Causeway

Corporate Governance, ESG, and Stock Returns around the World

January 7, 2019

Non-financial performance measures, such as Environmental, Social, and Governance ("ESG") measures, are potentially leading indicators of firms' financial performance. Investor interest in ESG and its relation with future stock returns has increased recently. We draw on the prior academic literature in corporate governance and ESG to construct new corporate governance and ESG metrics. We then compare the return predictability of the new metrics to that of off-the-shelf metrics from a leading ratings provider. The new governance and ESG metrics, in contrast to the off-the-shelf metrics, yield statistically and economically significant alpha in a global investable universe.

Mozaffar Khan

The author is at Causeway Capital Management, LLC. Please see the last page for important disclosures.
I thank participants at the Chicago Quantitative Alliance (CQA) 2018 Fall Conference, the Barclays 2018 European Quantitative Conference, and Arik Ben Dor, Joe Gubler, Harry Hartford, Andreas Hoepner, Arjun Jayaraman, Sarah Ketterer, Duff Kuhnert, Ryan Myers, and Deborah Taylor for helpful comments.

11111 Santa Monica Boulevard, 15th Floor Los Angeles, CA 90025
www.causewaycap.com
Inquiries: +1 310-321-6100

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EXECUTIVE SUMMARY OF CAUSEWAY RESEARCH ON "CORPORATE GOVERNANCE, ESG, AND STOCK RETURNS AROUND THE WORLD"

QUESTION:
Is there a relation between firms' ESG performance and their stock return performance?

Firms' performance on Environmental, Social, and Governance ("ESG") issues has been gathering increasing attention from various parties, including customers, employees, public interest groups, and government regulators. Firms, in turn, have responded to this scrutiny by undertaking internal initiatives to improve performance on ESG issues, conducting non-deal management roadshows with investors to showcase their ESG practices, and publicly reporting on their ESG efforts in their annual reports. Against this backdrop, investors have been asking whether ESG performance predicts stock returns.

METHODOLOGY:
We constructed new corporate governance and ESG metrics, and examined whether they predicted stock returns in a global investable universe

A key challenge in examining the return predictability of ESG is how to measure ESG. Drawing on academic literature, we constructed a new corporate governance ("G") metric based on the observation that the governance problem globally differs from that in the U.S. in three important ways. First, ownership structure tends to be more concentrated globally, with control being exercised by a founder, family, or state. Controlling shareholders can divert value from minority investors in many ways, and potentially vitiate traditional governance mechanisms such as boards of directors. Second, shareholder value maximization is not a universally acknowledged firm objective, and firms with more of a "stakeholder orientation" systematically subject shareholder interests to competition against the interests of a broader set of stakeholders. Third, it is difficult to assess firm-level governance in isolation from the country-level institutional setting that envelops it. Weak country-level institutions increase the risk of shareholder loss. We constructed a new governance metric that sought to systematically incorporate these governance factors alongside traditional governance factors.

We further constructed new environmental ("E") and social ("S") metrics by evaluating firms' performance on material E and S issues. Material issues are those that are expected to impact financial performance. For example, fuel management is likely a material environmental issue for healthcare distributors who have a large fleet of distribution vehicles, but not for healthcare providers who are not heavy fuel consumers. We constructed material E and S metrics industry-by-industry, since material E and S issues likely vary by industry as in the foregoing example.

The new ESG score combined the new governance score, and material environmental and social scores, described above.

FINDINGS:
There is significant evidence that better governance and ESG performance were associated with better future stock return performance globally

We found significant evidence that firms with better governance had higher future stock returns in a global investable universe consisting of large, mid, and small cap firms from 42 countries.

Stripping out confounding differences in style characteristics, time, and sector, firms in the top governance quartile outperformed those in the bottom quartile by a statistically significant 31 basis points monthly, on average, over the 2009-2017 period for which we had governance data. This performance differential had an annualized information ratio of 0.75.

Firms in the top ESG quartile outperformed those in the bottom quartile by an average 32 basis points monthly over the 2013-2017 period for which we had ESG data. This performance differential had an annualized information ratio of 0.87.

We conducted a battery of robustness tests, and concluded that firms' governance and ESG performance have the potential to predict their return performance if governance and ESG are measured correctly.

1. Introduction

Firms' performance on Environmental, Social, and Governance (hereafter, "ESG") issues has garnered increasing attention from various parties, including customers, employees, public interest groups, and government regulators. Firms, in turn, are increasingly ESG-aware, undertaking internal initiatives to improve performance on ESG issues, conducting non-deal management roadshows with investors to showcase their ESG practices, and publicly reporting on their ESG efforts in their annual reports. Against this backdrop, investors have been scanning for potential rewards and risk. Is there a relation between firms' stock return performance and their ESG performance? A key challenge in examining the return predictability of ESG is how to measure ESG. In this paper we draw on prior academic literature to construct a new measure of ESG, and test its return predictability in a global investable universe.

We begin with the "G" in "ESG" by constructing a new governance score, based on the observation that the governance problem internationally is different from that in the U.S. in three ways. First, there is significant variation in ownership structure globally (La Porta *et al.*, 1999; Bebchuk and Weisbach, 2010). The U.S./U.K. context is largely characterized by dispersed share ownership, whereas a common ownership structure internationally is concentrated ownership with a controlling shareholder such as a founder, family, or state. The presence of a controlling shareholder changes the governance problem for shareholders, as conflicts of interest with managers are superseded by conflicts of interest with the controlling shareholder who can divert value from minority shareholders in a variety of ways (Bertrand *et al.*, 2002; Johnson *et al.*, 2000; Jiang *et al.*, 2010). In this case, traditional governance metrics such as board of director characteristics are unlikely to be informative about the strength of corporate governance if the board of directors is captured by the controlling shareholder.

Second, it is generally accepted in the U.S./U.K. setting that the purpose of the firm is to maximize shareholder value. This conception of the firm is not universally acknowledged across countries. Rather, in many countries the interests of shareholders are weighed against those of employees, community groups, and other stakeholders. The competing objectives of stakeholders likely render governance mechanisms developed in the U.S./U.K. setting less effective in other countries. For example, an independent board is unlikely to accord primacy to shareholder interests if half the board consists of employee representatives as is required for (supervisory boards of) large German companies (OECD, 2017).[1]

[1]German companies have a two-tier board system, comprised of a supervisory board (Aufsichtsrat) of non-executive members and a management board (Vorstand) of executive members.

Third, it is difficult to assess firm-level governance in isolation from the broader institutional setting that envelops it. The U.S./U.K. setting is generally held to be characterized by rule of law and vigorous enforcement. Internationally however, there is significant variation in these institutional features (La Porta *et al.*, 1998). Weak institutions and investor protections increase the potential net returns to a given "diversion technology" that managers or controlling shareholders might employ by reducing the likelihood of being caught and penalized, thereby increasing the likelihood of (minority) investor loss (La Porta *et al.*, 2000).

The new corporate governance metric we construct seeks to systematically incorporate the governance factors described above. Empirically, we proxy for ownership dispersion using free float as a percent of shares outstanding. We use the country's legal tradition — common law, Scandinavian/German code law, or French code law — as a proxy for the extent of shareholder orientation. An extensive literature beginning with La Porta *et al.* (1998) posits that legal tradition is correlated with shareholder protection, which in turn we expect is correlated with shareholder orientation. We proxy for institutions risk/strength using a political risk measure from Bloomberg that rates countries on various relevant dimensions. In formal tests of return predictability in a global investable universe comprising almost 340,000 firm-month observations from 42 countries between 2009 and 2017, we find that ownership dispersion, shareholder orientation, and institutions strength are associated with significantly higher stock returns. Institutions strength and shareholder orientation can be seen as top-down factors, while ownership dispersion allows stock selection ('bottom-up') within-country.

We then combine these variables linearly with traditional ('bottom-up') governance scores from MSCI[2] to form a composite governance score. The governance score from MSCI rates firms on traditional governance factors such as board characteristics, executive compensation, and shareholder voting rights. The composite governance score shows striking ability to order the cross-section of returns over the 2009-2017 period for which we have available data. Returns increase, and volatility decreases, monotonically from the lowest to the highest composite governance score quartile portfolio. In contrast, the MSCI governance score alone does not similarly order the cross-section of returns, suggesting the efficacy of the new governance factors we incorporate. In firm-level panel regressions that control for style, time, and sector differences, the top-bottom quartile return spread for the composite governance score is 33 basis points (bps) monthly (t-stat=6.91). In Fama and French (1993) calendar-time regressions that control for

[2]Throughout this article, "MSCI" refers more specifically to MSCI ESG Research, LLC as the source of the ESG ratings.

the five Fama and French (2015) factors, the top-bottom quartile alpha is 31 bps monthly (t-stat=2.12) with an annualized information ratio of 0.75. In contrast, the MSCI governance score alone yields weaker and less stable results across these tests.

Next, we construct E and S scores by drawing on the notion of "materiality" introduced in Khan, Serafeim, and Yoon ("KSY," 2016). Materiality is the idea that there is a large array of ESG issues that firms are rated on by ratings providers, but not all issues are likely to be "material" for shareholder value. For example, fuel efficiency and management is likely material for shareholder value at a healthcare distributor, but not at a healthcare provider. The distributor, by its business model, is a heavy fuel consumer, so managing fuel efficiency is likely to be favorable both for the environment and for shareholder value. In contrast, the healthcare provider likely has relatively limited fuel consumption and is more likely to overinvest in fuel management if it undertakes such management initiatives (colloquially speaking, the healthcare provider might make a mountain out of a molehill on this issue). Using data on six sectors within the U.S., KSY proceed industry-by-industry to identify and exclude the contribution of immaterial issues to each firm's overall ESG score. KSY then show that material (immaterial) ESG, or the portion of firms' ESG performance due to material (immaterial) ESG issues, displays (does not display) return predictability.

Specifically, following the methodology in KSY, we intersect the list of material E and S issues identified by the Sustainability Accounting Standards Board (SASB)[3] with the list of E and S issues firms are rated on by MSCI. The SASB guidance varies by industry. This procedure yields firms' scores on material E and S issues, and we then linearly combine these scores with the composite governance score to yield a new ESG score. The new ESG score displays significant return predictability over the 2013-2017 period for which we have available data. In firm-level panel regressions that control for style, time, and sector differences, the top-bottom quartile return spread for the new ESG score is 36 bps monthly (t-stat=5.65). In Fama and French (1993) calendar- time regressions that control for the five Fama and French (2015) factors, the top-bottom quartile alpha is 32 bps monthly (t-stat=1.91) with an annualized information ratio of 0.87. In contrast, the MSCI ESG score yields weaker and less stable results across these tests.

Overall, across a range of tests, the results suggest a significant relation exists between ESG performance — including corporate governance strength — and future stock returns. To our knowledge, this is the first large-sample and global evidence in this regard.

[3] https://materiality.sasb.org/

This study extends the literature in important ways. First, we contribute to the corporate governance literature by demonstrating the importance of country-level context in evaluating firm-level governance. We construct a new governance score that incorporates country-level context, and provide large-sample global evidence of stock return predictability from firms' governance performance. This is important as out-of-sample evidence, and also because non-U.S. publicly listed companies comprise a significant portion by number of the global investable universe.[4] Second, we provide evidence on ESG's return predictability across all sectors in a global investable universe. Third, we expand the KSY implementation of materiality by identifying and adding new material issues to ESG (and specifically, governance) performance measurement, rather than only excluding immaterial issues as in KSY.

The paper proceeds as follows. Section 2 discusses prior governance and ESG literatures and develops the hypotheses embedded in the new governance and ESG scores we construct. Section 3 describes the data and sample. Section 4 provides evidence on corporate governance and return predictability, while Section 5 provides evidence on ESG and return predictability. Section 6 addresses some potential questions, and Section 7 concludes. The appendix provides data definitions.

2. Prior Literature

Corporate governance. Corporate governance is important to shareholders when ownership is separate from control. Shareholders are owners of the capital, but control over the allocation of that capital is exercised by separate decision makers who are typically the managers of the firm. The resulting misalignment between cash flow rights held by shareholders and control rights held by managers creates problems from divergent incentives, referred to as "agency problems," that corporate governance is intended to mitigate (Jensen and Meckling, 1976). As such, corporate governance is commonly viewed as the set of structural safeguards or mechanisms that protect shareholder interests (Shleifer and Vishny, 1997).

Practitioners and academics have proposed governance mechanisms and studied them extensively. For example, amid a series of high-profile governance failures in the U.K. such as those at Polly Peck and Maxwell Communications, the 1992 "Cadbury Report" offered a number of governance recommendations.[5] The academic literature on governance mechanisms has also mushroomed in the

[4] https://data.worldbank.org/indicator/CM.MKT.LDOM.NO?end=2017&start=1996&year_high_desc=true

[5] Report of the Committee on the Financial Aspects of Corporate Governance, 1992, Adrian Cadbury, Chair. http://cadbury.cjbs.archios.info/report

last couple of decades (Bebchuk and Weisbach, 2010). Collectively from this body of work, the primary suggested mechanisms for mitigating corporate governance problems include: (i) monitoring of managers by independent and high-quality auditors and boards of directors;[6] (ii) alignment of managers with shareholders through appropriate compensation contract design; and (iii) shareholder voting rights that allow them to exercise ultimate control over boards and managers.

For global investors however, these solutions do not necessarily apply internationally because the corporate governance problem is fundamentally different outside the U.S./U.K context for three reasons. First, with the prevalence of concentrated ownership structures internationally (La Porta *et al.*, 1999; Bebchuk and Weisbach, 2010), minority investors face conflicts of interest with controlling shareholders. In these cases, executives and boards of directors are likely captured by the controlling shareholder, so traditional governance mechanisms such as managerial alignment through compensation contracts or appointing independent directors are unlikely to be effective.

Second, the interests of shareholders can conflict not just with those of managers or controlling shareholders, but also with those of a broader set of stakeholders such as employees and community interests groups. To measure the strength of governance, i.e., whether the firm is governed to maximize shareholder value, it might be useful to recognize when managers and boards of directors systematically subject shareholder interests to competition against the interests of a broader set of stakeholders. Third, firm-level governance concerns are likely compounded by country-level institutional weaknesses. Such weaknesses may increase the net returns to any given "diversion technology" that managers or controlling shareholders might employ by reducing the likelihood of being caught and penalized (La Porta *et al.*, 2000), thereby likely increasing the risk of minority investor loss. Traditional bottom-up governance factors are unlikely to be fully effective in such settings.

There is surprisingly little large-sample global evidence on the relation between the governance factors described above and stock returns. Lemmon and Lins (2003) examine the stock returns of 800 firms in eight East Asian countries during the Asian financial crisis and find that ownership concentration is negatively related to stock returns. Diamonte *et al.* (1996) using country index-level returns, and Erb *et al.* (1996) using a sample of 884 observations, examine the relation between changes in country political risk and stock returns and find that decreases (increases) in risk are associated with higher (lower) returns. Turning to traditional bottom-up governance factors, Gompers *et al.* (2003) and Bebchuk *et al.* (2009) find

[6]Board quality encompasses characteristics of board structure such as CEO-Chair duality.

that U.S. firms with stronger shareholder rights have higher average returns. However, Bebchuk *et al.* (2013) suggest this relation may not have persisted in a subsequent 2000–2008 sub-period.

ESG. A large academic literature has examined the effect of ESG performance on firms' financial performance. Complementing the governance studies described above, a number of papers have examined the relation between the "E" and "S" components of ESG and financial performance. Busch and Friede (2017) review the latter set of studies and conclude that the overall evidence is consistent with a positive relation between environmental and social performance and financial performance as measured by accounting return metrics and productivity metrics. KSY was the first to study the relation between ESG and stock returns from the perspective of materiality, and report a positive relation.

The literature has posited competing viewpoints — positive versus negative — on the ESG-financial performance relation. While the role of G in enhancing shareholder value might be axiomatic (Shleifer and Vishny, 1997), arguments for a positive relation between "ES" and financial performance have also been posited. Managing environmental issues by optimizing fuel efficiency, locating heat-generating data centers in areas with naturally cooler temperatures and wind, and managing (scope 3) carbon emissions by curtailing some discretionary travel are all examples of ways that shareholder value can concurrently be enhanced. Managing social issues by, for example, investing in employee development and growth could lead to better execution of internal business processes, enhanced product and service quality, customer and employee satisfaction and retention, and ultimately profits (Kaplan and Norton, 1992). Evidence consistent with this viewpoint is also presented in Edmans (2011), Eccles *et al.* (2014), and Dimson *et al.* (2015).

A second viewpoint posits a negative ESG-return relation because ESG distracts (and therefore detracts) from shareholder value maximization. A more thoughtful vein of this argument could be that, while ESG initiatives are costly, their payback period and return on investment are more difficult to attribute. A lack of clear attribution could make ESG initiatives more vulnerable to overinvestment.

The competing viewpoints on the ESG-return relation provide precisely the tension that makes it an empirical question. Our contribution is to identify and incorporate new, material issues in constructing new governance and ESG scores, and to identify and exclude immaterial issues from the calculation of the new ESG scores. We further contribute by providing large-sample evidence from a global investable universe.

3. Data and Sample

Governance data. We calculate ownership dispersion at the firm level as the ratio of free float, or shares not held by insiders, to shares outstanding. These data are obtained from Factset. Country-level institutions risk is obtained from the Country Risk Assessment Template in Bloomberg which provides a "political risk" score ranging from 0 to 100. Bloomberg obtains this score from the World Bank's Worldwide Governance Indicators which capture facets such as rule of law (including enforcement), regulatory quality, government effectiveness, corruption, political stability, and voice and accountability (Kaufmann *et al.*, 2010).

Country-level legal tradition is obtained from the website of Professor Andrei Shleifer.[7] La Porta *et al.* (1998) initiate a large literature that posits investor protection varies with legal tradition, being strongest in common law countries, followed by countries with Scandinavian and German legal tradition (code law), and weakest in countries with French legal tradition (code law). In order to incorporate legal tradition into the corporate governance score, we assign a value of 1 to common law countries, 0.9 to Scandinavian and German code law countries, 0.8 to French code law countries, and 0.7 to all other countries (Socialist legal tradition). This essentially represents a rank ordering. We apply the country-level measures to firms based on the location of their headquarters (from Factset), under the hypothesis that the geographic locus of control matters for governance.

Traditional bottom-up governance scores are sourced from MSCI, which scores firms on 96 different "key metrics" that capture the "key issues" of accounting quality, board structure, executive pay, and ownership issues. The MSCI governance score ranges from 0 to 10. One ownership issue is the presence of a controlling shareholder, but MSCI's consideration of this differs from ours in two ways: (i) MSCI uses an indicator for the presence of a controlling shareholder, while we use a continuous measure of ownership dispersion. We expect a continuous measure preserves more information; (ii) Given the number of MSCI key metrics, the effective weight on their controlling shareholder indicator might be too low. In contrast, we assign a much more significant weight to ownership dispersion as described in a later section.

The MSCI governance score also includes a firm-level "key issue" that considers "corruption and instability." This is similar to our institutions risk measure, but applied differently: (i) we apply institutions risk at the country-level, such that all firms headquartered in a country receive a similar score on this dimension.

[7] https://scholar.harvard.edu/shleifer/publications

The MSCI score in contrast is applied at the firm-level, based on the extent of a firm's operations in a given country; (ii) we place more weight on institutions risk in constructing a governance score. MSCI places a much lower weight as this is one of many inputs into their score. Ultimately, which implementation is 'better' becomes an empirical question.

ESG data. We obtain scores on all "E" and "S" issues from MSCI, which rates firms on 29 "key issues" under the "E" and "S" pillars. For a given firm, some of these 29 issues might be immaterial, so we proceed industry-by-industry to identify material versus immaterial issues following guidance from the Sustainability Accounting Standards Board (SASB).[8] The definitions of "E" and "S" issues, and of industries, differ between MSCI and SASB. As in KSY, we therefore hand-map issues and industries between MSCI and SASB in order to identify material issues. We then apply the MSCI issue scores and weights (re-normalized) to calculate each firm's "E" and "S" scores on material issues only. Finally, we combine the new "G" score described earlier with the material "E" and "S" scores to create a new ESG score.

Sample. We use the broadest available universe of firms from the MSCI All-country Investable Market Index ("ACWI IMI"), which consists of large, mid, and small cap companies from 23 developed markets ("DM") and 24 emerging markets ("EM"). According to MSCI, this represents approximately "99% of the global equity investment opportunity set."[9] After conditioning on data availability requirements, our governance sample consists of 338,626 firm-month observations from 42 countries (23 DM and 19 EM) between January 2009 and November 2017. 2009 is the earliest year for which we have institutions risk data from Bloomberg. The ESG sample is further restricted to 183,335 firm-month observations between 2013 and 2017 since issue-level "E" and "S" scores from MSCI, which are needed to calculate scores on material issues, are only available from 2013. All independent variables are winsorized at the top and bottom 1%. Stock returns, market capitalization, and other relevant variables are all U.S. dollar-denominated, reflecting the perspective of a U.S.-based investor. Data definitions are presented in the Appendix. Table 1 shows means of monthly cross-sectional descriptive statistics. The new governance score (MSCI governance score) has a mean of 6.527 out of 10 (5.559 out of 10), while the new ESG score (MSCI ESG score) has a mean of 4.976 out of 10 (4.467 out of 10).

[8] https://www.sasb.org/materiality/sasb-materiality-map/
[9] https://www.msci.com/documents/10199/4211cc4b-453d-4b0a-a6a7-51d36472a703

4. Corporate Governance and Future Stock Returns

4.1. *New Inputs into the Governance Score*

In this section we examine whether the governance variables described above — ownership dispersion, shareholder orientation, and institutions risk — predict stock returns, and whether any predictability is incremental to that from a traditional bottom-up governance score from MSCI.

We begin by examining the univariate relation between stock returns and each of the three new governance variables. Figure 1 plots country-level equal-weighted average monthly returns against country-level average ownership dispersion. The average ownership dispersion and one-month-ahead stock returns are calculated monthly by country, and the time series means are plotted in Figure 1 such that each dot in the figure represents a country. The figure shows substantial variation (along the x-axis) in ownership dispersion globally, consistent with prior literature (La Porta *et al.*, 1999). Figure 1 further shows that ownership dispersion is positively related to stock returns globally, consistent with Lemmon and Lins (2003). Figure 2 shows average returns to terciles of ownership dispersion. The tercile portfolios are formed monthly at the firm level from the pooled cross-country sample, and the time series of one-month-ahead capitalization-weighted portfolio returns are used for inference. Figure 2 shows average returns increasing monotonically with ownership dispersion tercile.[10]

Figure 3 shows the univariate relation between shareholder orientation and stock returns. Using legal tradition as a proxy for shareholder orientation, we sort the cross-section each month into firms in common law countries and firms in all other countries. The one-month-ahead capitalization-weighted returns are calculated monthly for each of the two groups, and the time series means are depicted in Figure 3. The figure shows that firms in Common Law countries (which contribute 68% of the sample, and are hypothesized to have stronger shareholder orientation) have higher average returns than firms in all other countries. Figure 4 parses out the "non-Common Law" countries into those with Socialist (2% of the sample), French (9% of the sample), or Scandinavian/German (21% of the sample) legal tradition. Using the same calculation procedure as in Figure 3, Figure 4 shows that the finer sort yields a monotonically positive relation between shareholder orientation and stock returns. Figure 4 omits China from the Socialist tradition countries because Chinese equity markets have undergone unprecedented structural

[10] We sort into terciles because, as Table 1 shows, the distribution of ownership dispersion is left skewed and the median is 89.1%. Sorting into quartiles would not render a large spread in ownership dispersion between the third and fourth quartiles. This issue is mitigated by using terciles.

transformation over the last couple of decades, and so including China in Figure 4 disrupts the depicted monotonic relation. However, China is included in Figure 3 (and in all other tests in the manuscript).

Figure 5 plots country-level equal-weighted average monthly returns against country-level institutions risk (previously defined in Section 3 as weak country-level institutions). The institutions risk and one-month-ahead stock returns are calculated monthly by country, and the time series means are plotted in Figure 5 such that each dot in the figure represents a country. The figure shows substantial variation (along the x-axis) in institutions risk across the 42 countries in the sample. A higher score on the x-axis denotes lower institutions risk. As such, Figure 5 shows that firms in countries with stronger institutions have had higher average stock returns.[11]

Table 2 shows results from four regression specifications. Each regression estimates firm-level pooled sample regressions of one-month-ahead returns on known return predictors including one-month lagged return (Jegadeesh, 1990), return momentum (Jegadeesh and Titman, 1993), size, value, profitability, and investment (Fama and French, 1992, 2006, 2015; Hou *et al.*, 2015). We also control for share turnover as it is positively correlated with ownership dispersion which is a key variable of interest. Each specification includes time (month) and sector fixed effects, and standard errors clustered by firm to control for autocorrelation (Petersen, 2009). Country fixed effects are not included since we are testing top-down (country-level) variables.

The first specification in Table 2 shows that ownership dispersion loads significantly (*t*- stat=5.56), with a 26 bps return spread between the top and bottom terciles (coefficient of 0.0013 × 2). All other independent variables load significantly in the direction predicted by prior literature, with the exception of share turnover, although Campbell (2018, 71) suggests share turnover could have a positive relation with returns at shorter horizons as we observe. The second specification shows that shareholder orientation loads significantly, with a coefficient of 0.0191 (*t*-stat=7.44). Recall from Section 3 that shareholder orientation is coded as 1 for common law, 0.9 for Scandinavian and German code law, 0.8 for French code law, and 0.7 for Socialist law countries. Therefore, the second regression suggests monthly stocks returns are 19.1 bps (0.0191 × 0.1) higher for firms in Common Law versus Scandinavian/German code law countries, for example. The third specification in Table 2 shows that institutions risk loads significantly with a coefficient

[11] The return outliers in Figures 1 and 5 are Egypt (top) and Pakistan (bottom). Results are not sensitive to excluding firms from these countries.

of 0.0061 (t-stat=7.44). At the country level, the interquartile spread in institutions risk is roughly 0.5. This suggests a monthly return spread of roughly 30 bps (0.0061 × 0.5) for firms in countries at the bottom, versus the top, of the interquartile range of institutions risk.

Finally, the last specification in Table 2 provides evidence on the question posed at the beginning of this section. That specification shows that ownership dispersion, shareholder orientation, and institutions risk are all incrementally significant in predicting stock returns after controlling for a traditional bottom-up governance score from MSCI. In other words, all four variables carry some information that is not subsumed by any other variable.[12] The MSCI governance score has a coefficient of 0.0003 (t-stat=3.89), which implies a marginal effect of 3 bps associated with a one point difference in that governance score.

4.2. *A New Composite Governance Score*

Constructing a new score. The results in Table 2 suggest both top-down and bottom-up governance factors predict stock return performance. Our goal in this section to evaluate the return predictability of a governance score that is a composite of both top-down and bottom-up governance factors, relative to the return predictability of the MSCI governance score. A composite governance score is useful for a number of reasons. First, a composite score can more easily facilitate governance comparisons at the firm level. Second, the results in Table 2 are from firm-level return predictability tests, but it would be useful to also estimate portfolio-level tests that are common in the asset pricing literature (Fama and French, 1993). A composite score can be used to easily sort the cross-section of stocks into portfolios.

Specifically, we would like to construct a governance score that is a composite of ownership dispersion, shareholder orientation, institutions risk, and the MSCI bottom-up score that considers traditional governance factors such as board characteristics and executive pay. One way to construct such a score is to use the linear aggregation rule implied by the last specification in Table 2. A shortcoming of this approach is that those relative weights are estimated from the full sample and could have some look-ahead bias, if the weights vary over time at somewhat high frequency. An alternative is to estimate the return

[12] To see why the two top-down factors are incrementally informative relative to each other, consider that shareholder orientation is a categorical variable, while the institutions risk score captures further variation within each category. For example, the 'Common law' category of shareholder orientation includes the United States, United Kingdom, India, Pakistan, and Nigeria, among other countries. The institutions risk score recognizes variation in institutional strength across these countries even though they belong to the same shareholder orientation category. Similarly, the U.K. and France have similar institutions risk scores, but different degrees of shareholder orientation.

predictability regressions monthly or annually using only past data to recover the implied weights on each of the governance factors. This approach has a couple of shortcomings. First, the shorter estimation periods available earlier in the sample would likely attenuate the precision of estimates. Second, if the estimated weights on the governance factors change over time, a firm's composite governance score could change without any change in that firm's top-down and bottom-up characteristics. This might impair the usefulness of the governance score for some investors.

To be clear, the new components of the composite governance score — ownership dispersion, shareholder orientation, and institutions risk are all observable at each point in time, and as Figures 1 to 5 show, individually predict stock returns using past information only. The question above is how to combine these individual signals.

In determining a linear aggregation rule we prefer to use fixed weights. There are two country-level top-down factors (shareholder orientation, and institutions risk) and two firm-level bottom-up factors (ownership dispersion, and the MSCI score). To determine the weight for each factor we follow a two-step approach. In the first step, we ex ante fix the total weight on the top-down factors to 30%, and on the bottom-up factors to 70%. In the second step, using the fourth specification in Table 2, we compare the marginal effects of a one-standard-deviation change in each top-down factor and use these to allocate a portion of the 30% total top-down weight to each top-down factor. The same approach is used to allocate a portion of the 70% total bottom-up weight to each bottom-up factor. The final rounded weights are 20% shareholder orientation, 10% institutions risk, 20% ownership dispersion tercile indicator, and 50% MSCI score.[13] These weights are applied to calculate a composite governance score for each firm-month. This approach allows us to draw on the data for guidance on weights (second step), but at the same time the 30%/70% ex ante allocation to top-down versus bottom-up factors (first step) likely alleviates some concern about look-ahead bias. Readers will recognize that alternative aggregation rules are possible, and the performance of these alternatives can be evaluated. Here, we provide evidence on the performance of the composite score just described. Further below, we also evaluate the performance of an ex ante fixed, equal-weighted, composite of the four factors.

[13] Each component is first transformed to lie in [0, 10], and then percentage weights are applied, so that the final composite score lies in [0, 10]. For example, ownership dispersion tercile $\in \{0, 1, 2\}$ is multiplied by 5, and then by 0.2 (20% weight). For ownership dispersion we use the tercile score, rather than the continuous variable, in order to mitigate the effect of potential nonlinearity in the relation between stock returns and ownership dispersion.

Return predictability of the new score. We sort the cross-section into quartiles of the competing governance scores — the new composite score and the MSCI score — monthly, and examine the one-month-ahead capitalization-weighted return performance of these quartiles. Figure 6 (Figure 7) shows the cumulative return performance of the top and bottom quartiles of the composite governance score (MSCI governance score). In Figure 6, the top quartile of the composite score shows a spread in cumulative returns over the bottom quartile, but no similar cumulative return spread is observed in Figure 7 for the top versus bottom quartiles of the MSCI score. Figure 8 (Figure 9) depicts average capitalization-weighted monthly returns, and the volatility of the monthly return stream, for each quartile of the composite score (MSCI score). Figure 8 shows that returns increase monotonically, while volatility decreases monotonically, from the bottom to the top quartile of the composite governance score. The same ability to order the cross-section of stocks is not observed in Figure 9 using the MSCI score.

Formal tests of the composite governance score are reported in Tables 3 and 4. Table 3 estimates firm-level tests in which the assumed return generating process is a function of firm characteristics, while Table 4 estimates portfolio-level tests in which the assumed return generating process is a function of covariances with factor-mimicking portfolio returns. The portfolio-level tests have the added advantage of mitigating potential noise in firm-level returns.

Table 3 reports results from firm-level pooled regressions controlling for style, time, and sector differences, with standard errors adjusted for autocorrelation. The table reports results for two specifications, one examining the return predictability of the composite governance score quartiles, and a second examining the return predictability of the MSCI governance score quartiles. We use governance quartile indicators in the regressions in order to ease interpretation of their coefficients, and to mitigate effects of potential non-linearity in the relation between continuous governance scores and stock returns. In Table 3, the composite governance score quartile loads significantly with a coefficient of 0.0011 (t-stat=6.91). This implies a return spread between the top and bottom quartiles of (0.0011 × 3 =) 33 bps. The MSCI score in contrast yields a top-bottom quartile return spread of (0.0006 × 3 =) 18 bps.

Table 4 reports results from Fama and French (1993, 2015) time series regressions of top-bottom governance quartile portfolio returns on the market excess return (Rmxrf) and returns to factor-mimicking portfolios for size (SMB), value (HML), profitability (RMW) and investment (CMA). Since the governance portfolios include stocks from a global universe, we control for the five factors in both

developed markets (DM) and emerging markets (EM), as the suffix on each factor denotes. Data on the DM factors is obtained from the website of Professor Kenneth French,[14] while the EM factors are self-constructed following a similar approach. The EM market factor is the excess over the one-month U.S. Treasury bill rate. Table 4 shows results for two specifications, one using the composite score and another using the MSCI score. As the table shows, the top- bottom quartile of the composite score yields a significant alpha of 31 bps monthly (t-stat=2.12), with an annualized information ratio (IR) of 0.75. IR is calculated as the alpha divided by the standard deviation of the estimated regression residuals. The MSCI score, in contrast, yields a statistically insignificant alpha with a negative point estimate. In both specifications, the top- bottom quartiles also show a positive loading on the DM market factor and a negative loading on the EM market factor. This suggests both scores tend to sort DM firms into higher governance quartiles than EM firms.

Evaluating an alternative composite score. We also evaluate the return predictability of an alternative composite governance score in which the four components – ownership dispersion tercile, shareholder orientation, institutions risk, and MSCI governance score – are ex ante equally- weighted. This represents a hypothetical naïve strategy of an investor who applies fixed equal- weights to each signal, and further mitigates potential look-ahead bias in the weights. Results, untabulated, remain robust. In particular, the alternative composite score quartile yields a coefficient of 0.0014 (t-stat=8.36) if we re-estimate the first specification in Table 3. If we re- estimate the first specification in Table 4, the alternative composite score has a coefficient of 0.0048 (t-stat=2.82), which implies a monthly alpha of 48 bps and an annualized information ratio of 0.98. These stronger results are predictable from the last specification in Table 2, which shows that the MSCI bottom-up score has a smaller marginal effect than the other three components of the composite score combined (i.e., the MSCI score has less than 50% implied weight there). The alternative composite score reduces the weight on the MSCI bottom-up score to 25%, from 50%, and therefore yields stronger results.

Collectively, the results suggest the composite governance score shows significant ability to order the cross-section of returns, while the MSCI governance score alone does not display similar ability. In addition, from a portfolio perspective, any tilt away from the bottom-up MSCI score and towards the three new factors – ownership dispersion, shareholder orientation, and institutions risk – would have left an investor better off, relative to an investor tilting towards the MSCI governance score alone.

[14] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

5. ESG and Future Stock Returns

Constructing a new ESG score. We evaluate the return predictability of a composite ESG score constructed as described in Section 3, and compare it to the return predictability of the MSCI ESG score.[15] The scores differ in two ways: (i) the composite ESG score includes the new governance score described above; and (ii) the "E" and "S" scores in the composite ESG score include only scores on material "E" and "S" issues as identified by SASB. In other words, we begin with the MSCI scores on an array of "E" and "S" issues, identify issues that are material for each industry, and then calculate the material "E" and "S" scores based on material issues only.

We also have to consider how to aggregate "E", "S", and "G" scores. We use MSCI "E" and "S" weights to linearly combine material "E" and "S" scores and construct a material "ES" score. Next, we have to combine the material "ES" score with the composite "G" score developed earlier. Table 5 suggests some guidance in this regard. The table shows firm-level tests of return predictability for the composite "G" score and the material "ES" score, estimated over the 2013-2017 period for which we have relevant data. The composite "G" score coefficient of 0.0011 (t- stat=5.39) implies a top-bottom return spread of 33 bps, which is identical to the estimate from Table 3 which was estimated over the 2009-2017 period. This suggests stability in the return predictability of the composite "G" score. The material "ES" score coefficient of 0.0004 (t- stat=1.84) implies a top-bottom return spread of 12 bps. The magnitudes of these estimates suggest roughly 75% weight on the composite G score quartile indicator and 25% weight on the material "ES" quartile indicator, which we use to construct firm-level material ESG scores. Shortly below, we also evaluate the performance of an alternative, equal-weighted, aggregation of composite "G" and material "ES".

Return predictability of the new ESG score. We sort the cross-section monthly into quartiles of material ESG scores, and quartiles of MSCI ESG scores, and examine one-month- ahead returns of these quartile portfolios. Figure 10 (Figure 11) shows the cumulative return performance of the top and bottom material ESG (MSCI ESG) quartiles. Both figures show a spread in cumulative returns for the top quartile over the bottom quartile, but the spread is higher in Figure 10 using the material ESG score. Comparing Figure 11 to Figure 7 suggests the MSCI "ES" scores are more informative for returns than the MSCI "G" score. Figure 12 (Figure 13) shows the average monthly capitalization-weighted returns, and the volatility of the monthly return stream, for each quartile of the material ESG (MSCI ESG) score. Figure 12 shows a

[15] Specifically, we use the "Weighted Average Score" from MSCI as the MSCI ESG score.

monotonic increase in average returns, and nearly monotonic decline in volatility, from the bottom to the top material ESG quartile. This pattern is not observed in Figure 13 using the MSCI ESG score.

Table 6 shows results from firm-level tests of return predictability of the material ESG score and the MSCI ESG score. The coefficient of the material ESG score quartile is 0.0012 (t- stat=5.65), implying a top-bottom quartile return spread of 36bps. The coefficient of the MSCI ESG score quartile is 0.0005 (t-stat=2.37), implying a top-bottom quartile return spread of 15 bps. Table 7 estimates portfolio-level time series tests over the 2013-2017 period. The table reports results of regressions of the monthly top-bottom ESG quartile return spread on the Fama and French (2015) factor portfolio returns. The test portfolios are formed from a global universe, and hence the explanatory factors are from both developed (DM) and emerging (EM) markets as the factor suffixes indicate. As Table 7 shows, the material ESG score yields an alpha of 32 bps monthly (t-stat=1.91), with an annualized information ratio of 0.87. The MSCI ESG score yields a statistically insignificant alpha which, compared to the result in Table 6, suggests instability in the return predictability of the MSCI ESG score.

Evaluating an alternative Material ESG score. We also evaluate the return predictability of an alternative ESG score in which the two components — an equal-weighted composite governance score, and the material "ES" score — are ex ante equally-weighted. Fixed ex ante weights mitigate look-ahead bias in aggregation, and so here we use fixed equal weights in constructing the composite governance score (25% on each of its four components) as well as in constructing the material ESG score (50% on each of its two components). Clearly however, any aggregation rule depends on investor preferences. For example, an investor more keen on "E" and "S" might apply a greater than 50% weight on "ES" in constructing her portfolio. In our experience, governance is relatively more important to investors and so we evaluate the performance of a strategy that applies 50% weight to it.

The tenor of the results is largely predictable from Table 5, which shows that the composite governance score has much higher marginal impact than the material "ES" score. Now, down-weighting the governance component to 50%, from 75% earlier, yields slightly weaker but still significant results. In particular, the material ESG score quartile yields a coefficient of 0.0010 (t- stat=5.11) if we re-estimate the first specification in Table 6. If we re-estimate the first specification in Table 7, the coefficient of the alternative ESG score is 0.0020 (t-stat=1.66), which implies a monthly alpha of 20 bps and an annualized information ratio of 0.71. To put the strength of these results in some perspective, recall that tests in Tables

6 and 7 are estimated over the shorter 2013-2017 period. In addition, these results suggest governance might be the most important component of ESG from an investor perspective.

Collectively, the results suggest the new material ESG score, unlike the MSCI ESG score, is significantly informative for future stock returns.

6. Discussion

Survivor bias. The corporate governance tests, which rely on MSCI scores, were conducted over the 2009-2017 period. MSCI began issuing ratings in 2013. For periods prior, it took its 2013 sample and worked back to 2009 to estimate ratings for the same set of firms. This could raise a question of potential survivor bias in our tests. However, our results are unlikely to be driven by this concern as we describe next.

First, we do not compare the MSCI sample to a survivor-bias-free non-MSCI sample. Rather, we make within-sample comparisons across quartiles of governance or ESG. Second, in order for survivor bias to influence the differential performance across these quartiles, it would need to be correlated with the sorting variable, but even this seems unlikely to explain our results.

One could argue that survivor bias affects firms with poor governance more (i.e., that they are less likely to survive). However, this would tend to inflate the returns of the poor governance quartile in our (surviving) sample and attenuate return differences between the top and bottom quartiles, thereby biasing against our ability to find the results we report.

Are China State-Owned Enterprises driving the result? China SOEs have underperformed in the last several years, and are also considered to have poor corporate governance. While this relation — poor return performance associated with poor governance — is precisely what we hypothesize, SOEs are unlikely to be influential for our results for two reasons. First, they are unlikely to explain the monotonic relation between governance quartiles and returns, i.e., a relation that holds across the entire distribution of governance. Second, 88% of our ACWI IMI sample is from developed markets, which attenuates potential SOE influence.

Is the post-Global Financial Crisis bull market driving the result? Our governance tests span the post-GFC period in which equity markets have performed strongly. Is this "bull run" driving our results? This

appears unlikely for a couple of reasons. First, one would expect a rising market to lift all firms such that even "rascals" (poor governance firms) should perform well. This would likely attenuate any top-bottom governance quartile return spread and bias against the ability to find significant results as we do. Second, as the results show, other known return predictors that we control for consistently yield coefficients of the expected sign. Therefore, for the bull market to be driving our results, one would have to argue why it biases only the governance or ESG coefficients but leaves all others intact. Coupled with the first point above, this makes the argument a bit of a stretch.

Effect of small cap stocks. Our results are unlikely to be driven by small cap stocks for two reasons. First, all portfolio-level tests and results use capitalization-weighted returns, and all firm-level tests control for market cap. Second, the results remain robust in the MSCI ACWI universe which consists of large and mid cap stocks only.

7. Conclusion

ESG investing in a global context has attracted increasing levels of interest, with investors curious about the return implications of ESG. Likewise, corporate governance has seen an upsurge in interest from investors. To date, however, there is little empirical evidence to speak to these questions. We construct new corporate governance and ESG metrics informed by the academic literature in these areas, and show they have striking ability to order the cross-section of stock returns in a global investable universe. The new metrics, in contrast to off-the-shelf metrics from a leading ratings provider, display statistically and economically significant return predictability.

Regarding corporate governance, our results suggest the importance of institutional context and shareholder orientation in assessing firm-level governance in a global sample. Regarding ESG, our results reinforce the importance of assessing firms only on ESG issues that are also material for shareholders. Collectively, ESG appears to be informative for future stock return performance if the former is measured from the perspective of shareholders.

This study may have implications for global investors. In addition, if investors' capital allocation decisions affect firms' behavior and policy outcomes, then our results are likely to be of interest to the ESG community more broadly.

Appendix: Data Definitions

Return	Total monthly stock return in U.S. dollars
1m Lag Ret	One-month lagged return
Momentum	Cumulative return from months t-11 to t-1
Mkt Cap	End-of-month market value of equity in U.S. dollars (millions)
Size	Natural logarithm of Mkt Cap
CF/P	Operating cash flow over fiscal period closing market value of equity, for the last fiscal year ending at least four months prior
B/M	Book value of common equity over fiscal period closing market value of equity, for the last fiscal year ending at least four months prior
Profitability	Operating income over lagged book value of common equity, for the last fiscal year ending at least four months prior
Asset Growth	Percent growth in total assets over prior year, for the last fiscal year ending at least four months prior
Share turnover	Monthly trading volume over shares outstanding Ownership dispersion: End-of-month free float as a percent of shares outstanding
Shareholder orientation	=1 for common law countries; =0.9 for Scandinavian and German code law countries; =0.8 for French code law countries; =0.7 for Socialist law countries
Institutions risk	A quarterly political risk score from Bloomberg that considers rule of law (including enforcement), regulatory quality, government effectiveness, corruption, political stability and freedom
Composite governance	A monthly firm-level corporate governance score which is a linear aggregation of ownership dispersion tercile, shareholder orientation, institutions risk, and the MSCI governance score

MSCI governance	A monthly firm-level score from MSCI that includes corporate governance and corporate behavior
Material ESG	A monthly firm-level ESG score which is a linear aggregation of the Composite governance quartile and the material ES quartile; material ES is the firm's score on material environmental and social issues, which is a subset of MSCI issues
MSCI ESG	A monthly firm-level ESG score from MSCI

References

Bebchuk, Lucian, and Michael Weisbach. 2010. The state of corporate governance research. *Review of Financial Studies* 23, 939–961

Bebchuk, Lucian, Cohen Alma and A. Ferrell. 2009. What Matters in Corporate Governance? *Review of Financial Studies* 22, 783–827

Bebchuk, Lucian, Alma Cohen, and Charles Wang. 2013. Learning and the disappearing association between governance and returns. *Journal of Financial Economics* 108, 323–348

Bertrand, Marianne, Paras Mehta, and Sendhil Mullainathan. 2002. Ferreting out tunneling: An application to Indian business groups. *Quarterly Journal of Economics* 117, 121–148

Busch, Timo, and Gunnar Friede. 2017. Corporate social and financial performance: A second-order meta-analysis. Working paper, University of Hamburg and Deutsche Asset Management

Campbell, John Y. 2018. *Financial Decisions and Markets*. Princeton, NJ: Princeton University Press.

Diamonte, Robin, John Liew, and Ross Stevens. 1996. Political risk in emerging and developed markets. *Financial Analysts Journal* (May/June), 71–76

Dimson, Elroy, Oguzhan Karakas, and Xi Li. 2015. Active ownership. *Review of Financial Studies* 28, 3225–3268

Eccles, Robert, Ioannis Ioannou, and George Serafeim. 2014. The impact of corporate sustainability on organizational processes and performance. *Management Science* 60, 2835–2857

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

Erb, Claude, Campbell Harvey, and Tadas Viskanta. 1996. Political risk, Economic risk, and financial risk. *Financial Analysts Journal* (Nov/Dec), 29–46

Fama, Eugene, and Kenneth French. 1992. The cross-section of expected stock returns. *Journal of Finance* 47, 427–465

Fama, Eugene, and Kenneth French. 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics* 33, 3–56

Fama, Eugene F., and Kenneth R. French. 2006. Profitability, investment, and average returns, *Journal of Financial Economics* 82, 491-518

Fama, Eugene F., and Kenneth R. French. 2015. A five-factor asset pricing model, *Journal of Financial Economics* 116, 1-22

Gompers, Paul, Joy Ishii, and Andrew Metrick. 2003. Corporate Governance and Equity Prices. *Quarterly Journal of Economics* 118, 107-156

Hou, Kewei, Chen Xue, and Lu Zhang. 2015. Digesting anomalies: An investment approach. *Review of Financial Studies* 28, 650-705

Jegadeesh, Narasimhan. 1990. Evidence of predictable behavior of security returns. *Journal of Finance* 45, 881-898

Jegadeesh, Narasimhan, and Sheridan Titman. 1993. Returns to buying winners and selling losers: Implications for market efficiency. *Journal of Finance* 48, 65-91

Jensen, Michael, and William Meckling. 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3, 305-360

Jiang, Guohua, Charles Lee, and Heng Yue. 2008. Tunneling in China: The remarkable case of inter-corporate loans. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=861445

Johnson, Simon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2000. Tunneling. *American Economic Review* Papers and Proceedings 90, 22-27

Kaplan, Robert, and David Norton. 1992. The Balanced Scorecard – measures that drive performance. *Harvard Business Review* (Jan/Feb)

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2010. The worldwide governance indicators: Methodology and analytical issues. Draft policy research working paper, World Bank.

Khan, Mozaffar, George Serafeim, and Aaron Yoon. 2016. Corporate sustainability: First evidence on materiality. *The Accounting Review* 91, 1697-1724

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1998. Law and Finance. *Journal of Political Economy* 106, 1113-1155

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. 1999. Corporate ownership around the world. *Journal of Finance* 54, 471-517

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 2000. Investor protection and corporate governance. *Journal of Financial Economics* 58, 3-27

Lemmon, Michael, and Karl Lins. 2003. Ownership structure, corporate governance, and firm value: Evidence from the East Asian financial crisis. *Journal of Finance* 58, 1445-1468

Organization for Economic Cooperation and development (OECD). 2017. OECD Corporate Governance Factbook 2017

Petersen, Mitchell. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22, 435-480

Shleifer, Andrei, and Robert Vishny. 1997. A survey of corporate governance. *Journal of Finance* 52, 737-783

Table 1: Means of monthly cross-sectional descriptive statistics

	N	Mean	StdDev	Min	Q1	Median	Q3	Max
Return	3225	0.014	0.092	-0.619	-0.035	0.012	0.059	0.943
Momentum	3225	0.096	0.305	-0.580	-0.092	0.075	0.254	1.165
Mkt Cap	3225	11067	19341	274	2001	4555	10810	126127
CF/P	3225	0.118	0.134	-0.311	0.058	0.096	0.154	0.742
B/M	3225	0.635	0.450	0.052	0.311	0.531	0.843	2.445
Profitability	3225	0.238	0.294	-0.488	0.097	0.190	0.312	1.847
Asset Growth	3225	0.115	0.268	-0.282	-0.007	0.056	0.148	1.705
Share Turnover	3225	0.135	0.132	0.006	0.050	0.093	0.170	0.758
Ownership Dispersion	3225	79.4	22.5	21.7	65.1	89.1	98.4	99.9
Shareholder Orientation	3225	0.955	0.073	0.700	0.912	1.000	1.000	1.000
Institutions Risk	3225	0.836	0.178	0.108	0.841	0.903	0.911	0.944
Composite Governance	3225	6.527	1.454	2.131	5.504	6.556	7.594	9.811
MSCI Governance	3225	5.559	1.880	0.243	4.256	5.580	6.818	9.889
Material ESG	3107	4.976	3.064	0.000	2.492	4.991	7.491	9.990
MSCI ESG	3107	4.467	1.125	0.927	3.727	4.425	5.164	8.876

Table 1 shows means of monthly cross-sectional descriptive statistics. Data definitions are presented in the appendix.

Table 2: Corporate Governance Components and Stock Returns

	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Ownership Dispersion Tercile	0.0013	5.56					0.0005	1.87
Shareholder Orientation			0.0191	7.44			0.0128	4.37
Institutions Risk					0.0061	6.22	0.0025	2.35
MSCI Gov Score							0.0003	3.89
1m Lag Ret	-0.014	-4.79	-0.0141	-4.83	-0.014	-4.81	-0.0142	-4.87
Momentum	0.0015	2.20	0.0013	1.88	0.0014	2.05	0.0012	1.79
Size	-0.0011	-8.24	-0.0009	-6.38	-0.001	-7.28	-0.0009	-6.69
Value	0.003	1.64	0.0041	2.21	0.003	1.61	0.0039	2.09
Profitability	0.0027	3.66	0.0025	3.38	0.003	4.06	0.0025	3.31
Investment	-0.0036	-4.29	-0.0038	-4.55	-0.0037	-4.37	-0.0036	-4.28
Share Turnover	0.0052	2.26	0.0056	2.55	0.0063	2.88	0.0049	2.12
Time (month) f.e.	Yes		Yes		Yes		Yes	
Sector f.e.	Yes		Yes		Yes		Yes	
Firm-clustered s.e.	Yes		Yes		Yes		Yes	
Adj. Rsq	0.16		0.16		0.16		0.16	

Table 2 shows coefficients and t-statistics from firm-level panel regressions of one-month-ahead stock returns on the variables listed. The sample consists of 338,626 firm-month observations from 23 developed and 19 emerging markets countries between 01/2009 and 11/2017, for large, mid, and small cap firms in the MSCI ACWI IMI (all-country investable market index). All relevant variables are U.S. Dollar-denominated. The regressions include time and sector fixed effects, and standard errors are clustered by firm. The intercept is estimated but unreported. Ownership dispersion tercile is an indicator for the tercile of free float scaled by shares outstanding. Shareholder orientation =1 for common law countries, =0.9 for Scandinavian and German code law countries; =0.8 for French code law countries; and =0.7 for Socialist law countries. Institutions risk is a country-level political risk measure based on the World Bank's Worldwide Governance Indicators. MSCI Gov score is a firm-level corporate governance score from MSCI based on board, compensation, accounting, and ownership characteristics. All variable definitions are presented in the appendix.

Table 3: Corporate Governance and Stock Returns – Firm-level Tests

	Coefficient	t-stat	Coefficient	t-stat
Composite Gov Score Quartile	0.0011	6.91		
MSCI Gov Score Quartile			0.0006	3.85
1m Lag Ret	-0.014	-4.81	-0.0139	-4.76
Momentum	0.0015	2.14	0.0016	2.34
Mkt Cap	-0.0011	-7.95	-0.001	-7.72
Value	0.0032	1.73	0.0028	1.54
Profitability	0.0026	3.51	0.0029	3.87
Investment	-0.0036	-4.32	-0.0038	-4.56
Share Turnover	0.006	2.72	0.008	3.73
Time (month) f.e.	Yes		Yes	
Sector f.e.	Yes		Yes	
Firm-clustered s.e.	Yes		Yes	
Adj. Rsq	0.16		0.16	

Table 3 shows coefficients and t-statistics from firm-level panel regressions of one-month-ahead stock returns on the variables listed. The sample consists of 338,626 firm-month observations from 23 developed and 19 emerging markets countries between 01/2009 and 11/2017, for large, mid, and small cap firms in the MSCI ACWI IMI (all-country investable market index). All relevant variables are U.S. Dollar-denominated. The regressions include time and sector fixed effects, and standard errors are clustered by firm. The intercept is estimated but unreported. Composite Gov score is a firm-level aggregate corporate governance score based on a firm's ownership dispersion tercile, its country- level shareholder orientation, its country-level institutions risk, and its MSCI Gov score. MSCI Gov score is a firm- level corporate governance score from MSCI based on board, compensation, accounting, and ownership characteristics. The regressions use indicators for the quartiles of these scores. All variable definitions are presented in the appendix.

Table 4: Corporate Governance and Stock Returns – Portfolio-level Tests

	Coefficient	t-stat	Coefficient	t-stat
Composite Gov Score: Alpha	0.0031	2.12		
MSCI Gov Score: Alpha			-0.0015	-1.27
Rmxrf_DM	0.2405	4.52	0.1431	3.68
SMB_DM	0.1615	1.46	0.0415	0.48
HML_DM	0.0585	0.45	-0.1128	-1.26
RMW_DM	0.3675	2.18	0.4212	3.40
CMA_DM	0.1357	1.30	0.0593	0.51
Rmxrf_EM	-0.2694	-5.23	-0.0918	-2.97
SMB_EM	-0.0862	-1.88	-0.0402	-1.66
HML_EM	-0.1425	-2.81	-0.0574	-1.58
RMW_EM	0.0627	1.14	-0.062	-1.68
CMA_EM	0.1362	3.60	0.0505	1.55
Ann. IR	0.75		-0.53	
Adj. Rsq	0.37		0.31	

Table 4 shows coefficients and t-statistics from Fama and French (1993, 2015) time series regressions of test portfolio returns on the returns to factor-mimicking portfolios. The sample consists of 338,626 firm-month observations from 23 developed and 19 emerging markets countries between 01/2009 and 11/2017, for large, mid, and small cap firms in the MSCI ACWI IMI (all-country investable market index). All relevant variables are U.S. Dollar-denominated. The test portfolio in the first (second) regression specification is a global long-short portfolio formed monthly from the top-bottom quartile of the Composite Gov score (MSCI Gov score). All portfolio returns are capitalization- weighted. Composite Gov score is a firm-level aggregate corporate governance score based on a firm's ownership dispersion tercile, its country-level shareholder orientation, its country-level institutions risk, and its MSCI Gov score. MSCI Gov score is a firm-level corporate governance score from MSCI based on board, compensation, accounting, and ownership characteristics. Rmxrf is the market excess return over the one-month U.S. Treasury bill; SMB is the size factor, HML is the value factor; RMW is the profitability factor; CMA is the investment factor; the suffix denotes whether the factor was formed within developed (DM) or emerging (EM) markets. Ann. IR is the annualized information ratio. IR is calculated as the alpha divided by the standard deviation of the estimated regression residuals. All variable definitions are presented in the appendix. Standard errors are adjusted for autocorrelation up to 3 lags.

Table 5: ESG Components and Stock Returns

	Coefficient	t-stat
Composite Gov Score Quartile	0.0011	5.39
Material ES Score Quartile	0.0004	1.84
1m Lag Ret	-0.0163	-4.47
Momentum	0.0031	3.46
Mkt Cap	-0.0003	-1.87
Value	0.0063	2.77
Profitability	0.0009	0.89
Investment	-0.0049	-4.55
Share Turnover	-0.0002	-0.09
Time (month) f.e.	Yes	
Sector f.e.	Yes	
Firm-clustered s.e.	Yes	
Adj. Rsq	0.11	

Table 5 shows coefficients and t-statistics from firm-level panel regressions of one-month-ahead stock returns on the variables listed. The sample consists of 183,335 firm-month observations from 23 developed and 19 emerging markets countries between 01/2013 and 11/2017, for large, mid, and small cap firms in the MSCI ACWI IMI (all-country investable market index). All relevant variables are U.S. Dollar-denominated. The regressions include time and sector fixed effects, and standard errors are clustered by firm. The intercept is estimated but unreported. Composite Gov score is a firm-level aggregate corporate governance score based on a firm's ownership dispersion tercile, its country- level shareholder orientation, its country-level institutions risk, and its MSCI Gov score. Material ES score is a firm- level score on material environmental (E) and social (S) issues (excluding immaterial E and S issues). The regressions use indicators for the quartiles of these scores. All variable definitions are presented in the appendix.

Table 6: ESG and Stock Returns – Firm-level Tests

	Coefficient	t-stat	Coefficient	t-stat
Material ESG Score Quartile	0.0012	5.65		
MSCI ESG Score Quartile			0.0005	2.37
1m Lag Ret	-0.0163	-4.46	-0.016	-4.40
Momentum	0.0031	3.43	0.0033	3.67
Mkt Cap	-0.0003	-1.63	-0.0003	-1.99
Value	0.0064	2.79	0.0057	2.53
Profitability	0.0008	0.81	0.0012	1.22
Investment	-0.0049	-4.60	-0.0051	-4.70
Share Turnover	-0.0005	-0.18	0.0017	0.62
Time (month) f.e.	Yes		Yes	
Sector f.e.	Yes		Yes	
Firm-clustered s.e.	Yes		Yes	
Adj. Rsq	0.11		0.11	

Table 6 shows coefficients and t-statistics from firm-level panel regressions of one-month-ahead stock returns on the variables listed. The sample consists of 183,335 firm-month observations from 23 developed and 19 emerging markets countries between 01/2013 and 11/2017, for large, mid, and small cap firms in the MSCI ACWI IMI (all-country investable market index). All relevant variables are U.S. Dollar-denominated. The regressions include time and sector fixed effects, and standard errors are clustered by firm. The intercept is estimated but unreported. Material ESG score is a firm-level ESG score based on aggregating a firm's composite governance score and its material ES score. MSCI ESG is a firm-level ESG score from MSCI. The regressions use indicators for the quartiles of these scores. All variable definitions are presented in the appendix.

Table 7: ESG and Stock Returns – Portfolio-level Tests

	Coefficient	t-stat	Coefficient	t-stat
Material ESG Score: Alpha	0.0032	1.91		
MSCI ESG Score: Alpha			0.0002	0.21
Rmxrf_DM	0.3429	3.28	0.1441	1.73
SMB_DM	0.201	1.67	-0.1205	-1.09
HML_DM	0.0363	0.26	0.1307	0.82
RMW_DM	-0.0327	-0.18	0.5388	2.85
CMA_DM	0.6858	3.15	-0.1723	-1.03
Rmxrf_EM	-0.3003	-4.76	-0.1201	-2.64
SMB_EM	-0.1214	-2.55	0.0492	1.52
HML_EM	-0.2698	-4.91	-0.0877	-1.77
RMW_EM	-0.1956	-3.05	0.0873	1.81
CMA_EM	0.0264	0.33	0.0176	0.44
Ann. IR	0.87		0.07	
Adj. Rsq	0.42		0.29	

Table 7 shows coefficients and t-statistics from Fama and French (1993, 2015) time series regressions of test portfolio returns on the returns to factor-mimicking portfolios. The sample consists of 183,335 firm-month observations from 23 developed and 19 emerging markets countries between 01/2013 and 11/2017, for large, mid, and small cap firms in the MSCI ACWI IMI (all-country investable market index). All relevant variables are U.S. Dollar-denominated. The test portfolio in the first (second) regression specification is a global long-short portfolio formed monthly from the top-bottom quartile of the Material ESG score (MSCI ESG score). All portfolio returns are capitalization-weighted. Material ESG score is a firm-level ESG score based on aggregating a firm's composite governance score and its material ES score. MSCI ESG is a firm-level ESG score from MSCI. Rmxrf is the market excess return over the one- month U.S. Treasury bill; SMB is the size factor, HML is the value factor; RMW is the profitability factor; CMA is the investment factor; the suffix denotes whether the factor was formed within developed (DM) or emerging (EM) markets. Ann. IR is the annualized information ratio. IR is calculated as the alpha divided by the standard deviation of the estimated regression residuals. All variable definitions are presented in the appendix. Standard errors are adjusted for autocorrelation up to 3 lags.

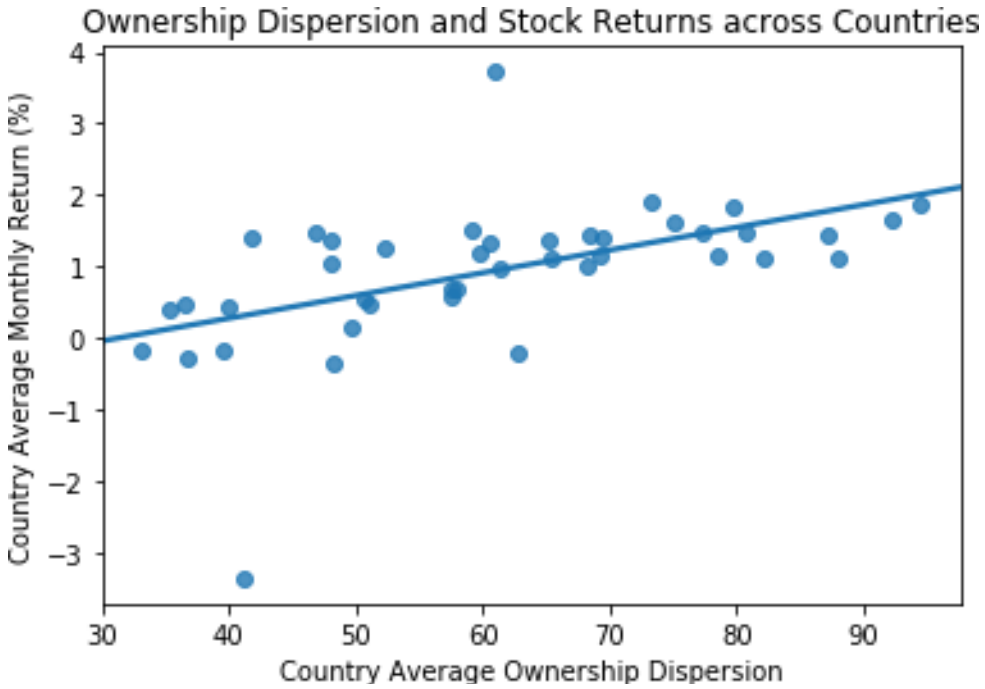

Figure 1: The figure plots country average monthly stock returns against country average ownership dispersion, with a superimposed line of best fit. Average ownership dispersion and one-month-ahead returns are calculated monthly by country, and the time series means are plotted above, where each dot represents a country. The sample and variables are described in the notes to the tables and in the appendix.

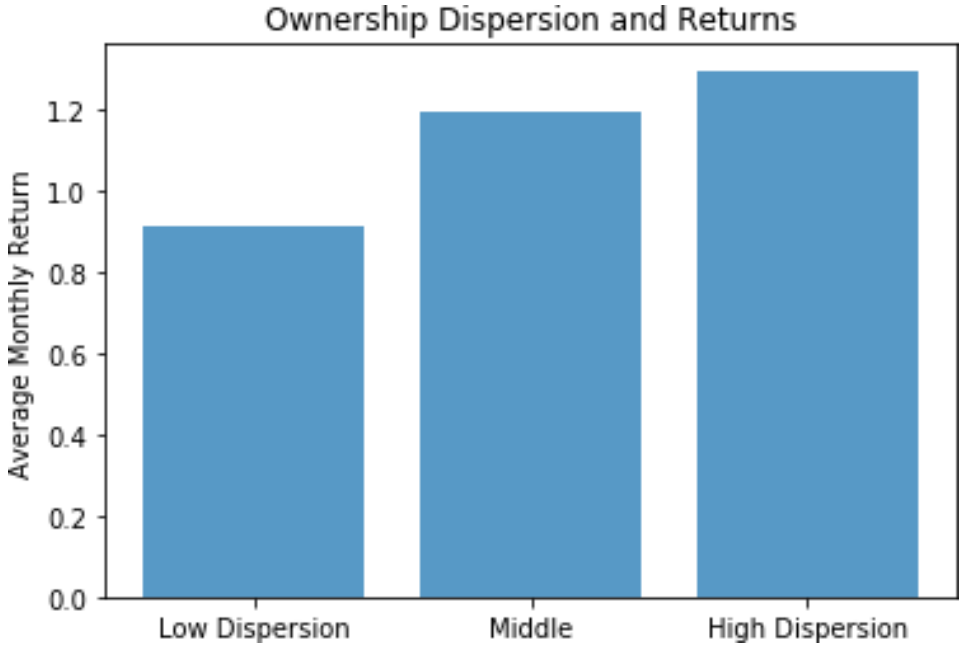

Figure 2: The figure shows average monthly capitalization-weighted stock returns by tercile of ownership dispersion. The terciles are formed monthly, and the means of the time series of one-month-ahead returns are depicted above. The sample and variables are described in the notes to the tables and in the appendix.

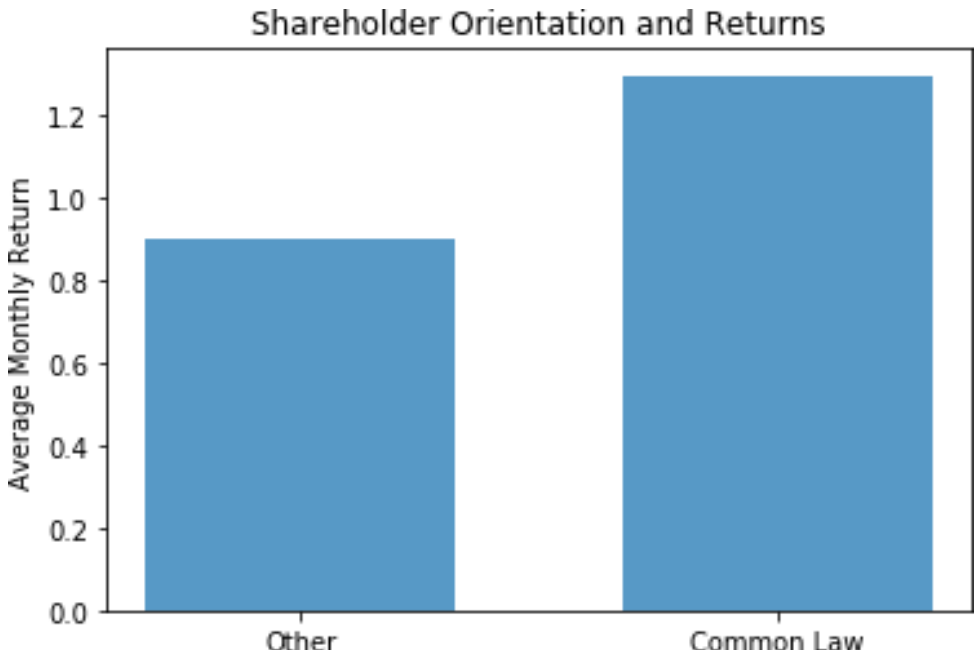

Figure 3: The figure shows average monthly capitalization-weighted stock returns for a portfolio of common law countries (high shareholder orientation) and a portfolio of all other countries (low shareholder orientation). The portfolios are formed monthly, and the means of the time series of one-month-ahead returns are depicted above. The sample and variables are described in the notes to the tables and in the appendix.

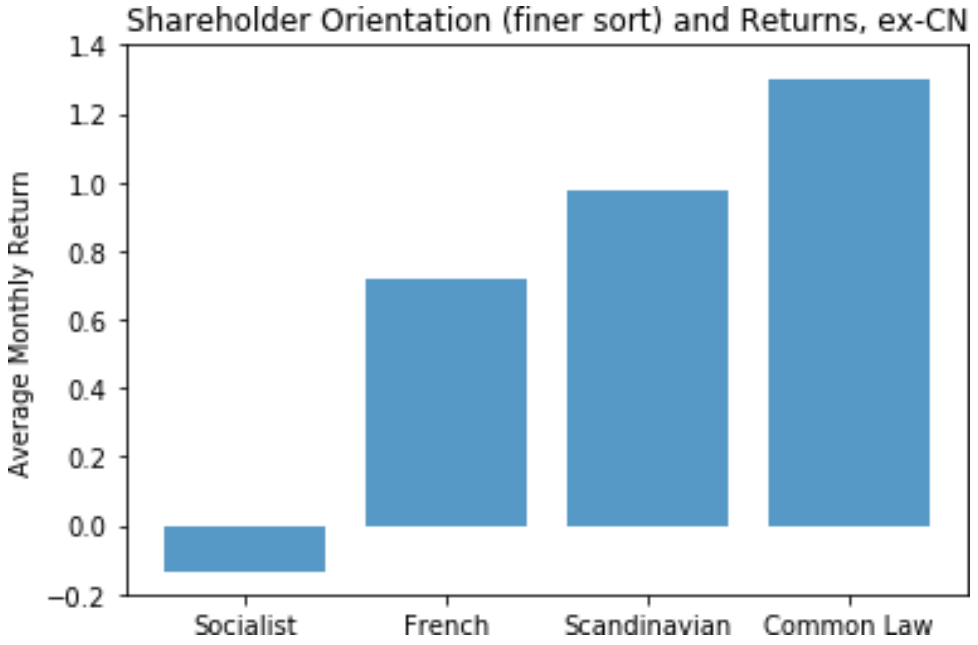

Figure 4: The figure shows average monthly capitalization-weighted stock returns by shareholder orientation (which is increasing on the x-axis) portfolios. The portfolios are formed monthly, and the means of the time series of one-month-ahead returns are depicted above. The sample and variables are described in the notes to the tables and in the appendix.

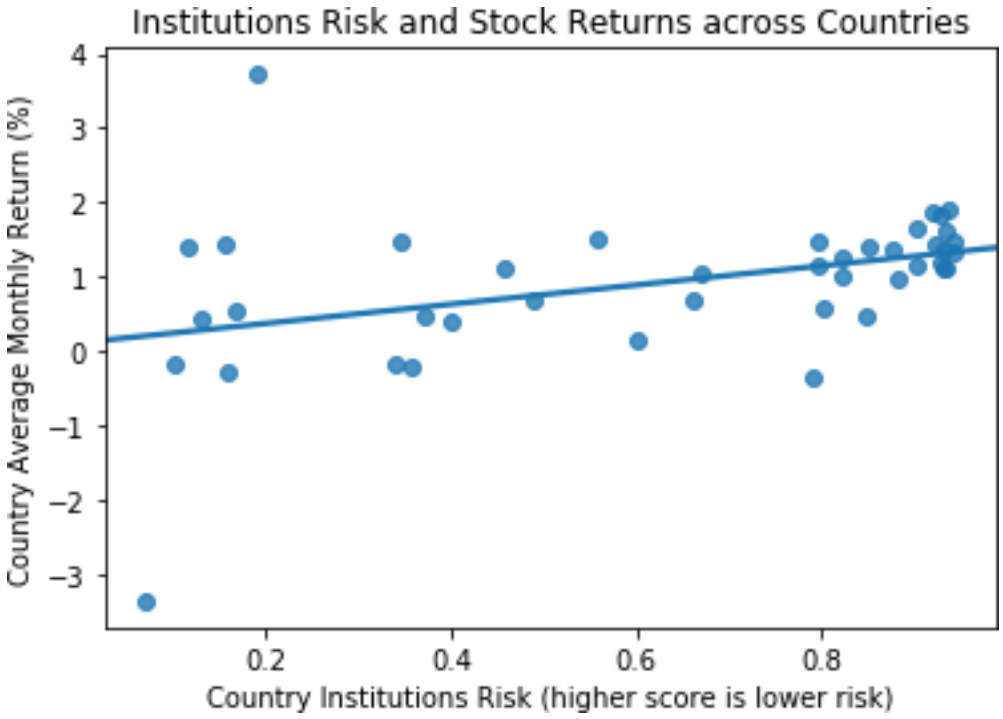

Figure 5: The figure plots country average monthly stock returns against country-level institutions risk, with a superimposed line of best fit. Institutions risk and one-month-ahead returns are obtained monthly by country, and the time series means are plotted above, where each dot represents a country. The sample and variables are described in the notes to the tables and in the appendix.

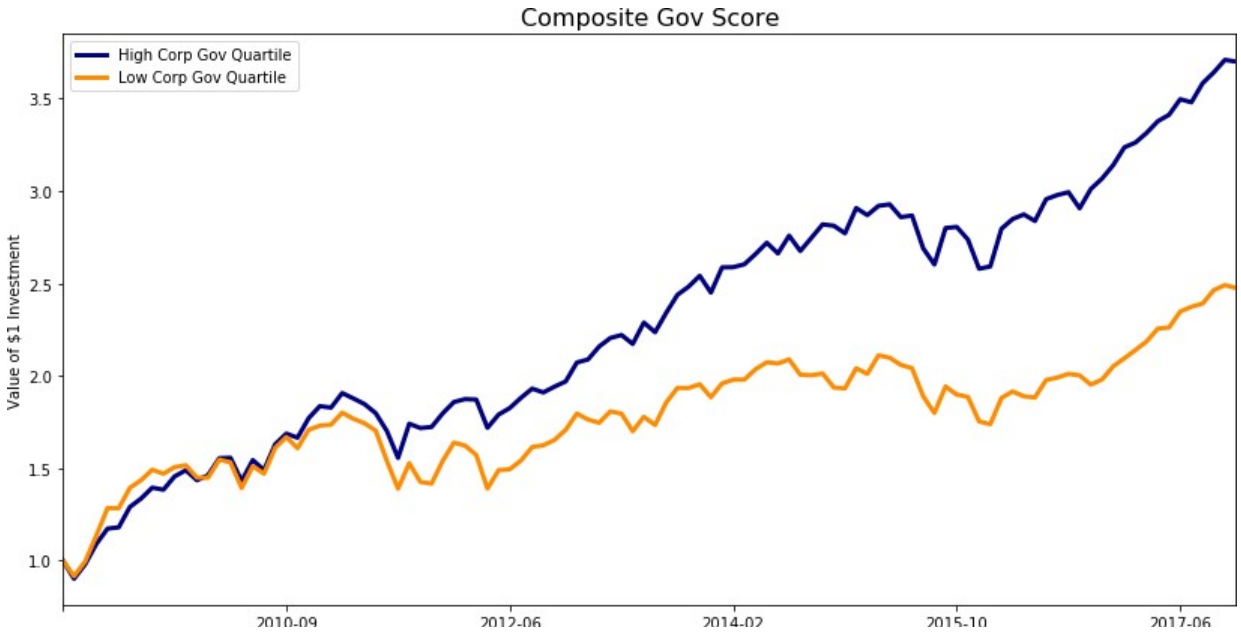

Figure 6: The figure shows the growth in the value of $1 invested in the top and bottom quartiles of a new composite corporate governance score. The quartile portfolios are formed monthly, and one-month-ahead capitalization-weighted returns are calculated. The monthly portfolio returns are cumulated to derive the growth curves shown in the figure. The sample and variables are described in the notes to Table 5 and in the appendix.

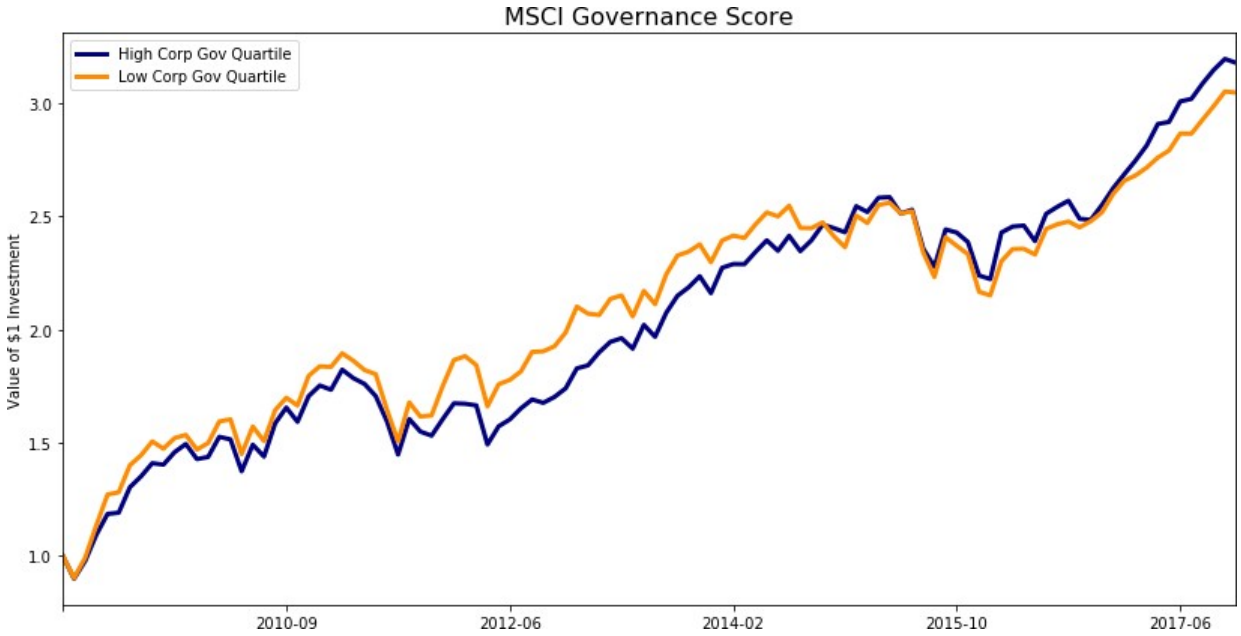

Figure 7: The figure shows the growth in the value of $1 invested in the top and bottom quartiles of the MSCI corporate governance score. The quartile portfolios are formed monthly, and one-month-ahead capitalization-weighted returns are calculated. The monthly portfolio returns are cumulated to derive the growth curves shown in the figure. The sample and variables are described in the notes to Table 5 and in the appendix.

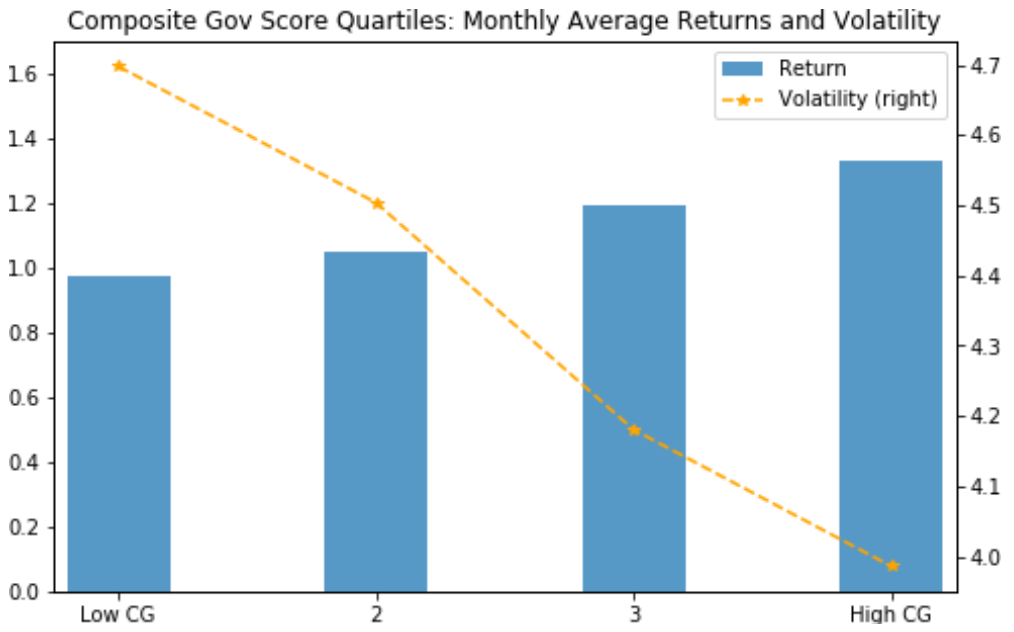

Figure 8: The figure shows average monthly capitalization-weighted stock returns (blue bars), and volatility (yellow dotted line) by quartile of a new composite governance score. The quartile portfolios are formed monthly, and the average and volatility of the time series of one-month-ahead returns are shown above. The sample and variables are described in the notes to Table 5 and in the appendix.

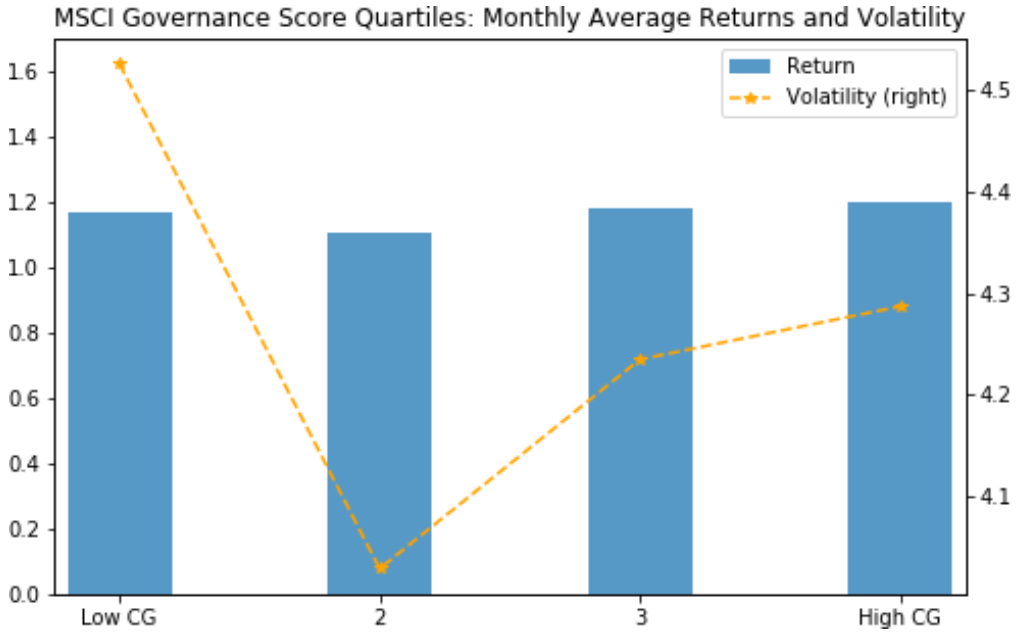

Figure 9: The figure shows average monthly capitalization-weighted stock returns (blue bars), and volatility (yellow dotted line) by quartile of a new composite governance score. The quartile portfolios are formed monthly, and the average and volatility of the time series of one-month-ahead returns are shown above. The sample and variables are described in the notes to Table 5 and in the appendix.

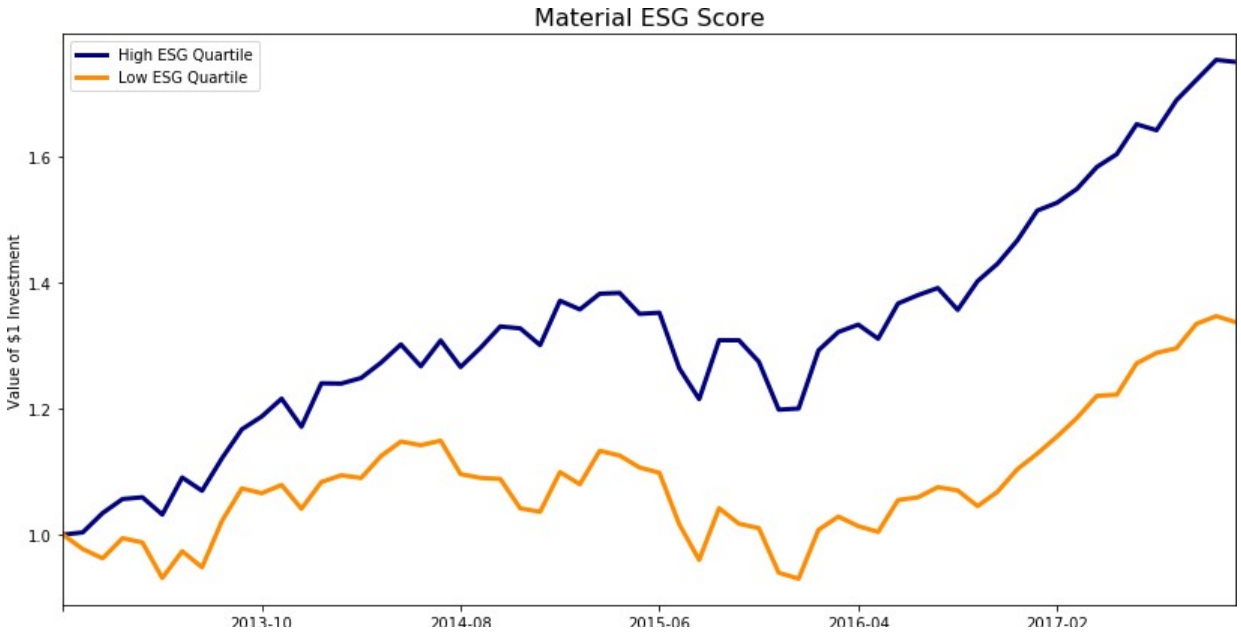

Figure 10: The figure shows the growth in the value of $1 invested in the top and bottom quartiles of a new Material ESG score. The quartile portfolios are formed monthly, and one-month-ahead capitalization-weighted returns are calculated. The monthly portfolio returns are cumulated to derive the growth curves shown in the figure. The sample and variables are described in the notes to Table 7 and in the appendix.

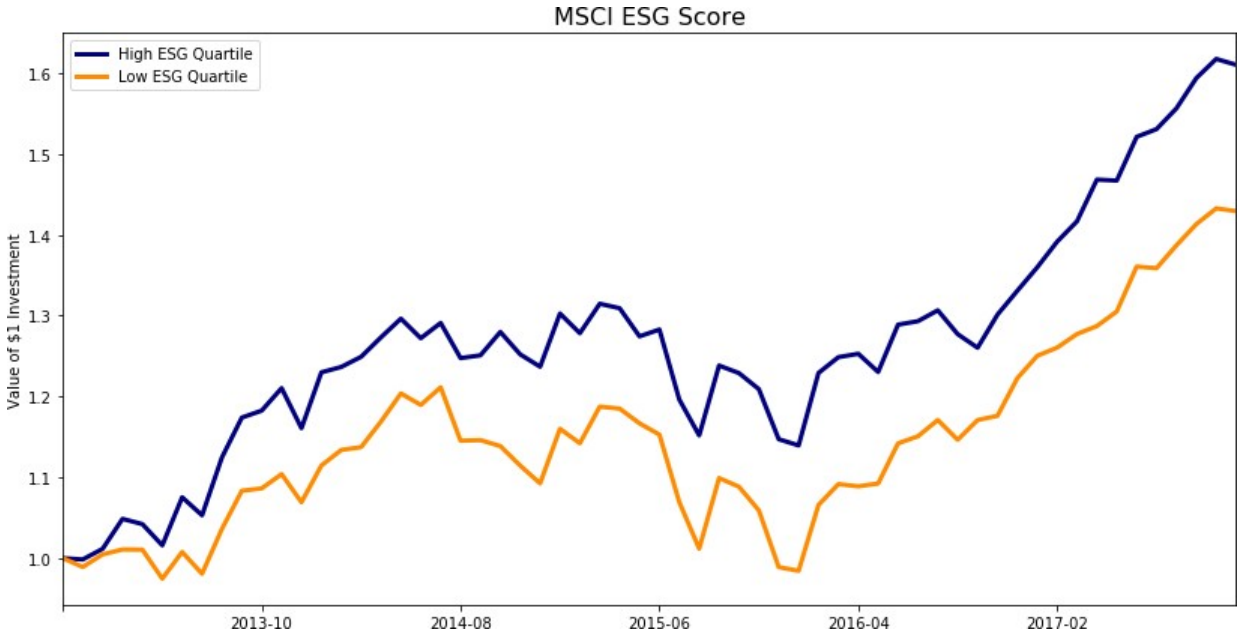

Figure 11: The figure shows the growth in the value of $1 invested in the top and bottom quartiles of the MSCI ESG score. The quartile portfolios are formed monthly, and one-month-ahead capitalization-weighted returns are calculated. The monthly portfolio returns are cumulated to derive the growth curves shown in the figure. The sample and variables are described in the notes to Table 7 and in the appendix.

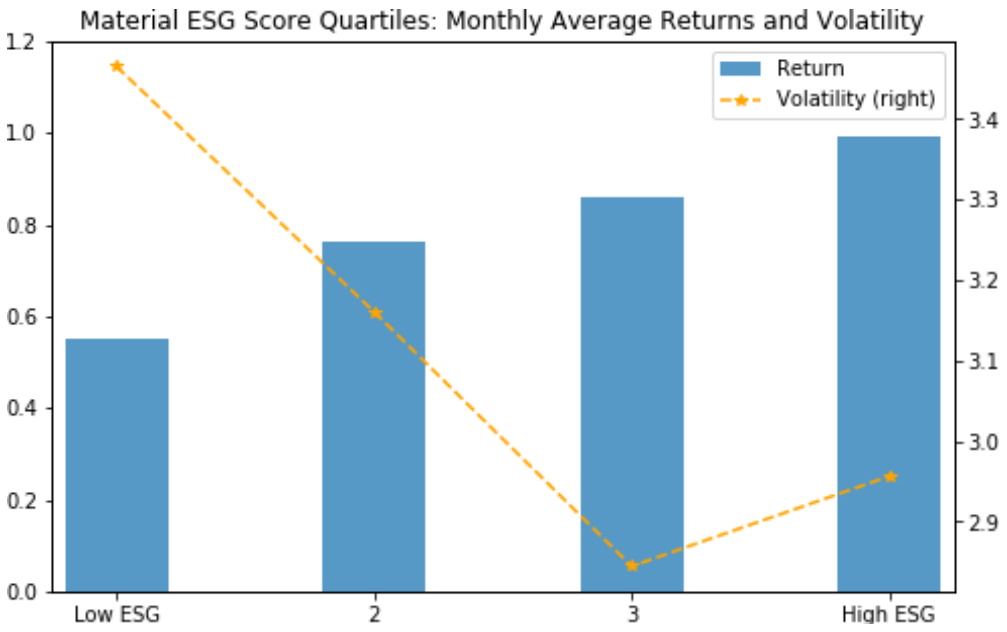

Figure 12: The figure shows average monthly capitalization-weighted stock returns (blue bars), and volatility (yellow dotted line) by quartile of a new Material ESG score. The quartile portfolios are formed monthly, and the average and volatility of the time series of one-month-ahead returns are shown above. The sample and variables are described in the notes to Table 7 and in the appendix.

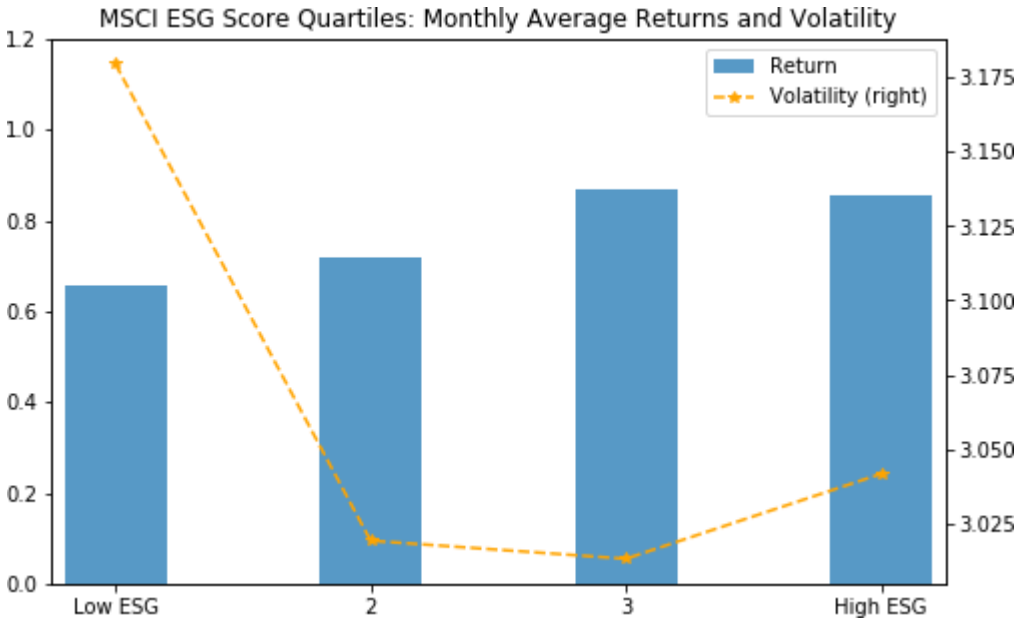

Figure 13: The figure shows average monthly capitalization-weighted stock returns (blue bars), and volatility (yellow dotted line) by quartile of the MSCI ESG score. The quartile portfolios are formed monthly, and the average and volatility of the time series of one-month-ahead returns are shown above. The sample and variables are described in the notes to Table 7 and in the appendix.

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