42) |
| Domestic IO _{t-1} | 0.442 (0.00) | 0.444 (0.00) | 0.644 (0.00) | 0.646 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.544 | 0.544 | 0.445 | 0.446 |
| Obs | 19,648 | 19,661 | 19,585 | 19,598 |
| Average Foreign IO | | | | |
| Low Group | 0.078 | 0.085 | 0.078 | 0.085 |
| High Group | 0.049 | 0.050 | 0.049 | 0.050 |
| Foreign IO, Low vs. High (<i>p</i> -value) | (0.00) | (0.01) | (0.00) | (0.01) |

Panel B: Social Scores

| Splits by | Overall Score | | ASSET4 z-Score | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| | Employment Laws Index | World Value E&S Index | Employment Laws Index | World Value E&S Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO _{t-1} | | | | |
| High-social-norm Group | 0.315 (0.00) | 0.285 (0.00) | 1.449 (0.00) | 0.962 (0.00) |
| Low-social-norm Group | 0.028 (0.56) | 0.056 (0.29) | 0.359 (0.00) | 0.291 (0.18) |
| Domestic IO _{t-1} | 0.184 (0.00) | 0.186 (0.00) | 0.702 (0.00) | 0.733 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.525 | 0.524 | 0.388 | 0.392 |
| Obs | 19,648 | 19,661 | 19,413 | 19,598 |
| Average Foreign IO | | | | |
| Low Group | 0.078 | 0.085 | 0.105 | 0.085 |
| High Group | 0.049 | 0.050 | 0.029 | 0.050 |
| Foreign IO, Low vs. High (<i>p</i> -value) | (0.01) | (0.07) | (0.02) | (0.15) |

Table 6
Foreign Institutional Investors' Geographic Location and Firms' E&S Performance

This table reports regression estimates of environmental and social scores on institutional ownership grouped by geographical region of domicile and control variables. The dependent variables are the natural logarithm of environmental and social scores. We group foreign institutional investors by the following geographic regions: Europe, Americas, Asia & Australasia, and Africa. The data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and *p*-values are reported in parentheses.

| | Environmental Scores | | Social Scores | |
|----------------------------|----------------------|------------------|------------------|------------------|
| | Overall Score | ASSET4 z-Score | Overall Score | ASSET4 z-Score |
| | (1) | (2) | (3) | (4) |
| Foreign IO _{t-1} | | | | |
| Europe | 0.809 (0.00) | 1.077 (0.00) | 0.275 (0.00) | 0.871 (0.00) |
| Americas | -0.089 (0.43) | -0.067 (0.67) | 0.008 (0.84) | 0.139 (0.38) |
| Asia & Australasia | 0.625 (0.25) | 0.857 (0.26) | 0.060 (0.74) | 0.432 (0.48) |
| Africa | -1.119 (0.21) | -2.204 (0.13) | -0.953 (0.11) | -3.771 (0.09) |
| Domestic IO _{t-1} | 0.445 (0.00) | 0.652 (0.00) | 0.183 (0.00) | 0.720 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.547 | 0.450 | 0.525 | 0.394 |
| Obs | 19,849 | 19,785 | 19,849 | 19,785 |

Table 7
Social Norms, Institutional Investors' Exposure to Market Forces, and Firms' E&S Performance

This table reports regression estimates of environmental and social scores on domestic institutional ownership, foreign institutional ownership grouped by social norms of institutional investors' home countries and investor type, and control variables. The dependent variables are the natural logarithm of environmental and social scores. Foreign institutional ownership is sorted into high and low-social-norm groups based on the social norms concerning environmental and social issues of the foreign investors' country of domicile and investor type. We measure a country's social norms concerning environmental issues with a) the Environmental Performance Index (obtained from Yale Center for Environmental Law (Yale University) and Center for International Earth Science Information Network (Columbia University), 2004, median split); and b) the World Value E&S Index (obtained from the World Value Survey and European Value Study, 1999-2010, Welzel (2013), median split). We measure a country's social norms concerning social issues with a) the Employment Laws Index (obtained from Botero et al. (2004), median split); and b) the World Value E&S Index. The other data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and *p*-values are reported in parentheses.

Panel A: Environmental Scores

| | Overall Score | | ASSET4 z-Score | |
|--|---------------------------------|-----------------------|---------------------------------|-----------------------|
| | Environmental Performance Index | World Value E&S Index | Environmental Performance Index | World Value E&S Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO, High-social-norm Group $t-1$ | | | | |
| Independent Institutional Investors | 0.608 (0.00) | 0.550 (0.01) | 0.852 (0.00) | 0.751 (0.00) |
| Pension Funds | 2.643 (0.00) | 2.014 (0.00) | 3.186 (0.00) | 2.399 (0.00) |
| Hedge Funds | -1.046 (0.65) | -2.256 (0.06) | -0.852 (0.80) | -2.818 (0.11) |
| Foreign IO, Low-social-norm Group $t-1$ | | | | |
| Independent Institutional Investors | 0.026 (0.81) | 0.107 (0.33) | 0.080 (0.59) | 0.180 (0.23) |
| Pension Funds | 1.436 (0.06) | 3.909 (0.00) | 1.643 (0.08) | 5.185 (0.01) |
| Hedge Funds | -0.674 (0.02) | -0.734 (0.02) | -0.762 (0.01) | -0.848 (0.01) |
| Domestic IO $t-1$ | 0.410 (0.00) | 0.412 (0.00) | 0.609 (0.00) | 0.610 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R^2 | 0.545 | 0.546 | 0.446 | 0.448 |
| Obs | 19,648 | 19,661 | 19,585 | 19,598 |

Panel B: Social Scores

| | Overall Score | | ASSET4 z-Score | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| | Employment Laws Index | World Value E&S Index | Employment Laws Index | World Value E&S Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO, High-social-norm Group $t-1$ | | | | |
| Independent Institutional Investors | 0.444 (0.00) | 0.187 (0.05) | 1.173 (0.06) | 0.669 (0.05) |
| Pension Funds | 0.574 (0.07) | 0.579 (0.00) | 1.706 (0.17) | 1.691 (0.03) |
| Hedge Funds | -1.816 (0.07) | -0.927 (0.07) | -4.014 (0.10) | -3.101 (0.10) |
| Foreign IO, Low-social-norm Group $t-1$ | | | | |
| Independent Institutional Investors | 0.065 (0.04) | 0.054 (0.29) | 0.335 (0.00) | 0.263 (0.19) |
| Pension Funds | 0.740 (0.03) | 2.150 (0.00) | 2.439 (0.05) | 7.905 (0.00) |
| Hedge Funds | -0.242 (0.17) | -0.241 (0.20) | -0.518 (0.29) | -0.484 (0.35) |
| Domestic IO $t-1$ | 0.170 (0.00) | 0.175 (0.00) | 0.689 (0.00) | 0.705 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R^2 | 0.524 | 0.526 | 0.387 | 0.394 |
| Obs | 19,648 | 19,661 | 19,413 | 19,598 |

Figure 1
Environmental and Social Scores and Institutional Investors' Ownership over Time

This figure shows average environmental and social scores and institutional ownership by year. Data are from the ASSET4 ESG database and Factset, and are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores.

Panel A: Constant Panel of 805 Firms, 2004-2013



Panel B: Constant Panel of 1,662 Firms, 2009-2013

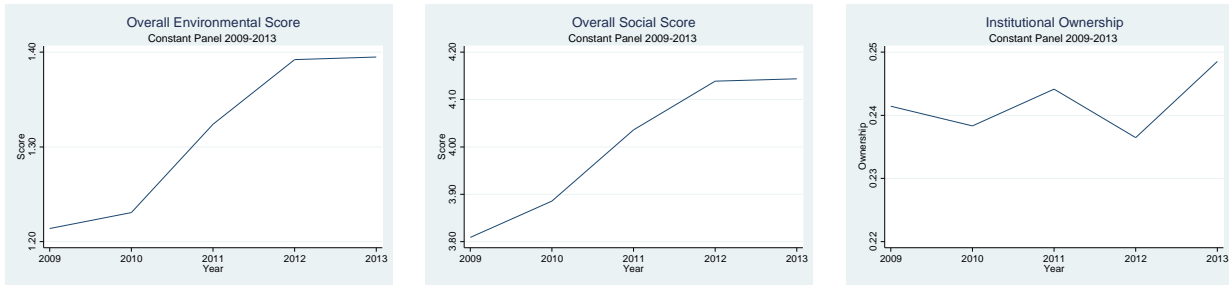
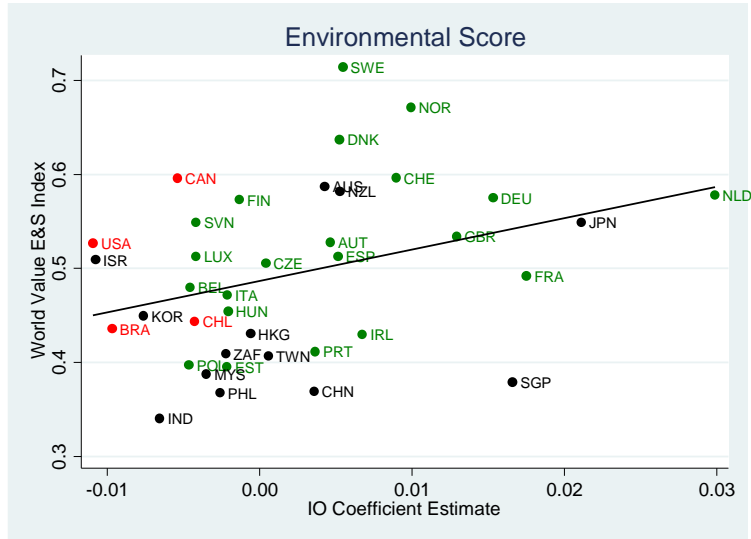


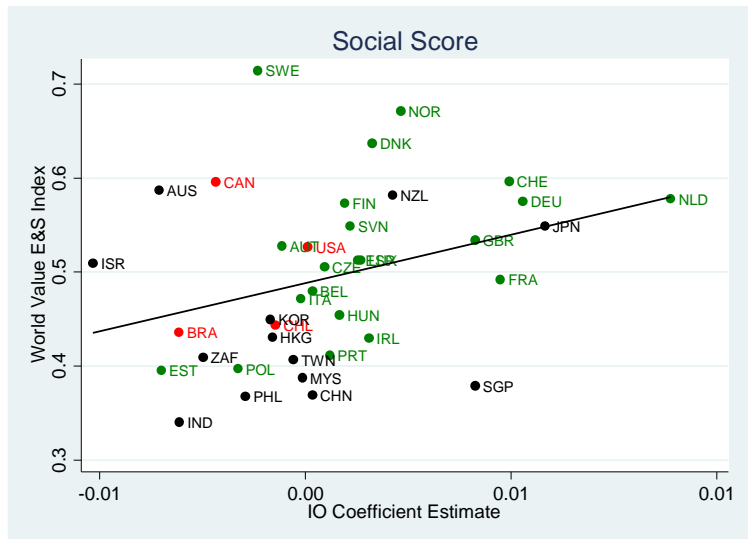
Figure 2
Foreign Institutional Investors' Social Norms and Firms' E&S Performance by Country

This figure shows social norms, measured with the World Value E&S Index, and the coefficient estimates of foreign institutional ownership grouped by country. The coefficient estimates are obtained from regressing environmental and social scores on foreign institutional ownership grouped by investors' country of domicile, while controlling for domestic institutional ownership and controls. We standardize foreign institutional ownership for better comparison across countries.

Panel A: Overall Environmental Score



Panel B: Overall Social Score



Appendix A
Creating Environmental and Social Indicators Based on ASSET4 ESG Environmental and Social Data

We create environmental and social indicator variables based on the ASSET4 ESG environmental and social indicator values. Indicator values are the answers to Y/N questions, double Y/N questions, and numerical questions. We translate the answers to these questions into indicator variables. More specifically, for questions with a positive direction (i.e., a “yes” answer or a greater number is associated with better environmental performance), we translate the answers to Y/N questions into 0 (N) and 1 (Y); the answers to double Y/N questions into 0 (NN), 0.5 (YN or NY), and 1 (YY); and the answers to numerical questions into 0 (value is less (or equal) than zero; or value is less (or equal) than the median; see also column “Translation Numeric Values”) and 1 (value is greater than zero; or value is greater than the median; see also column “Translation Numeric Values”). For questions with a negative direction (i.e., a “no” answer or a lower number is associated with better social performance), the opposite coding applies. The data are from the ASSET4 ESG database.

Panel A: Environmental Indicator Variables

| | Description | Direction | Question Type | Translation Numeric Values |
|------------------------------|--|---|---------------|----------------------------|
| A. Emission Reduction | | | | |
| 1) | Biodiversity Controversies | Is the company under the spotlight of the media because of a controversy linked to biodiversity? | Negative | Y/N |
| 2) | Biodiversity Impact | Does the company report on initiatives to protect, restore or reduce its impact on native ecosystems and species, biodiversity, protected and sensitive areas? | Positive | Y/N |
| 3) | Cement CO2 Emissions | Total CO2 and CO2 equivalents emission in kilograms per tonne of cement produced. | Negative | Number |
| 4) | Climate Change Risks and Opportunities | Is the company aware that climate change can represent commercial risks and/or opportunities? | Positive | Y/N |
| 5) | CO2 Reduction | Does the company show an initiative to reduce, reuse, recycle, substitute, phased out or compensate CO2 equivalents in the production process? | Positive | Y/N |
| 6) | Discharge into Water System | Total weight of water pollutant emissions in tonnes divided by net sales or revenue in US dollars. | Negative | Number |
| 7) | Environmental Compliance | All real or estimated penalties, fines from lost court cases, settlements or cases not yet settled regarding environmental controversies in US dollars. | Negative | Number |
| 8) | Environmental Expenditures | Does the company report on its environmental expenditures or does the company report to make proactive environmental investments to reduce future risks or increase future opportunities? | Positive | Y/N |
| 9) | Environmental Management Systems | The percentage of company sites or subsidiaries that are certified with any environmental management system. | Positive | Number |
| 10) | Environmental Partnerships | Does the company report on partnerships or initiatives with specialized NGOs, industry organizations, governmental or supragovernmental organizations that focus on improving environmental issues? | Positive | Y/N |
| 11) | Environmental Restoration Initiatives | Does the company report or provide information on company-generated initiatives to restore the environment? | Positive | Y/N |
| 12) | F-Gases Emissions | Does the company report on initiatives to recycle, reduce, reuse or phase out fluorinated gases such as HFCs (hydrofluorocarbons), PFCs (perfluorocarbons) or SF6 (sulphur hexafluoride)? | Positive | Y/N |
| 13) | Greenhouse Gas Emissions | Total CO2 and CO2 equivalents emission in tonnes divided by net sales or revenue in US dollars. | Negative | Number |
| 14) | Hazardous Waste | Total amount of hazardous waste produced in tonnes divided by net sales or revenue in US dollars. | Negative | Number |
| 15) | Implementation | Does the company describe the implementation of its emission reduction policy through a public commitment from a senior management or board member? AND Does the company describe the implementation of its emission reduction policy through the processes in place? | Positive | Double Y/N |
| 16) | Improvements | Does the company set specific objectives to be achieved on emission reduction? | Positive | Y/N |
| 17) | Innovative Production | Does the company report on the concentration of production locations in order to limit the environmental impact during the production process? OR Does the company report on its participation in any emissions trading initiative? OR Does the company report on new production techniques to improve the global environmental impact (all emissions) during the production process? | Positive | Y/N |
| 18) | Monitoring | Does the company monitor its emission reduction performance? | Positive | Y/N |
| 19) | NOx and SOx Emissions Reduction | Does the company report on initiatives to reduce, reuse, recycle, substitute, or phase out SOx (sulphur oxides) or NOx (nitrogen oxides) emissions? | Positive | Y/N |
| 20) | Ozone-Depleting Substances Reduction | Does the company report on initiatives to reduce, substitute, or phase out ozone-depleting (CFC-11 equivalents, chlorofluorocarbon) substances? | Positive | Y/N |
| 21) | Policy | Does the company have a policy for reducing environmental emissions or its impacts on biodiversity? AND Does the company have a policy for maintaining an environmental management system? | Positive | Double Y/N |
| 22) | Spill Impact Reduction | Does the company report on initiatives to reduce, avoid or minimize the effects of spills or other polluting events (crisis management system)? | Positive | Y/N |
| 23) | Spills and Pollution Controversies | Is the company directly or indirectly (through a supplier) under the spotlight of the media because of a controversy linked to the spill of chemicals, oils and fuels, gases (flaring) or controversy relating to the overall impacts of the company on the environment? | Negative | Y/N |
| 24) | Transportation Impact Reduction | Does the company report on initiatives to reduce the environmental impact of transportation of its products or its staff? | Positive | Y/N |
| 25) | VOC Emissions Reduction | Does the company report on initiatives to reduce, substitute, or phase out volatile organic compounds (VOC) or particulate matter less than ten microns in diameter (PM10)? | Positive | Y/N |
| 26) | Waste | Total amount of waste produced in tonnes divided by net sales or revenue in US dollars. | Negative | Number |
| 27) | Waste Recycling Ratio | Total recycled and reused waste produced in tonnes divided by total waste produced in tonnes. | Positive | Number |
| 28) | Waste Reduction | Does the company report on initiatives to recycle, reduce, reuse, substitute, treat or phase out total waste, hazardous waste or wastewater? | Positive | Y/N |

| B. Product Innovation | | | | | |
|-----------------------|---|--|----------|------------|--------|
| 1) | Animal Testing | Is the company endorsing guidelines on animal testing (e.g., the EU guideline on animal experiments)? OR Has the company established a programme or an initiative to reduce, phase out or substitute for animal testing? | Positive | Y/N | |
| 2) | Eco-Design Products | Does the company report on specific products which are designed for reuse, recycling or the reduction of environmental impacts? | Positive | Y/N | |
| 3) | Energy Footprint Reduction | Does the company describe initiatives in place to reduce the energy footprint of its products during their use? | Positive | Y/N | |
| 4) | Environmental Asset Management | Does the company report on assets under management which employ environmental screening criteria or environmental factors in the investment selection process? | Positive | Y/N | |
| 5) | Environmental Labels and Awards | Has the company received product awards with respect to environmental responsibility? OR Does the company use product labels (e.g., FSC, Energy Star, MSC) indicating the environmental responsibility of its products? | Positive | Y/N | |
| 6) | Environmental Products | Does the company report on at least one product line or service that is designed to have positive effects on the environment or which is environmentally labelled and marketed? | Positive | Y/N | |
| 7) | Environmental Project Financing | Is the company a signatory of the Equator Principles (commitment to manage environmental issues in project financing)? OR Does the company claim to evaluate projects on the basis of environmental or biodiversity risks as well? | Positive | Y/N | |
| 8) | Environmental R&D | Does the company invest in R&D on new environmentally friendly products or services that will limit the amount of emissions and resources needed during product use? | Positive | Y/N | |
| 9) | Environmental R&D Expenditures | Total amount of environmental R&D costs (without clean up and remediation costs) divided by net sales or revenue in US dollars. | Positive | Number | Median |
| 10) | GMO Free Products | Does the company make a commitment to exclude GMO ingredients from its products or retail offerings? | Positive | Y/N | |
| 11) | Hybrid Vehicles | Is the company developing hybrid vehicles? | Positive | Y/N | |
| 12) | Implementation | Does the company describe the implementation of its environmental product innovation policy? | Positive | Y/N | |
| 13) | Improvements | Does the company set specific objectives to be achieved on environmental product innovation? | Positive | Y/N | |
| 14) | Labelled Wood Percentage | The percentage of labelled wood or forest products (e.g., Forest Stewardship Council (FSC)) from total wood or forest products. | Positive | Number | Median |
| 15) | Liquefied Natural Gas | Does the company develop new products and services linked to liquefied natural gas? | Positive | Y/N | |
| 16) | Monitoring | Does the company describe, claim to have or mention the processes it uses to accomplish environmental product innovation? | Positive | Y/N | |
| 17) | Noise Reduction | Does the company develop new products that are marketed as reducing noise emissions? | Positive | Y/N | |
| 18) | Organic Products | Does the company report or show initiatives to produce or promote organic food or other products? | Positive | Y/N | |
| 19) | Policy | Does the company have an environmental product innovation policy (eco-design, life cycle assessment, dematerialization)? | Positive | Y/N | |
| 20) | Product Impact Controversies | Is the company under the spotlight of the media because of a controversy linked to the environmental impact of its products or services? | Negative | Y/N | |
| 21) | Product Impact Minimization | Does the company reports about take-back procedures and recycling programmes to reduce the potential risks of products entering the environment? OR Does the company report about product features and applications or services that will promote responsible, efficient, cost-effective and environmentally preferable use? | Positive | Y/N | |
| 22) | Renewable Energy Supply | Total energy distributed or produced from renewable energy sources divided by the total energy distributed or produced. | Positive | Number | Median |
| 23) | Renewable/Clean Energy Products | Does the company develop products or technologies for use in the clean, renewable energy (such as wind, solar, hydro and geo-thermal and biomass power)? | Positive | Y/N | |
| 24) | Sustainable Building Products | Does the company develop products and services that improve the energy efficiency of buildings? | Positive | Y/N | |
| 25) | Water Technologies | Does the company develop products or technologies that are used for water treatment, purification or that improve water use efficiency? | Positive | Y/N | |
| C. Resource Reduction | | | | | |
| 1) | Cement Energy Use | Total energy use in gigajoules per tonne of clinker produced. | Negative | Number | Median |
| 2) | Energy Efficiency Initiatives | Does the company report on initiatives to use renewable energy sources? AND Does the company report on initiatives to increase its energy efficiency overall? | Positive | Double Y/N | |
| 3) | Energy Use | Total direct and indirect energy consumption in gigajoules divided by net sales or revenue in US dollars. | Negative | Number | Median |
| 4) | Environmental Resource Impact Controversies | Is the company under the spotlight of the media because of a controversy linked to the environmental impact of its operations on natural resources or local communities? | Negative | Y/N | |
| 5) | Environmental Supply Chain Management | Does the company use environmental criteria (ISO 14000, energy consumption, etc.) in the selection process of its suppliers or sourcing partners? AND Does the company report or show to be ready to end a partnership with a sourcing partner, if environmental criteria are not met? | Positive | Double Y/N | |
| 6) | Green Buildings | Does the company have environmentally friendly or green sites or offices? | Positive | Y/N | |
| 7) | Implementation | Does the company describe the implementation of its resource efficiency policy through a public commitment from a senior management or board member? AND Does the company describe the implementation of its resource efficiency policy through the processes in place? | Positive | Double Y/N | |
| 8) | Improvements | Does the company set specific objectives to be achieved on resource efficiency? AND Does the company comment on the results of previously set objectives? | Positive | Double Y/N | |
| 9) | Land Use | Does the company report on initiatives to reduce the environmental impact on land owned, leased or managed for production activities or extractive use? | Positive | Y/N | |
| 10) | Materials | Total amount of materials used in tonnes divided by net sales or revenue in US dollars. | Negative | Number | Median |
| 11) | Materials Recycled and Reused Ratio | The percentage of recycled materials of the total materials used. | Positive | Number | Median |
| 12) | Monitoring | Does the company monitor its resource efficiency performance? | Positive | Y/N | |
| 13) | Policy | Does the company have a policy for reducing the use of natural resources? AND Does the company have a policy to lessen the environmental impact of its supply chain? | Positive | Double Y/N | |
| 14) | Renewable Energy Use | Total energy generated from primary renewable energy sources divided by total energy. | Positive | Number | Median |

| | | | | |
|---------------------|---|----------|--------|--------|
| 15) Toxic Chemicals | Does the company report on initiatives to reduce, reuse, substitute or phase out toxic chemicals or substances? | Positive | Y/N | |
| 16) Water Recycling | Does the company report on initiatives to reuse or recycle water? OR Does the company report on initiatives to reduce the amount of water used? | Positive | Y/N | |
| 17) Water Use | Total water withdrawal in cubic meters divided by net sales or revenue in US dollars. | Negative | Number | Median |

Panel B: Social Indicator Variables

| | Description | Direction | Question Type | Translation Numeric Values |
|--|--|-----------|---------------|----------------------------|
| A. Community Category | | | | |
| 1) Bribery, Corruption, Fraud Controversies | Is the company under the spotlight of the media because of a controversy linked to bribery and corruption, political contributions, improper lobbying, money laundering, parallel imports or any tax fraud? | Negative | Y/N | |
| 2) Business Ethics Compliance | All real or estimated penalties, fines from lost court cases, settlements or cases not yet settled regarding controversies linked to business ethics in general, political contributions or bribery and corruption, price-fixing or anti-competitive behaviour, tax fraud, parallel imports or money laundering in US dollars. | Negative | Number | Zero |
| 3) Corporate Responsibility Awards | Has the company received an award for its social, ethical, community, or environmental activities or performance? | Positive | Y/N | |
| 4) Crisis Management | Does the company report on crisis management systems or reputation disaster recovery plans to reduce or minimize the effects of reputation disasters? | Positive | Y/N | |
| 5) Critical Countries, Indigenous People Controversies | Is the company under the spotlight of the media because of a controversy linked to activities in critical, undemocratic countries that do not respect fundamental human rights or to disrespecting the rights of indigenous people? | Negative | Y/N | |
| 6) Donations in General | Does the company make cash donations? AND Does the company make in-kind donations, foster employee engagement in voluntary work or provide funding of community-related projects through a corporate foundation? | Positive | Double Y/N | |
| 7) Implementation | Does the company describe the implementation of its community policy through a public commitment from a senior management or board member? AND Does the company describe the implementation of its community policy through the processes in place? | Positive | Double Y/N | |
| 8) Improvements | Does the company set specific objectives to be achieved on its reputation or its relations with communities? | Positive | Y/N | |
| 9) Income Taxes | Total amount of income taxes divided by net income. | Positive | Number | Median |
| 10) Monitoring | Does the company monitor its reputation or its relations with communities? | Positive | Y/N | |
| 11) Patent Infringement | All real or estimated penalties, fines from lost court cases, settlements or cases not yet settled regarding controversies linked to patents and intellectual property infringement in US dollars. | Negative | Number | Zero |
| 12) Policy | Does the company have a policy to strive to be a good corporate citizen or endorse the Global Sullivan Principles? AND Does the company have a policy to respect business ethics or has the company signed the UN Global Compact or follow the OECD guidelines? | Positive | Double Y/N | |
| 13) Public Health Controversies | Is the company under the spotlight of the media because of a controversy linked to public health or industrial accidents harming the health & safety of third parties (non-employees and non-customers)? | Negative | Y/N | |
| 14) Total Donations | Total amount of all donations divided by net sales or revenue. | Positive | Number | Zero |
| B. Diversity and Opportunity | | | | |
| 1) Diversity Compliance | All real or estimated penalties, fines from lost court cases, settlements or cases not yet settled regarding controversies linked to workforce diversity and opportunity in US dollars. | Negative | Number | Zero |
| 2) Diversity Controversies | Is the company under the spotlight of the media because of a controversy linked to workforce diversity and opportunity? | Negative | Y/N | |
| 3) Family Friendly | Does the company claim to provide day care services for its employees? OR Does the company claim to provide generous maternity leave benefits? OR Has the company won a family friendly prize like a "Working Mother Award"? | Positive | Y/N | |
| 4) Implementation | Does the company describe the implementation of its diversity and opportunity policy? | Positive | Y/N | |
| 5) Improvements | Does the company set specific objectives to be achieved on diversity and equal opportunity? | Positive | Y/N | |
| 6) Management Equal Opportunity | Does the company promote positive discrimination? OR Has the company won any prize or award relating to diversity or opportunity? | Positive | Y/N | |
| 7) Managers Female Male Ratio | Percentage of women managers. | Positive | Number | Median |
| 8) Monitoring | Does the company monitor the diversity and equal opportunities in its workforce? | Positive | Y/N | |
| 9) Policy | Does the company have a work-life balance policy? AND Does the company have a diversity and equal opportunity policy? | Positive | Double Y/N | |
| 10) Work-Life Balance | Does the company claim to provide generous vacations, career breaks or sabbaticals? OR Does the company claim to provide flexible working hours or working hours that promote a work-life balance? | Positive | Y/N | |
| C. Employment Quality | | | | |
| 1) Announced Lay-offs | Total number of announced lay-offs by the company divided by the total number of employees. | Negative | Number | Median |
| 2) Bonus Plan | Does the company claim to provide a bonus plan to at least the middle management level? AND Is the employees' compensation based on personal or company-wide targets? | Positive | Double Y/N | |
| 3) Employment Awards | Has the company won an award or any prize related to general employment quality or "Best Company to Work For"? | Positive | Y/N | |
| 4) Generous Fringe Benefits | Does the company claim to provide its employees with a pension fund, health care or other insurances? | Positive | Y/N | |
| 5) Implementation | Does the company describe the implementation of its employment quality policy? | Positive | Y/N | |

| | | | | | |
|----------------------------------|--|--|----------|------------|--------|
| 6) | Improvements | Does the company set specific objectives to be achieved on employment quality? | Positive | Y/N | |
| 7) | Key Management Departures | Has an important executive management team member or a key team member announced a voluntary departure (other than for retirement) or has been ousted? | Negative | Y/N | |
| 8) | Monitoring | Does the company monitor or measure its performance on employment quality? | Positive | Y/N | |
| 9) | Net Employment Creation | Employment growth over the last year. | Positive | Number | Median |
| 10) | Personnel Turnover | Percentage of employee turnover. | Negative | Number | Median |
| 11) | Policy | Does the company have a competitive employee benefits policy or ensuring good employee relations within its supply chain? AND Does the company have a policy for maintaining long term employment growth and stability? | Positive | Double Y/N | |
| 12) | Salaries | Average salaries and benefit in US dollars (Salaries and Benefits (US dollars) /Total Number of Employees). | Positive | Number | Median |
| 13) | Salaries Distribution | Total salaries and benefits divided by net sales or revenue. | Positive | Number | Median |
| 14) | Salary Gap | CEO's total salary (or other highest salary) divided by average wage (Highest Salary (US dollars) /Average Salaries and Benefits in (US dollars)). | Negative | Number | Median |
| 15) | Strikes | Has there has been a strike or an industrial dispute that led to lost working days? | Negative | Y/N | |
| 16) | Trade Union Representation | Percentage of employees represented by independent trade union organizations or covered by collective bargaining agreements. | Positive | Number | Median |
| 17) | Wages or Working Condition Controversies | Is the company under the spotlight of the media because of a controversy linked to the company's employees, contractors or suppliers due to wage, layoff disputes or working conditions? | Negative | Y/N | |
| D. Health and Safety | | | | | |
| 1) | Health & Safety Compliance | All real or estimated penalties, fines from lost court cases, settlements or cases not yet settled regarding controversies linked to workforce or contractor health and safety in US dollars. | Negative | Number | Zero |
| 2) | Health & Safety Controversies | Is the company under the spotlight of the media because of a controversy linked to workforce health and safety? | Negative | Y/N | |
| 3) | HIV-AIDS Programme | Does the company report on policies or programmes on HIV/AIDS for the workplace or beyond? | Positive | Y/N | |
| 4) | Implementation | Does the company describe the implementation of its employee health & safety policy through a public commitment from a senior management or board member or the establishment of an employee health & safety team? AND Does the company describe the implementation of its employee health & safety policy through the processes in place? | Positive | Double Y/N | |
| 5) | Improvements | Does the company set specific objectives to be achieved on employee health & safety? AND Does the company comment on the results of previously set objectives? | Positive | Double Y/N | |
| 6) | Injuries | Total number of injuries and fatalities including no-lost-time injuries relative to one million hours worked. | Negative | Number | Median |
| 7) | Lost Days | Total lost days at work divided by total working days. (Refers to an employee absent from work because of incapacity of any kind, not just as the result of occupational injury or disease) | Negative | Number | Median |
| 8) | Monitoring | Does the company monitor or measure its performance on employee health & safety? | Positive | Y/N | |
| 9) | Policy | Does the company have a policy to improve employee health & safety within the company and its supply chain? | Positive | Y/N | |
| E. Human Rights | | | | | |
| 1) | Child Labour Controversies | Is the company under the direct or indirect (through suppliers) spotlight of the media because of a controversy linked to child labour? | Negative | Y/N | |
| 2) | Freedom of Association Controversies | Is the company under the direct or indirect (through suppliers) spotlight of the media because of a controversy linked to freedom of association? | Negative | Y/N | |
| 3) | Human Rights Controversies | Is the company under the direct or indirect (through suppliers) spotlight of the media because of a controversy linked to general human rights issues? | Negative | Y/N | |
| 4) | Implementation | Does the company describe the implementation of its human rights policy? | Positive | Y/N | |
| 5) | Improvements | Does the company set specific objectives to be achieved on its human rights policy? | Positive | Y/N | |
| 6) | Monitoring | Does the company monitor human rights in its or its suppliers' facilities? | Positive | Y/N | |
| 7) | Policy | Does the company have a policy to guarantee the freedom of association universally applied independent of local laws? AND Does the company have a policy for the exclusion of child, forced or compulsory labour? | Positive | Double Y/N | |
| 8) | Suppliers Social Impact | Does the company report or show to use human rights criteria in the selection or monitoring process of its suppliers or sourcing partners? AND Does the company report or show to be ready to end a partnership with a sourcing partner if human rights criteria are not met? | Positive | Double Y/N | |
| F. Product Responsibility | | | | | |
| 1) | Customer Controversies | Is the company under the spotlight of the media because of a controversy linked to its products or services quality and responsibility? | Negative | Y/N | |
| 2) | Implementation | Does the company describe the implementation of its product responsibility policy? | Positive | Y/N | |
| 3) | Improvements | Does the company set specific objectives to be achieved on its products or services quality and responsibility? | Positive | Y/N | |
| 4) | Monitoring | Does the company monitor the impact of its products or services on consumers or the community more generally? | Positive | Y/N | |
| 5) | Policy | Does the company have a policy to protect customer health & safety? AND Does the company have a products and services quality policy? | Positive | Double Y/N | |
| 6) | Product Access | Does the company distribute any low-priced products or services specifically designed for lower income categories (e.g., bridging the digital divide, telecommunications, low cost cars and micro-financing services)? | Positive | Y/N | |
| 7) | Product Compliance | All real or estimated penalties, fines from lost court cases, settlements or cases not yet settled regarding controversies linked its products or services quality and responsibility in US dollars. | Negative | Number | Zero |
| 8) | Quality Management | Does the company claim to apply quality management systems, such as ISO 9000, Six Sigma, Lean Manufacturing, Lean Sigma, TQM or any other similar quality principles? | Positive | Y/N | |

| | | | | | |
|------------------------------------|--------------------------------|--|----------|--------|--------|
| 9) | Social Exclusion Controversies | Is the company under the spotlight of the media because of a controversy linked to market withdrawal (closing of branches), retreating or failing to serve specific markets or customers?O | Negative | Y/N | |
| 10) | Technology Know-How Sharing | Does the company voluntarily share licenses, patents, intellectual property or useful technology with developing countries, or allow generics under specific conditions? | Positive | Y/N | |
| G. Training and Development | | | | | |
| 1) | Implementation | Does the company describe the implementation of its training and development policy? | Positive | Y/N | |
| 2) | Improvements | Does the company set specific objectives to be achieved on the employee training and career development? | Positive | Y/N | |
| 3) | Internal Promotion | Does the company claim to favour promotion from within? | Positive | Y/N | |
| 4) | Management Training | Does the company claim to provide regular staff and business management training for its managers? | Positive | Y/N | |
| 5) | Monitoring | Does the company monitor its training and development programs? | Positive | Y/N | |
| 6) | Policy | Does the company have a policy to support the skills training or career development of its employees? | Positive | Y/N | |
| 7) | Supplier ESG Training | Does the company provide training on environmental, social or governance factors for its suppliers? | Positive | Y/N | |
| 8) | Training Costs | Training costs per employee in US dollars. | Positive | Number | Median |
| 9) | Training Hours | Average hours of training per year per employee. | Positive | Number | Median |
| 10) | University Partnerships | Does the company claim to cooperate with schools or universities? | Positive | Y/N | |

Appendix B

Additional Tests and Statistics

B1. Granger Causality Tests

We perform Granger-causality-style tests to draw conclusions about the direction of statistical causality between institutional ownership and firms' E&S performance. We estimate two sets of regressions. First, we regress E&S scores on lagged Total IO, lagged E&S scores, and lagged control variables. Second, we regress Total IO on lagged E&S scores, lagged Total IO, and lagged control variables. Granger causality has been widely studied and applied in macroeconomics, and interpretations of the causality concept have been widely debated such that caveats associated with its usage are well understood. With panel data, where time series tend to be relatively short but available for a great number of cross-sectional units, parameter estimation is performed by pooling the data, and allowing for differences in individual effects can be achieved by including fixed effects (see, e.g., Holtz-Eakin, Newey, and Rosen (1988)). We follow this approach and include firm fixed effects. The results are reported in Table B2. Consistent with Total IO driving firms' E&S performance, we find that E&S scores significantly depends on lagged Total IO (while controlling for lagged E&S performance). However, the opposite is not true: Total IO does not significantly depend on lagged E&S scores (while controlling for lagged Total IO). Combined, this evidence indicates that the direction of causality likely flows from institutional ownership to firms' E&S performance.

B2. Instrumental Variables Regressions

We use instrumental variable estimation to further address the concern of reverse causality. Aggarwal, Erel, Ferreira, and Matos (2011), Crane, Michenaud, and Weston (2014), Appel, Gormley, and Keim (2016), and Bena, Ferreira, Matos, and Pires (2016) exploit variation of institutional ownership that results from a firm's stock being added to a major stock market index. In our study, we use stock additions to the MSCI All Country World Index as an instrument for institutional ownership. The MSCI World Index is composed of all country-level MSCI indices that are often used as a benchmark by institutional investors. Stocks are added to the MSCI country indices until the cumulative free-float-adjusted market capitalization reaches 85% of the total free-float-adjusted market capitalization in each country. Based on the index addition rules, firms are added mechanically to the index. Thus, stocks are added to the index because of their relative free-float-adjusted market capitalization, and not because of their E&S commitments.

Panel A of Table B3 shows the first-stage results. Institutional investors increase their holdings by about 3.7 percentage points when a firm is added to the MSCI World Index. More importantly, the second-stage results in Panel B show that instrumented institutional ownership is positively and significantly associated with environmental and social scores. These results show that our findings are not due to the endogenous selection of firms with high E&S scores, but rather than institutional investors drive environmental and social performance of firms.¹⁸

¹⁸ We also exploit the variation of institutional ownership directly around firms' MSCI World Index addition. We match firms that were added to the index (treated firms) using a propensity score matching approach to control firms within the same country and industry in the year of the index addition. We match on outcome and control variables. The results show that after the index addition, environmental and social scores of treated firms increased significantly more compared to control firms (unreported for brevity).

B3. Firm Fixed Effects Regressions

Our results could be due to unobserved firm characteristics that affect both institutional ownership and the willingness of firms to adopt E&S policies. To address, we introduce a firm fixed effect specification as suggested by Gormley and Matsa (2014) in Table B4. The results show that institutional ownership continues to have a statistically significant impact on firms' E&S performance. Compared to the findings in Table 2, the coefficient estimates of Total IO are generally smaller. This is to be expected as the estimates are relying on time-series variation within firms rather than the likely larger cross-sectional variation. As an example, using the overall environmental score as the dependent variable, the coefficient on Total IO declines from 0.268 (Table 2, column 1) to 0.137 (Table B4, column 1).

B4. Alternative E&S Measures

We explore whether the positive effect of institutional ownership on environmental and social performance stems from our specific definitions of E&S measures. One concern is that while ASSET4 provides detailed documentation for its ESG data, and in evaluating firms' E&S performance relies predominantly on publicly available data, we cannot verify the entire data collection process or its accuracy. A second concern is that investors have a choice among several providers of ESG data, and there is no standardized framework of capturing such data. While ASSET4 data are widely used in the industry, the probability that a specific institutional investor in our sample will rely on a different data provider is significant. To address both concerns, we obtain detailed ESG data from Sustainalytics and Bloomberg, and match these data with our sample. Sustainalytics and Bloomberg coverage begins in 2009 and 2005, respectively.

We use the Sustainalytics' overall environmental and social scores. To construct these scores, Sustainalytics looks at similar firm-level information available from annual reports, corporate sustainability reports, NGOs, and news sources, applying their own weighting across items. The correlations between the scores constructed from ASSET4 and Sustainalytics data are neither particularly low nor high, at 0.68 for the environmental performance and 0.52 for social performance.

We aggregate indicator variables provided by Bloomberg to construct Bloomberg E&S scores. For the environmental score we use indicator variables that measure whether the firm has a climate change policy, energy efficiency policy, environmental supply chain management policy, waste reduction policy, water policy, and biodiversity policy. For the social score we use indicator variables that measure whether the firm has a health and safety policy, equal opportunity policy, human rights policy, policy against child labor, employee protection/whistle blower policy, anti-bribery ethics policy, and social supply chain management policy. The correlations between the ASSET4 overall scores and Bloomberg's scores are 0.66 for environmental and 0.65 for social commitments.

We use the Sustainalytics and Bloomberg scores to re-estimate our baseline specification of Table 2. The results are reported in Panel A of Table B5. In all specifications, the coefficient estimate on institutional ownership is positive and significant at the 5% level or better. Thus, using alternative measure from two data providers confirms that lagged institutional ownership is positively associated with environmental and social performance.

Further, in Panels B and C of Table B5 we use the Sustainalytics and Bloomberg scores to replicate the specifications of Table 5, grouping foreign institutional ownership into high and low-social-norm groups. For both

alternative E&S measures we find that investors' impact on firms' E&S performance is concentrated in the high-social-norm group, confirming our initial results.

B5. Disentangling Environmental and Social Performance from Transparency and Governance

One potential concern about our results is that unobserved heterogeneity between firms may contribute to the observed positive relation between institutions and E&S performance. We have addressed this concern with firm fixed effects, evidence from a quasi-natural experiment, and IV regressions. It is illustrative, however, to explicitly control for firm-level characteristics that might influence both institutional ownership and E&S performance at the same time. Also, fixed effects would not capture firm heterogeneity in case it is time-varying.

We consider transparency and governance quality as two firm-level measures that are plausible candidates as determinants of both institutional ownership and E&S scores across firms. We therefore perform tests that re-estimate the baseline specifications of Table 2, but additionally control for a firm's transparency and governance. Transparency is measured by the log of a firm's transparency score, which is defined as the number of data items reported by the company out of all items tracked as part of the ASSET4 scoring system. Our governance measure is based on a firm's level of insider control. To construct this measure, we regress the percentage of closely held shares (from Worldscope) on the percentage of institutional ownership of a firm, and retain the residuals from that regression. These residuals are, by construction, orthogonal to institutional ownership, and we refer to them as Insider Control.¹⁹

Table B6 shows the results. Greater E&S transparency is associated with higher E&S performance, as might be expected. Importantly, the coefficient on Total IO remains positive and significant when controlling for transparency. Insider Control is negatively related to E&S scores and is significantly different from zero in some of our model specifications. The key result for our purposes is that the coefficient on Total IO is affected very little when we explicitly control for firm-level governance. The negative sign on insider ownership also suggests that, generally speaking, more entrenched insiders do not see investing in E&S as a private benefit.

¹⁹ We prefer this cleaner measure of insider control. All of our results also obtain when we instead use the raw insider control percentages.

Table B1
Additional Summary Statistics

This table reports descriptive statistics. The sample consists of 19,849 firm-year observations and covers 3,277 firms from 41 countries during the period 2004 through 2013. Panel A shows summary statistics for our sample firms, and Panel B reports number of observations by industry (using SIC divisions industry groupings). Total Assets is in USD million, Log (Total Assets) is the natural logarithm of total assets, Tangibility is property, plant, and equipment to total assets, Leverage is total debt to total assets, Tobin's q is market capitalization of equity plus total debt divided by total assets, Profitability is net income plus after-tax interest expenses to total assets, Cross-list is a dummy variable equal to one if the firm is cross-listed on a major U.S. exchange, and zero otherwise, and Total IO is total institutional ownership. The data are from Factset, Worldscope, DR lists, and CRSP. We winsorize all variables at the 1st and 99th percentiles.

Panel A: Summary Statistics

| Variable | Average | Median | 25 th Percentile | 75 th Percentile | Standard Deviation |
|--------------------|---------|--------|-----------------------------|-----------------------------|--------------------|
| Total Assets | 31,313 | 4,761 | 1,714 | 15,544 | 101,622 |
| Log (Total Assets) | 8.602 | 8.468 | 7.446 | 9.651 | 1.794 |
| Tangibility | 0.317 | 0.271 | 0.091 | 0.494 | 0.259 |
| Leverage | 0.239 | 0.224 | 0.092 | 0.352 | 0.176 |
| Tobin's q | 1.644 | 1.271 | 1.037 | 1.795 | 1.064 |
| Profitability | 0.061 | 0.052 | 0.019 | 0.094 | 0.080 |
| Cross-list | 0.096 | 0.000 | 0.000 | 0.000 | 0.295 |
| Total IO | 0.224 | 0.180 | 0.100 | 0.313 | 0.168 |

Panel B: Number of Observations by Industry

| Industry | Obs | Fraction of Sample (%) |
|----------------------------------|-------|------------------------|
| Agriculture, Forestry, Fishing | 66 | 0.3 |
| Mining | 2,077 | 10.5 |
| Construction | 900 | 4.5 |
| Manufacturing | 7,095 | 35.7 |
| Transportation, Public Utilities | 2,816 | 14.2 |
| Wholesale Trade | 552 | 2.8 |
| Retail Trade | 1,138 | 5.7 |
| Finance, Insurance, Real Estate | 3,505 | 17.7 |
| Services | 1,685 | 8.5 |
| Public Administration | 15 | 0.1 |

Table B2
Granger Causality Tests

This table reports results of Granger-causality-style tests. In columns 1 through 4, the dependent variables are the natural logarithm of the environmental and social scores. In columns 5 through 8, the dependent variable is total institutional ownership. In all specifications, the one-year lagged dependent variable is included as a control. All regressions are estimated with firm fixed effects. The data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and *p*-values are reported in parentheses.

Panel A: Overall Scores

| | Environ- mental Score | Social Score | Environ- mental Score | Social Score | Total IO | | | |
|------------------------------------|-----------------------------|-----------------|-----------------------------|-----------------|-----------------|-----------------|-----------------|------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Total IO _{t-1} | 0.229 (0.00) | 0.088 (0.01) | 0.058 (0.02) | 0.012 (0.27) | 0.425 (0.00) | 0.427 (0.00) | 0.422 (0.00) | 0.423 (0.00) |
| Environmental Score _{t-1} | 0.657 (0.00) | | 0.490 (0.00) | | 0.003 (0.57) | | 0.003 (0.27) | |
| Social Score _{t-1} | | 0.670 (0.00) | | 0.468 (0.00) | | 0.002 (0.87) | | -0.006 (0.39) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effects | No | No | Yes | Yes | No | No | Yes | Yes |
| Adjusted R ² | 0.664 | 0.678 | 0.734 | 0.750 | 0.220 | 0.220 | 0.236 | 0.236 |
| Obs | 16,538 | 16,538 | 16,538 | 16,538 | 16,538 | 16,538 | 16,538 | 16,538 |

Panel B: ASSET4 z-Scores

| | Environ- mental Score | Social Score | Environ- mental Score | Social Score | Total IO | | | |
|------------------------------------|-----------------------------|-----------------|-----------------------------|-----------------|------------------|------------------|-----------------|------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Total IO _{t-1} | 0.158 (0.02) | 0.138 (0.05) | 0.094 (0.04) | 0.059 (0.23) | 0.429 (0.00) | 0.430 (0.00) | 0.424 (0.00) | 0.424 (0.00) |
| Environmental Score _{t-1} | 0.415 (0.00) | | 0.396 (0.00) | | -0.000 (0.99) | | 0.001 (0.55) | |
| Social Score _{t-1} | | 0.430 (0.00) | | 0.411 (0.00) | | -0.002 (0.28) | | -0.001 (0.61) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effects | No | No | Yes | Yes | No | No | Yes | Yes |
| Adjusted R ² | 0.259 | 0.265 | 0.278 | 0.287 | 0.247 | 0.247 | 0.258 | 0.258 |
| Obs | 16,479 | 16,479 | 16,479 | 16,479 | 16,479 | 16,479 | 16,479 | 16,479 |

Table B3
Institutional Investors and Firms' E&S Performance: IV Regressions

This table reports IV regression estimates of environmental and social scores on institutional ownership and control variables. Total IO is instrumented with MSCI Index, a dummy variable equal to one if the firm is a member of the MSCI World Index, and zero otherwise. The dependent variables are the natural logarithm of environmental and social scores. The data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, MSCI, and they are obtained for the years 2004-2013. Table 3 provides variable descriptions. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. Controls are as in Table 3. Standard errors are clustered at the country-level and *p*-values are reported in parentheses.

Panel A: First Stage

| | Total IO | | |
|------------------------|------------------|--|--|
| | Full Sample | Only Firms that Changed MSCI Index Membership | Only Firms that Changed MSCI Index Membership Once |
| | (1) | (2) | (3) |
| MSCI Index | 0.037 (0.00) | 0.027 (0.00) | 0.026 (0.00) |
| Log (Total Assets) | -0.004 (0.44) | -0.018 (0.00) | -0.015 (0.00) |
| Tangibility | -0.039 (0.00) | -0.033 (0.18) | -0.001 (0.99) |
| Leverage | -0.012 (0.55) | -0.023 (0.24) | -0.031 (0.30) |
| Tobin's <i>q</i> | -0.005 (0.05) | -0.007 (0.02) | -0.004 (0.33) |
| Profitability | 0.092 (0.02) | 0.081 (0.08) | 0.047 (0.41) |
| Cross-list | 0.148 (0.00) | 0.227 (0.00) | 0.239 (0.00) |
| Country Fixed Effects | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes |
| Adjusted R^2 | 0.521 | 0.586 | 0.597 |
| Obs | 19,849 | 7,556 | 5,575 |

Panel B: Second Stage, Total IO Instrumented with MSCI Index

| | Environmental Scores | | Social Scores | |
|--|----------------------|-----------------|-----------------|-----------------|
| | Overall Score | ASSET4 z-Score | Overall Score | ASSET4 z-Score |
| | (1) | (2) | (3) | (4) |
| A. Full Sample | | | | |
| Total IO _{t-1} | 2.970 (0.00) | 4.111 (0.00) | 1.390 (0.00) | 4.854 (0.00) |
| Adjusted R ² | 0.292 | 0.142 | 0.224 | 0.059 |
| Obs | 19,849 | 19,785 | 19,849 | 19,785 |
| B. Only Firms that Changed MSCI Index Membership | | | | |
| Total IO _{t-1} | 1.168 (0.08) | 1.842 (0.07) | 0.760 (0.05) | 2.800 (0.08) |
| Adjusted R ² | 0.494 | 0.36 | 0.436 | 0.265 |
| Obs | 7,556 | 7,536 | 7,556 | 7,536 |
| C. Only Firms that Changed MSCI Index Membership Once | | | | |
| Total IO _{t-1} | 1.836 (0.05) | 2.802 (0.04) | 0.753 (0.11) | 2.948 (0.13) |
| Adjusted R ² | 0.437 | 0.287 | 0.431 | 0.247 |
| Obs | 5,575 | 5,563 | 5,575 | 5,563 |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |

Table B4
Institutional Investors and Firms' E&S Performance: Firm Fixed Effects Regressions

This table reports firm fixed effects regression estimates of environmental and social scores on institutional ownership and control variables. The dependent variables are the natural logarithm of environmental and social scores. The data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and p -values are reported in parentheses.

| | Environmental Scores | | Social Scores | |
|--------------------------------------|----------------------|-------------------|-----------------|-------------------|
| | Overall Score | ASSET4 z -Score | Overall Score | ASSET4 z -Score |
| | (1) | (2) | (3) | (4) |
| Total IO _{$t-1$} | 0.137 (0.00) | 0.186 (0.00) | 0.048 (0.04) | 0.200 (0.05) |
| Control Variables | Yes | Yes | Yes | Yes |
| Firm Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R^2 | 0.640 | 0.110 | 0.685 | 0.115 |
| Obs | 19,849 | 19,785 | 19,849 | 19,785 |

Table B5
Alternative E&S Measures

This table reports regression estimates of environmental and social measures, obtained from Sustainalytics and Bloomberg, on institutional ownership and control variables. The Sustainalytics environmental and social scores are the overall scores obtained from the Sustainalytics database. The Bloomberg environmental score is equal to one plus the sum of indicator variables that measure whether the firm has a climate change policy, energy efficiency policy, environmental supply chain management policy, waste reduction policy, water policy, and biodiversity policy. The Bloomberg social score is equal to one plus the sum of indicator variables that measure whether the firm has a health and safety policy, equal opportunity policy, human rights policy, policy against child labor, employee protection / whistle blower policy, anti-bribery ethics policy, and social supply chain management policy. The dependent variables are the natural logarithm of environmental and social scores. In Panels B and C, foreign institutional ownership is sorted into high and low-social-norm groups based on the social norms concerning environmental and social issues of the foreign investors' country of domicile. We measure a country's social norms concerning environmental issues with a) the Environmental Performance Index (obtained from Yale Center for Environmental Law (Yale University) and Center for International Earth Science Information Network (Columbia University), 2004, median split); and b) the World Value E&S Index (obtained from the World Value Survey and European Value Study, 1999-2010, Welzel (2013), median split). We measure a country's social norms concerning social issues with a) the Employment Laws Index (obtained from Botero et al. (2004), median split); and b) the World Value E&S Index. The other data are from the Sustainalytics database (starting in 2009), Bloomberg (starting in 2005), Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2005-2013. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and p -values are reported in parentheses.

Panel A: Baseline Regressions

| | Sustainalytics | | Bloomberg | |
|-------------------------|---------------------|-----------------|---------------------|-----------------|
| | Environmental Score | Social Score | Environmental Score | Social Score |
| | (1) | (2) | (3) | (4) |
| Total IO _{t-1} | 0.111 (0.00) | 0.068 (0.00) | 0.281 (0.05) | 0.196 (0.05) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R^2 | 0.427 | 0.322 | 0.441 | 0.400 |
| Obs | 7,259 | 7,259 | 13,209 | 13,254 |

Panel B: Environmental Scores

| Splits by | Sustainalytics | | Bloomberg | |
|----------------------------|-------------------|-----------------|-------------------|-----------------|
| | Environmental | World Value E&S | Environmental | World Value E&S |
| | Performance Index | Index | Performance Index | Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO _{t-1} | | | | |
| High-social-norm Group | 0.394 | 0.360 | 0.690 | 0.462 |
| | (0.01) | (0.01) | (0.03) | (0.08) |
| Low-social-norm Group | -0.026 | -0.010 | 0.040 | 0.190 |
| | (0.72) | (0.88) | (0.85) | (0.27) |
| Domestic IO _{t-1} | 0.111 | 0.109 | 0.611 | 0.609 |
| | (0.01) | (0.01) | (0.00) | (0.00) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.428 | 0.428 | 0.437 | 0.438 |
| Obs | 7,250 | 7,251 | 13,118 | 13,129 |

Panel C: Social Scores

| Splits by | Sustainalytics | | Bloomberg | |
|----------------------------|-----------------|-----------------|-----------------|-----------------|
| | Employment Laws | World Value E&S | Employment Laws | World Value E&S |
| | Index | Index | Index | Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO _{t-1} | | | | |
| High-social-norm Group | 0.381 | 0.191 | 0.981 | 0.307 |
| | (0.02) | (0.01) | (0.01) | (0.25) |
| Low-social-norm Group | 0.025 | 0.015 | 0.122 | 0.162 |
| | (0.51) | (0.76) | (0.35) | (0.37) |
| Domestic IO _{t-1} | 0.042 | 0.049 | 0.402 | 0.411 |
| | (0.23) | (0.16) | (0.00) | (0.00) |
| Control Variables | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.323 | 0.322 | 0.399 | 0.400 |
| Obs | 7,235 | 7,251 | 13,075 | 13,175 |

Table B6
Institutional Investors and Firms' E&S Performance: Controlling for Transparency and Governance

This table reports regression estimates of environmental and social scores on institutional ownership, controlling for transparency scores, governance measures, and control variables. The dependent variables are the natural logarithm of environmental and social scores. The Transparency Score is the natural logarithm of the overall transparency score calculated as the number of reported E&S items divided by the number of E&S items a firm could have reported. Insider Control is the residuals of a regression of Closely Held Shares (obtained from Worldscope) on Total IO. The data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year (except for the Transparency Score). Controls are as in Table 3. Standard errors are clustered at the country-level and *p*-values are reported in parentheses.

Panel A: Environmental Scores

| | Overall Score | | | ASSET4 z-Score | | |
|---------------------------------|-----------------|------------------|------------------|-----------------|------------------|------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Total IO _{t-1} | 0.180 (0.00) | 0.290 (0.00) | 0.198 (0.00) | 0.293 (0.00) | 0.430 (0.00) | 0.315 (0.00) |
| Transparency Score _t | 3.313 (0.00) | | 3.290 (0.00) | 4.146 (0.00) | | 4.116 (0.00) |
| Insider Control _{t-1} | | -0.099 (0.01) | -0.035 (0.26) | | -0.112 (0.03) | -0.032 (0.45) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.643 | 0.545 | 0.643 | 0.546 | 0.447 | 0.546 |
| Obs | 19,849 | 18,560 | 18,560 | 19,785 | 18,496 | 18,496 |

Panel B: Social Scores

| | Overall Score | | | ASSET4 z-Score | | |
|---------------------------------|-----------------|------------------|------------------|------------------|------------------|------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Total IO _{t-1} | 0.076 (0.00) | 0.125 (0.00) | 0.078 (0.01) | 0.324 (0.00) | 0.498 (0.00) | 0.334 (0.00) |
| Transparency Score _t | 3.324 (0.00) | | 3.256 (0.00) | 11.590 (0.00) | | 11.368 (0.00) |
| Insider Control _{t-1} | | -0.028 (0.05) | -0.019 (0.11) | | -0.068 (0.15) | -0.037 (0.38) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.618 | 0.526 | 0.616 | 0.501 | 0.394 | 0.497 |
| Obs | 19,849 | 18,560 | 18,560 | 19,785 | 18,496 | 18,496 |

Table B7
Foreign Institutional Investors' Social Norms and Firms' E&S Performance: Controlling for GDP/capita and Investor Protection

This table reports regression estimates of environmental and social scores on domestic institutional ownership, foreign institutional ownership grouped by social norms of institutional investors' home countries while controlling for GDP/capita and investor protection laws, and control variables. The dependent variables are the natural logarithm of environmental and social scores. Foreign institutional ownership is sorted into high and low-social-norm groups based on the social norms concerning environmental and social issues of the foreign investors' country of domicile. We measure a country's social norms concerning environmental issues with a) the Environmental Performance Index (obtained from Yale Center for Environmental Law (Yale University) and Center for International Earth Science Information Network (Columbia University), 2004); and b) the World Value E&S Index (obtained from the World Value Survey and European Value Study, 1999-2010, Welzel (2013)). We measure a country's social norms concerning social issues with a) the Employment Laws Index (obtained from Botero et al. (2004)); and b) the World Value E&S Index. All social norm measures are orthogonal to a country's GDP/capita (as of 2004, measured in USD) and investor protection laws (measured with Legal, calculated as the product of the Revised Anti-director Rights Index (Djankov et al. (2008)) and Rule of Law (La Porta et al. (1998)) as used in Doidge et al. (2007)). We regress each social norm measure separately on GDP/capita and Legal and use the residuals of these regressions to sort foreign investor ownership in high and low-social-norm groups based on median values. The other data are from the ASSET4 ESG database, Factset, Worldscope, DR lists, and CRSP, and they are obtained for the years 2004-2013. Appendix A describes the indicator variables used to calculate the environmental and social scores. All variables are winsorized at the 1st and 99th percentiles. All right-hand side variables are lagged by one year. Controls are as in Table 3. Standard errors are clustered at the country-level and *p*-values are reported in parentheses. The last row reports *p*-values of a test of equality of the coefficient estimates on Foreign IO, High-social-norm Group and Foreign IO, Low-social-norm Group.

Panel A: Environmental Scores

| Splits by | Overall Score | | | | ASSET4 z-Score | | | |
|---|---------------------------------|-----------------|-----------------------|-----------------|---------------------------------|-----------------|-----------------------|-----------------|
| | Environmental Performance Index | | World Value E&S Index | | Environmental Performance Index | | World Value E&S Index | |
| | GDP/capita | Legal | GDP/capita | Legal | GDP/capita | Legal | GDP/capita | Legal |
| Orthogonal to | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Foreign IO _{t-1} | | | | | | | | |
| High-social-norm Group | 0.802 (0.00) | 1.579 (0.00) | 0.766 (0.00) | 1.205 (0.00) | 1.074 (0.00) | 1.904 (0.00) | 1.013 (0.00) | 1.397 (0.00) |
| Low-social-norm Group | -0.017 (0.86) | 0.041 (0.56) | 0.041 (0.68) | 0.128 (0.11) | 0.030 (0.82) | 0.124 (0.18) | 0.101 (0.45) | 0.234 (0.02) |
| Domestic IO _{t-1} | 0.446 (0.00) | 0.416 (0.00) | 0.449 (0.00) | 0.430 (0.00) | 0.651 (0.00) | 0.615 (0.00) | 0.654 (0.00) | 0.631 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.543 | 0.542 | 0.543 | 0.541 | 0.444 | 0.441 | 0.445 | 0.441 |
| Obs | 19,650 | 19,518 | 19,663 | 19,520 | 19,587 | 19,456 | 19,600 | 19,458 |
| Average Foreign IO | | | | | | | | |
| High Group | 0.049 | 0.030 | 0.050 | 0.031 | 0.049 | 0.030 | 0.050 | 0.031 |
| Low Group | 0.078 | 0.099 | 0.084 | 0.106 | 0.078 | 0.099 | 0.084 | 0.106 |
| Foreign IO, High vs. Low (<i>p</i> -value) | (0.00) | (0.00) | (0.01) | (0.00) | (0.00) | (0.00) | (0.01) | (0.01) |

Panel B: Social Scores

| Splits by | Overall Score | | | | ASSET4 z-Score | | | |
|---|---------------------------------|-----------------|-----------------------|-----------------|---------------------------------|-----------------|-----------------------|-----------------|
| | Environmental Performance Index | | World Value E&S Index | | Environmental Performance Index | | World Value E&S Index | |
| | GDP/capita | Legal | GDP/capita | Legal | GDP/capita | Legal | GDP/capita | Legal |
| Adjusted for | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Foreign IO _{t-1} | | | | | | | | |
| High-social-norm Group | 0.480 (0.00) | 0.486 (0.00) | 0.233 (0.00) | 0.369 (0.00) | 1.311 (0.00) | 1.334 (0.00) | 0.795 (0.00) | 0.981 (0.00) |
| Low-social-norm Group | 0.038 (0.12) | 0.055 (0.05) | 0.031 (0.49) | 0.066 (0.03) | 0.257 (0.01) | 0.313 (0.00) | 0.206 (0.25) | 0.351 (0.01) |
| Domestic IO _{t-1} | 0.178 (0.00) | 0.179 (0.00) | 0.188 (0.00) | 0.182 (0.00) | 0.712 (0.00) | 0.716 (0.00) | 0.744 (0.00) | 0.727 (0.00) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted R ² | 0.523 | 0.523 | 0.524 | 0.524 | 0.387 | 0.387 | 0.391 | 0.389 |
| Obs | 19,476 | 19,461 | 19,663 | 19,520 | 19,415 | 19,400 | 19,600 | 19,458 |
| Average Foreign IO | | | | | | | | |
| High Group | 0.029 | 0.029 | 0.050 | 0.031 | 0.029 | 0.029 | 0.050 | 0.031 |
| Low Group | 0.104 | 0.107 | 0.084 | 0.106 | 0.104 | 0.107 | 0.084 | 0.106 |
| Foreign IO, High vs. Low (<i>p</i> -value) | (0.00) | (0.00) | (0.07) | (0.00) | (0.01) | (0.01) | (0.14) | (0.09) |