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Research

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Corporate Governance, ESG, and Stock Returns around the World

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Nonfinancial performance measures, such as environmental, social, and governance (ESG) measures, are potentially leading indicators of companies' financial performance. In the study reported here, I drew on prior academic literature and the concept of ESG materiality to develop new corporate governance and ESG metrics. The new metrics predicted stock returns in a global investable universe over the tested period, which suggests potential investment value in the ESG signals.

Disclosure: The author is employed by an investment management firm that invests in public equities globally.

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Companies' performance on environmental, social, and governance (ESG) issues has garnered increasing attention in the past decade from various parties, including customers, employees, public interest groups, and government regulators. Companies, in turn, are increasingly ESG aware, and many have undertaken initiatives to improve performance on ESG issues, have conducted management roadshows with investors to showcase their ESG practices, and have begun publicly reporting their ESG efforts in their annual reports. Against this backdrop, investors have been scanning for potential rewards and risks in this information. Is there a relationship between companies' stock return performance and their ESG performance ("ESG" hereafter)? A key challenge in examining the return predictability of ESG is how to measure it. I drew on prior academic literature and the concept of ESG materiality to motivate and develop a new measure of ESG. I then tested the return predictability of the measure in a global investable universe.

In developing a new measure of ESG, I adopted and extended the framework of materiality described in Khan, Serafeim, and Yoon (2016). The concept of ESG materiality seeks investment value in ESG performance by identifying ESG issues at the intersection of shareholders' and other stakeholders' interests. In particular, ESG issues are considered "material" if they also affect a company's financial performance and, therefore, shareholder value. For example, fuel efficiency and management is probably a material ESG issue for a health-care distributor but not for a health-care provider. The distributor, because of its business model, is a heavy consumer of fuel, so managing fuel efficiency is likely to be favorable not only for the environment but also for shareholders in the company. In contrast, the health-care provider probably has relatively limited fuel consumption and is more likely to

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overinvest in fuel management if it undertakes such management initiatives at the urging of stakeholder groups. Under the materiality framework, a health-care distributor's score on a material ESG issue such as fuel management would contribute to its overall ESG score. In contrast, a health-care provider's score on an immaterial issue such as fuel management would be disregarded in calculating its overall ESG score. So, material ESG issues vary by industry, and for a given industry, they constitute a subset of potential ESG issues that stakeholders might advocate for. The concept of materiality is increasingly a part of the ESG lexicon, and the materiality framework is being applied by a number of investment managers and corporations.[1]

Although I drew on Khan et al. (2016) to identify cross-industry variation in material environmental and social (E&S) issues, I drew on prior corporate governance literature to identify cross-country variations in governance (the G in ESG) because the nature of the governance problem varies fundamentally among countries. Khan et al. is silent on this issue because those authors examined US companies only. For global investors, however, it is important to identify and incorporate the cross-country variation in governance in order to measure the strength of corporate governance globally.

Good corporate governance is important for efficient capital allocation and for the preservation and growth of capital, which are important conditions for building sustainable businesses in the long run. Unsustainable businesses are unlikely to provide an appropriate long-run return on savings (i.e., an appropriate return to shareholders), long-run employment in the community, or sustainable tax revenues for societal (including environmental) development. From this perspective, poor governance is costly for both shareholders and other stakeholders.

I identified three specific reasons the strength of corporate governance varies across countries. First is the significant variation in ownership structure globally. Companies in the United States have, on average, dispersed share ownerships, whereas internationally, ownership tends to be more concentrated, with control being exercised by a controlling shareholder, such as a founder, a family, or the state (La Porta, Lopez-de-Silanes, and Shleifer 1999; Bebchuk and Weisbach 2010; Aminadav and Papaioannou 2018). For example, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) found that average ownership concentration is lower in the United States than in more than 90% of 45 other countries. La Porta et al. (1999) found that the proportion of companies with controlling shareholders is lower in the United States than in more than 90% of the 27 countries they examined; Aminadav and Papaioannou (2018) found the same result for the 85 countries they examined. When ownership is largely dispersed, as in the United States, the governance problem arises from conflicts of interest between shareholders and the company's managers (Berle and Means 1932).

The presence of a controlling shareholder, however, as is common internationally, shifts the source of governance problems to conflicts of interest between minority and controlling shareholders (Bebchuk and Hamdani 2009). Controlling shareholders can tunnel capital out of a company in a variety of ways—for example, through related-party transactions or opportunistic transfer-pricing arrangements with their other companies (Bertrand, Mehta, and Mullainathan 2002; Johnson, La Porta, Lopez-de-Silanes, and Shleifer 2000; Jiang, Lee, and Yue 2008). This problem is exacerbated when the controlling shareholder exercises control through opaque structures, such as cross-shareholdings and stock pyramids, or when the controlling shareholder owns a minority of the cash flow rights, as is often the case internationally (Bebchuk, Kraakman, and Triantis 2000). Private enrichment and capital misallocation by controlling shareholders can rob a business of capital needed for long-run sustainability.

Second is the variation in shareholder orientation across countries. In some countries, emphasizing broad stakeholder interests can be an important policy-influenced goal. A shareholder orientation potentially assigns a clear purpose, or hierarchy of purposes in capital allocation, through objective and quantifiable costs and benefits. A stakeholder orientation that slights shareholders may make business objectives more diffuse and could make quantifying and balancing costs and benefits in a capital allocation difficult because of potential trade-offs between the interests of different stakeholders. Diffuse business objectives may be less conducive than focused objectives to long-run business sustainability. From this perspective, a shareholder orientation lends economic discipline to the capital allocation decision, with a view to preserving the long-run sustainability of the business for the benefit of all parties.

Third is the difficulty of assessing company-level governance in isolation from the broad institutional setting that envelops a company. The US/UK setting is generally held to be characterized by the rule of

law, vigorous enforcement, and accountability. Other countries, however, exhibit significant variation in these institutional features (La Porta et al. 1998). Weak institutions increase the potential net returns to diversion tactics and reduce the likelihood of controlling shareholders being caught and penalized for damaging minority shareholder interests, thereby increasing the likelihood of losses for (minority) investors (La Porta, Lopez-de-Silanes, Shleifer, and Vishny 2000). Seepage of capital from companies, which is accommodated by weak country-level institutions, is unlikely to be conducive to building sustainable businesses.

These material governance factors, which do not represent an exhaustive list of such factors, are intended to suggest a step analysts can take toward incorporating cross-country variation into their assessment of governance. For empirical tests of the first governance factor, I used free float scaled by shares outstanding as a proxy for ownership dispersion. For the second factor, I used a country's legal tradition—common law, Scandinavian/German code law, French code law, or socialist law—as a proxy for the extent of shareholder orientation. An extensive literature, beginning with La Porta et al. (1998), has hypothesized that legal tradition is correlated with shareholder protection, which I expect is, in turn, correlated with shareholder orientation. As a proxy for the third factor, country-level institutional strength, I used a political risk score from Bloomberg that rates countries on various relevant dimensions. I found that in a global investable universe of 42 countries between 2009 and 2017, ownership dispersion, shareholder orientation, and institutional strength did predict stock returns.

I next combined these material governance factors with more traditional governance scores from MSCI to form a composite governance score.[2] The governance score from MSCI rates companies on such factors as board characteristics, executive compensation, and shareholder voting rights. I found that the composite governance score predicted stock returns over the 2009–17 period for which data were available. When I controlled for style, time, and sector differences, the estimated top-quartile–bottom-quartile return spread for the composite governance score was 33 basis points (bps) monthly.

I also constructed a new ESG score by combining companies' material E, S, and G scores. The new ESG score predicted stock returns over the 2013–17 period for which data were available. When I controlled for style, time, and sector differences, the estimated top-quartile–bottom-quartile return spread for the new ESG score was 36 bps monthly. For investors, these results suggest that companies' ESG performance—including corporate governance strength—is informative for future stock return performance. A caveat is that the reported results are not those of an actual live trading strategy and are gross of transaction costs. Actual investor experience would probably have differed from the backtested results described here because portfolio construction rules and implementation approaches vary.

Another important aspect to acknowledge is the heterogeneity in views about what constitutes ESG and what the objectives of ESG are. I present one conception of ESG that derives some motivation from prior literature and that is mindful of shareholder interests. This perspective posits that building a sustainable business is difficult if the business is ultimately unable to provide an appropriate long-run return on shareholders' savings. Such a perspective could align with that of professional investment managers acting as fiduciaries, whose objective is to find investment value in ESG. This perspective may not be universally accepted, however, and could be viewed by some as a dilution of other important ESG objectives. But these important open questions about the definition and objectives of ESG are beyond the scope of this article. Different conceptions of ESG may not yield the same evidence, however, that I found on the return predictability of ESG. Finally, the appropriateness of an ESG definition or conception may be independent of its association with subsequent alpha.[3]

Data and Sample

This section describes the governance data and ESG data. The universe and time period are also identified and described in this section.

Governance Data. I calculated ownership dispersion at the company level as the ratio of free float, or shares not held by insiders, to shares outstanding. These data were obtained from FactSet. Country-level institutional strength was 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 such facets as rule of law (including enforcement), regulatory quality, government effectiveness, corruption, political stability, and voice and accountability (Kaufmann, Kraay, and Mastruzzi 2010).

Country-level legal traditions were obtained from the website of Andrei Shleifer.[4] La Porta et al. (1998) initiated a large literature suggesting that investor protection varies with legal tradition; the protection is strongest under common law tradition, followed by Scandinavian and German legal traditions, followed by French legal traditions, and is weakest under socialist legal tradition. For the practical purpose of numerically incorporating legal tradition into the corporate governance score as described later, in the section "A New Composite Governance Score," I assigned a value of 1.0 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 scheme essentially represents a rank ordering, but the choice was made for implementation reasons. I have not explored the effect of other rank orderings. I applied the country-level measures to companies 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 were sourced from MSCI, which scores companies on 96 "key metrics" that capture the "key issues" of accounting quality, board structure, executive pay, and ownership. 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 issue differs in two ways from my consideration of it: (1) MSCI uses an indicator for the presence of a controlling shareholder, whereas I used ownership dispersion tercile indicators; (2) given the number of key metrics, the effective weight on MSCI's controlling shareholder indicator may be too low. I applied a more significant weight to ownership dispersion, as described later.

The MSCI governance score also includes a company-level key issue that considers "corruption and instability." This issue is similar to the institutional strength measure in this article, but it is applied differently. I applied institutional strength at the country level, so all companies headquartered in a country received a similar score on this dimension. The MSCI score, in contrast, is applied at the company level and is based on the extent of a company's operations in a given country. In addition, institutional strength received a more significant weight in the governance score in this study than the measure receives from MSCI. For the MSCI score, the issue is just one of many inputs. Ultimately, which implementation is "better" is an empirical question.

ESG Data. Scores on all E&S issues were sourced from MSCI, which provides ratings on 29 key issues under the E&S pillars. MSCI's key issues vary by industry; therefore, no given company is rated on all 29 issues. For a given company, some MSCI key issues might be immaterial, so I proceeded industry-by-industry, using guidance from the Sustainability Accounting Standards Board (SASB), to identify material versus immaterial issues. MSCI's approach to determining its key issues and SASB's approach to determining its "material issues" are described broadly in their public documents. MSCI identifies key ESG issues "where companies in that industry currently generate large environmental or social externalities" that they might be forced to internalize in the future.[5] SASB identifies material issues as those "that are reasonably likely to impact the financial condition or operating performance of a company and therefore are most important to investors."[6] While the approaches have some similarities, in that the organizations look for financial impact, differences in the implementation of their approaches are sufficient that the overlap between MSCI key issues and SASB material issues is only 60%, on average, for each industry.[7] I followed Khan et al. (2016) in adopting SASB's guidance, but whether the SASB or MSCI approach has greater efficacy in return predictability is an empirical question.

The definitions of E&S issues and industries differ between MSCI and SASB. Therefore, as in Khan et al. (2016), I hand-mapped issues and industries between MSCI and SASB to identify material issues. I then applied the MSCI issue scores and weights (renormalized) to calculate each company's E&S score on material issues only, and finally, I combined the new governance (G) score described earlier with the material E&S scores to create a new ESG score.

Sample. I used the broadest available universe of companies from the MSCI All Country World Investable Market Index (ACWI IMI), which consists of large-, mid-, and small-capitalization companies from 23 developed markets (DM) and 24 emerging markets (EM). According to MSCI, this universe represents approximately "99% of the global equity investment opportunity set."[8] After conditioning on data availability requirements, the governance sample consists of 338,626 company-month observations from 42 countries (23 DM and 19 EM) between January 2009 and November 2017. The year 2009 was the earliest year with available institutional strength data from Bloomberg. Therefore, data availability was a binding constraint on the

length of the governance sample. In the "Discussion" section, however, I report the efficacy of ownership dispersion and shareholder orientation for a longer window, 2000–2017, because these two factors have data available for that period. The ESG sample was further restricted to 183,335 company-month observations between 2013 and 2017 because issue-level E&S scores from MSCI, which were needed to calculate scores on material issues, were available only beginning in 2013.

All independent variables were winsorized at the top and bottom 1%. Following Fama and French (2012) and Asness, Frazzini, and Pedersen (2019), stock returns, market cap, and other relevant variables were denominated in US dollars to reflect the perspective of a US-based investor. Therefore, non-US investors' local-currency results might differ from those described here. Definitions of variables are presented in Appendix A.

Table 1 shows means of monthly cross-sectional descriptive statistics for the variables. The new composite governance score had a mean of 6.527 out of 10 (vs. the MSCI governance score of 5.559 out of 10); the new material ESG score (MSCI ESG score) had a mean of 4.976 out of 10 (4.467 out of 10).

Corporate Governance and Future Stock Returns

This section reports whether the governance variables described in the previous section—ownership dispersion, shareholder orientation, and institutional strength—predicted stock returns in the sample and whether any predictability was incremental to that from a traditional bottom-up governance score from MSCI.

I began by examining the univariate relationship between stock returns and each of the three new governance variables. **Figure 1** shows a plot of country-level equal-weighted average monthly returns against country-level average ownership dispersion. The average ownership dispersion and one-month-ahead stock returns were calculated monthly by country, and the time-series means are plotted in Figure 1 in such a way that each dot represents a country. Figure 1 shows substantial variation (along the *x*-axis) in ownership dispersion globally, which is consistent with prior literature (La Porta et al. 1999; Bebchuk and Weisbach 2010; Aminadav and Papaioannou 2018). Figure 1 further shows that ownership dispersion was positively related to stock returns globally in the sample, which is consistent with Lemmon and Lins (2003).

Figure 2 shows average returns to terciles of ownership dispersion.[9] The tercile portfolios were formed monthly at the company level from the pooled cross-country sample, and the time series of one-month-ahead cap-weighted portfolio returns were used for inference. Figure 2 shows that average returns increased monotonically with ownership dispersion tercile.

Figure 3 shows the univariate relationship between shareholder orientation and stock returns. Using legal tradition as a proxy for shareholder orientation, I sorted the cross-section each month into companies in common law countries and companies in all other countries. I then calculated the one-month-ahead cap-weighted return monthly for each of the two groups. Figure 3 depicts the time-series means. It shows that companies in common law countries (which contributed 68% of the sample and were hypothesized to have stronger shareholder orientation) had higher average returns than companies in all other countries. **Figure 4** parses the non-common-law countries into those with socialist (2% of the sample), French (9% of the sample), and Scandinavian/German (21% of the sample) legal traditions. (Figure 4 omitted China from the socialist countries because Chinese equity markets have undergone unprecedented structural transformation in the past couple of decades and including China in Figure 4 disrupted the monotonic relationship. China was included, however, in calculations for Figure 3 and in all other tests in the manuscript.) Using the same calculation procedure as for Figure 3, Figure 4 shows that the finer sort yielded a monotonically positive relationship between shareholder orientation and stock returns.

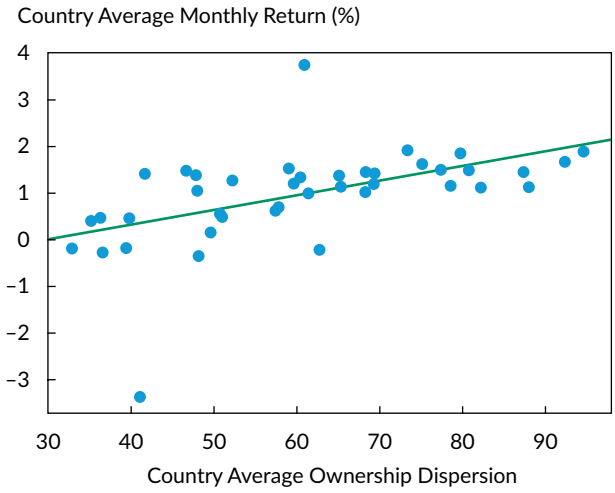
Figure 5 shows a plot of country-level (for all countries) equal-weighted average monthly returns against country-level institutional strength. Institutional strength and one-month-ahead stock returns were calculated monthly by country. Each dot in Figure 5 represents the time-series mean of a country. Substantial variation in institutional strength (shown along the *x*-axis) is visible across the 42 countries in the sample. A higher score on the *x*-axis denotes higher institutional strength. Figure 5 shows that companies in countries with stronger institutions had higher average stock returns.[10]

Table 1. Means of Monthly Cross-Sectional Descriptive Statistics

Variable	*N*	Mean	Std. Dev.	Min.	Quartile 1	Median	Quartile 3	Max.
Return	3,225	0.014	0.092	−0.619	−0.035	0.012	0.059	0.943
Momentum	3,225	0.096	0.305	−0.580	−0.092	0.075	0.254	1.165
Market cap	3,225	11,067	19,341	274	2,001	4,555	10,810	126,127
Value	3,225	0.118	0.134	−0.311	0.058	0.096	0.154	0.742
B/M	3,225	0.635	0.450	0.052	0.311	0.531	0.843	2.445
Profitability	3,225	0.238	0.294	−0.488	0.097	0.190	0.312	1.847
Investment	3,225	0.115	0.268	−0.282	−0.007	0.056	0.148	1.705
Share turnover	3,225	0.135	0.132	0.006	0.050	0.093	0.170	0.758
Ownership dispersion	3,225	79.4	22.5	21.7	65.1	89.1	98.4	99.9
Shareholder orientation	3,225	0.955	0.073	0.700	0.912	1.000	1.000	1.000
Institutional strength	3,225	0.836	0.178	0.108	0.841	0.903	0.911	0.944
Composite governance	3,225	6.527	1.454	2.131	5.504	6.556	7.594	9.811
MSCI governance	3,225	5.559	1.880	0.243	4.256	5.580	6.818	9.889
Material ESG	3,107	4.976	3.064	0.000	2.492	4.991	7.491	9.990
MSCI ESG	3,107	4.467	1.125	0.927	3.727	4.425	5.164	8.876

Note: Variable definitions are presented in Appendix A.

Figure 1. Ownership Dispersion and Stock Returns across Countries, January 2009–November 2017



Note: Superimposed is a line of best fit.

Figure 2. Ownership Dispersion and Returns across Companies, January 2009–November 2017

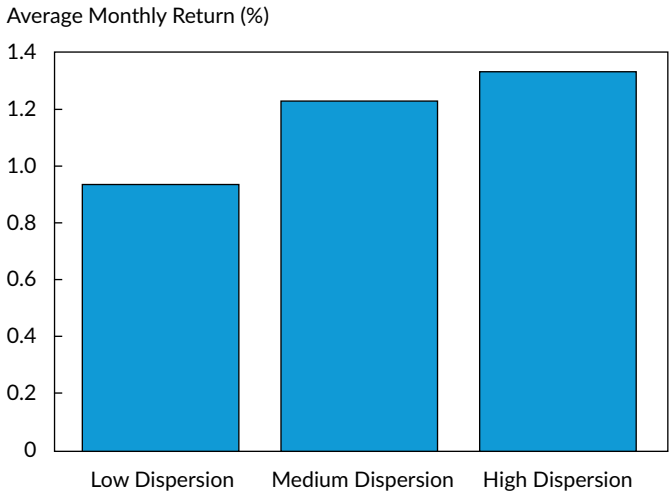


Figure 3. Shareholder Orientation and Returns: Common Law Countries vs. Other, January 2009–November 2017

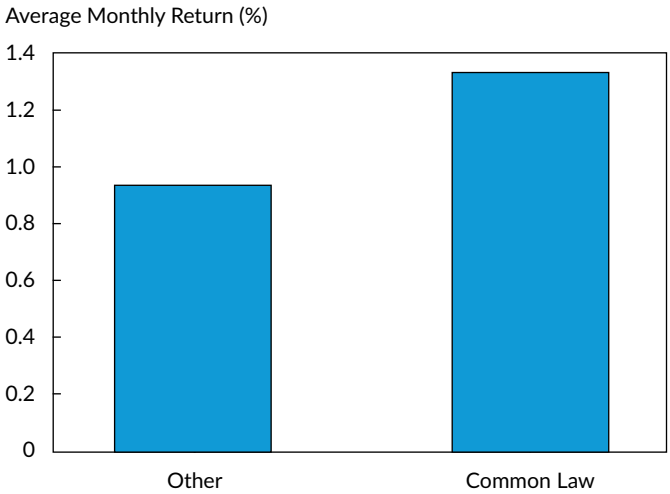
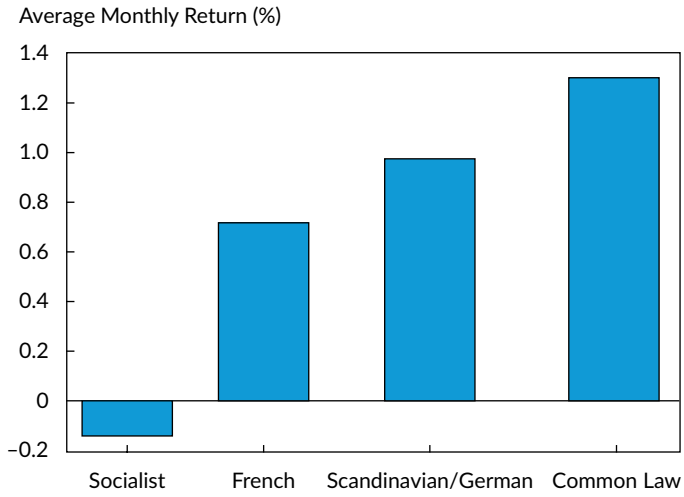
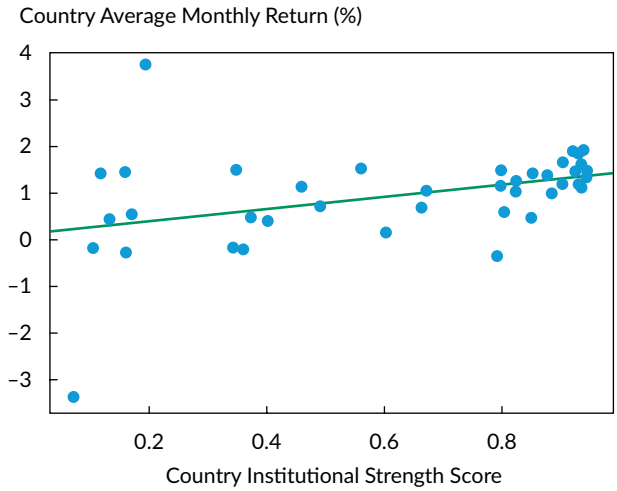


Figure 4. Shareholder Orientation and Returns: Four Types of Country Legal Traditions, ex China, January 2009–November 2017



Notes: China is omitted from the socialist countries because Chinese equity markets have undergone unprecedented structural transformation in the past couple of decades and including China disrupted the monotonic relationship. China was included, however, in calculations for Figure 3 and in all other tests in the manuscript.

Figure 5. Institutional Strength and Stock Returns across Countries, January 2009–November 2017



Note: Superimposed is a line of best fit.

Table 2 shows results from four regression specifications. Each regression estimated company-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); and size, value, profitability, and investment (Fama and French 1992, 2006, 2015; Hou, Xue, and Zhang 2015). I also controlled for share turnover because it is positively correlated with ownership dispersion—a key variable of interest. Each specification included time (month) and sector fixed effects and also standard errors clustered by company to control for autocorrelation (Petersen 2009). Country fixed effects were not included because I was testing two top-down factors and country fixed effects suppress cross-country variation.

The first regression specification in Table 2 shows that ownership dispersion loaded significantly (*t*-statistic = 5.56), with a 26 bp return spread between the top and bottom terciles (coefficient of 0.0013 × 2). All other independent variables loaded significantly in the direction predicted by prior literature except share turnover, although Campbell (2018, p. 71) suggested that share turnover could have a positive relationship with returns at short horizons, as in Table 2.

Table 2. Corporate Governance Components and Stock Returns, January 2009–November 2017

	Regression 1		Regression 2		Regression 3		Regression 4	
Variable	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.
Ownership dispersion tercile	0.0013	5.56					0.0005	1.87
Shareholder orientation			0.0191	7.44			0.0128	4.37
Institutional strength					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) fixed effects	Yes		Yes		Yes		Yes	
Sector fixed effects	Yes		Yes		Yes		Yes	
Company-clustered standard error	Yes		Yes		Yes		Yes	
Adj. R^2	0.16		0.16		0.16		0.16	

Notes: The governance sample consists of 338,626 company-month observations from 23 developed and 19 emerging markets for large-, mid-, and small-cap companies in the MSCI ACWI IMI. All relevant variables are US dollar denominated. The regressions include time and sector fixed effects, and standard errors are clustered by company. The intercept was estimated but is unreported. Ownership dispersion tercile is an indicator for the tercile of free float scaled by shares outstanding. Shareholder orientation = 1.0 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. Institutional strength is a country-level political risk measure based on the World Bank's Worldwide Governance Indicators. "MSCI gov score" is a company-level corporate governance score from MSCI based on board, compensation, accounting, and ownership characteristics. Variables are defined in Appendix A.

The second regression specification shows that shareholder orientation loaded significantly, with a coefficient of 0.0191 (*t*-statistic = 7.44). Recall from the "Governance Data" section that shareholder orientation was coded as 1.0 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, for example, that monthly stock returns were 19.1 bps (0.0191 × 0.1) higher for companies in common law countries than for those in Scandinavian/German code law countries.

The third regression specification in Table 2 shows that institutional strength loaded significantly, with a coefficient of 0.0061 (*t*-statistic = 6.22). At the country level, the interquartile spread in institutional strength was roughly 0.5. This result suggests a monthly return spread of roughly 30 bps (0.0061 × 0.5) for companies in countries at the bottom versus countries at the top of the interquartile range of institutional strength.

Finally, the fourth regression specification in Table 2 shows that ownership dispersion, shareholder orientation, and institutional strength were all incrementally significant in predicting stock returns for this sample after I controlled 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.[11] The MSCI governance score had a coefficient of 0.0003

(*t*-statistic = 3.89), which implies a marginal effect of 3 bps associated with a 1 point difference in that governance score.

A New Composite Governance Score

In this section, I first describe how I constructed a new governance score by combining top-down and bottom-up governance factors. Then, I report the results of tests of the return predictability of the new composite score, and finally, I evaluate an alternative composite score.

Constructing a New Score.

The results in Table 2 suggest that both top-down and bottom-up governance factors predict stock return performance. So, I constructed a governance score that is a composite of top-down and bottom-up governance factors. A composite governance score is useful for a number of reasons. First, a composite score facilitates governance comparisons at the company level. Second, a composite score can be used to sort the cross-section of stocks into portfolios. The results in Table 2 are from company-level return predictability tests, but estimating *portfolio-level* tests that are common in the asset pricing literature (Fama and French 1993) would also be useful.

My goal was to construct a governance score that was, specifically, a composite of ownership dispersion, shareholder orientation, institutional strength, *and* the MSCI bottom-up score that considers 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 were estimated from the full sample and could, if the weights varied over time at a somewhat high frequency, have some look-ahead bias. An alternative is to estimate the return predictability regressions monthly or annually by 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 probably attenuate the precision of the estimates. Second, if the estimated weights on the governance factors changed over time, a company's composite governance score could change without any change in that company's top-down and bottom-up characteristics. This occurrence might impair the usefulness of the governance score for some investors.

Clearly, the components of the composite governance score—ownership dispersion, shareholder orientation, and institutional strength—were all observable at each point in time and, using past information only, individually predicted stock returns, as Figures 1 through 5 show. The question was how to combine these individual signals.

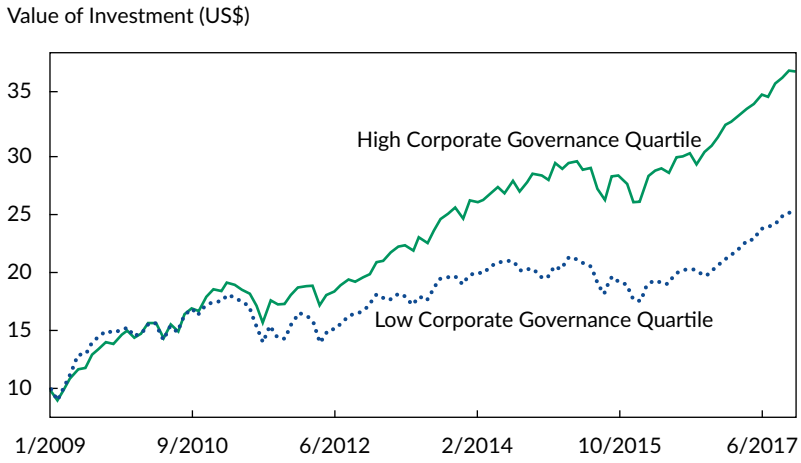
In determining a linear aggregation rule, I used fixed, rather than time-varying, weights. There were two country-level top-down factors (shareholder orientation and institutional strength) and two company-level bottom-up factors (ownership dispersion and the MSCI governance score). To determine the weight for each factor, I followed a two-step approach. In the first step, the total weight on the top-down factors was fixed *ex ante* at 30% and on the bottom-up factors, at 70%. In the second step, using the fourth specification in Table 2, I compared the marginal effects of a 1-standard-deviation change in each top-down factor and used the information to allocate a portion of the 30% total top-down weight to each top-down factor. I used the same approach to allocate a portion of the 70% total bottom-up weight to each bottom-up factor. The final rounded weights were 20% shareholder orientation, 10% institutional strength, 20% ownership dispersion tercile indicator, and 50% MSCI score.[12] These weights were applied to calculate a composite governance score for each company-month. This approach drew 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) was intended to alleviate some concern about look-ahead bias.

Alternative aggregation rules are possible, and investor results may differ from those of the strategy described if investors use different aggregation rules. To further mitigate concern about look-ahead bias in selecting the aggregation rule, I also report in a later section the performance of an alternative—a naive, equal-weighted composite of the four factors.

Return Predictability of the New Score.

I sorted the cross-section of stocks monthly into quartiles of the governance score so I could examine the one-month-ahead cap-weighted return performance of these quartiles. **Figure 6** shows the cumulative return performance of the top and bottom quartiles of the composite governance score. The top quartile of the composite score had a spread in cumulative returns over the bottom quartile of 122 percentage points (pps) by the end

Figure 6. Performance of the Composite Governance Score, January 2009–November 2017

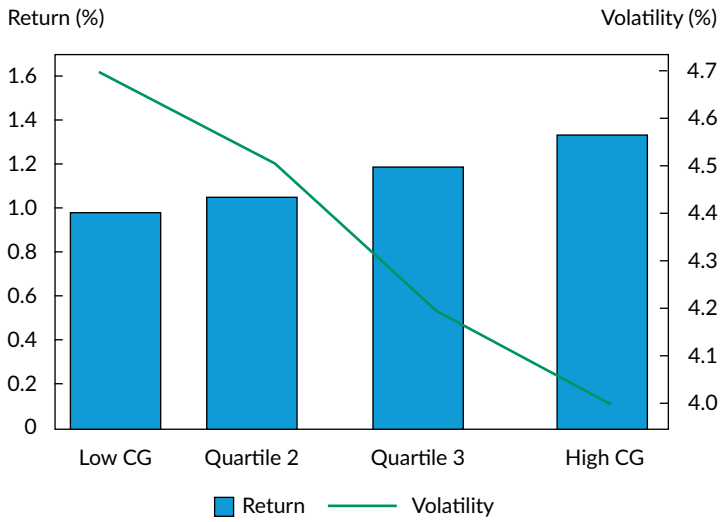


Notes: The figure shows the growth in the value of US$10 invested in the top and bottom quartiles of the new composite corporate governance score. The quartile portfolios were formed monthly, and one-month-ahead cap-weighted returns were calculated. The monthly portfolio returns were cumulated to derive the growth curves. The depicted performance is gross of transaction costs. The sample and variables are described in the notes to Table 2 and in Appendix A.

of the period. Keep in mind that the performance depicted in Figure 6 may not reflect the effects of alternative portfolio construction rules and manager-imposed constraints; also, it is gross of transaction costs. In practice, transaction costs can be low, however, for large investors who use sophisticated trading algorithms. For example, Frazzini, Israel, and Moskowitz (2018) estimated the mean implementation shortfall at 11 bps. For the strategy depicted in Figure 6, the long (short) portfolio turnover would be 43% (46%) annually, implying an average holding period of more than two years. These costs would attenuate but probably not fully subsume the annualized alpha estimate, as reported further in the next paragraphs. Finally, the capacity of the strategy is difficult to estimate reliably, but the average market cap of companies in the long (short) portfolio is US$13.4 billion (US$10.1 billion), suggesting some investable capacity.

Figure 7 depicts average cap-weighted monthly returns and the volatility of the monthly return

Figure 7. Composite Governance (CG) Score Quartiles: Monthly Average Returns and Volatility, January 2009–November 2017



Notes: Stock returns (left axis) are the bars, and volatility (right axis) is the line. The quartile portfolios were formed monthly. The sample and variables are described in the notes to Table 2 and in Appendix A.

Table 3. Corporate Governance and Stock Returns: Company-Level Tests, January 2009–November 2017

Variable	Coefficient	*t*-Statistic
Composite governance score quartile	0.0011	6.91
1M lag ret	−0.014	−4.81
Momentum	0.0015	2.14
Mkt cap	−0.0011	−7.95
Value	0.0032	1.73
Profitability	0.0026	3.51
Investment	−0.0036	−4.32
Share turnover	0.006	2.72
Time (month) fixed effects	Yes	
Sector fixed effects	Yes	
Company-clustered standard errors	Yes	
Adj. R^2	0.16	

Notes: The composite governance score is based on a company's ownership dispersion tercile, its country-level shareholder orientation, its country-level institutional strength, and its MSCI governance score. The regression used indicators for the quartiles of the governance score. See also the notes to Table 2.

Table 4. Corporate Governance and Stock Returns: Portfolio-Level Tests, January 2009–November 2017

Variable	Coefficient	*t*-Statistic
Composite governance score: Alpha	0.0031	2.12
Rmxrf_DM	0.2405	4.52
SMB_DM	0.1615	1.46
HML_DM	0.0585	0.45
RMW_DM	0.3675	2.18
CMA_DM	0.1357	1.30
Rmxrf_EM	−0.2694	−5.23
SMB_EM	−0.0862	−1.88
HML_EM	−0.1425	−2.81
RMW_EM	0.0627	1.14
CMA_EM	0.1362	3.60
Annual IR	0.75	
Adj. R^2	0.37	

Notes: Coefficients and *t*-statistics are from Fama and French (1993, 2015) time-series regressions of test portfolio returns on the returns to factor-mimicking portfolios. The test portfolio was a global long–short portfolio formed monthly from the top quartile minus the bottom quartile of the composite governance score. All portfolio returns are cap-weighted. The regression coefficients are the exposures, or betas, of the test portfolio with respect to the factor-mimicking portfolios. Rmxrf is the market excess return over the one-month US T-bill; SMB (small minus big) is the size factor; HML (high book to market minus low book to market) is the value factor; RMW (robust minus weak) is the profitability factor; CMA (conservative minus aggressive) is the investment factor. The "DM" or "EM" suffix denotes whether the factor was formed within developed markets or emerging markets. Annual IR is the annualized information ratio. The IR was calculated as the alpha divided by the standard deviation of the estimated regression residuals. Standard errors were adjusted for autocorrelation up to three lags.

stream for each quartile of the composite score. Figure 7 shows that returns increased monotonically whereas volatility decreased monotonically from the bottom to the top quartile of the composite governance score. The top-quartile–bottom-quartile return spread was 36 bps monthly.

Formal tests of the composite governance score are reported in **Table 3** and **Table 4**. Table 3 shows estimates from a *company*-level test in which the assumed return-generating process was a function of company characteristics. Table 4 provides estimates of a *portfolio*-level test in which the assumed return-generating process was a function of covariances with factor-mimicking portfolio returns. The portfolio-level test had the added advantage of mitigating potential noise in company-level returns. The tested portfolio represents only one set of rules, however, out of many potential portfolio construction rules.

The tests reported in Table 3 controlled for style, time, and sector differences, with standard errors adjusted for autocorrelation. Because the new governance score includes two top-down country-level factors (shareholder orientation and institutional strength), country fixed effects were not included in the regression. They would have suppressed the top-down variation the governance score was seeking to exploit. The dependent variable is the one-month-ahead return. I used governance quartile indicators in the regression to facilitate interpretation of their coefficients and to mitigate the effects of potential nonlinearity in the relationship

between continuous governance scores and stock returns. In Table 3, the composite governance score quartile coefficient of 0.0011 (*t*-statistic = 6.91) implies a top-quartile–bottom-quartile return spread of (0.0011 × 3 =) 33 bps.

Table 4 reports results from a Fama and French (1993, 2015) time-series regression of test portfolio returns on the market excess return and returns to factor-mimicking portfolios for size, value, profitability, and investment. The test portfolio was a long–short portfolio consisting of the top (long) quartile minus the bottom (short) quartile of the composite governance score. Because the test portfolio included stocks from a global universe, the regression controlled for the five factors in developed and emerging markets, as the suffix for each factor denotes. Data for the DM factors were obtained from the website of Kenneth French;[13] I constructed the EM factors by following an approach similar to that of Fama–French. The EM market factor is the excess return over the one-month US T-bill rate. Table 4 shows that the test portfolio had a significant alpha, with an annualized information ratio (IR) of 0.75.

The other coefficients in Table 4 are the exposures (or betas) of the long–short test portfolio with respect to the factor portfolios. A positive (negative) factor exposure implies that the long (short) side of the test portfolio had higher exposure to that factor. Consider this economic interpretation of the factor exposures in Table 4. For the DM factors, the size and value exposures are insignificant, suggesting that DM companies do not have significant size or value tilts related to governance (that is, DM companies in the long and short sides of the test portfolio were somewhat balanced as to size and value characteristics). For the EM factors, the size and value exposures are negative. The negative SMB_EM exposure suggests that the larger EM companies were taking the lead in implementing good governance practices during this sample period while the smaller companies were probably in the bottom governance quartile. The negative HML_EM exposure suggests that poor governance companies in EM had value characteristics consistent with the "old economy" state-owned companies that have value characteristics (large installed asset base, heavy industries) and have poor governance practices. The different market factor exposures suggest that good governance companies in DM are slightly more cyclical (have slightly higher market betas) than poor governance companies whereas good governance companies in EM are slightly more defensive (perhaps these companies have the higher-earnings-quality stocks). Finally, the profitability and investment factor exposures are positive in the emerging markets, suggesting that the more profitable companies with a lower investment characteristic were more likely to be in the good governance quartile than in the poor governance quartile.

To mitigate concerns about potential collinearity between DM and EM factors, I also reestimated Table 4 after replacing the separate DM and EM factors with global portfolios (for example, SMB_DM and SMB_EM were replaced by one global SMB factor). Collinearity can inflate standard errors and bias *t*-statistics downward. Using the global factors, the alpha estimate was 53 bps monthly with a *t*-statistic of 3.18, which is statistically significant at the 1% level in a two-tailed test. The model-adjusted R^2 dropped by more than 40%, however, when global factors were used, which suggests that a model with separate regional factors, as in Table 4, had better fit or explained more of the variability in returns.

Evaluating an Alternative Composite Score.

To mitigate potential look-ahead bias in the weights, I evaluated the return predictability of an alternative composite governance score in which the four components—ownership dispersion tercile, shareholder orientation, institutional strength, and MSCI governance score—were *ex ante* equally weighted. This approach represents a hypothetical naive strategy of an investor who applies fixed equal weights to each signal. Reestimating Table 3, I found that the alternative governance score quartile had a coefficient of 0.0014 (*t*-statistic = 8.36). Reestimating Table 4, I found that the alternative governance score had a monthly alpha of 48 bps (*t*-statistic = 2.82) and an annualized IR of 0.98.

ESG and Future Stock Returns

In addition to a new composite governance score, I constructed a new composite ESG score. In this section, I report the return predictability of this new ESG score and my evaluation of an alternative material ESG score.

Constructing a New ESG Score.

The new composite ESG score includes (1) the new composite governance score just described in the section "A New Composite Governance Score" and (2) scores on material E&S issues: Beginning with the MSCI scores on E&S issues, I identified issues deemed

material for each industry by SASB and then calculated the material E and S scores on the basis of material issues only.

To aggregate the E, S, and G scores, I used MSCI's E and S weights to linearly combine material scores and constructed a *material ES score*. Next, I combined the material ES score with the composite G score. **Table 5** suggested some guidance in regard to weighting. Table 5 shows the results of company-level tests of return predictability for the composite G score and the material ES score estimated for the 2013–17 period (the period for which relevant data were available). The composite G score coefficient of 0.0011 (*t*-statistic = 5.39) implies an 11 bp monthly return premium for a one-quartile difference in corporate governance strength. The material ES score coefficient of 0.0004 (*t*-statistic = 1.84) implies a 4 bp monthly return premium for a one-quartile difference in ES strength. The magnitudes of these coefficient estimates suggested a weight on the composite G score quartile indicator of roughly 75% and a weight on the material ES quartile indicator of about 25%. I used these weights to construct company-level material ESG scores.

Table 5. ESG Components and Stock Returns, January 2013–November 2017

Variable	Coefficient	*t*-Statistic
Composite governance 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) fixed effects	Yes	
Sector fixed effects	Yes	
Company-clustered standard errors	Yes	
Adj. R^2	0.11	

Notes: Although the ESG sample covers a shorter time period than the governance sample (2013–2017 vs. 2009–2017) and thus fewer company-month observations (183,335 vs. 338,626), the rest of the Table 2 notes regarding the sample apply here. The material ES score is a company-level score on *material* environmental and social factors. The regression used indicators for the quartiles of the governance and ES scores. Variables are defined in Appendix A.

In Table 5, the material ES score coefficient is statistically insignificant at the 5% level in a two-tailed test but is statistically significant at the 5% level in a *one-tailed* test. On the one hand, because the tested hypothesis was that the material ES score would have a positive effect on stock returns, a one-tailed test could be applicable. On the other hand, a two-tailed test is a more stringent or conservative test. Regarding the magnitude of the coefficient estimates, the annualized top-quartile–bottom-quartile return spread for the governance score is 0.11% × 12 × (4 − 1) = 3.96%; for the ES score, it is 0.04% × 12 × (4 − 1) = 1.44%.

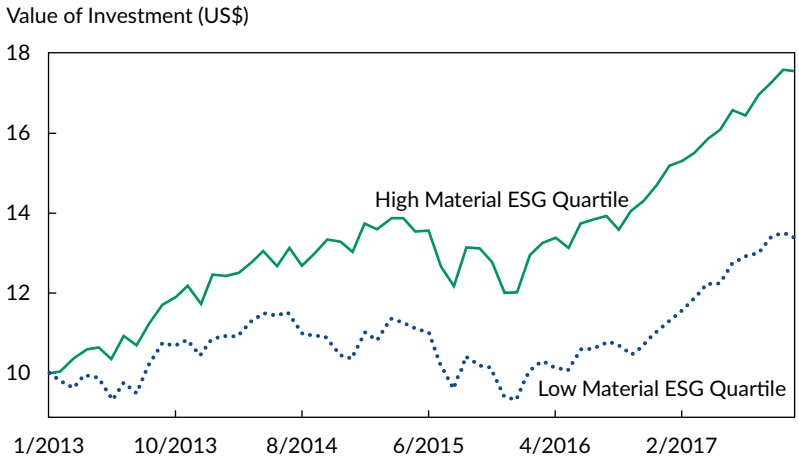
Remember that these estimates are gross of transaction costs. In addition, academic studies commonly report larger return premiums for new factors. For example, Sloan (1996) reported an annualized premium of 10.4% for the accrual factor, and Pástor and Stambaugh (2003) reported an annualized premium of 7.5% for their liquidity factor.

Return Predictability of the New Material ESG Score. To examine one-month-ahead returns of portfolios based on the new ESG score, I sorted the cross-section of stocks monthly into quartiles of material ESG scores. **Figure 8** shows the cumulative return performance of the top and bottom material ESG quartiles. The spread in cumulative returns between the top quartile and the bottom quartile is 41 pps at the end of the period. Keep in mind that this performance is gross of transaction costs and does not reflect the impact of potential manager-imposed constraints.

Figure 9 shows the average monthly cap-weighted returns and the volatility of the monthly return stream for each of the material ESG quartiles. A monotonic increase in average returns and a nearly monotonic decline in volatility are visible. The top-quartile–bottom-quartile return spread was 44 bps monthly.

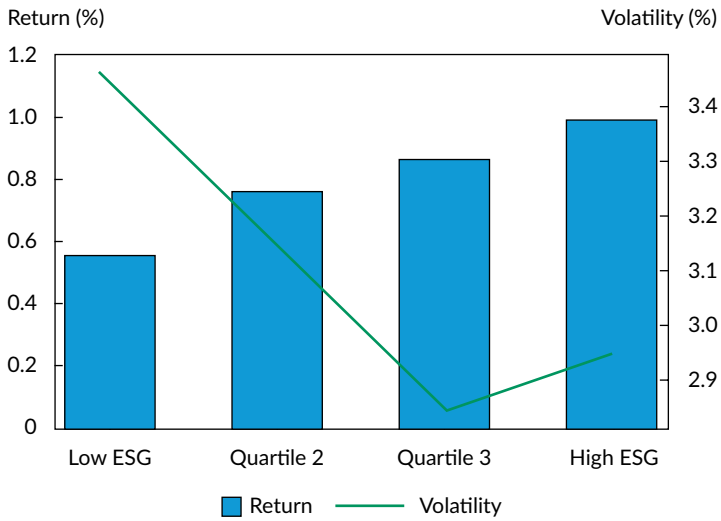
Table 6 shows results from a company-level test of the return predictability of the material ESG score. The coefficient of the material ESG score quartile is 0.0012 (*t*-statistic = 5.65), implying a

Figure 8. Material ESG Score, January 2013–November 2017



Notes: The figure shows the growth in the value of US$10 invested in the top and bottom quartiles of a new material ESG score. See the notes to Table 5 (for ESG sample information) and Figure 6.

Figure 9. Material ESG Score Quartiles: Monthly Average Returns and Volatility, January 2013–November 2017



Note: See the notes to Table 5 (for ESG sample information) and Figure 7.

top-quartile–bottom-quartile return spread of 36 bps monthly. **Table 7** shows estimates for a portfolio-level time-series test over the 2013–17 period. Table 7 reports results of a regression of the monthly top-quartile–bottom-quartile return spread on the Fama and French (2015) factor portfolio returns. Table 7 shows an alpha of 32 bps monthly (*t*-statistic = 1.91) for the material ESG score, with an annualized IR of 0.87. The alpha is statistically insignificant at the 5% level in a two-tailed test but statistically significant at the 5% level in a one-tailed test. Because the sign of the alpha has a directional prediction (positive), a one-tailed test could be applicable, but a two-tailed test would be more stringent and conservative.

One potential reason for the difference in statistical significance between Table 6 and Table 7 could be that the panel approach in Table 6 has far more observations—and, therefore, potentially more power—than the time-series approach reflected in Table 7.[14] A second potential reason could be that the top–bottom long–short portfolio in Table 7 is not the best portfolio implementation approach for maximizing the statistical significance of alpha. Finally, a third reason could be the presence of multicollinearity between DM and EM factors in Table 7, because multicollinearity can inflate standard errors and bias *t*-statistics downward (thereby working against the hypothesis being tested). When I replaced the separate DM and EM factors in Table 7

Table 6. Material ESG Score and Stock Returns: Company-Level Tests, January 2013–November 2017

Variable	Coefficient	*t*-Statistic
Material ESG score quartile	0.0012	5.65
1M lag ret	−0.0163	−4.46
Momentum	0.0031	3.43
Mkt cap	−0.0003	−1.63
Value	0.0064	2.79
Profitability	0.0008	0.81
Investment	−0.0049	−4.60
Share turnover	−0.0005	−0.18
Time (month) fixed effects	Yes	
Sector fixed effects	Yes	
Company-clustered standard errors	Yes	
Adj. R^2	0.11	

Note: See the notes to Table 2 and Table 5.

Table 7. Material ESG Score and Stock Returns: Portfolio-Level Tests, January 2013–November 2017

Variable	Coefficient	*t*-Statistic
Material ESG score: Alpha	0.0032	1.91
Rmxrf_DM	0.3429	3.28
SMB_DM	0.201	1.67
HML_DM	0.0363	0.26
RMW_DM	−0.0327	−0.18
CMA_DM	0.6858	3.15
Rmxrf_EM	−0.3003	−4.76
SMB_EM	−0.1214	−2.55
HML_EM	−0.2698	−4.91
RMW_EM	−0.1956	−3.05
CMA_EM	0.0264	0.33
Annual IR	0.87	
Adj. R^2	0.42	

Note: See the notes to Table 2, Table 4, and Table 5.

with global factor portfolios, I found that the alpha estimate was 64 bps monthly with a *t*-statistic of 3.46, which is statistically significant at the 1% level in a two-tailed test. The adjusted R^2 dropped by 60%, however, when global factors were used, suggesting that a model with separate regional factors, as in Table 7, is a better fit.

Evaluating an Alternative Material ESG Score. To address the issue of look-ahead bias, I also evaluated the return predictability of an alternative ESG score in which the two components—an equal-weighted composite governance score and the material ES score—were *ex ante* equally weighted to mitigate look-ahead bias in aggregation. Fixed equal weights were used in constructing the composite governance score (25% on each of its four components) and in constructing the material ESG score (50% on each of its two components). (Clearly, however, any aggregation rule would depend on investor preferences. For example, an investor more keen on environmental and social issues might apply a weight greater than 50% on the ES score in constructing the portfolio. Anecdotally, governance is relatively more important to investors, so I examined the performance of a strategy that placed a 50% weight on governance.)

With this alternative strategy, the material ESG score quartile had a coefficient of 0.0010 (*t*-statistic = 5.11) in a reestimation of Table 6. In reestimating Table 7, I found that the alternative ESG score had a monthly alpha of 20 bps (*t*-statistic = 1.66), with an annualized IR of 0.71. To put the strength of these results in some perspective, recall that the tests presented in Table 6 and Table 7 were estimated over the shorter 2013–17 period. In addition, these results, in line with anecdotal evidence, suggest that governance might be the most important component of ESG from an investor perspective.

Discussion

In this section, I discuss survivorship bias and a series of tests I estimated to evaluate the effects of various economic and global factors: the effect of state-owned enterprises (SOEs), the effect of the long US bull market following the global financial crisis (GFC) of 2007–2009, the stability of the results in the period prior to the GFC, the role of small-cap stocks, and the effect of limiting the strategy to long-only (top-quartile) portfolios.

Survivorship Bias. The corporate governance tests, which relied on MSCI scores, were conducted over the 2009–17 period, but MSCI did not begin issuing ratings until 2013. For prior periods, MSCI took its 2013 sample and worked backward to 2009, estimating ratings for the same set of companies. This methodology raises the question of potential survivorship bias in the tests. The results in this study were unlikely to be driven by this bias, however, for two reasons. First, inferences were based on in-sample comparisons across quartiles of governance or ESG scores, not on comparisons between the MSCI sample and a survivorship-bias-free non-MSCI sample. Second, for survivorship bias to influence the differential performance across these quartiles, it would need to be correlated with the sorting variable, but this phenomenon seems unlikely to explain the results. If one argues that survivorship bias affects companies with poor governance more than those with good governance (i.e., poor governance companies are less likely to survive), the effect would be to inflate the returns of the poor governance quartile in the surviving sample and attenuate return differences between the top and bottom quartiles, thereby biasing *against* an ability to find the results reported here.

Effect of SOEs in the Sample. Although it has been reported[15] that SOEs have relatively poor performance due to governance issues, SOEs were unlikely to be influential in the results reported here for two reasons. First, SOEs were unlikely to explain the monotonic relationship between governance quartiles and returns, which held across the entire distribution of governance. Second, 88% of the ACWI IMI sample consists of companies from the developed markets, which attenuated any potential SOE influence.

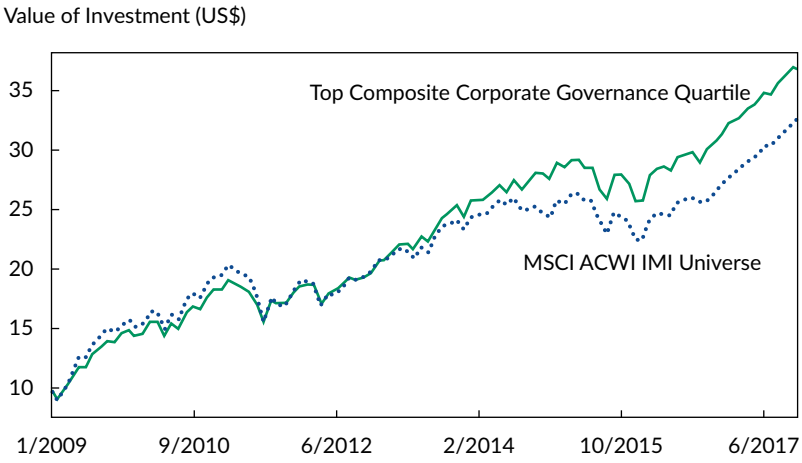
Effect of the US Bull Market. The corporate governance tests spanned the post-GFC period, when US equity markets have performed more strongly than those in the rest of the world.[16] To examine whether this US "bull run" was driving the results, I excluded US equities from the original test sample and reestimated Table 3 for corporate governance and Table 6 for ESG. In the ex-US sample, the new composite governance score quartile had a coefficient of 8 bps monthly (*t*-statistic = 4.10), implying a 24 bp monthly return spread between the top and bottom quartiles. Without the United States, the material ESG score quartile had a coefficient of 10 bps monthly (*t*-statistic = 3.68), implying a 30 bp monthly return spread between the top and bottom quartiles.

Pre-GFC Effect. The corporate governance tests spanned a nine-year post-GFC period, but a useful test, if data availability permits, might be to assess the stability of the results in a pre-GFC window. Because data for two governance factors, ownership dispersion and shareholder orientation, are available beginning in 2000, I reestimated the first and second regression specifications in Table 2 over the longer, 2000–17, window to examine the efficacy of these two factors in the pre-GFC period. Ownership dispersion and shareholder orientation remained statistically significant at the 1% level in a one-tailed test (coefficient = 0.0014, *t*-statistic = 10.65 for the ownership dispersion tercile; coefficient = 0.0136, *t*-statistic = 9.42 for shareholder orientation).

Effect of Small-Cap Stocks. Could the results have been driven by small-cap stocks? This outcome is unlikely for two reasons. First, all the portfolio-level tests and results used cap-weighted returns, and all the company-level tests controlled for market cap. Second, the results remained robust in the MSCI ACWI universe, which consists of large-cap and mid-cap stocks only.

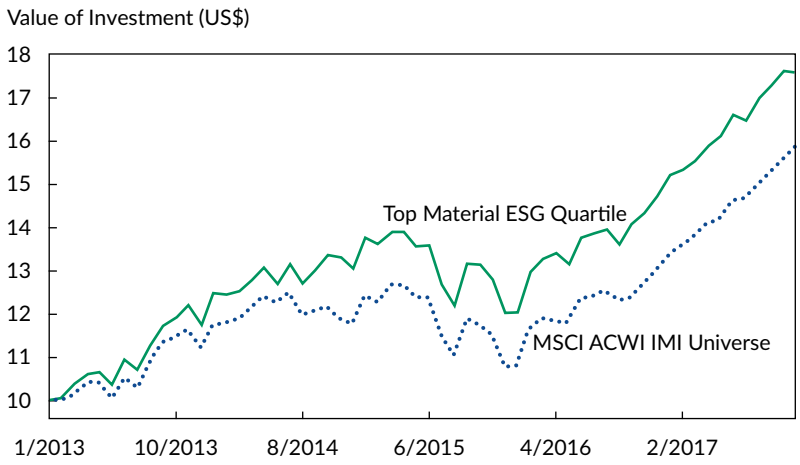
Long-Only Strategy. Some investors might consider ESG investing in a long-only fashion and would be interested in the performance of a long-only strategy (rather than a long–short strategy) versus an overall index consisting of all firms regardless of ESG data availability. I examined the performance of a long-only governance strategy and an ESG strategy versus the MSCI ACWI IMI universe (all companies in the universe regardless of whether they had governance or ESG data available). **Figure 10** shows the cumulative cap-weighted performance of the top-quartile portfolio of corporate governance companies (as measured by the composite governance score) versus the MSCI ACWI IMI universe. Each month, the cap-weighted forward returns of the top governance quartile and the entire universe were calculated; the return streams were cumulated to arrive at the growth curves in Figure 10. As shown, companies with the best governance outperformed the universe over the test period by 40 pps cumulatively. **Figure 11** shows the cumulative performance of the top-quartile portfolio of ESG companies (as measured by the material ESG score) versus the MSCI ACWI IMI universe. In Figure 11, companies with the best ESG scores outperformed the universe over the test period by 17 pps cumulatively.

Figure 10. Corporate Governance Long-Only Strategy vs. Universe, January 2009–November 2017



Notes: The figure shows the growth in the value of US$10 invested in the top quartile of a new composite governance score versus the MSCI ACWI IMI universe. The top quartile of corporate governance had 84,124 company-month observations in the test period; the MSCI ACWI IMI universe had 887,781 company-month observations in the test period. See also the notes to Figure 6.

Figure 11. ESG Long-Only Strategy vs. Universe, January 2013–November 2017



Notes: The figure shows the growth in the value of US$10 invested in the top quartile of the material ESG score versus the MSCI ACWI IMI universe. The MSCI ACWI IMI universe consisted of all index companies. The top-quartile total of the material ESG score had 45,511 company-month observations in the test period; the MSCI ACWI IMI universe had 496,640 company-month observations in the test period. See the notes to Table 5 (for ESG sample information) and Figure 6.

Conclusion

ESG investing in a global context has attracted increasing levels of interest, with investors curious about whether companies' ESG performance—which includes corporate governance strength—predicts stock returns. To date, however, little empirical evidence speaks to this question in a global context. In this study, I developed new corporate governance and ESG metrics informed by the academic literature and the concept of ESG materiality. The corporate governance framework is grounded in the view that good governance brings long-run economic discipline to capital allocation decisions so that capital is preserved and grows for long-run sustainability, which benefits all stakeholders in a company. The ESG materiality framework looks for investment value in ESG performance by focusing on ESG issues that are important to shareholders and other stakeholders.

I found that the new governance and ESG metrics did predict stock returns in a global investable universe in the tested period. In the cross-section, forward stock returns increased monotonically across governance and ESG quartiles. In tests of return predictability that controlled for style, time, and sector differences, the top-quartile–bottom-quartile return spread was 33 bps monthly for corporate governance (36 bps for ESG). A long-only portfolio of the top quartile of governance (ESG) scores was found to outperform the global universe by 40 pps (17 pps) cumulatively. These results are likely to be of interest to professional investment managers acting as fiduciaries.

A few caveats are in order. The backtested results described in the article may not be representative of the future performance of the strategy. The results are reported gross of transaction costs. Return performance was calculated in US dollars and may not be representative of the experience of non-US-dollar-based investors. Given the heterogeneity in views about corporate governance and ESG performance, the concepts presented here could be debated by some readers. Finally, future work, as more data become available, could examine the efficacy of the governance and ESG signals over a longer window.

Appendix A. Variable Definitions

Return:	Total monthly stock return in US dollars
1M lag ret:	One-month-lagged (relative to forward) return
Momentum:	Cumulative return from months $t - 11$ to $t - 1$
Mkt cap:	End-of-month market value of equity in US dollars (millions)
Size:	Natural logarithm of Mkt cap
Value:	Operating cash flow divided by 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 divided by fiscal period closing market value of equity, for the last fiscal year ending at least four months prior
Profitability:	Operating income divided by lagged book value of common equity, for the last fiscal year ending at least four months prior
Investment:	Percentage growth in total assets relative to prior year, for the last fiscal year ending at least four months prior
Share turnover:	Monthly trading volume divided by shares outstanding
Ownership dispersion:	End-of-month free float as a percentage of shares outstanding
Shareholder orientation:	= 1.0 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
Institutional strength:	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 company-level corporate governance score that is a linear aggregation of ownership dispersion tercile, shareholder orientation, institutional strength, and the MSCI governance score
MSCI governance:	A monthly company-level score from MSCI that includes corporate governance and corporate behavior
Material ESG:	A monthly company-level ESG score that is a linear aggregation of the composite governance quartile and the material ES quartile; the material ES score is the company's score on material environmental and social issues, which is a subset of MSCI issues
MSCI ESG:	A monthly company-level ESG score from MSCI

Editor's Note

Important Disclosures: These materials should not be relied on as research or investment advice regarding any stock. There is no guarantee that any forecasts made will come to pass. Causeway Capital Management LLC does not guarantee the accuracy, adequacy, or completeness of such information. Although the author's information providers, including without limitation MSCI ESG Research LLC and its affiliates (the "ESG Parties"), obtain information from sources they consider reliable, none of the ESG Parties warrants or guarantees the originality, accuracy, and/or completeness of any data herein. None of the ESG Parties makes any express or implied warranties of any kind, and the ESG Parties hereby expressly disclaim all warranties of merchantability and fitness for a particular purpose, with respect to any data herein. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data herein. Further, without limiting any of the foregoing, in no event shall any of the ESG Parties have any liability for any direct, indirect, special, punitive, consequential, or any other damages (including lost profits) even if notified of the possibility of such damages.

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Notes

1. See, for example, PRI (2016) and SASB (2018).
2. Throughout this article, MSCI refers specifically to MSCI ESG Research, LLC, as the source of the ESG ratings (see www.msci.com/documents/1296102/1311232/ESG+ADV+2A+2017-03.pdf/49ba55aa-b739-428c-b32d-87580eb4aeea).
3. I thank the *Financial Analysts Journal* editor, Stephen Brown, for this observation.
4. https://scholar.harvard.edu/shleifer/publications.
5. See MSCI ESG Ratings Methodology (April 2016).
6. www.sasb.org/standards-overview/materiality-map/.
7. The 60% overlap was indicated by MSCI in private correspondence dated 3 May 2017.
8. www.msci.com/documents/10199/4211cc4b-453d-4b0a-a6a7-51d36472a703.
9. Ownership dispersion was sorted into terciles because, as Table 1 shows, its distribution was left skewed and the median was 89.1%. Sorting into quartiles did not render a large spread in ownership dispersion between the third and fourth quartiles. This issue was mitigated by using terciles.
10. The return outliers in Figures 1 and 5 are Egypt (top) and Pakistan (bottom). Results were robust to excluding companies from these countries.
11. To see why the two top-down factors are incrementally informative relative to each other, consider that shareholder orientation is a categorical variable but the institutional strength score captures further variations in each category. For example, the common law category of shareholder orientation includes the United States, the United Kingdom, India, Pakistan, and Nigeria, among others. The institutional strength score recognizes variations in institutional strength across these countries even though they belong to the same shareholder orientation category. Similarly, the United Kingdom and France have similar institutional strength scores but different degrees of shareholder orientation.
12. Each component was first transformed to lie in [0, 10], and then I applied percentage weights, so the final composite score was in [0, 10]. For example, ownership dispersion tercile $\in \{0, 1, 2\}$ was multiplied by 5 and then by 0.2 (20% weight). For ownership dispersion, I used the tercile score, rather than the continuous variable, to mitigate the effect of potential nonlinearity in the relationship between stock returns and ownership dispersion.
13. http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.
14. Nonmonotonicity in the cross-section could be another reason for the weaker significance in Table 7, but Figure 9 suggests monotonicity across quartiles.
15. State-owned enterprises (SOEs) raise a number of governance concerns. For example, the OECD articulated some of these concerns and explicitly developed guidelines for addressing them in its *OECD Guidelines on Corporate Governance of State-Owned Enterprises. 2015 Edition* (www.oecd-ilibrary.org/docserver/9789264244160-en.pdf?expires=1568043942&id=id&accname=guest&checksum=DD27481849CD94DA1B762B38B0F3BF85, p. 12). Research by MSCI shows that SOEs are more economically important, by weight, in emerging than in developed markets (www.msci.com/www/blog-posts/evaluating-emerging-market/01261472348). Publicly available research by some asset managers shows that emerging market SOEs have delivered lower cumulative returns than non-SOEs over this article's sample period.
16. Specifically, the MSCI USA IMI index has outperformed its World and ACWI counterparts since the GFC: www.msci.com/documents/10199/3c4c8412-5d81-4aa9-a9c8-4490f9f5e04a.

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