

Entrenched Insiders and Corporate Sustainability (ESG): How Much Does the “G” Matter for “E” and “S” Performance Around the World?

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Abstract

We explore the impact of entrenchment on firms' environmental and social (E&S) performance by studying a large international sample of firms with detailed data on insider control mechanisms. We hypothesize that entrenched insiders choose corporate social responsibility outcomes conditional on their private benefits of control, and that their preferences may differ from those of outside shareholders. Consistent with this hypothesis, we find that entrenchment has a substantial impact on firms' E&S performance, with entrenched family control weakening both E&S performance, and government control strengthening social performance. We also show that governance mechanisms which increase outsiders' voice improve E&S performance when control is contestable. To the extent that sustainability-oriented outsiders seek to influence firms' E&S performance, our findings have broad implications for both investors and regulators.

Keywords: Corporate Social Responsibility, ESG, Corporate Governance, Ownership Structure, Insider Control, Environmental Performance, Social Performance

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1. Introduction

Corporate sustainability has two distinct facets to it: a corporate governance (G) facet and an environmental (E) and social (S) sustainability facet (and indeed corporate sustainability performance is often referred to as ESG performance). We gain insight into the factors that drive E&S choices if we separate facets rather than lumping them together. The reason is that the governance facet is in large part driven by insiders' entrenchment, which allows insiders to pursue private benefits of control. Such private benefits could be important in determining how much the firms they control invest in environmental and social performance. Entrenched insiders may prefer lower levels of investment in E&S than outsiders to the extent that they question the financial benefits of E&S investments. Alternatively, entrenched insiders could have preferences for higher levels of E&S investments. They may want to use their entrenched position to address E&S externalities that are personally important to themselves and/or they may believe that E&S investments deliver financial benefits in the long run.

In this paper, rather than controlling for G or abstracting away from it to focus on E&S (e.g., Liang and Renneboog (2017) and Lins, Servaes, and Tamayo (2017)), we directly investigate the extent to which a lack of G influences firms' E&S efforts. This analysis will establish a baseline as to whether entrenched insiders, who control firms, prefer relatively low (or high) levels of E&S investments. Our analysis also aims to quantify the potential E&S performance gains for outside shareholders and stakeholders who are able to overcome the entrenchment challenges. To the extent that sustainability-oriented outsiders seek to improve firms' E&S performance worldwide, this question of the impact of entrenchment on E&S performance is crucial, as it is investors and regulators who have the greatest power to address the various mechanisms that entrench insiders.

To study the question of the impact of entrenchment on firms E&S performance we use a large sample of firms from around the world with detailed data on the control mechanisms that exist within these firms. An international sample allows us to better identify the effect of entrenchment because we have both within-country and cross-country variation in control rights structures. We start our analysis of the impact of entrenchment on firms' E&S performance by differentiating between controlled firms and widely-held firms. Our expectation is that insiders in controlled firms can in large part (or at least to some extent) ignore the views of outsiders and choose levels of E&S investments that are optimal for themselves, disregarding whether these choices are optimal for outside shareholders and other stakeholders. For these first tests, we focus in particular on family-owned and government-owned firms as they are likely to view their control stakes as being (relatively) permanent.

We next explore what happens to E&S performance when control is contestable by focusing on widely held firms and the firm-level governance choices that affect insiders' entrenchment. Specifically, we ask whether governance mechanisms that are expected to lessen the degree of managerial entrenchment in widely held firms have any impact on the E&S performance of such firms. For these tests, we focus on both individual and aggregate measures of corporate governance to see whether particular mechanisms stand out in terms of impact.

To examine these questions, we first obtain firm-level E&S performance data from Thompson Reuters (ASSET4), as in prior research on the E&S performance of firms around the world (see, for example, Hsu, Liang, and Matos (2017) and Dyck, Lins, Roth, and Wagner (2018), among others). We construct firm-level E&S performance scores that equally weight the many individual E&S line items reported by ASSET4 and we also use the proprietary-weighted E&S scores (called z -scores) provided by ASSET4.

Second, we obtain firm-level data on blockholders. We use Datastream as our primary source for blockholder data, as it covers the largest total number of firms around the world and is configured to provide a continuous measure of control rights for the ownership categories that we believe are most likely to impact E&S performance: family and government control. We also compute whether a family or government entity is an ultimate owner with an ownership stake exceeding 25%.¹ For robustness, we obtain data from the Orbis database in which a matching of firms and owners also allows us to classify firms as block-controlled by a family or government at the 25% or greater level, albeit for a smaller sample of firms.

Third, we obtain more traditional corporate governance data (e.g., existence of superior voting rights shares, tenure of the board, are board members elected with a majority vote? etc.) for each of our sample firms from BoardEx and Thomson Reuters. We combine these E&S performance, ownership, and governance data with financial statement and stock market valuation data from Worldscope to obtain our main sample of 3,487 non-U.S. firms from 41 countries over the 2004-2015 period.

Our initial tests focus directly on the environmental performance of firms when insiders are effectively entrenched and are likely to be insulated from control challenges. Specifically, we test whether family control or government control is associated with firms' environmental performance and our regressions control for industry, country, year, and a variety of other observable factors that may affect environmental performance directly. Using a linear variable for control, we find that entrenched family control has a negative and substantial impact on firms' environmental performance. Similar results obtain when we use 25% ownership as a threshold level of ownership to indicate entrenchment. In our sample, approximately 8% of firms are family

¹ Our results are unaffected when we use ownership stakes greater than 20% and 15%, respectively.

controlled and 5% are government controlled at this threshold (based on year-2012 statistics). Finally, we estimate piecewise linear regressions featuring family control levels broken into segments from 5 to 15%, 15 to 25%, and greater than 25%. In these tests, we find that the impact of family control on environmental performance, using both measures of E, is always strongly significant and monotonic in magnitude with the largest impact for control in the >25% range, followed by the 15 to 25% range, and then the 5 to 15% range. Interestingly, using the same approach, we find very different results for government control. Government control always has a positive, but insignificant, relation with environmental performance, indicating no significant difference between government-owned and widely-held firms.

These results are consistent with protection from capital market pressures allowing controlling-shareholder environmental preferences to be revealed. The results have implications for pension plans and other outside shareholders who seek to improve the environmental performance of the firms they own as they suggest that for family firms there is a hurdle to jump in order to get such improvements in E performance. Similarly, these tests provide some evidence regarding the scope for environmental performance improvement. Successful activism aimed at the E performance of government-controlled firms or widely-held firms may not move the needle as much as successful activism aimed at family-controlled firms.

Our next set of tests focuses on firms' performance on social issues (S) when insiders are effectively entrenched. As with the environmental score tests, we find that firms with high levels of family control have significantly lower social scores measured using the equally weighted method or as a z-score, indicating their personal preferences for less of a focus on social issues in the firms they control. Government control is associated, however, with significantly higher social scores, indicating that entrenched government control is used to increase firm-level performance

on social issues. The implication is that there is ample scope to improve social performance for family-controlled firms should outside shareholders and stakeholders wish to undertake such activism, while there may be less scope for improvement within government-controlled firms.

We conduct similar tests using Orbis blockholder data for a subsample as a robustness check. We are able to identify ultimate blockholder control via Orbis for the years 2010 through 2015. In this sample, we again find that family-controlled firms have significantly worse environmental performance (using both environmental scores). We also find that government-controlled firms have higher environmental z -scores (but not equally weighted scores), indicating that in this smaller and more recent sample government-controlled firms prefer higher environmental performance, all else equal.² For social performance, we find similar patterns, with a negative coefficient on family-controlled firms and a positive coefficient on government-controlled firms, but the results are insignificant, perhaps due to a relative lack of power.

We turn next to the large part of our sample of firms in which control is plausibly contestable as there is no 25% or greater family or government blockholder. We refer to these firms as widely held firms. Based on year-2012 statistics, they comprise approximately 87% of our sample firms. For these firms, we seek to understand whether governance mechanisms that lessen managerial entrenchment and give outside shareholders more power have an impact on E&S performance. We find that governance mechanisms that increase outsider voice are associated with stronger E&S performance, while measures of greater managerial entrenchment are associated with weaker E&S performance.

² Our ASSET4 z -score results of government-controlled firms having higher environmental performance around the world are consistent with those of Hsu, Liang, and Matos (2017) who find that large state-owned enterprises from emerging markets (“leviathans”) have relatively high environmental performance.

More specifically, we measure board entrenchment following the methodology of MSCI ESG Research (2015) and aggregate board members' age and tenure. The premise is that the older and longer serving are board members, the more they become like insiders and act as a barrier against outside influence. We find that board entrenchment is associated with lower E&S scores and thus makes widely-held firms perform more like family-controlled firms. Results are similar if we alternatively use board independence as the governance metric—firms with less independent boards exhibit weaker E&S performance.

We find analogous results if we consider as a governance indicator whether a firm has a majority voting policy for director elections. With majority voting, outside investors can replace directors by not giving them majority support. The absence of such a policy is therefore interpreted by outsiders as an indication of entrenchment. Our results show that without majority voting policies, firms' E&S performance is worse, again indicating that when widely held firms' shareholders lack power, such firms behave more like family-controlled firms in terms of their E&S performance.

A natural concern with these tests is the endogeneity of governance attributes such as board independence. As, for example, Hermalin and Weisbach (2003) emphasize, an omitted factor may affect both the level of board independence and corporate outcomes (in this case, firm E&S performance). We note that the endogeneity concern applies less to the MSCI entrenched board measure and to majority voting. The entrenched board measure captures characteristics that are not easily changed and likely fixed for long periods. For majority voting, it is plausible that in some jurisdictions this is imposed on firms by regulators rather than being a choice variable of the firm.

To control for time-invariant unobserved firm characteristics, we estimate firm fixed effects specifications. These tests are not likely to reaffirm support for variables such as dual-class shares that are unlikely to change much during our sample period. But they may be useful for assessing the variables that periodically change: majority voting, aggregate board entrenchment, and percentage of independent directors. While we find weaker results given a general lack of power, the results from the firm-fixed-effects models generally support the conclusion that less managerial entrenchment corresponds to stronger E&S performance.

Our results relate most directly to the literature on investor pressure for increased E&S performance at firms. Recent work such as Dimson, Karakas, and Li (2015) and Dyck, Lins, Roth, and Wagner (2018) provides some evidence that investors are able to actively push their E&S preferences into improvements in firms' E&S performance levels, but such work generally controls for some aspects of a firm's corporate governance rather than assessing whether strong governance is a pre-condition for successful E&S activism. We directly assess what happens when insiders are entrenched, and our results that entrenched family firms have lower levels of E&S performance indicate that any E&S activism to date has not, on average, been fruitful for such firms. These results have implications for institutional investors and regulators. One takeaway is the challenge sustainability-oriented outsiders face in driving changes in family-owned firms by themselves, without regulatory controls or some other form of government intervention. In widely-held firms, our results indicate that sustainability-oriented investors benefit from corporate governance changes that reduce entrenchment, providing empirical support for a common practice of pushing first for governance before pushing for E&S changes.³

³ As an example, a recent interview with the Vice President and the Senior Director for responsible investment practices at one of the largest Canadian pension plans, PSP, yielded the comment "governance is everything."

Our paper's focus on insider entrenchment is also related to recent work by Hart and Zingales (2017). In their paper they predict that E&S choices, in equilibrium, will crucially depend on the degree to which control of the firm is contestable. Their model shows that even if owners care about externalities (e.g., reducing global climate change or improving workers' status levels) they will not be able to get their firms to make such investments if there is an active market for corporate control, because then they will be replaced by other owners that do not share these beliefs. Their work suggests that when control is not contestable, we are most likely to observe the baseline preferences of owners, as they can impose their E&S preferences on firms without capital market consequences. We find that such preferences do seem to exist for family-controlled firms, and that they are not in the direction of a positive concern about tackling externalities.

The paper proceeds as follows. Section 2 describes our sample, Section 3 tests whether entrenchment drives firms' E&S performance, and Section 4 concludes.

2. Sample and Summary Statistics

2.1. Data Sources

We obtain data on firms' E&S performance 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, at annual frequency. Thomson Reuters states that reported data items are chosen to maximize company coverage, timeliness of reporting, data availability, quality, and perceived materiality for investors. Consistent coverage of firms begins in 2004, with coverage for a few countries starting in 2009. We use data from the first year of coverage through year-end 2015 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).

There is no obvious ‘right’ weighting scheme of these line items that an investor should use. We use two weighting approaches for our main tests. First, 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’)⁴ and construct an equally-weighted performance measure, where 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-weighted aggregate scores that ASSET4 provides to investors (ASSET4 *z*-scores).⁵ These rank-based scores range from 0 to 100 and measure the E&S performance relative to all other companies in a given year.

We use Datastream as our primary source for ownership data as it covers the largest total number of firms around the world. Datastream breaks down the company’s share capital into different strategic ownership groups. They state to collect the ownership data from various sources, including SEC filings, U.K. Register, annual and interim company reports, regulators, stock exchanges, company websites, and news resources as well as company investor relations. For each sample firm we obtain from Datastream the percentage of total shares in issue held by family

⁴ 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.

⁵ 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.

members/employees as well as the total shares in issue held by the government. We use these continuous ownership percentages to first estimate linear models for these types of insider control. Next, using these continuous ownership stake variables, we group firms into family-controlled, government-controlled, and widely-held firms. We classify firms as family-controlled (government-controlled) when the ultimate family (government) ownership stake is 25% or greater. Firms that are not family or government controlled we classify as widely held. We select these threshold levels in order to better capture the likelihood that insiders are truly entrenched. Using different cutoff-ownership stakes of 15% or 20% does not change our results. We use these ownership data from Datastream because it allows us to compile a large sample of firms for many countries across the world. For robustness, resulting in a smaller sample, we obtain ownership data from the Orbis database. Using these data and matching firms and ultimate owners also allows us to classify firms as controlled by a family or government at the 25%-level or greater.

In addition to ownership data we also obtain more traditional governance data for our sample firms. We use data from the BoardEx database that show a complete picture of a firm's board to create measures of governance. More specifically, we follow MSCI's entrenchment definition (MSCI ESG Research, 2015) and measure whether a firm is entrenched if any of the following conditions exist: (more than 35% of the board has a tenure greater than 15 years; more than 4 directors have a tenure greater than 15 years; more than 4 directors are over 70 years old; or more than 22% of the board has a tenure greater than 15 years) and (more than 15% of the directors are over 70 years old). We also use the BoardEx data to create a measure of board independence calculated as the number of independent directors scaled by board size. We obtain data from Thomson Reuters to create various indicator variables measuring a firm's governance: a) whether the company has any of the following: dual-class shares, non-voting rights common

shares, and/or multiple voting rights shares, and zero otherwise (Control rights without cash flow (CF) rights); and b) whether the company's board members are generally elected with a majority vote (Majority Voting).

Finally, we obtain from Worldscope financial statement and stock market valuation data and Institutional Ownership data from Factset. Our final sample consists of 23,914 firm-year observations and covers 3,487 firms from 41 countries during the period 2004-2015.

2.2. Descriptive Statistics

There is significant variation in firms' E&S performance across countries, industries, and time. Table 1 provides 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 that weights each sub-area equally is 38.4 (35.8), where a perfect score would be 100. The mean (median) S score is 53.2 (53.1). Panel B of Table 1 details average E&S scores by country and shows significant variation across all 41 countries in the sample (we show data for the year 2012 to facilitate comparisons). The countries where firms have the highest E&S performance are all European (Finland, France, Portugal, and Spain, e.g., are ranked in the top five for all four measures of E&S). Countries where firms' E&S scores are lowest are in Asia, Australia, and Africa.⁶

Panel B of Table 1 also shows average fractions of firms that are family controlled, government controlled, or widely held.⁷ Overall, 8% of the sample firms in 2012 are family

⁶ 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).

⁷ As discussed above, a firm is considered family (government) controlled if 25% or more shares are family owned (government owned). Widely-held firms are defined as firms for which neither family nor government ultimate ownership exceeds 25%.

controlled, 5% are government controlled, and 87% are widely held. Control rights show a substantial variation across countries. For example, Mexico, Portugal, and France are the countries with the greatest fraction of family-controlled firms, whereas none of our sample firms are family-controlled in, among others, Singapore, Finland, and New Zealand. Government-controlled firms are most common in Poland, Singapore, and Indonesia. Finally, more than 98% of firms in New Zealand, the Philippines, and Japan are widely held, whereas Poland, Turkey, and Italy have the lowest fraction of widely-held firms. In all our multivariate analysis we include country fixed effects to ensure that any relation between E&S performance and control rights is identified within countries.

In Panel C of Table 1 we report summary statistics for firms grouped by whether they are family controlled, government controlled, and widely held. All E&S performance measures are lowest among family-controlled firms, highest among government-controlled firms, and in between for widely-held firms. In terms of the five measures of firm governance, they vary in prevalence across the different control types. For example, on average, 42% of directors in family-controlled firms are independent compared to 47% in government-controlled firms and 52% in widely-held firms. The MSCI indicator for board entrenchment is 20% in family-controlled firms, 9% in widely-held firms, and less than 1% in government-controlled firms. Regardless of control rights, firms have majority voting rules approximately 50% of the time. Unsurprisingly, the univariate summary statistics suggest there is a positive correlation between family-control and entrenchment measures.

3. Does Entrenchment Drive Firms' Environmental and Social Performance?

In this section, we assess whether there is global evidence that entrenchment is a driving force behind firms' E&S performance.

3.1. Block Ownership and Firms' E&S Performance

Our baseline tests examine the relation between (lagged) block ownership by type 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 a continuous measure of family and government ownership in firm i in year $t-1$, Y_{it-1} are a set of firm-level controls 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, cash, leverage, profitability, and institutional ownership. We include firm size as prior literature has shown it to be related to ownership structures, and larger firms may be subject to more external pressures. Hong, Kubik, and Scheinkman (2012) suggest that financial slack also explains E&S adoption. Following them, we include leverage, asset tangibility, and cash to capture credit constraints, and profitability to capture the impact of performance. The percentage of institutional ownership is included as Dyck et al. (2018) find that institutional investors are a major factor in E&S performance around the world. As noted in Equation (1), all right-hand side variables are lagged by one year. We cluster standard errors by country.

Table 2 reports the results of these tests. The coefficients on family-held shares are all negative and statistically significant at the 1% level. This implies that firms with greater family

⁸ 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.

ownership have worse E&S performance relative to widely-held firms, using both equally-weighted scores and the ASSET4 z-scores. The coefficients on government-held shares are positive and statistically significant for both measures of S, but there is no significant effect for E. Larger firms and more profitable firms show stronger E&S performance. Consistent with Dyck et al. (2018), firms with more institutional ownership have higher E&S scores. Finally, greater tangibility is associated with higher E performance, but has no discernable impact on S.

To more directly assess the impact of entrenchment, we perform additional tests in Table 3. First, we apply ownership thresholds to only consider significant blockholder stakes. Blockholder definition thresholds vary in the literature, but one that is frequently used is the 25% control threshold. We create dummy variables for whether (1) or not (0) a firm has 25% or greater family ownership or 25% or greater government ownership. Firms without such blockholdings are considered to be widely held. The results are reported in Panel A.

We find that firms with 25% or greater family ownership have substantially worse E&S performance relative to firms that are widely-held, and this result is highly significant. *Ceteris paribus* family-controlled firms are associated with lower equally weighted (proprietary weighted) environmental scores of 12.2% (16.4%) and lower social scores of 2.7% (9.2%).¹⁰ Turning to government entrenchment, we find that firms with 25% or greater government ownership have significantly higher social scores, but such entrenchment does not correspond to higher environmental scores. Government controlled firms are associated with higher equally weighted (proprietary weighted) social scores of 2.5% (17.6%)

Finally, we estimate piecewise linear regressions featuring family and government control levels broken into segments from 5 to 15%, 15 to 25%, and greater than 25%. The independent

¹⁰The economic magnitude of a logged dependent variable on an independent indicator variable is equal to $\exp(\text{coefficient}) - 1$.

variables of interest are indicators equal to one if the total ownership for family and government shares fall in these ranges with the omitted category being firms with less than 5% ownership by each respective group. The results from these regressions are reported in Panel B of Table 3. In these tests, we find that the impact of family control on environmental performance is always negative and strongly significant but the magnitude is largest for family control that falls in the 25%+ ownership range, followed by the 15 to 25%, and then the 5 to 15% range. The family piecewise coefficients are also always negative and strongly significant for measures of social performance. The magnitude of the coefficients in the social performance models is U-shaped with the largest coefficients in the 15-25% range. In contrast, the only statistically significant coefficients for government control are the positive coefficients found in the social performance regressions when the government owns at least 25% of a firm. These coefficients suggest that only high levels of government ownership are associated with improved social performance.

For robustness, we conduct additional tests using alternative data on control rights from the Orbis database for the years 2010 through 2015. Table B1 of Appendix B shows the results. Using this smaller sample of 14,466 firm-year observations, we again find that family-controlled firms have significantly worse environmental performance. We also find that government-controlled firms have higher environmental performance, however, only the ASSET4 z -score obtains statistical significance. For social performance, the coefficient estimates are negative for family-controlled firms and positive for government-controlled firms, however, none of these coefficient estimates is statically significant, perhaps due to a relative lack of power. The results from this smaller, more recent, sample mirror our initial findings that family control is negatively associated with E performance. Other coefficient directions and magnitudes, while not significant,

also provide some support for our earlier results that family (government) firms have lower (higher) social performance levels.

Overall, our results are consistent with protection from capital market pressures allowing controlling-shareholders to pursue their private preferences for environmental and social performance in the firms they control. Family controlled firms appear to have a preference for lower E&S performance, while government control of firms indicates a preference for higher S performance. These findings have implications for institutional investors and governments. In particular, one takeaway is the challenge that sustainability-oriented outsiders face in driving changes in family-owned firms by themselves, without regulatory controls or some other form of government intervention. Another conclusion is that successful activism aimed at the E performance of government-controlled or widely-held firms may not move the needle as much as successful E activism aimed at family-controlled firms.

3.2. Governance in Widely Held Firms and E&S Performance

We turn next to the set of firms in which control is contestable, that is, widely held firms. We define widely-held firms as firms without a 25% government or family blockholder. For these firms, we analyze whether governance mechanisms that lessen managerial entrenchment and empower outside shareholders have an impact on either environmental or social performance outcomes. These tests examine the relation between (lagged) corporate governance measures and firms' E&S performance using a specification similar to our first set of tests:

$$\text{Log}(\text{Score}_{it}) = \alpha + \beta X_{it-1} + \gamma Y_{it-1} + \Lambda + \varepsilon_{it}, \quad (2)$$

where the dependent variables are the same as before: the logarithm of E&S scores for firm i in year t . X_{it-1} is a set of four governance measures described in detail in Section 2. Y_{it-1} are a set of firm-level controls in year $t-1$, and Λ are year, country, and industry fixed effects.

We first report results for environmental performance in Table 4. We include each of our four firm-level governance metrics separately in columns (1)-(4) and incorporate all measures in column (5). Panel A uses equally-weighted E scores as the dependent variable, Panel B uses ASSET4's z-scores.

In Panel A, across all specifications, anti-entrenchment governance mechanisms are associated with stronger E performance. The coefficients on Majority Voting and Independent Board are positive and statistically significant in all specifications.¹¹ The MSCI board entrenchment indicator is negative and significant, and the indicator for control rights without cash-flow rights is negative but not significant. Ceteris paribus, firms with majority voting election rules are associated with 7.1% higher E scores, firms that MSCI classifies as entrenched have 8.5% lower E scores, and a one standard deviation increase in the number of independent board members is associated with 4.1% higher E scores.

The estimates in Panel B with z-scores as the dependent variable for E performance show closely comparable coefficients and significance levels. The main difference is that the indicator for control rights without cash-flow rights is negative and statistically significant at the 10% level when it is the only independent governance measure of interest. The other measures of entrenchment are all highly significant across all specifications. In summary, for firms without a controlling blockholder, governance mechanisms that increase outsider voice are associated with better E performance, while proxies for insider entrenchment are associated with weaker E

¹¹ We get similar results if we include an indicator equal to one if at least 50% of the board is classified as independent.

performance. The economic magnitudes of the coefficients in Panel B are slightly larger than those found in Panel A. Majority elections are associated with 8.7% higher standardized E scores, MSCI entrenched firms have 11.8% lower E scores, and a one standard deviation increase in independent board members is associated with 4.9% higher E scores, *ceteris paribus*.

Table 5 repeats this analysis for firms' social performance, and we find similar results. In Panel A, across all specifications, anti-entrenchment mechanisms are associated with stronger S performance. Specifically, firms with Majority Voting board rules, more independent and less entrenched boards all have significantly higher S scores. The economic magnitudes of these coefficients are smaller than from the E regressions. All else equal, firms with majority elections have 3.7% higher equal-weighted S scores, entrenched firms have 2.9% lower scores, and a one standard deviation increase in independent board members is associated with 2.4% higher S scores.

The estimates in Panel B with social z-scores as the dependent variable are again closely comparable. Majority voting, a greater proportion of independent board members and boards that aren't entrenched are associated with statistically significant higher social scores. These coefficients are larger than those in Panel A and are comparable to the results from Table 4. *Ceteris paribus*, firms with majority elections have 10.7% higher proprietary-weighted S scores, a one standard deviation increase in independent board members is associated with 8.2% higher S scores, and MSCI-classified entrenchment corresponds to 8.5% lower S scores.

In our final set of tests, we estimate firm fixed effects models to address the possibility that the results on corporate governance variables mattering for widely-held firms' E&S performance could be driven by time-invariant unobserved firm characteristics. These final tests are unlikely to show much for variables such as dual-class shares that are not likely to change during our sample

period. They may, however, help to address other variables that may have variation over time, including Majority Voting and Board Independence.

In Panel A of Table 6 we focus on the firms that have changed majority voting rules at some point during our sample.¹² The dependent variables in columns 1 and 2 are the equal-weighted scores and they are the ASSET4 z-scores in columns 3 and 4. All specifications include year and firm fixed effects; the odd columns are E scores and the even columns are S scores. In all specifications, the coefficient on Majority Voting is positive and statistically significant, albeit the economic magnitudes are approximately half the size of the cross-sectional regressions.

Finally, Panel B repeats the firm fixed effects analysis with the percent of independent board members as our independent variable of interest. We drop all firms with a time invariant percentage of independent board members. The coefficients on Independent Board are positive and statistically significant at conventional levels in all specifications except when the dependent variable is ASSET4's E z-score (which has a *t*-statistic of 1.67).¹³ These results suggest that increasing the percent of independent board members will improve E&S performance.

While these results are by construction weaker, they generally support the conclusion that less managerial entrenchment corresponds to stronger E&S performance. The fact that we find consistent results with firm fixed effects while using governance measures that may have relatively modest time-series variation suggests that anti-entrenchment mechanisms are likely to at least partially explain stronger E&S performance in firms around the world.

¹² This is approximately 50% of the firm-years in our sample.

¹³ We find similar results if we replace the percent of independent board members with an indicator equal to one if the firm has at least 50% independent board members.

4. Conclusion

Institutional investors are increasingly interested in corporate sustainability worldwide, and are exerting influence to push firms towards improving their environmental and social (E&S) performance. Yet, an important potential roadblock to doing so is the extent to which influencing firms requires first overcoming the interests of entrenched insiders. In our global sample, widely held firms rather than large controlling blockholders dominate the landscape of ownership, and as our results show, in those firms sustainability-minded investors gain from governance changes that reduce entrenchment. These results provide empirical support for an often-followed practice of institutional investors of pushing for governance improvements in target firms first, which in turn help them achieve E&S performance improvements. Outside widely held firms, we find that entrenched insiders in family firms choose relatively low levels of firm E&S performance, while government owners seem to prefer relatively higher levels of S performance.

One implication of our results is that outside investors seeking to improve E&S performance face both opportunities and challenges in family-owned firms around the world. Investors that manage to overcome the entrenched interests of families, such as around succession events, may realize significant gains in E&S performance. In the absence of forced control changes however, generating meaningful improvements in E&S performance may require regulatory intervention.

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Table 1
Descriptive Statistics

This table shows summary statistics of environmental and social scores, control rights, and other key variables. Panel A shows environmental and social scores for the full sample. The category scores are calculated as the sum of all indicator variables in each 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 performance relative to other companies in a given year. Panel B shows means of environmental and social scores as well as the fraction of firms that are family controlled, government controlled, and widely held. We classify firms as family-controlled (government-controlled) when the ultimate family (government) ownership stake is 25% or greater. Firms that are neither family nor government controlled are classified as widely held. These statistics are reported for each country for year 2012. Panel C shows summary statistics for firms grouped by whether they are family controlled, government controlled, or widely held. 1(Majority Voting) is an indicator variable that equals one if the company's board members are generally elected with a majority vote, and zero otherwise. 1(Control rights without CF) is an indicator variable that equals one if the company has any of the following: dual-class shares, non-voting rights common shares, and/or multiple voting rights shares, and zero otherwise. These data are from the Thomson Reuters ASSET4 database. 1(MSCI Entrenched) is an indicator variable that equals one if the following conditions exist: (more than 35% of the board has a tenure greater than 15 years or more than 4 directors have a tenure greater than 15 years or more than 4 directors are over 70 years old or more than 22% of the board has a tenure greater than 15 years) and (more than 15% of the directors are over 70 years old). Independent Board is the number of independent board members scaled by the total number of board members. These data are obtained from BoardEx. Total Assets is in US\$ million, Log (Total Assets) is the natural logarithm of total assets, Tangibility is property, plant, and equipment to total assets, Cash is cash and cash equivalents to total assets, Leverage is total debt to total assets, Profitability is net income plus after-tax interest expenses to total assets. These data are from Worldscope. Institutional Ownership is the total institutional ownership obtained from the Factset Factset Ownership database. The sample period is 2004-2015. All variables are winsorized at the 1st and 99th percentiles.

Panel A: Full Sample

	Number of Indicators	Mean	S.D.	Median	Obs
A. Environmental					
1) Emission Reduction	28	54.0	31.7	56.0	23,914
2) Product Innovation	25	50.7	31.5	41.8	23,914
3) Resource Reduction	17	53.8	31.5	59.9	23,914
Overall Score	70	38.4	21.3	35.8	23,914
B. Social					
1) Community	14	52.7	31.0	56.0	23,914
2) Diversity & Opportunity	10	50.1	32.4	47.4	23,914
3) Employment Quality	17	51.6	31.6	52.5	23,914
4) Health & Safety	9	50.3	30.9	42.2	23,914
5) Human Rights	8	51.8	31.0	47.0	23,914
6) Product Responsibility	10	52.1	31.5	52.6	23,914
7) Training & Development	10	55.7	31.0	64.5	23,914
Overall Score	78	53.2	13.7	53.1	23,914
C. ASSET4 z-Score					
Environmental Score		53.7	31.5	56.3	23,914
Social Score		53.4	31.5	56.1	23,914

Panel B: Summary Statistics by Country

Country	Overall Scores		ASSET4 z-Scores		Control Rights			Obs	
	Environ- ment	Social	Environ- ment	Social	Family controlled	Gov. controlled	Widely Held	Year 2012	Full Sample
Australia	28.1	50.2	32.8	36.1	0.07	0.00	0.93	277	2,129
Austria	47.5	60.1	61.4	63.1	0.13	0.13	0.75	16	182
Belgium	44.3	58.1	57.2	55.3	0.21	0.04	0.75	24	246
Brazil	43.7	62.8	56.2	66.6	0.09	0.06	0.85	79	523
Canada	32.5	51.7	40.0	41.6	0.05	0.00	0.95	229	1,967
Chile	33.7	52.4	41.2	43.7	0.18	0.00	0.82	22	146
China	26.6	44.9	31.3	27.8	0.11	0.04	0.85	123	801
Colombia	32.1	54.5	37.6	49.8	0.00	0.27	0.73	11	64
Denmark	50.7	62.6	68.3	66.6	0.04	0.00	0.96	25	248
Egypt	18.1	45.5	18.3	25.9	0.18	0.09	0.73	11	65
Finland	62.1	65.1	81.4	73.7	0.00	0.12	0.88	25	273
France	63.1	69.6	81.7	82.2	0.22	0.06	0.70	90	904
Germany	54.8	65.5	68.7	70.3	0.15	0.04	0.81	75	804
Greece	44.9	57.6	56.0	56.3	0.18	0.12	0.65	17	196
Hong Kong	30.5	48.8	36.6	36.3	0.14	0.01	0.85	106	924
India	42.3	56.6	50.2	51.6	0.06	0.20	0.74	80	530
Indonesia	36.6	59.1	46.3	62.0	0.00	0.36	0.64	28	197
Ireland	41.6	51.2	49.2	38.5	0.07	0.07	0.87	15	151
Israel	33.7	50.6	42.1	44.2	0.07	0.00	0.93	15	103
Italy	50.1	64.8	60.8	68.4	0.20	0.22	0.58	45	455
Japan	51.6	54.7	63.4	49.3	0.02	0.01	0.98	384	4,139
Luxembourg	41.3	54.7	56.0	56.2	0.25	0.00	0.75	8	63
Malaysia	33.8	56.6	41.5	53.6	0.05	0.29	0.67	42	279
Mexico	35.8	54.3	45.4	51.6	0.27	0.00	0.73	26	197
Netherlands	51.7	64.2	66.7	69.8	0.11	0.00	0.89	36	356
New Zealand	34.2	55.2	44.2	48.9	0.00	0.00	1.00	10	131
Norway	52.0	65.1	68.1	72.5	0.00	0.29	0.71	17	179
Philippines	34.9	52.5	43.9	43.3	0.00	0.00	1.00	19	126
Poland	30.3	49.4	35.0	40.9	0.13	0.42	0.46	24	158
Portugal	57.5	67.2	73.4	77.1	0.25	0.08	0.67	12	125
Russia	36.2	55.3	46.7	52.9	0.13	0.16	0.72	32	245
Singapore	35.3	52.3	41.9	44.2	0.00	0.39	0.61	44	424
South Africa	39.4	63.0	50.2	69.7	0.03	0.01	0.96	119	584
South Korea	48.1	57.2	60.8	56.9	0.13	0.02	0.85	99	577
Spain	57.5	69.0	75.4	79.5	0.19	0.00	0.81	42	452
Sweden	57.1	64.1	75.3	70.9	0.09	0.04	0.87	45	512
Switzerland	45.3	57.8	57.3	55.0	0.15	0.05	0.80	59	564
Taiwan	37.5	49.7	46.9	40.3	0.02	0.02	0.96	126	721
Thailand	42.8	59.8	53.4	63.9	0.08	0.17	0.75	24	152
Turkey	44.7	57.5	57.9	57.3	0.21	0.13	0.63	24	158
U.K.	45.8	61.2	60.6	64.6	0.10	0.01	0.88	278	2,864
Overall	41.9	56.3	52.4	52.7	0.08	0.05	0.86	2,783	23,914

Panel C: Summary Statistics by Control Type

	Family-controlled (N=1,973)			Government-controlled (N=1,092)			Widely-held (N=20,823)		
	Mean	S.D.	Median	Mean	S.D.	Median	Mean	S.D.	Median
Overall E score	32.1	20.5	26.5	45.9	19.7	46.6	38.6	21.3	36.0
Overall S score	51.0	13.8	49.8	60.3	12.6	61.1	53.0	13.6	52.9
ASSET4 E z-Score	43.1	30.8	32.8	63.9	27.9	72.4	54.1	31.5	57.3
ASSET4 S z-Score	46.8	31.5	43.1	69.4	27.0	80.8	53.1	31.5	55.8
1(Majority Voting)	0.50	0.50	1.00	0.46	0.50	0.00	0.50	0.50	1.00
1(Control rights no CF)	0.13	0.34	0.00	0.08	0.27	0.00	0.13	0.33	0.00
1(MSCI Entrenched)	0.20	0.40	0.00	0.01	0.08	0.00	0.09	0.28	0.00
% Independent Board	0.42	0.22	0.44	0.47	0.26	0.44	0.52	0.26	0.55
Log(Total Assets)	8.25	1.48	8.19	9.98	1.61	9.75	8.65	1.76	8.53
Tangibility	0.29	0.23	0.23	0.38	0.27	0.38	0.31	0.26	0.26
Cash	0.25	0.22	0.18	0.15	0.13	0.12	0.20	0.20	0.14
Leverage	0.25	0.18	0.24	0.26	0.16	0.24	0.23	0.18	0.22
Profitability	0.07	0.09	0.06	0.06	0.06	0.05	0.05	0.08	0.05
Institutional Ownership	0.17	0.11	0.15	0.15	0.10	0.13	0.24	0.18	0.19

Table 2
Ownership Type and Firms' E&S Performance

This table reports regression estimates of environmental and social scores on ownership measures and control variables. The dependent variables are the natural logarithm of environmental and social scores. Family Shares and Government Shares are continuous measures of family and government ownership (obtained from Datastream). Log (Total Assets) is the natural logarithm of total assets, Tangibility is property, plant, and equipment to total assets, Cash is cash and cash equivalents to total assets, Leverage is total debt to total assets, Profitability is net income plus after-tax interest expenses to total assets, and Institutional Ownership is the total institutional ownership. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, Datastream, Worldscope, and Factset and are obtained for the years 2004-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Overall Scores		ASSET4 <i>z</i> -Scores	
	Environment	Social	Environment	Social
	(1)	(2)	(3)	(4)
Family Shares _{<i>t</i>-1}	-0.347*** (-3.49)	-0.101*** (-2.84)	-0.467*** (-3.56)	-0.348*** (-2.85)
Government Shares _{<i>t</i>-1}	0.133 (1.04)	0.102** (2.55)	0.235 (1.43)	0.325** (2.66)
Log (Total Assets) _{<i>t</i>-1}	0.205*** (13.35)	0.079*** (12.00)	0.234*** (12.04)	0.236*** (9.00)
Tangibility _{<i>t</i>-1}	0.158*** (2.95)	0.024 (0.71)	0.166** (2.27)	0.061 (0.54)
Cash _{<i>t</i>-1}	-0.036 (-0.53)	-0.014 (-0.45)	-0.089 (-1.16)	-0.133 (-1.26)
Leverage _{<i>t</i>-1}	-0.124 (-1.48)	-0.027 (-0.89)	-0.125 (-1.12)	-0.042 (-0.42)
Profitability _{<i>t</i>-1}	0.252** (2.48)	0.137*** (3.59)	0.321*** (2.72)	0.501*** (4.65)
Institutional Ownership _{<i>t</i>-1}	0.131* (2.02)	0.117*** (5.21)	0.185** (2.05)	0.394*** (5.14)
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Obs	23,914	23,914	23,914	23,914
Adjusted <i>R</i> ²	0.509	0.462	0.440	0.386

Table 3
Entrenchment and Firms' E&S Performance

This table reports regression estimates of environmental and social scores on measures of entrenchment and control variables. The dependent variables are the natural logarithm of environmental and social scores. Panel A shows threshold regression results. 1(Family 25+%) is an indicator variable that equals one if family ownership is 25% or greater, and zero otherwise. 1(Government 25+%) is an indicator variable that equals one if government ownership is 25% or greater, and zero otherwise. Panel B reports piecewise linear regression results with indicator variables that equal to one if the number of shares owned by family or government fall between 5 and 15%, 15 and 25%, or are greater than 25%. Log (Total Assets) is the natural logarithm of total assets, Tangibility is property, plant, and equipment to total assets, Cash is cash and cash equivalents to total assets, Leverage is total debt to total assets, Profitability is net income plus after-tax interest expenses to total assets, and Institutional Ownership is the total institutional ownership. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, Datastream, Worldscope, and Factset and are obtained for the years 2004-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Threshold Regression

	Overall Scores		ASSET4 z-Scores	
	Environment	Social	Environment	Social
	(1)	(2)	(3)	(4)
1(Family 25+%) _{t-1}	-0.130*** (-3.35)	-0.027* (-1.91)	-0.179*** (-3.69)	-0.096* (-1.99)
1(Government 25+%) _{t-1}	0.075 (1.33)	0.051*** (2.75)	0.125* (1.78)	0.162*** (2.78)
Log (Total Assets) _{t-1}	0.206*** (13.48)	0.080*** (12.10)	0.235*** (12.12)	0.237*** (9.05)
Tangibility _{t-1}	0.159*** (2.98)	0.024 (0.73)	0.168** (2.29)	0.063 (0.55)
Cash _{t-1}	-0.125 (-1.50)	-0.028 (-0.95)	-0.126 (-1.13)	-0.047 (-0.47)
Leverage _{t-1}	-0.039 (-0.57)	-0.016 (-0.50)	-0.093 (-1.21)	-0.139 (-1.31)
Profitability _{t-1}	0.241** (2.37)	0.132*** (3.41)	0.307** (2.59)	0.483*** (4.43)
Institutional Ownership _{t-1}	0.149** (2.33)	0.125*** (5.46)	0.206** (2.30)	0.421*** (5.40)
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Obs	23,914	23,914	23,914	23,914
Adjusted R ²	0.507	0.460	0.438	0.384

Panel B: Piecewise Linear Regression

	Overall Scores		ASSET4 z-Scores	
	Environment	Social	Environment	Social
	(1)	(2)	(3)	(4)
1(Family 5-15%) _{t-1}	-0.098*** (-3.63)	-0.050*** (-4.19)	-0.120*** (-3.09)	-0.148*** (-3.48)
1(Family 15-25%) _{t-1}	-0.142*** (-4.70)	-0.063*** (-4.43)	-0.187*** (-4.45)	-0.235*** (-4.44)
1(Family 25+%) _{t-1}	-0.149*** (-3.72)	-0.037** (-2.49)	-0.204*** (-4.04)	-0.128** (-2.51)
1(Government 5-15%) _{t-1}	0.026 (0.99)	0.014 (1.01)	0.026 (0.76)	0.013 (0.25)
1(Government 15-25%) _{t-1}	0.025 (0.55)	0.021 (0.88)	0.021 (0.29)	0.048 (0.61)
1(Government 25+%) _{t-1}	0.075 (1.31)	0.052*** (2.75)	0.124* (1.73)	0.160*** (2.74)
Log (Total Assets) _{t-1}	0.203*** (13.38)	0.078*** (11.87)	0.231*** (12.04)	0.232*** (8.96)
Tangibility _{t-1}	0.154*** (2.87)	0.021 (0.66)	0.162** (2.20)	0.056 (0.49)
Cash _{t-1}	-0.032 (-0.50)	-0.013 (-0.42)	-0.085 (-1.17)	-0.129 (-1.26)
Leverage _{t-1}	-0.121 (-1.45)	-0.027 (-0.90)	-0.121 (-1.09)	-0.041 (-0.41)
Profitability _{t-1}	0.246** (2.49)	0.135*** (3.55)	0.313*** (2.73)	0.490*** (4.64)
Institutional Ownership _{t-1}	0.135** (2.08)	0.118*** (5.30)	0.188** (2.06)	0.399*** (5.17)
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Obs	23,914	23,914	23,914	23,914
Adjusted R ²	0.510	0.464	0.441	0.388

Table 4
Governance and Firms' Environmental Performance in Widely Held Firms

This table reports regression estimates of environmental scores on governance measures and control variables for widely-held firms, defined as firms for which neither family nor government ultimate ownership exceeds 25%. 1(Majority Voting) is an indicator variable that equals one if the company's board members are generally elected with a majority vote, and zero otherwise. 1(Control rights without CF) is an indicator variable that equals one if the company has any of the following: dual-class shares, non-voting rights common shares, and/or multiple voting rights shares, and zero otherwise. These data are from the Thomson Reuters ASSET4 database. 1(MSCI Entrenched) is an indicator variable that equals one if the following conditions exist: (more than 35% of the board has a tenure greater than 15 years or more than 4 directors have a tenure greater than 15 years or more than 4 directors are over 70 years old or more than 22% of the board has a tenure greater than 15 years) and (more than 15% of the directors are over 70 years old). Independent Board is the number of independent board members scaled by the total number of board members. These data are obtained from BoardEx. Controls as in Table 2 are included but not reported. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, BoardEx, Datastream, Worldscope, and Factset and are obtained for the years 2004-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Overall Environmental Score

	Overall Environmental Score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.090*** (3.87)				0.069*** (2.96)
1(Control rights without CF) _{t-1}		-0.011 (-0.54)			-0.004 (-0.17)
1(MSCI Entrenched) _{t-1}			-0.096*** (-2.74)		-0.085** (-2.33)
Independent Board _{t-1}				0.183*** (3.62)	0.162*** (3.35)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	20,823	20,823	15,640	15,640	15,640
Adjusted R ²	0.509	0.513	0.548	0.548	0.552

Panel B: Environmental ASSET4 z-score

	Environmental ASSET4 z-score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.110*** (3.94)				0.083*** (2.92)
1(Control rights without CF) _{t-1}		-0.039 (-1.42)			-0.017 (-0.51)
1(MSCI Entrenched) _{t-1}			-0.139*** (-2.84)		-0.125** (-2.48)
Independent Board _{t-1}				0.219*** (3.34)	0.191*** (3.03)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	20,823	20,823	15,640	15,640	15,640
Adjusted R ²	0.442	0.439	0.473	0.473	0.478

Table 5
Governance and Firms' Social Performance in Widely Held Firms

This table reports regression estimates of social scores on governance measures and control variables for widely-held firms, defined as firms for which neither family nor government ultimate ownership exceeds 25%. 1(Majority Voting) is an indicator variable that equals one if the company's board members are generally elected with a majority vote, and zero otherwise. 1(Control rights without CF) is an indicator variable that equals one if the company has any of the following: dual-class shares, non-voting rights common shares, and/or multiple voting rights shares, and zero otherwise. These data are from the Thomson Reuters ASSET4 database. 1(MSCI Entrenched) is an indicator variable that equals one if the following conditions exist: (more than 35% of the board has a tenure greater than 15 years or more than 4 directors have a tenure greater than 15 years or more than 4 directors are over 70 years old or more than 22% of the board has a tenure greater than 15 years) and (more than 15% of the directors are over 70 years old). Independent Board is the number of independent board members scaled by the total number of board members. These data are obtained from BoardEx. Controls as in Table 2 are included but not reported. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, BoardEx, Datastream, Worldscope, and Factset and are obtained for the years 2004-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Overall Social Score

	Overall Social Score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.052*** (4.23)				0.036*** (4.34)
1(Control rights without CF) _{t-1}		0.004 (0.45)			-0.007 (-0.63)
1(MSCI Entrenched) _{t-1}			-0.036** (-2.53)		-0.029* (-1.97)
Independent Board _{t-1}				0.105*** (3.75)	0.096*** (3.56)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	20,823	20,823	15,640	15,640	15,640
Adjusted R ²	0.463	0.457	0.485	0.489	0.494

Panel B: Social ASSET4 z-score

	Social ASSET4 z-score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.156*** (4.14)				0.102*** (4.19)
1(Control rights without CF) _{t-1}		0.021 (0.62)			-0.022 (-0.62)
1(MSCI Entrenched) _{t-1}			-0.111** (-2.44)		-0.089* (-1.89)
Independent Board _{t-1}				0.350*** (3.82)	0.323*** (3.61)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	20,823	20,823	15,640	15,640	15,640
Adjusted R ²	0.389	0.383	0.421	0.425	0.429

Table 6
Majority Voting, Board Independence, and Firms' E&S Performance in Widely Held Firms

This table reports firm fixed effects regression estimates of environmental and social scores on governance measures and control variables for widely-held firms, defined as firms for which neither family nor government ultimate ownership exceeds 25%. In Panel A, 1(Majority Voting) is an indicator variable that equals one if the company's board members are generally elected with a majority vote, and zero otherwise. We remove firms if their majority voting status is time invariant. In Panel B, Independent Board is the number of independent board members scaled by the total number of board members. We remove firms if their independent board percentage is time invariant. Controls as in Table 2 are included but not reported. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, BoardEx, Datastream, and Worldscope and are obtained for the years 2004-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Majority Voting

	Overall Scores		ASSET4 <i>z</i> -Scores	
	Environment	Social	Environment	Social
	(1)	(2)	(3)	(4)
1(Majority Voting) _{<i>t-1</i>}	0.025*** (3.24)	0.007** (2.39)	0.039*** (3.02)	0.038** (2.58)
Controls	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Obs	10,113	10,113	10,113	10,113
Adjusted <i>R</i> ²	0.886	0.888	0.834	0.827

Panel B: Board Independence

	Overall Scores		ASSET4 <i>z</i> -Scores	
	Environment	Social	Environment	Social
	(1)	(2)	(3)	(4)
Independent Board _{<i>t-1</i>}	0.069** (2.15)	0.021* (1.72)	0.088 (1.67)	0.112** (2.53)
Controls	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Obs	13,717	13,717	13,717	13,717
Adjusted <i>R</i> ²	0.910	0.913	0.862	0.864

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	Median
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 U.S. dollars.	Negative	Number	Median
7)	Environmental Compliance	All real or estimated penalties, fines from lost court cases, settlements or cases not yet settled regarding environmental controversies in U.S. dollars.	Negative	Number	Zero
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	Median
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 U.S. dollars.	Negative	Number	Median
14)	Hazardous Waste	Total amount of hazardous waste produced in tonnes divided by net sales or revenue in U.S. dollars.	Negative	Number	Median
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 U.S. dollars.	Negative	Number	Median
27)	Waste Recycling Ratio	Total recycled and reused waste produced in tonnes divided by total waste produced in tonnes.	Positive	Number	Median
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 U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. 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 U.S. dollars (Salaries and Benefits (U.S. 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 (U.S. dollars) /Average Salaries and Benefits in (U.S. 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 U.S. 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 U.S. 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 U.S. 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

Table B1
Entrenchment and Firms' E&S Performance: Orbis Ownership Data

This table reports regression estimates of environmental and social scores on Orbis ownership measures and control variables. The dependent variables are the natural logarithm of environmental and social scores. 1(Family Control) and 1(Government Control) are indicator variables derived from Orbis and are equal to one if the ultimate owner owns over 25% of the firm and falls into each respective category. Log (Total Assets) is the natural logarithm of total assets, Tangibility is property, plant, and equipment to total assets, Cash is cash and cash equivalents to total assets, Leverage is total debt to total assets, and Profitability is net income plus after-tax interest expenses to total assets, and Institutional Ownership is the total institutional ownership. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, Orbis, Worldscope, and Factset and are obtained for the years 2010-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Overall Scores		ASSET4 <i>z</i> -Scores	
	Environment	Social	Environment	Social
	(1)	(2)	(3)	(4)
1(Family Control) _{t-1}	-0.070*** (-2.71)	-0.012 (-1.00)	-0.103*** (-3.10)	-0.042 (-1.09)
1(Government Control) _{t-1}	0.049 (1.07)	0.030 (1.61)	0.109* (1.90)	0.109* (2.01)
Log (Total Assets) _{t-1}	0.199*** (12.98)	0.079*** (13.16)	0.226*** (10.91)	0.225*** (9.68)
Tangibility _{t-1}	0.103 (1.56)	0.007 (0.19)	0.095 (1.13)	-0.011 (-0.08)
Cash _{t-1}	-0.063 (-0.93)	-0.019 (-0.61)	-0.115 (-1.53)	-0.142 (-1.44)
Leverage _{t-1}	-0.084 (-1.01)	-0.007 (-0.24)	-0.058 (-0.52)	0.042 (0.43)
Profitability _{t-1}	0.152 (1.09)	0.107** (2.08)	0.195 (1.20)	0.387*** (2.71)
Institutional Ownership _{t-1}	0.218*** (2.93)	0.142*** (4.66)	0.324*** (3.29)	0.483*** (4.90)
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Obs	14,466	14,466	14,466	14,466
Adjusted <i>R</i> ²	0.508	0.437	0.451	0.397

Table B2
Governance and Firms' Environmental Performance in Widely Held Firms: Orbis Ownership Data

This table reports regression estimates of environmental scores on governance measures and control variables for widely-held firms defined as firms with less than 25% family or government ownership using Orbis ownership data. 1(Majority Voting) is an indicator variable that equals one if the company's board members are generally elected with a majority vote, and zero otherwise. 1(Control rights without CF) is an indicator variable that equals one if the company has any of the following: dual-class shares, non-voting rights common shares, and/or multiple voting rights shares, and zero otherwise. These data are from the Thomson Reuters ASSET4 database. 1(MSCI Entrenched) is an indicator variable that equals one if the following conditions exist: (more than 35% of the board has a tenure greater than 15 years or more than 4 directors have a tenure greater than 15 years or more than 4 directors are over 70 years old or more than 22% of the board has a tenure greater than 15 years) and (more than 15% of the directors are over 70 years old). Independent Board is the number of independent board members scaled by the total number of board members. These data are obtained from BoardEx. Controls as in Table B1 are included but not reported. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, BoardEx, Orbis, Worldscope, and Factset and are obtained for the years 2010-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Overall Environmental Score

	Overall Environmental Score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.139*** (3.90)				0.093*** (3.07)
1(Control rights without CF) _{t-1}		0.005 (0.22)			-0.005 (-0.16)
1(MSCI Entrenched) _{t-1}			-0.040 (-0.95)		-0.026 (-0.60)
Independent Board _{t-1}				0.215*** (3.26)	0.194*** (3.02)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	9,135	9,135	7,246	7,246	7,246
Adjusted R ²	0.564	0.557	0.622	0.625	0.628

Panel B: Environmental ASSET4 z-score

	Environmental ASSET4 z-score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.175*** (3.85)				0.119*** (2.93)
1(Control rights without CF) _{t-1}		-0.019 (-0.60)			-0.025 (-0.59)
1(MSCI Entrenched) _{t-1}			-0.087 (-1.50)		-0.069 (-1.16)
Independent Board _{t-1}				0.266*** (3.13)	0.235*** (2.83)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	9,135	9,135	7,246	7,246	7,246
Adjusted R ²	0.505	0.497	0.554	0.557	0.561

Table B3
Governance and Firms' Social Performance in Widely Held Firms: Orbis Ownership Data

This table reports regression estimates of social scores on governance measures and control variables for widely-held firms defined as firms with less than 25% family or government ownership using Orbis ownership data. 1(Majority Voting) is an indicator variable that equals one if the company's board members are generally elected with a majority vote, and zero otherwise. 1(Control rights without CF) is an indicator variable that equals one if the company has any of the following: dual-class shares, non-voting rights common shares, and/or multiple voting rights shares, and zero otherwise. These data are from the Thomson Reuters ASSET4 database. 1(MSCI Entrenched) is an indicator variable that equals one if the following conditions exist: (more than 35% of the board has a tenure greater than 15 years or more than 4 directors have a tenure greater than 15 years or more than 4 directors are over 70 years old or more than 22% of the board has a tenure greater than 15 years) and (more than 15% of the directors are over 70 years old). Independent Board is the number of independent board members scaled by the total number of board members. These data are obtained from BoardEx. Controls as in Table B1 are included but not reported. Appendix A describes the indicator variables used to calculate the overall environmental and social scores. The data are from the Thomson Reuters ASSET4 database, BoardEx, Orbis, Worldscope, and Factset and are obtained for the years 2010-2015. 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 *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Overall Social Score

	Overall Social Score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.084*** (5.12)				0.055*** (5.25)
1(Control rights without CF) _{t-1}		0.007 (0.69)			-0.014 (-0.90)
1(MSCI Entrenched) _{t-1}			-0.018 (-1.40)		-0.009 (-0.66)
Independent Board _{t-1}				0.134*** (3.74)	0.122*** (3.53)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	9,135	9,135	7,246	7,246	7,246
Adjusted R ²	0.475	0.459	0.510	0.517	0.525

Panel B: Social ASSET4 z-score

	Social ASSET4 z-score				
	(1)	(2)	(3)	(4)	(5)
1(Majority Voting) _{t-1}	0.265*** (5.01)				0.164*** (5.21)
1(Control rights without CF) _{t-1}		0.024 (0.63)			-0.049 (-0.90)
1(MSCI Entrenched) _{t-1}			-0.053 (-1.18)		-0.025 (-0.51)
Independent Board _{t-1}				0.430*** (4.05)	0.396*** (3.80)
Controls	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Obs	9,135	9,135	7,246	7,246	7,246
Adjusted R ²	0.444	0.429	0.473	0.481	0.488