

ESG Shareholder Engagement and Downside Risk

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Abstract

We examine whether engagement on environmental, social and governance (ESG) issues can benefit shareholders by reducing firms' downside risk, measured using lower partial moments and value at risk. Using a proprietary database, we provide evidence supporting this hypothesis. We further find that the measured risk effects vary across engagement success and engagement themes. Engagement appears most effective in lowering downside risk when addressing governance or strategy topics and when changes in firms' environmental policies (especially on climate risk) are coupled with governance improvements. We find corroborating evidence in that successful engagement reduces the firm's exposure to a downside risk factor.

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1. Introduction

Direct institutional investor engagement on environmental, social and governance (ESG) issues has become increasingly prevalent in financial markets worldwide. Several factors contribute to this trend, including the increased public interest in ESG (or corporate social responsibility (CSR)), the growing size and importance of institutional shareholdings, and the still relatively low passing rates for shareholder proxy proposals on many of the ESG issues of importance to institutional investors.¹

Both academics and practitioners have argued that firm's risk exposures are related to their ESG profiles. For example, Albuquerque, Koskinen, and Zhang (2017) develop a theoretical model in which a firm's efforts to increase product differentiation through higher CSR investments decreases the firm's systematic risk and increases the firm's value. They also provide empirical evidence that supports their theory. Similarly, Oikonomou, Brooks, and Pavelin (2012) show that firm risks, including downside risks, are related to corporate ESG ratings (as measured by MSCI KLD scores). These theoretical and empirical results are consistent with the practitioner argument that reducing the downside risks related to ESG factors is a major driver of direct shareholder engagement because the shareholders are concerned about negative ESG exposures that imply substantial legal, reputational, operational, and financial risks (e.g., Blackrock and Ceres, 2015; Fortado, 2017). For example, BP's Deepwater Horizon oil spill in 2010, a typical example of a tail risk event, reminded many investors of the importance of having robust environmental policies in place (Dyck et al., 2018). Further, evidence shows that increased tail risk can have consequences for

¹ See, for example, Gillan and Starks (2000; 2007) or Grewal, Serafeim, and Yoon (2016).

corporate investment and corporate risk-taking (Gormley and Matsa, 2011; Gormley, Matsa, and Milbourn, 2013).

Thus, it is perhaps not surprising that an increasing number of institutions actively engage with their constituent firms in order to reduce the risks of ESG exposures. These engagements commonly involve direct communications with management and/or the board. The goal of most of these engagements is to engender higher standards of corporate ESG practices that serve as an insurance mechanism against harmful, risk-inducing events, the investors strive to stimulate improved ESG standards at portfolio firms in order to reduce downside risk through mitigating the likelihood of regulatory, legislative or consumer actions taken against firms. Often the shareholders seeking such engagements are large institutional investors—also called “universal owners” due to their highly diversified and long-term portfolios—who are exposed to ESG risk not just because of events caused by individual portfolio firms that affect both those firms as well as others, but also because of additional externalities from economy-wide factors, such as climate change or social unrest.

We examine whether these costly engagements on ESG topics result in successful conclusions for firm risk. That is, we test whether the engagements are associated with subsequent reductions in downside risk at portfolio firms. To do so, we employ proprietary engagement data provided by a large institutional investor with more than \$200 billion in assets under advisement. This investor is considered to be one of the most influential activists when it comes to promoting and developing ESG standards at portfolio firms. Further, the investor not only has the weight of its own holdings, but also speaks on behalf of other large institutional investors. The data includes 682 engagements across 296 targeted firms worldwide, covering the years 2005 through 2014. The

investor provided us with full access to the engagement database, including shareholdings, engagement activities, action reports, and their measures of success.

In the first part of the paper, we provide a detailed descriptive analysis of the investor's ESG engagement process. The investor most commonly engages portfolio firms regarding corporate governance issues, which accounts for approximately half of all the engagements. These governance engagements most frequently center on concerns about board structure and remuneration. The next most common types of engagements cover what the investor terms as social issues (21%) and contain mostly engagements over health and safety issues, supply chain topics, and illegal acts such as bribery and corruption. The 18% of the engagements that focus on environmental issues have a primary theme of climate risk, which has become a first-order topic for engagement among many major institutional investors. Blackrock, for example, has announced that portfolio firm disclosure on climate risk will be a focus area for their future engagements (Blackrock, 2017). The number of engagements on climate risk by our investor has increased to reach more than half the number of engagements on executive pay, which has traditionally been the focus of many engagement campaigns. These figures reflect a more general trend, mainly that many institutional investors find climate risk difficult to price and hedge, making direct engagement on climate risk an important risk management tool.² Finally, 13% of the engagements center on strategy topics which are mostly driven by concerns over a firm's business strategy and corporate risk management.

The investor uses four milestones to track the success of each intervention. These milestones reflect (i) whether the investor raises a concern with a target company (Milestone 1);

² Given their prominent position as large shareholders in publicly-listed firms, institutional investors are also increasingly viewed as potent catalysts in driving firms to reduce carbon emissions (Andersson, Bolton, and Samama, 2016).

(ii) whether the company acknowledges the concern that was raised (Milestone 2); (iii) whether the company takes actions to address the concern (Milestone 3); and (iv) whether the investor successfully completes the engagement (Milestone 4). In total, 28% of the investor's engagements successfully achieve all four milestones, 51% achieve Milestone 3 (but no further), 85% reach Milestone 2, and 15% remain at the stage of raising a concern. While it takes the investor, on average, four months to complete Milestone 1, it usually takes an average of 34 months until the entire engagement is successfully completed.

The investor primarily uses a private, non-public route to engage portfolio firms, consistent with the more general evidence on institutional engagement in McCahery, Sautner, and Starks (2016). Among the 2,927 interactions the investor has documented with portfolio firms, more than 60% take the form of private in-person meetings (1,778 interactions), followed by conference calls (606), emails (204), and letters (203). The strategy by the investor to prefer private negotiations to public engagements is consistent with recent theoretical reasoning in Levit (2014), who demonstrates that if an activist's information becomes public, the activist can lose credibility and consequently the ability to influence the manager's actions. The data on duration and meeting frequency confirm that engagement is costly for the investor, in terms of the time and resources needed to successfully close an ESG engagement (Gantchev, 2013).

The database identifies who at the portfolio firms is contacted by the investor when raising an ESG issue. The individuals most frequently contacted include senior executives (1,004 contacts), the board of directors (805), and the board chair (471). However, there exists substantial heterogeneity in the identity of the contacts, depending on the specific ESG topic. Dialogues over social and environmental issues are conducted most frequently with senior executives, the CSR

department, and investor relations, whereas governance as well as strategy issues tend to be raised directly with the board, the board chair or senior executives.

In the second part of the paper, we examine whether and how ESG engagement reduces downside risk of the portfolio firm, which we measure in three different ways. Our first two measures capture the distribution of returns that fall below the 0%-return-threshold. We calculate these measures as the lower partial moments (LPMs) of the second and third order, respectively (Bawa, 1975; Fishburn, 1977). Different from stock return volatility, these measures capture *negative* return fluctuations, reflecting many long-term investors' perception of risk (Harlow, 1991). These measures also underline the potential wealth-protection motives of ESG engagements (Blackrock and Ceres, 2015; Fortado, 2017). As a third measure we calculate an investment's value at risk (VaR) (Duffie and Pan, 1997). Empirical evidence suggests that this tail-risk measure is closely related to ESG risk (Diemont, Moore, and Soppe, 2016), as firms with better ESG performance are less vulnerable to company-specific negative events (e.g., Krüger, 2015).

We document across all three measures that ESG engagements are associated with subsequent significant reductions in downside risk. We ascertain this risk-reduction effect using two complementary methodologies. Given the challenge that (unobserved) factors may affect both the investor's engagement decision and a target's downside risk, in our first approach we employ an endogenous treatment-effects model that addresses potential selection in the engagement decision (Wooldridge, 2010). This approach is also appropriate because some ESG engagements can be triggered by public events that occur more frequently in industries where ESG issues are more important. We estimate this model using a set of matched control firms that were not targeted by the investor, but have similar characteristics in terms of their country origin, industry, and size. After controlling for selection, we find that engagement has an average treatment effect of 1.1% (1.4%)

in terms of reducing the LPMs of the second (third) order, which are economically meaningful, as both risk measures have mean values of 5.6% and 7.5% at control firms, respectively. We also find that engagement reduces value at risks (5%-VaR) by 2.7% compared to matched control firms. This is again economically meaningful as the VaR averages 14% across control firms, so the reduction in VaR equals about 20% of this mean value.

If, as these results support, engagement leads to a subsequent reduction in a firm's downside risk, we should also find that the treatment effect of ESG engagement on downside risk is stronger for more successful engagements, which we define as those where at least Milestone 2 is achieved. Hence, the risk-reduction effect would come from engagements in which portfolio firms acknowledge that they have a problem, or even respond with actions to meet the investor's demands. We find that the results are indeed concentrated among such engagements, which supports the hypothesis that it is indeed the intervention by the investor, rather than a selection effect, that reduces downside risk.

We further find that the measured risk reductions after ESG engagements vary across engagement themes, with more effective engagement, i.e., a stronger relationship with risk reduction, occurring when governance or strategy topics are addressed. Engagement is also associated with substantial reductions in environmental risks (such as those stemming from climate change), but only when the environmental engagement is combined with engagement to improve governance. This finding supports the hypothesis that changing a firm's sustainability agenda without addressing the firm's governance is unlikely to reduce downside risk, which is consistent with findings in Monks et al. (2004), who show that shareholder proposals combining CSR issues with suggested traditional governance improvements gain more shareholder support than proposals addressing CSR issues alone. We find no significant downside risk effects from

engagements on social themes, whether we examine these effects for social themes on an isolated basis or when they are combined with governance engagements.

We complement the treatment-effects analysis with a second approach in which we examine the relationship between the engaged firms' stock return loadings and a down-side risk factor. Specifically, we test whether after engagement a change occurs in the relationship between a target firm's weekly returns and the firm's exposures to a downside-risk factor, which we construct as the difference in returns between portfolios of stocks with high minus low downside risk. This approach is motivated by work such as Ang et al. (2006) which also creates a risk factor but uses volatility rather than downside risk. We find that exposure to the downside-risk factor significantly decreases after Milestone 2 has been achieved, suggesting that the firms that respond to the investor become less exposed to downside risk, again supporting the hypothesis of a risk-reduction effect due to ESG engagement.

Our paper contributes to the literature on shareholder engagement. First, we provide insights into private engagement processes and practices and the apparent outcomes. Second, we provide evidence to support the hypothesis that intervention over ESG topics reduces downside risk. This finding complements work that focuses primarily on the effects of ESG engagements on first moments, i.e., firm values or returns (Smith, 1996; Carleton, Nelson, and Weisbach, 1998; Becht et al., 2009; Dimson, Karakas, and Li, 2017). We also complement studies that show that voluntary ESG or CSR efforts by firms decrease the probability that negative events occur (Kim, Li, and Li, 2014; Krüger, 2015), and also reduce firm risk more generally (Albuquerque, Koskinen, and Zhang, 2017; Jo and Na, 2012; Godfrey, Merrill, and Hansen, 2009; Luo and Bhattacharya, 2009; Oikonomou, Brooks, and Pavelin, 2012). Our findings complement Dyck et al. (2018), who show that institutional ownership is positively associated with firm-level environmental and social

performance, and Liang and Renneboog (2017) who trace standards of corporate CSR back to the legal origins in a country.

2. Engagement Data and Process

2.1 Engagement Data

Our institutional engagement data is obtained from a large institutional asset manager in the United Kingdom, who is considered to be a highly influential activist in promoting and developing ESG standards at portfolio firms. This investor has a stated goal of engaging firms to incorporate long-term sustainability and risk management into their business operations and corporate policies. The investor believes that companies with informed and involved shareholders are better able to manage risk and minimize the occurrence of tail risk events.

The proprietary database, which constitutes the core of our analysis, contains 682 engagements across 296 targeted firms worldwide over the 2005 to 2014 period. We have full access to the investor's online engagement database, including the shareholdings, engagement reports, action reports, and success milestones. The investor states that the engagement occurs predominantly via a constructive, confidential dialogue. Further, the investor prefers not to take a public route when seeking to promote change in companies, an approach that is consistent with recent survey evidence on engagement by institutional investors in McCahery, Sautner, and Starks (2016).

2.2 ESG Engagement Process

The investor has widely engaged firms across geographic and industry boundaries as shown in Figures 1 and 2. Figure 1 illustrates the geographic distribution and shows that the investor has engaged portfolio firms across 31 different countries, with the largest number of their engagements

with firms headquartered in the United Kingdom (154 engagements or 23% of the sample) and the United States (137 or 20%). The next most common countries for engagements are also developed markets, with 6.7% each in France and Japan, and 4.8% in Canada. The investor also has engaged firms in a number of emerging markets.

Figure 2 shows that engagements tend to be concentrated in several industrial sectors with most interventions, 426 in total, having occurred among firms in the financial, oil & gas, basic materials, and consumer goods sectors (about two-thirds of all engagements). Firms in the industrial, consumer services, and utilities sector also received a number of engagements, while firms in the health care, telecommunications, and technology sectors attracted relatively fewer engagements.

The time series of engagements by the investor shown in Figure 3 indicates that the investor gradually increased the intensity of engagements since the beginning of our sample period in 2004, reaching a peak with 155 engagements in 2010, and then entering into fewer engagements in the remaining years. Although the number of engagements per year has decreased since the peak, the investor has still remained very active, engaging over 50 firms per year through the end of our sample in 2014.

The investor engages firms according to four themes: (i) corporate governance, (ii) social, (iii) environmental, and (iv) strategy. In Table 1 we report the frequency of engagements across each of these themes, and we also list the sub-themes that are within each of these broader areas. Overall, the investor most commonly engages portfolio firms over governance issues, accounting for about half of all engagements. This is followed by engagements over social (21%), environmental (18%), and strategy issues (13%). Interestingly, this distribution generally mirrors the percentages of engagements by a different asset manager documented by Dimson, Karakas, and Li (2015), who

also find for that investor that corporate governance engagements traditionally outpace those on environmental and social topics.

The particular engagement topics shown in Table 1 provide insights into the most pressing concerns that the investor has within each of the more general themes. For example, within the governance area, the investor most frequently intervenes because of concerns over board structure (37%), remuneration (31%), succession planning (9%), and the separation of the chairman/CEO role (6%). These concerns of an investor involved in private engagement also reflect the broader institutional investor community concerns as shown in industry publications (Wilcox and Sodali, 2017).

In terms of social themes, the investor engages primarily over concerns regarding health and safety issues (19%), supply chain topics (25%), and bribery and corruption (13%). Community relations, operations in troubled regions and employee relations are also frequently on this asset manager's engagement agenda. The investor examined in Dimson, Karakas, and Li (2015) engaged on similar social theme topics.

Among environmental topics, the investor focuses primarily on issues related to climate change (45%). The increasing importance of climate change as an engagement topic is shown by the fact that the total number of engagements (54) amounts to more than half the number of engagements on one of the most common engagement topics: executive pay (103). Climate risk has become an important engagement topic among many institutions, reflecting a belief that climate risk has the potential to adversely affect the values of assets managed by institutional investors, especially long-term investors. Additionally, many institutional investors find climate risk difficult to price and hedge, making direct engagement to have more robust climate change disclosure or to

reduce the carbon footprint of portfolio firms (and the impact of climate risk on business models more generally) an important risk management tool.

The primary intervention motives over strategy topics are improving business strategy (47%) and risk management (40%) at portfolio firms. This observation is in line with Khorana, Shivdasani, and Shigurdsen (2017), who find that activists are increasingly focusing on business strategy.

Using the four milestones that the investor uses to track the success of each individual firm engagement, Table 2 reports the proportion of the engagements that have reached each milestone at the end of sample period. Across all of the different categories of engagements, the table shows that 100% have reached Milestone 1 (the investor raises concern with the target company); 85% have achieved at least Milestone 2 (company acknowledges the concern that is raised); 51% have achieved at least Milestone 3 (company takes actions to address the concern); and in 28% of the cases the investor reaches Milestone 4 and successfully completes the engagement. Thus, according to these milestones, the engagements have been met with varying success rates. At the end of the sample period, 15% of the engagements in the sample are still at the stage of raising a concern. Similar to the success rates shown in Dimson, Karakas, and Li (2015), the engagement success rate in our sample is lower than reported by activist hedge funds who engage in a different way and generally for different purposes (the hedge fund success rates are 60% in Brav et al., 2008 and 60% in Klein and Zur, 2011). One reason for the differences between our results and theirs could be that it is harder to persuade top management and the board to incorporate the requested ESG changes as compared to requested financial changes such as for capital structure or dividend policy, which traditionally have been the more typical focuses of activist hedge funds. Second, hedge funds typically target firms that are in need of the requested financial changes and are able to bring other institutional investors on board with lobbying firm management for changes (Kedia,

Starks and Wang, 2017). Third, ESG engagements by our investor could be less aggressive and less influential on target firms because ownership positions are lower compared to those of activist hedge funds that often take more concentrated positions.

In Table 2 we also report descriptive statistics on engagement durations, reported by milestone and theme. The details regarding the engagements show that the investor expends considerable efforts and time in trying to engender the desired changes at the portfolio firm. The table illustrates that it takes on average four months to complete Milestone 1, eleven months until a portfolio firm also acknowledges an issues raised by the investor (Milestone 2), 24 months until the engagement target has also taken actions or developed a strategy to improve an issue (Milestone 3), and 34 months in total until all milestones are successfully completed.³ The minimum time needed to achieve one milestone is between one and two months, regardless of the stage of the engagement.

Regarding the length of engagement by theme, the table shows that environmental engagements take the least time for targets to acknowledge an issue of concern (Milestone 2), and to implement an action in response to the investor's demands (Milestone 3). In contrast, corporate governance engagements take the longest time when it comes to completing Milestones 1 and 2. The difference may reflect that the investor faces more difficulty in completing the engagement when boards must be involved with regard to their own alleged shortcomings. Strategy engagements require the longest duration for Milestone 3, probably as larger organizational changes are typically required in these types of engagements. Finally, social issues take the longest

³ Becht et al. (2010) suggest that, in general, collaborative corporate governance engagements take 16 months, whereas confrontational ones take 43 months. Brav et al. (2008) find that the average duration of an engagement undertaken by a hedge fund is 12 months.

time for eventually accomplishing an engagement success (Milestone 4).

In Table 3, Panel A, we provide the actions taken by the investor to achieve their engagement goals. These engagement actions are divided by theme and milestone. Apart from the absolute number of actions, we also report the number of actions per engagement. The table shows that, among the set of 2,927 actions, more than 60% take the form of meetings (1,778 actions), followed by conference calls (606), emails (204), and letters (203). The table further shows that Milestone 1 can be completed, on average, with one meeting per engagement, while it takes on average two meetings to achieve Milestone 2. Moving from Milestone 2 to Milestone 3 is the most difficult step, taking as many as four meetings. Once Milestone 3 is achieved, it requires on average three further meetings to successfully complete an engagement.

In the engagement process, the investor contacts a variety of individuals at the portfolio firms. In Table 3, Panel B we present data on who is contacted. The positions most contacted are senior executives (1,004 contacts), as would be expected, but the investor also often contacts members of the boards of directors (805), and separately, the chairman of the board (471). However, an interesting heterogeneity exists on who is contacted depending on the specific engagement topic, which reflects the decision-making authority for the topic. Statistics classified by theme show that the investor has dialogues over social and environmental topics mostly with senior executives, CSR and investor relations, whereas the investor tends to directly communicate with the board of directors, chairmen, and senior executives over governance as well as strategy issues.

Actions classified by milestone further show that the investor usually raises issues of concern directly with senior management (Milestone 1). Senior management also acknowledges in Milestone 2 the issue that is raised. To ensure that firms take measures to address the concerns

(Milestones 3 and 4), the investor then roughly doubles the number of cases in which interventions occur directly with the board, chairmen and senior executives.

3. Empirical Tests on Downside-Risk

3.1 Downside-Risk Measures

Downside-risk or left tail risk can be an important consideration for institutional investors in asset pricing, which has long been recognized in the academic literature (see, for example, Bawa, 1975; Bawa and Lindenberg, 1977; Harlow and Rao, 1989; and more recently, Ang, Chen, and Zing, 2006; or Xiong, Idzorek, and Ibbotson, 2016). In particular, empirical evidence suggests that the distribution of stock returns is not normal, and instead characterized by skewness and heavy tails (Ang, Chen, and Xing, 2006; Singleton and Wingender, 1986). In this case, measures such as stock return volatility that do not distinguish between positive and negative events may produce biased results. Downside risk measures reflect negative price fluctuations, thereby capturing many investors' perceptions of risk (Harlow, 1991). As pointed out by Ang, Chen, and Sundaresan (2013) many institutional investors such as pension funds face liabilities and the failure to meet those liabilities carries significant penalties. Thus, they have a natural focus on left-tail risk. Thus, wealth protection becomes important and can lead to ESG engagement. As pointed out earlier, ESG activists have specified downside risk considerations in their activism decisions (e.g., Fortado, 2017). Further, long-term institutional investors often try to hedge against downside risk, especially during times of economic turbulence (Hebb, 2011). We hypothesize that if downside risk is an important consideration in asset pricing and ESG engagements, a relationship should exist between ESG engagements and firms' subsequent downside risk.

To test our hypotheses regarding whether ESG engagements are associated with subsequent lower downside risk for the targeted firm, we employ three measures that have been

widely used to capture firm downside risk, two lower partial moment variables and variance at risk. Our first two measures, the lower partial moments of the second ($LPM(0,2)$) and third order ($LPM(0,3)$), respectively, capture the distribution of returns that fall below a certain threshold value, which we set equal to 0% for our analysis. That is, we consider the negative return part of the distribution for the downside risk, thus, $LPM(0,2)$ and $LPM(0,3)$ are calculated as the square and cube root of the semi-variance below 0%, respectively (Bawa, 1975; Fishburn, 1977). More formally, $LPM(0,2)$ is defined as:

$$LPM(0,2) = \sqrt{\frac{1}{N_1-1} \sum_{i=1}^{N_1} (r_{n,i} - \bar{r}_{n,i})^2}$$

where $r_{n,i}$ indicates the negative monthly return of firm i and $\bar{r}_{n,i}$ is the mean value of $r_{n,i}$. N_1 is the number of observed *negative* monthly returns for firm i during the measurement period. $LPM(0,3)$ measures the extreme negative return dispersion and is defined as:

$$LPM(0,3) = \sqrt[3]{\left| \frac{1}{N_1-1} \sum_{i=1}^{N_1} (r_{n,i})^3 \right|}$$

where $r_{n,i}$; $\bar{r}_{n,i}$ and N_1 are defined as above. We use the absolute value of $LPM(0,3)$ in our analysis.

As a third measure, we calculate a portfolio firm's value at risk (Var), by measuring the worst historical loss over the measurement period (Duffie and Pan, 1997; Jorion, 2002). The concept of VaR has gradually gained importance in risk management and is promoted by various industry regulations.⁴ More crucially, empirical evidence suggests that the tail-risk measure of VaR is closely related to ESG risk (Diemont, Moore, and Soppe, 2016). The intuition is that firms with better ESG

⁴ For example, The Federal Reserve and regulators in the European Union have accepted VaR as a risk measure in financial reporting. In 1995, the SEC issued a proposal to encourage market risk disclosure using a VaR measure as one of three available methods.

performance are less vulnerable to company specific negative events. We measure the VaR by taking return outcomes ranked at the bottom fifth percentile (5%-VaR).

3.2 Empirical Tests I: Endogenous Treatment-Effects Models

3.3.1 Empirical Framework

In order to test whether ESG engagement is related to future downside risk reduction, we need to consider potential bias that could arise because selection of which firms to target for ESG intervention is endogenous. Consequently, we employ an endogenous treatment-effects model to address this selection bias (Wooldridge, 2010). We estimate the endogenous treatment-effects model through an outcome-regression equation (1) and an engagement-selection equation (2):

$$\text{Downside Risk}_{i,t} = \alpha_1 + \delta \text{Engagement Target}_{i,t} + x_{i,t}\beta + \varepsilon_{i,t} \quad (1)$$

$$\text{Engagement Target}_{i,t} = \alpha_2 + z_{i,t-1}\gamma + u_{i,t}, \quad (2)$$

where *Engagement Target*_{*i,t*} is the treatment variable in year *t* and takes the value 1 if a firm is an engagement target, and 0 if it is a control firm; *Downside Risk*_{*i,t*} is one of our three measures capturing downside risk in year *t*. We construct these measures from monthly return data over the period between the initial engagement and the end of the sample (“post-engagement period”). *x*_{*i,t*} and *z*_{*i,t-1*} are vectors of control variables for the outcome and engagement selection equations in *t* and *t* – 1, and *ε*_{*i,t*} and *u*_{*i,t*} are error terms. All parameters are estimated using maximum likelihood. Our main coefficient of interest in this model is *δ*, which represents the average treatment effect (ATE) of investor engagement on downside risk

To conduct this analysis, we create a set of matched control firms that have similar characteristics but were not targeted by the investor. To identify such firms, we use the initial engagement date for each target firm and then search for a control firm in the FTSE All-World index

within the same year. We use this index given that the engagement targets are distributed across many countries as shown in Figure 1.⁵ Similar to Brav et al. (2008) we match engagement targets with firms using three matching variables, namely country, industry, and size. Matching by country is important because of the variations in ESG regulations and ESG firm performance across countries. Dyck et al. (2018) provide evidence that institutional ownership and its relation to E&S performance varies by social norms across countries. Similarly, Dimson, Karakas and Li (2017) show that the success of coordinated ESG engagements varies across countries. We further control for industry as engagement may be more successful in reducing risk in countries or industries that experience recent governance, social, or environmental scandals (e.g., the Deepwater Horizon spill in the United States). Consistent with this conjecture, Dimson, Karakas, and Li (2017) also find that the success rate in their sample varies across industries. We match firms on size as the occurrence of ESG risks likely has more adverse legal or reputational consequences for larger firms. Moreover, larger firms have been shown to respond more positively to shareholder activists (Dimson, Karakas, and Li, 2015). We use the largest number of possible matches available in the FTSE All-World index.⁶ Finally, we exclude 27 utilities firms from our subsequent analysis as they operate in heavily regulated environments in which shareholder activists have lesser chance to effect change. The resulting matching sample contains 1,131 firms, including 269 engagement targets and 862 control firms. To ensure comparability, we calculate our risk measures for targets and matched control firms over the same “post-engagement period”.

To account for firm characteristics that may explain the decision to engage a target in the engagement-selection equation, we control for size, the market-to-book ratio, profitability,

⁵ The index covers about 90-95% of the world’s investable market capitalization and includes more than 3,000 firms from 47 different countries.

⁶ We first match on country, then on industry, and finally on size. To match on size, we use the index grouping of firms into two categories, medium and large size firms and match only within the same size category.

dividend yield, leverage, and proxies for corporate governance. We control for size as activist investors tend to engage with larger firms, which are not only more visible for institutional investors and their final asset owners, but also tend to contribute to a higher portfolio risk because of their weight in institutional portfolios (Smith, 1996; Karpoff, Malatesta, and Walkling, 1996; Dimson, Karakas, and Li, 2015). We measure size using the logarithm of the equity market capitalization. We control for the market-to-book ratio to capture growth opportunities and value potential, reflecting some investors' engagement preferences (see Brav et al., 2008). We also control for past performance using a firm's operating profit margin, calculated as operating income over sales. Past performance can affect an activist's engagement decision, as poor performance has been shown to trigger engagement (Karpoff, Malatesta, and Walkling, 1996; Smith, 1996). We further control for dividend yields as Dimson, Karakas, and Li (2015) show that target firms have relatively higher dividend yields. Given the Dimson, Karakas, and Li (2015) finding that engagement targets have higher leverage than control firms, we control for the firm's leverage. We also control for investor concerns regarding target governance, which we capture using the free float and the anti-director rights index (ADRI) from La Porta et al. (1998) and Spamann (2009).

Table 4 provides estimates of the selection equation and Table 5 provides estimates of the outcome equations. The three regressions we report in Table 4 correspond to the three outcome equations we estimate in Table 5 for the downside-risk measures. Control variables are measured one year prior to engagement. The estimates show that after matching target and control firms the decision to engage is unrelated to most firm characteristics that have been shown to explain engagement. Nevertheless, even after matching firms on size, we continue to find that larger firms are more often targeted by the investor. Furthermore, targeted firms tend to pay relatively higher dividends than control firms. We have some weak evidence that the investor generally engages

more in countries with better minority shareholder protection, as captured by the ADRI index. This corresponds to Liang and Renneboog (2017), who find that corporate ESG standards are higher in countries where legal origins foster stronger investor protection. Overall, the remaining differences in firm characteristics documented in Table 4 highlight the need to carefully address selection bias beyond just matching firms through an econometric model.

3.3.2 Empirical Results

We next estimate the effects of shareholder intervention on downside risk. We report three sets of results. First, we present estimates of the overall effects of ESG engagement on downside risk. We then provide results by engagement success. If our hypotheses are correct that the risk changes are driven by investor engagement and the target's subsequent response, then we should observe systematic variation across targets with different rates of engagement success. Finally, we show the results according to the engagement theme in order to understand which areas of engagement have the largest potential to reduce downside risk.

Constituting our first step, Table 5 reports regressions of the overall effect of ESG engagement on downside risk after accounting for engagement selection. Recall that we measure downside risk for each target-control-pair over the same time horizon, namely over the post-engagement period (from the initial engagement date to the end of the sample). In order to consider individual year effects to make different pairs comparable, we standardize all measures by year. We also control for firm size and the market-to-book ratio to capture the other Fama-French (1993) factors that could explain the results. We account for leverage as higher debt tends to increase the volatility of firm's earnings. Finally, we control for profitability, which is related to firm risk (Wei and Zhang, 2006) as it reflects information about future cash flow streams which, in turn, drive returns (Vuolteenaho, 2002).

In Columns (1) and (2) of Table 5 we find that when estimated relative to control firms, the average treatment effect (ATE) of engagement on *LPM (0,2)* is 1.4%, and on *LPM (0,3)* it is 1.2%. Both effects are statistically significant at the 1% level. Economically, these results imply that subsequent to the engagement, the negative returns of firms targeted by the investor are statistically less dispersed than those of the control firms. Both numbers are economically meaningful, as the risk measures have mean values of 5.6% and 7.5% at control firms during the post-engagement period. Turning in Column (3) to the link between ESG engagement and value at risk, we find that engagement targets have a subsequent VaR that is 2.8% lower compared to the one at control firms, significant at the 1% level. This is again a large number as the VaR averages 14% across control firms over the post-engagement period, so the reduction in VaR due to engagement is about 20% of this value. The control variables in Table 5 indicate that larger firms, firms with higher market-to-book ratios, and more profitable firms tend to have lower downside risk, while leverage is positively associated with downside risk. Overall, the regressions Table 5 provide some first evidence for a wealth-protection effect of ESG engagements. This effect is obtained after controlling both for the endogenous engagement decisions of our investor, and for observable variables that may also affect downside firm risk.

As our second step, we examine whether the apparent ESG-risk-reduction effect varies by success rate. We again use the treatment-effects model with the control firms. The results are presented in Table 6. In Columns (1) through (3) we report the results for the target firms that have high engagement success rates where high engagement success is defined as at least Milestone 2 having been achieved. In Columns (4) through (6) we show the results for target firms that have low

engagement success rates, that is, only Milestone 1 has been achieved.⁷ We conduct this sample split as a further test of whether the investor's engagement itself leads to reduced downside risk; if this were not the case we should *not* expect to see results that differ across success rates.

The results in Table 6 show that our measured risk-reduction effects of ESG engagements only exist for those engagements where at least Milestone 2 was achieved, that is, at target firms that have acknowledged the existence of an ESG issue or even responded with actions to the investor's engagement demands. In economic terms, we find that the ATE for successful engagements is 1.3% in terms of *LPM (0,2)* and 1.7% in terms of *LPM (0,3)* with both effects statistically significant at the 1% level. Moreover, targets achieving Milestone 2 or higher have VaRs that are 3.2% lower compared to control firms. For the set of firms in which the investor's engagement was judged to be unsuccessful, we find an increase in all three downside risk measures. One possible explanation for this finding is that the engagement was initiated with the objective to address a latent ESG risk, and the failure to change ESG policies may have caused the risk to materialize.

Constituting our third and final step, we investigate whether the effects of ESG engagement on downside risk vary across engagement themes. To this end, we report in Table 7 regressions by engagement theme. This is an important analysis as it can indicate where engagement can yield the most effective results in terms of reducing downside risk. The estimates in Columns (1) through (3), and (10) through (12), show that ESG engagement reduces risk when concerns over governance and, to a weaker extent, strategy topics are addressed by the investor. For these themes we find a negative and mostly significant ATE of shareholder engagement, after controlling for selection.

⁷ If several engagements are simultaneously conducted at a target firm by the investor, we calculate the firm average engagement success rate. We calculate this average success rate as the sum of the milestones achieved from the initial engagements up to December 2014, divided by the number of engagements, times 4.

Although we do not find a direct risk-reduction effect for engagement over environmental topics (not reported), we do find as reported in Columns (4) through (6) that risk is significantly reduced if environmental engagement is combined with engagement to improve the firm's governance. These results suggest that changing a firm's sustainability agenda without addressing the corporate governance at the firm is unlikely to yield a risk-reduction effect. This finding echoes the results in Monks et al. (2004), who find that shareholder proposals which combine CSR issues with traditional corporate governance gain more support than proposals over CSR issues alone. We do not find any significant effects for engagement over social themes, neither when we examine them individually (not reported) nor when we examine them in combination with governance engagements (Columns (7) through (9)).

3.4 Empirical Tests II: Weekly Stock-Return Analysis

An advantage of our treatment-effects analysis is that results are straightforward to interpret, but the disadvantage is that most variables are measured on an annual frequency only (e.g., the accounting variables). We next complement this analysis with tests that examine whether engagement reduces firms' exposure to a downside risk factor. That is, we test whether the loadings of the target firms' weekly stock returns to a downside-risk factor are reduced subsequent to the engagement. To measure exposure to downside risk, we construct the downside-risk factor (DOWN) as the return difference between portfolios of stocks with high minus low downside risk. Stocks with high (low) downside risk in the previous period belong to the top (bottom) 30% of the downside risk distribution, which we continue to measure using either LPM or VaR. We then use a firm's time-varying exposure to this factor to capture changes in firm riskiness resulting from ESG engagement by our investor. We capture the timing of engagement by creating a two-sided dummy variable (*Post*) that equals 1 for stock-return observations from the two-year period after our

investor started to engage a target, -1 for stock-return observations from the two-year period before, and zero for all other observations. We also use a modified version of this dummy variable which takes the value 1 in the two-year period after Milestone 2 has been achieved, -1 in the two-year period before, and zero otherwise. We then run the following factor model explaining weekly excess returns ($r_{i,t} - r_f$):

$$r_{i,t} - r_f = \alpha_i + \rho_i Post_{i,t} * DOWN_t + d_i DOWN_t + \theta_i Post_{i,t} + b_i MKT_t \quad (3)$$

$$+ s_i SMB_t + h_i HML_t + r_i RMW_t + c_i CMA_t + \varepsilon_{i,t}$$

We also include controls for the five factors proposed by Fama and French (2015): the *MKT*, *SMB*, and *HML* from the three-factor model (Fama and French, 1993), as well as a profitability (*RMW*) and investment factor (*CMA*). The key variable of interest in this model is ρ_i , the coefficient on the interaction term *Post* * *DOWN*. A negative value of ρ_i would indicate that the exposure of targets to the downside-risk factor decreases after investor engagement, relative to the period before.

The regression results are reported in Table 8, with the *DOWN* factor in Columns (1) and (2) based on *LPM(0,2)* and in Columns (3) and (4) based on *VaR*. We report the results for the full sample (Columns (1) and (3)) and for the sample of firms in which at least Milestone (2) is achieved (Columns (2) and (4)). The regressions show that the target firms generally have positive exposure to the *DOWN* factor. Columns (1) and (3) further show that this exposure is not significantly altered by the initial engagement contact, as reflected by the insignificant interaction term on *Post* * *DOWN*. In contrast, there exists strong evidence in Columns (2) and (4) that exposure to the downside-risk factor significantly decreases after Milestone 2 has been achieved. These results suggest that the portfolio of firms for which Milestone 2 has been achieved become less tilted towards high downside risk, reflecting a reduction in risk due to the ESG engagement. A concern to

the analysis presented in Table 8 is that these results may partially reflect the ability of our investor to pick stocks that, independent of engagement, became less risky. To mitigate this concern we run regressions as in Table 8 but replace the excess returns of targeted firms with the return difference between targeted and one to one propensity score matched firms. In these weekly difference-in-differences regressions we continue to find that engagement reduces downside risk.

4. Conclusions

In this paper we examine whether shareholder engagement regarding ESG topics can reduce downside risk at portfolio firms. We present supporting evidence for such an effect using proprietary data provided by a large influential institutional investor activist. Based on 682 engagements across 296 targeted firms worldwide over the 2005-2014 period, we find that the investor most commonly engages firms over corporate governance issues, accounting for approximately half of the engagements. The investor also actively engages on other themes social (21%), environmental (18%), and strategy (13%).

We examine whether a risk-reduction effect exists from these ESG shareholder engagements by employing an endogenous treatment-effects model that addresses selection bias in the engagement decision. After controlling for selection, we find that engagement targets have lower downside risk, which we measure using lower partial moments and value at risk. The estimated effects of ESG engagement are economically meaningful. Lower partial moments of the second (third) order are 1.2% (1.4%) lower at target firms subsequent to the engagement as compared to matched control firms that were not targeted. In addition, subsequent to the engagement, the targeted portfolio firms have values at risk that are 2.8% lower compared to matched control firms.

We find that the measured effects of ESG engagement on downside risk tend to be stronger for the engagements defined as more successful. This result supports the contention that the investor's engagement leads to reduced downside risk. We further find support for the hypothesis that the risk-reduction effects of ESG engagement vary across engagement themes with stronger effects when governance or strategy topics are addressed, and for environmental engagements that are combined with governance engagements. These results support the hypothesis that changing a firm's environmental agenda without addressing governance is unlikely to yield a risk-reduction effect. We find no significant effects on downside risk for engagements over social themes.

We support the validity of these findings through additional tests that examine the effects of engagement on the exposure of targeted firms' returns to a downside-risk factor. We find that exposure to the downside-risk factor significantly decreases after successful engagement.

Given the increasing engagement by institutional investors on ESG issues, our analysis contributes new insights into understanding the channel through which ESG engagement can create value for investors.

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Figure 1: ESG Engagements by Country

This figure reports engagements by the targeted firm's country of incorporation. The sample consists of 682 engagements across 296 targeted firms over the period 2005 to 2014.

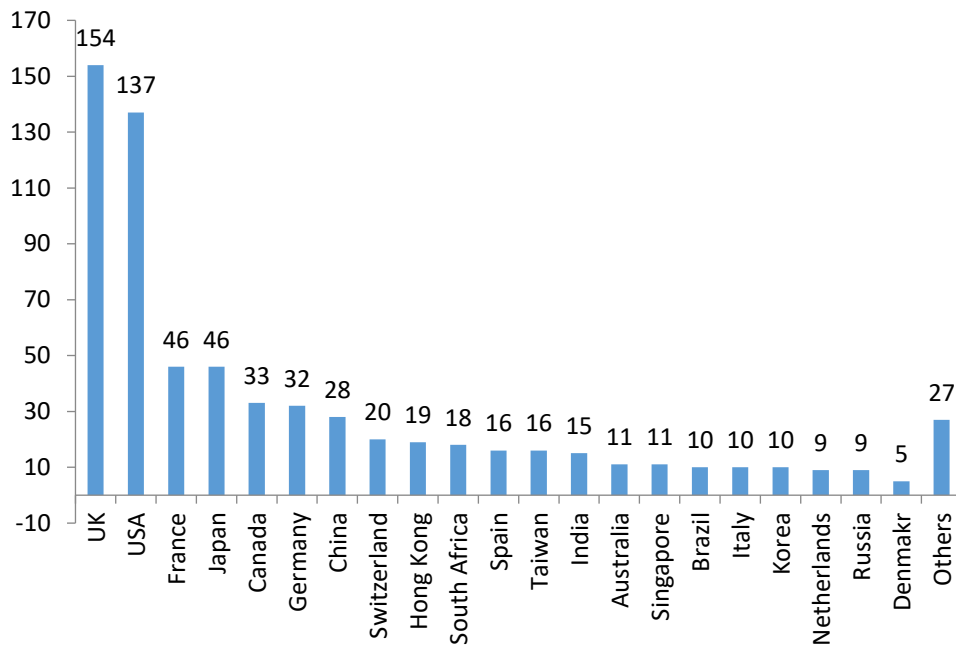


Figure 2: ESG Engagements by Industry

This figure reports engagements by the target firm's industry. The sample consists of 682 engagements across 296 targeted firms over the period 2005 to 2014.

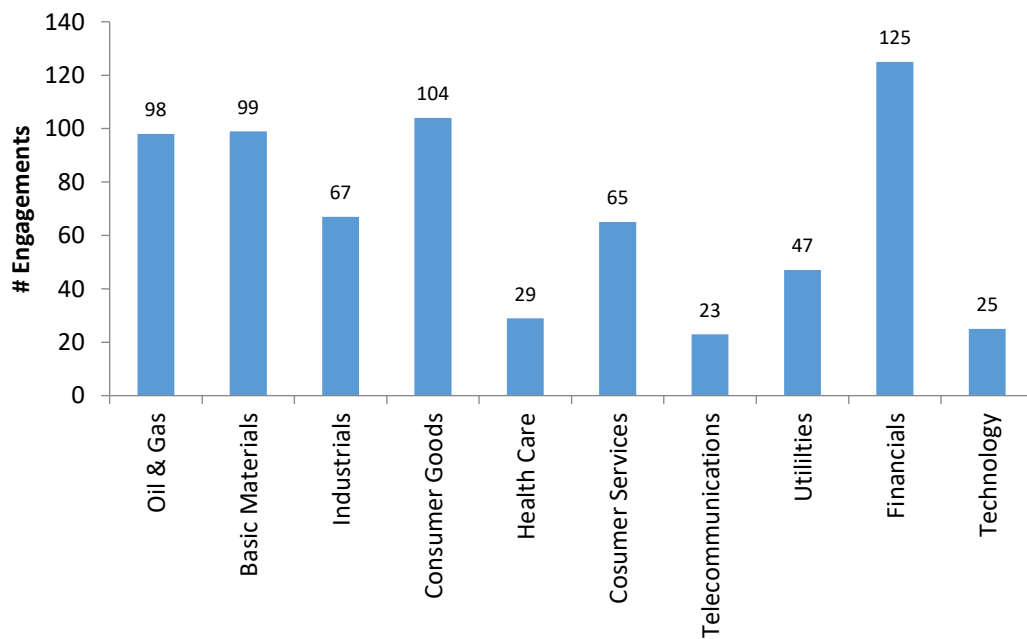


Figure 3: ESG Engagements by Year

This figure reports engagements by year of the initial engagement. The sample consists of 682 engagements across 296 targeted firms over the period 2005 to 2014.

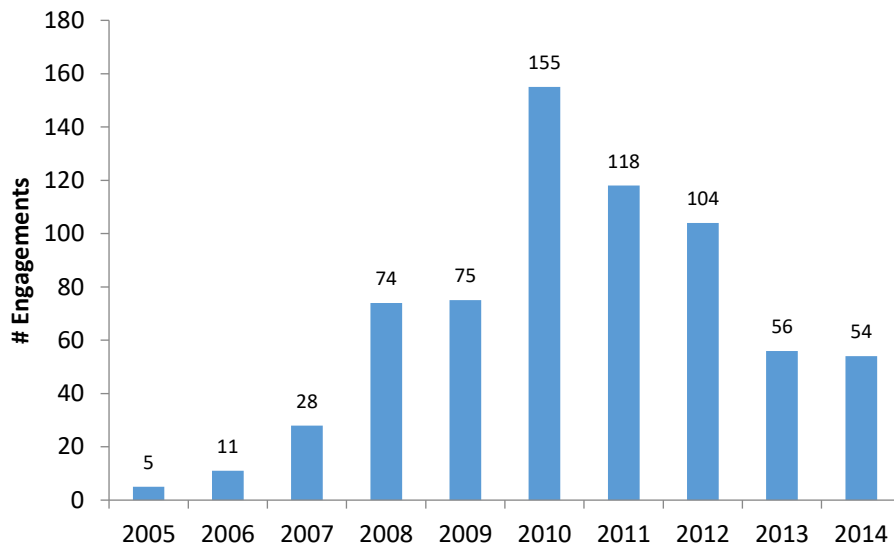


Table 1: Summary Statistics on Engagement Themes

This table provides summary statistics across four engagement themes: (i) governance; (ii) social; (iii) environmental; and (iv) strategy. The table also classifies the themes into sub-themes, and we report the number (percentage) of engagements within each engagement theme. The sample consists of 682 engagements across 296 targeted firms over the period 2005 to 2014.

Governance Engagement			Social Engagement			Environmental Engagement			Strategy Engagement		
Subthemes	#	%	Subthemes	#	%	Subthemes	#	%	Subthemes	#	%
Board structure	122	37	Health and safety	27	19	Climate change	54	45	Business strategy	42	47
Remuneration	103	31	Supply chain management	25	17	Other environmental	22	18	Risk management	36	40
Other governance	32	10	Bribery and corruption	18	13	Forestry	13	11	Capital structure	4	4
Succession planning	30	9	Community relations	14	10	Water stress	11	9	Shareholder returns	3	3
Separation of chair/CEO	20	6	Operation in trouble regions	14	10	Environmental management	8	7	Reputational risk	3	3
Shareholder communication	6	2	Employee relations	12	8	Biodiversity	5	4	Other strategy and risk	2	2
Accounting/auditing issues	5	2	Corporate culture	10	7	Oil sand	5	4			
Committee structure	5	2	License to operate	7	5	Nuclear power safety	1	1			
Conflicts of interest	2	1	Other social and ethical	7	5	Waste	1	1			
Related party transaction	2	1	Access to medicine	3	2						
Voting rights not 1 share 1 vote	1	0.3	Customer relations	2	1						
			Labor issues	2	1						
			Political risk management	2	1						
Total	328	100	Total	144	100	Total	120	100	Total	90	100
% of All Engagements (N=682)	48			21			18			13	

Table 2: Summary Statistics on Milestones and Engagement Duration

This table displays descriptive statistics on measures of engagement success (milestones) as well as engagement durations. We report engagement durations in months and by milestone and theme. We report means, standard deviations, minimums and maximums of engagement durations. As the average engagement duration equals 34 months and our data end in 2014, some engagements are still work-in-progress or pending, implying that Milestones 3 or 4 may not yet have been achieved. The sample consists of 682 engagements across 296 targeted firms over the period 2005 to 2014.

Milestone 1: Concern Raised with Portfolio Firm				
Achieved Milestone 1 Only	# Engagements		%	
	102		15	
Engagement Duration (in months)	Mean	STD	Min	Max
Governance	4	10	1	87
Social	3	6	1	31
Environmental	4	9	1	65
Strategy	4	8	1	53
All	4	9	1	87
Milestone 2: Issue Acknowledged by Portfolio Firm				
Achieved Milestone 1 to 2	# Engagements		%	
	231		34	
Engagement Duration (in months)	Mean	STD	Min	Max
Governance	13	19	1	114
Social	9	13	1	85
Environmental	7	12	1	72
Strategy	11	16	1	74
All	11	16	1	114
Milestone 3: Actions Taken by Portfolio Firm				
Achieved Milestone 1 to 3	# Engagements		%	
	158		23	
Engagement Duration (in months)	Mean	STD	Min	Max
Governance	25	23	1	126
Social	21	16	1	71
Environmental	16	15	2	59
Strategy	28	25	2	91
All	24	22	1	126
Milestone 4: Engagement Successfully Completed				
Achieved Milestone 1 to 4	# Engagements		%	
	191		28	
Engagement Duration (in months)	Mean	STD	Min	Max
Governance	34	26	2	126
Social	38	21	2	77
Environmental	27	25	2	74
Strategy	34	28	1	95
All	34	25	1	126

Table 3: Summary Statistics of Engagement Actions and Targeted Individuals

This table reports summary statistics on different engagement actions (Panel A) as well as the individuals that were targeted by the investor (Panel B). We report these statistics by engagement themes as well as by milestones achieved. The sample consists of 682 engagements across 296 targeted firms over the period 2005 to 2014.

		Engagement Themes					Engagement Progress by Milestones				
		Social	Governance	Environ- mental	Strategy	Total	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Total
Panel A. Action Types											
Meeting	#	435	823	217	303	1778	144	491	616	527	1778
	<i>Per Engmt.</i>	3.0	2.5	1.8	3.4	2.6	1.4	2.1	3.9	2.8	2.6
Call	#	184	260	94	68	606	51	167	192	196	606
	<i>Per Engmt.</i>	1.3	0.8	0.8	0.8	1.0	0.5	0.7	1.2	1.0	0.9
Email	#	62	91	31	20	204	16	78	55	55	204
Letter	#	39	86	40	38	203	24	58	51	70	203
Web update	#	14	30	17	6	67	1	15	22	29	67
AGM	#	1	16	1	0	18	2	4	2	10	18
Shareholder meeting	#	2	8	2	4	16	0	4	5	7	16
Announcement	#	2	10	5	0	17	0	7	3	7	17
Internal review	#	1	9	0	1	11	0	0	1	10	11
Site visit	#	2	0	2	1	5	0	1	2	2	5
Conference	#	2	0	0	0	2	0	0	2	0	2
Panel B. Targeted Individuals											
Chairman	#	80	251	44	96	471	27	124	163	157	471
	<i>Per Engmt.</i>	0.6	0.8	0.4	1.1	0.7	0.3	0.5	1.0	0.8	0.7
Board of directors	#	132	474	58	141	805	54	211	267	273	805
	<i>Per Engmt.</i>	0.9	1.4	0.5	1.6	1.2	0.5	0.9	1.7	1.4	1.2
Senior executives	#	275	410	153	166	1004	91	301	340	272	1004
	<i>Per Engmt.</i>	1.9	1.3	1.3	1.8	1.5	0.9	1.3	2.2	1.4	1.5
CSR	#	173	49	121	39	382	39	105	144	94	382
	<i>Per Engmt.</i>	1.2	0.1	1.0	0.4	0.6	0.4	0.5	0.9	0.5	0.6
Investor relations and legal	#	184	320	84	108	696	52	192	204	248	696
	<i>Per Engmt.</i>	1.3	1.0	0.7	1.2	1.0	0.5	0.8	1.3	1.3	1.0
Secretary	#	57	187	21	46	311	18	86	105	102	311
	<i>Per Engmt.</i>	0.4	0.6	0.2	0.5	0.5	0.2	0.4	0.7	0.5	0.5

Table 4: Determinants of Effect: Selection Equation

This table reports results from the selection equation of an endogenous treatment-effects model to estimate the effect of ESG engagement on downside risk. The three regressions we report correspond to the three outcome equations we estimate in Table 5 for our three measures of downside risk. The sample in this analysis consists of a total of 1,131 firms, including 269 engagement targets and 862 control firms. *Engagement target* is a dummy variable that equals 1 if a firm is an engagement target, and 0 if it is a control firm. Control firms are matched with engagement targets using country, industry, and size as matching criteria. *t*-statistics are reported in parentheses. *, **, and *** denote statistical significant at the 10%, 5% and 1% levels, respectively.

Dependent Variable:	Engagement Target		
	(1)	(2)	(3)
Log(Market cap)	0.688*** (8.70)	0.696*** (8.80)	0.705*** (8.93)
Market-to-book ratio	0.009 (1.12)	0.008 (1.08)	0.008 (1.05)
Profit margin	-0.002 (-1.09)	-0.002 (-1.19)	-0.002 (-1.23)
Dividend yield	0.069*** (3.10)	0.067*** (2.95)	0.064*** (2.82)
Leverage	0.002 (1.44)	0.002 (1.43)	0.002 (1.43)
Free float	0.002 (1.04)	0.001 (0.73)	0.002 (0.74)
Anti-director right index	0.064 (1.33)	0.065 (1.32)	0.090* (1.80)
Matched sample	Yes	Yes	Yes
Obs.	1040	1040	1040

Table 5: Effect of ESG Engagement on Downside Risk: Outcome Equation

This table reports results from the outcome equation of an endogenous treatment-effects model to estimate the effect of ESG engagement on downside risk. The engagement selection equation has been estimated as in Table 4. The sample in this analysis consists of a total of 1,131 firms, including 269 engagement targets and 862 control firms. *Engagement target* is a dummy variable that equals 1 if a firm is an engagement target, and 0 if it is a control firm. Control firms are matched with engagement targets using country, industry, and size as matching criteria. We use three dependent variables to measure subsequent firm downside risk in the outcome equations: (i) the lower partial moment of the second order (*LPM (0,2)*); (ii) the lower partial moment of the third order (*LPM (0,3)*); and (iii) the value at risk (*VaR*). *t*-statistics are reported in parentheses. *, **, and *** denote statistical significant at the 10%, 5% and 1% levels, respectively.

Dependent Variable:	LPM (0,2)	LPM (0,3)	VaR
	(1)	(2)	(3)
Engagement Target	-0.012*** (-2.68)	-0.014** (-2.45)	-0.028*** (-2.59)
Log(Market cap)	-0.005*** (-4.48)	-0.007*** (-4.43)	-0.011*** (-4.14)
Market-to-book ratio	-0.0003*** (-4.55)	-0.0005*** (-4.66)	-0.0007*** (-3.96)
Profit margin	-0.0002*** (-5.07)	-0.0002*** (-4.82)	-0.0003*** (-4.37)
Leverage	0.00001*** (5.95)	0.00002*** (6.82)	0.00003*** (4.50)
Matched sample	Yes	Yes	Yes
Selection bias corrected	Yes	Yes	Yes
Obs.	1040	1040	1040

Table 6: Effect of ESG Engagement on Downside Risk: Results by Success Rates

This table reports results from endogenous treatment-effects models to estimate the effect of ESG engagement on firms' downside risk. We report results from the outcome equation only. The selection equation has been estimated as in Equation (2). We split the sample based on a measure of the engagement success. We consider the engagement success to be high if Milestones 2, 3 or 4 have been achieved. We consider the engagement success to be low if only Milestone 1 has been achieved. The sample in this analysis consists of a total of 1,131 firms, including 269 engagement targets and 862 control firms. *Engagement target* is a dummy variable that equals 1 if a firm is an engagement target, and 0 if it is a control firm. Control firms are matched with engagement targets using country, industry, and size as matching criteria. We use three dependent variables to measure subsequent firm downside risk in the outcome equations: (i) the lower partial moment of the second order (*LPM (0,2)*); (ii) the lower partial moment of the third order (*LPM (0,3)*); and (iii) the value at risk (*VaR*). *t*-statistics are reported in parentheses. *, **, and *** denote statistical significant at the 10%, 5% and 1% levels, respectively.

Dependent Variable:	LPM (0,2)	LPM (0,3)	VaR	LPM (0,2)	LPM (0,3)	VaR
	(1)	(2)	(3)	(4)	(5)	(6)
Sample:	Engagement achieved Milestone 2 or more			Engagement did not achieve Milestone 2		
Engagement target	-0.013*** (-3.02)	-0.017*** (-2.79)	-0.032*** (-2.83)	0.025*** (2.95)	0.041*** (4.17)	0.069*** (3.50)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Matched sample	Yes	Yes	Yes	Yes	Yes	Yes
Selection bias corrected	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	833	833	833	207	207	207

Table 7: Effect of ESG Engagement on Downside Risk: Results by Engagement Themes

This table reports results from endogenous treatment-effects models to estimate the effect of ESG engagement on downside risk across engagement themes. We report results from the outcome equation only. The engagement selection equation has been estimated as in Equation (2). The sample in this analysis consists of a total of 1,131 firms, including 269 engagement targets and 862 control firms. *Engagement target* is a dummy variable that equals 1 if a firm is an engagement target, and 0 if it is a control firm. Control firms are matched with engagement targets using country, industry, and size as matching criteria. We use three dependent variables to measure subsequent firm downside risk in the outcome equations: (i) the lower partial moment of the second order (*LPM (0,2)*); (ii) the lower partial moment of the third order (*LPM (0,3)*); and (iii) the value at risk (*VaR*). *t*-statistics are reported in parentheses. *, **, and *** denote statistical significant at the 10%, 5% and 1% levels, respectively.

Dependent Variable:	Governance Engagement			Environmental and Governance Engagement			Social and Governance Engagement			Strategy Engagement		
	LPM (0,2)	LPM (0,3)	VaR	LPM (0,2)	LPM (0,3)	VaR	LPM (0,2)	LPM (0,3)	VaR	LPM (0,2)	LPM (0,3)	VaR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Engagement target	-0.010** (-2.02)	-0.013** (-1.97)	-0.027** (-2.30)	-0.015* (-1.70)	-0.018 (-1.53)	-0.048** (-2.49)	0.008 (0.57)	0.014 (0.55)	-0.018 (-0.66)	-0.013 (-1.63)	-0.021* (-1.92)	-0.039** (-2.08)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Matched sample	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Selection bias corrected	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	730	730	730	122	122	122	182	182	182	259	259	259

Table 8: Effect of ESG Engagement on Downside Risk: Evidence from Weekly Stock Returns

This table shows results from regressions of weekly excess stock returns (stock return minus risk-free rate) on a downside risk factor, the Post dummy, and an interaction of the two. We construct the downside-risk factor (DOWN) as the difference between the returns of portfolios of stocks with high versus low downside risk. Stocks with high (low) downside risk are in the highest (lowest) 30% of the respective downside-risk measure distribution. In Columns (1) and (2) the DOWN factor is based on LPM (0,2), the lower partial moment of the second order, and in Columns (3) and (4) it is based on VaR, the value at risk. In Columns (1) and (3) the dummy variable Post equals 1 for stock-return observations from the two-year period after our investor started to engage a target, -1 for stock-return observations from the two-year period before, and zero for all other observations. In Columns (2) and (4) the Post dummy takes the value 1 in the two-year period after Milestone 2 has been achieved, -1 in the two-year period before, and zero otherwise. We further include in all regressions the five factors proposed by Fama and French (2015), which contain the market (MKT), size (SMB), value (HML), profitability (RMW), and investment (CMA) factors. The sample includes 269 engagement targets. *, **, and *** denote statistical significant at the 10%, 5% and 1% levels, respectively.

Time period used to measure Post dummy:	LPM (0,2)		VaR	
	Initial	Milestone 2	Initial	Milestone 2
	Engagement		Engagement	
	Excess Returns		Excess Returns	
	(1)	(2)	(3)	(4)
Post * DOWN	-0.001 (-0.17)	-0.030*** (-3.43)	0.002 (0.26)	-0.030*** (-4.14)
DOWN	0.039*** (7.46)	0.038*** (7.33)	0.062*** (14.73)	0.060*** (14.15)
Post	-0.000 (-1.11)	-0.001** (-2.58)	-0.000 (-0.84)	-0.001** (-2.42)
MKT	0.971*** (238.49)	0.971*** (238.73)	0.959*** (238.48)	-0.001 (-0.23)
SMB	0.066*** (19.61)	0.066*** (19.63)	0.064*** (19.12)	-0.005 (-1.31)
HML	0.063*** (9.79)	0.063*** (9.85)	0.058*** (9.25)	-0.012 (-1.55)
RMW	-0.095*** (-9.99)	-0.094*** (-9.95)	-0.081*** (-8.60)	0.053*** (4.72)
CMA	-0.001*** (-9.85)	-0.001*** (-9.81)	-0.001*** (-10.13)	-0.000 (-0.01)
Constant	-0.000*** (-3.29)	-0.000*** (-3.40)	-0.000*** (-3.80)	-0.000*** (-3.97)
Obs.	225,295	225,295	225,295	225,295
R-squared	0.288	0.288	0.289	0.287