Environmental and social incidents and misvaluation-driven leveraged buyouts

Environmental and Social Incidents and Misvaluation-driven Leveraged Buyouts ♦

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Abstract

This study examines how private equity (PE) firms incorporate environmental and social (E&S) factors into investment decisions, particularly in the context of leveraged buyouts (LBOs). Using a global dataset of public firms from 2007 to 2020, we analyse the relationship between firm-level E&S incidents and the likelihood of a subsequent PE acquisition. We further assess whether PE firms committed to responsible investing – proxied by their signatory status to the UN Principles for Responsible Investment (PRI) – exhibit distinct investment behaviour compared to non-signatories. Our findings indicate that firms experiencing E&S incidents, particularly of lower severity, are more likely to be targeted for LBOs, primarily due to a valuation channel, whereby such incidents lead to temporary undervaluation. This effect is more pronounced among non-PRI signatories, while PRI-affiliated PE firms demonstrate greater selectivity, aligning investment decisions with responsible investment principles. These results contribute to the literature on sustainable finance and the integration of ESG considerations in PE investment strategies.

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1. Introduction

Private equity (PE) plays a key role in corporate transformations, often through leveraged buyouts (LBOs) that drive financial and operational restructuring.[1] In recent years, growing emphasis on environmental, social, and governance (ESG) factors has opened both challenges and opportunities for PE investors. This is particularly true for the Environmental and Social (E&S) components of ESG, given the links to socially responsible investment and 'impact investing'. These components are often used to differentiate portfolio allocations driven by 'values' rather than 'value' (see, e.g., Starks, 2023; Ilhan et al., 2023; Bialkowski et al., 2024; Dyck et al., 2019; Gantchev et al., 2019; Heath et al., 2023). Traditionally focused on financial returns, PE firms have, up until recently, faced pressure from institutional investors, regulators, and broader society to align with sustainability goals (Abraham et al., 2024). At the time of writing, there are pressures from the US federal and some state governments to abandon such principles, even as some large institutional investors, most notably those based in Europe, remain steadfastly committed to maintaining them. This makes it a particularly opportune moment to reevaluate how ESG principles impact PE investment decisions, and, by implication, what the potential consequences of their abandonment might mean.

This paper examines the relationship between PE investment and E&S performance. Specifically, we investigate whether PE firms adjust their investment strategies in response to negative E&S news and whether this behaviour is shaped by PRI signatory status. Further, we explore whether these investment decisions can be explained through valuation dynamics, testing whether firms experiencing E&S incidents are more likely to be undervalued at the time of buyout.

[1] See, among others, Davis et al. (2014), Kaplan and Strömberg (2009), Gompers et al. (2016, 2022), and Wood and Wright (2009).

To investigate these questions, we construct a novel dataset that integrates firm-level financial data from Compustat-Capital IQ with RepRisk, capturing firms' E&S performance based on their incident records and ESG ratings. We complement this with private equity buyout transactions from the Thomson Financial SDC Mergers & Acquisitions Database, which identifies leveraged buyouts (LBOs) executed by a global sample of PE firms between 2007 and 2020. This allows us to create a dataset consisting of 16,670 firms with available financial and E&S data, of which 749 were targeted for LBOs by 404 distinct private equity investors. We then use a Poisson Pseudo-Maximum Likelihood regression model (see Correia et al., 2019; 2020) to understand the probability of a buyout in response to E&S incidents and shed light on the channels explaining our findings. The study further explores valuation effects by applying the misvaluation framework of Vagenas-Nanos (2020) and Rhodes-Kropf et al. (2005) alongside financial analysts' valuation data from IBES.

We find that the likelihood of PE buyouts increases after a potential target firm experiences an increase in E&S incidents. This probability is both highly statistically significant and economically relevant. In particular, we observe that a one percent increase in the number of E&S incidents increases the probability of a buyout announcement the following quarter by approximately fifty percent. Decomposing E&S incidents by their severity, we show that the positive association between incidents and the probability of an LBO is driven by less severe incidents, which are likely to have only a short-term effect on the company's E&S performance, but may nonetheless affect the valuation of potential targets. Differences between PRI signatories and non-signatories highlight an important distinction. Non-signatory firms primarily drive the positive link between E&S incidents and buyout probability, while PRI-affiliated investors – especially early adopters – appear more selective, reducing their likelihood of acquiring firms with recent E&S controversies. This suggests that non-signatory

PE firms exploit valuation opportunities after E&S incidents, whereas PRI-affiliated firms exercise greater caution to align with sustainability commitments.

Exploring a potential rationale, we examine the existence of a valuation channel and conjecture that firms experiencing E&S incidents are undervalued at the time of the buyout and, as a result, more likely to be targeted by PE LBOs. We find that (i) PE responds to a 'misvaluation' by increasing investment when a potential target is undervalued, (ii) E&S incidents by a potential target firm make the latter relatively cheaper, and (iii) the 'undervaluation' of firms experiencing E&S controversies drives the observed positive link between LBOs and "bad" E&S performance of portfolio firms.

This paper contributes to four strands of literature. The first examines sustainable funds' investment strategies and the role of climate risks and ESG factors in investment decisions (Ceccarelli et al., 2023; Marshall et al., 2022; Kim et al., 2019). Some argue sustainable funds reduce carbon exposure through divestment (Azar et al., 2021), while others suggest they primarily select firms with strong ESG records rather than driving improvements (Heath et al., 2023). Activist strategies, such as shareholder engagement, face legal and practical hurdles, as seen in ExxonMobil's lawsuits against ESG-orientated investors (Moreno, 2024). Ethical and reputational motives also shape ESG investing, sometimes at the expense of returns (Barber et al., 2020; Avramov et al., 2022; Heeb et al., 2022). We contribute to this literature by examining how E&S incidents influence PE buyouts and whether firms are targeted for undervaluation or sustainability potential.

The second explores PRI-affiliated institutional investors and their commitment to sustainability. Some research finds PRI adoption improves ESG outcomes (Humphrey & Li, 2021), while others argue signatories may prioritise reputational benefits over genuine ESG improvements (Barber et al., 2020; Liang et al., 2022; Kim & Yoon, 2023). Empirical evidence

remains mixed, with some studies showing no significant ESG gains or even lower returns for PRI signatories (Kim & Yoon, 2023). We assess whether PRI-affiliated PE firms behave differently from non-signatories when responding to E&S incidents.

The third examines how sustainability affects financial markets, particularly valuation and fundraising. Divestment pressures on carbon-intensive firms can lead to lasting share price declines (Rohleder et al., 2022), while fund managers tend to overreact to climate risks, mispricing high-carbon stocks (Alok et al., 2020). Climate risk exposure is increasingly priced into volatility and crash risk (Hartzmark & Sussman, 2019; Humphrey & Li, 2021). Firms signalling climate transition attract liquidity inflows from green funds (Jaunin et al., 2024). We contribute by analysing whether E&S incidents create valuation distortions that make firms more attractive for PE buyouts.

The fourth strand is related to the literature on the fundamental factors that drive PE success. Considering that PE investors are sophisticated financial players whose success largely relies upon their ability to accurately time the market by arbitraging debt (leverage) for their target portfolio firm's equity when either or both these components are relatively cheap (Axelson et al., 2009; 2013). Access to either of these factors will largely facilitate and speed up the realisation of a profitable LBO exit. In this paper, we do not focus on the leverage component. Ivashina and Kovner (2011) and Demiroglu and James (2010) have already found support for the superior funding options available to PE. Rather, we focus on the second factor of target equity valuation and ask how this is affected by E&S incidents and if this, in turn, incentivises an LBO. Put differently; we ask if the observed increase in the probability of a

buyout following E&S incidents can be ascribed to a temporary undervaluation experienced by a target portfolio firm following an E&S incident.[2]

The rest of the paper is structured as follows: Section 2 presents and discusses the data, while Section 3 outlines the methodology. Section 4 contains the results. Section 5 shows the robustness checks. Section 6 concludes.

2. Data

Our initial sample consists of all listed firms with quarterly accounting data on Compustat-Capital IQ from 2007 to 2020.[3,4] We obtain PE investment data from Thomson Financial SDC Mergers and Acquisitions Database (SDC). This dataset consists of a global sample of mergers and acquisitions flagged by the data provider as LBOs, and having a PE firm as the investor, announced from 2007 to 2020.[5] This gives us an initial sample of 22,420 deals with LBO targets incorporated in more than 100 countries. From all LBOs announced in the sample period, we only include those whose LBO target CUSIP matches that of a firm included in our initial sample. We build a 'fuzzy matching' algorithm to merge our Compustat-Capital IQ data

[2] Recent work from Derrien et al. (2023), Gantchev et al. (2019), Serafeim and Yoon (2023), and Glossner (2021), also relying on RepRisk data, has observed generally that E&S incidents lead to a temporary undervaluation of firms experiencing these shocks. Other work analysing M&A deals obtained similar findings, but unlike us, observed a decrease in the probability of an M&A following an E&S incident (see, e.g., Boone and Uysal, 2020; Maung et al., 2020).

[3] We use the country of headquarters to identify a company's location and eliminate all firms without information on headquarters location.

[4] We focus exclusively on listed firms because our identification strategy relies on estimating a valuation channel through mispricing, which requires publicly available market valuation data. As such data are not available for private firms, they are necessarily excluded from our empirical framework. Importantly, even at the target selection stage, extending the analysis to private firms would introduce substantial cross-country unevenness in coverage and reporting depth, reflecting differences in statutory disclosure regimes for unlisted firms (note the less restrictive disclosure requirements in the United States relative to many European countries). Finally, focusing on listed targets is economically meaningful and empirically relevant. In value terms, public-to-private (P2P) transactions represent a substantial and growing share of global PE activity. According to the Bain Global Private Equity Report (2022), P2P deals accounted for approximately close to 50 percent of total global buyout value in recent years, reaching record levels in 2021.

[5] In a similar spirit to Axelson et al. (2013) and Kellard et al. (2022), we only considered LBO and select deals with as ultimate acquiror investors mentioning in their business descriptions "private equity", "investment group", "investment firm", "LBO", "MBO", "leveraged buyout", "management buyout" and with "Alternative Finance", "Asset Management" and "Other Financial" as acquiror mid-industry.

with the LBO deals collected from SDC for firms with a missing CUSIP identifier in either dataset.[6]

To observe PE investment reaction to new information regarding firms' E&S responsibility, we use data from RepRisk on news coverage of companies' E&S policies.[7] RepRisk provides comprehensive services to major investors, offering insights into adverse findings regarding companies' business practices, including environmental degradation, child labour, and corruption. It monitors over 80,000 sources daily, including media, blogs, stakeholders and third parties, such as NGOs and government bodies, for news on firms' ESG practices. Since 2007, RepRisk has tracked daily updates on negative news about specific companies, assessing each incident's significance based on its reporting source. Each E&S incident news is classified by the issue to which it relates (and relevant UN Global Compact principle), by the severity of the incident that has occurred and by the reach of the media source reporting on the incident.

An illustrative example from our sample is as follows. In mid-2007, Apollo Global Management completed a leveraged buyout of Claire's Stores – a globally recognised jewellery and accessories retailer – at an approximate valuation of $3.1 billion. By July of that year, shortly after the acquisition, the company faced a major social and environmental challenge when the U.S. Consumer Product Safety Commission issued a recall for a line of children's

[6] This allows us to identify companies with eighty percent name overlap in the datasets, which we then manually inspect to identify only the relevant deals. Utilising the data available through SDC, we construct a dataset encompassing various aspects of each deal, including (among other variables) investment date, total deal value and deal type (entry or exit). Moreover, the database supplies details on each entity participating in PE deals, including key investors' identifiers and information (such as the investors' names, CUSIP, country of incorporation, industry, raised volumes, PE firm commitment, etc.), as well as data on the portfolio firms involved in these deals, including firm-specific identifiers (name, CUSIP, parent firm), geographical details (address, ZIP code, city, state), and industry code (NAICS 6).

[7] Using RepRisk and, in particular, E&S incidents, allows one to circumvent the ESG ratings construction issues reported by several authors in other data sources. For example, some methodological changes to ratings have improved the historical rating and firm performance association, leaving the researcher less capable of drawing a meaningful analysis of investors' asset allocation conditional on the available data (see, e.g., Berg et al., 2020; Berg et al., 2022).

necklaces sold exclusively at Claire's. These products were found to contain excessive lead levels, posing a significant risk of lead poisoning in children. Consumer complaints initially flagged the issue and rapidly drew media attention, prompting questions about product safety and corporate oversight under standards such as those articulated in the UN Global Compact (UNGC). This incident not only intensified public and regulatory scrutiny but also had lasting implications for Claire's reputation and operational practices in the years that followed. The incident is classified by RepRisk as a medium severity event – indicating a moderate yet significant risk – and is associated with violations of UNGC Principles 7 and 9 (which call for supporting a precautionary approach to environmental challenges and encouraging the development and diffusion of environmentally friendly technologies).

Based on these companies' incidents, RepRisk also creates ESG ratings for these companies and a RepRisk index (RRI) based on the companies' incident rates. We use all these measures in our analysis to assess PE response to sustainability information. As previously mentioned, we focus our attention specifically on E&S components of ESG, which have more recently been linked to socially responsible investment and 'impact investing' to assess PE-responsible investment in line with a large body of literature (see, e.g., Starks, 2023; Ilhan et al., 2023; Bialkowski et al., 2024; Dyck et al., 2019; Gantchev et al., 2019; Heath et al., 2023).

Focusing on the E&S incidents experienced by the companies in our dataset, we observed 268,863 incidents in the 2007-2020 period (i.e., the years covered by our Reprisk subscription) distributed over 112 countries. Using the primary company ISIN and the relevant quarter of the year, we merge the RepRisk data with Compustat-Capital IQ, retaining only companies present in both datasets. This results in a final sample of 16,670 firms with accounting data and RepRisk coverage for at least one quarter.[8] Finally, we merge the dataset

[8] Online Appendix A.1 provides a detailed discussion of all variables, with Appendix A.2, containing detailed summary statistics and relevant pairwise correlations.

by matching the CUSIP and quarter of companies from our initial sample with the same variables for PE portfolio firms from SDC. If CUSIP is unavailable, we use the company name. This process results in a final sample of 749 buyouts (conducted by 404 PE investors) with accounting and E&S data.

2.1 LBO stylised facts

We restrict our analysis to LBOs, which constitute the predominant form of private equity investment with comprehensive deal-level data coverage (Bain Global Private Equity Report, 2022; Ivashina, 2022; see also Online Appendix A.2.4). This focus enables a consistent mapping between firms' E&S incidents and subsequent investment activity.[9] We explore the country of incorporation of PE LBO targets and the evolution of PE deals over time. We begin by analysing the geographical and sectoral decomposition of our LBO sample. Table 1 shows that most deals in our sample occur in the US, capturing close to 62 percent of all deals, and primarily in Western countries. As documented in Table 1, we find some, but not a substantial, degree of heterogeneity in the country distribution of PE deals. Supporting this argument, we note that the top-10 countries by PE deals in our sample account for more than 85 percent of all deals (see Table 1, Panel A). Exploring the sectoral characteristics of LBO targets, the distribution appears to be more heterogeneous. Most LBO targets operate in the 'financial services' and 'banking' sectors, followed by 'support services' and 'retail' (see Table 1, Panel B). Finally, analysing the evolution of PE deals over time, we observe that having reached a

[9] LBOs differ fundamentally from other PE transactions, such as growth capital or minority investments. They typically involve large, mature firms, substantial leverage, and the transfer of control to the acquirer, giving PE investors direct influence over the target's strategic and operational direction (Lerner et al., 2012; Wood & Wright, 2009). This control perspective is central to the study of responsible investment behaviour, as it allows investors to actively reshape governance and sustainability practices post-acquisition. Moreover, LBOs are closely linked to value creation through operational and governance engineering rather than financial structuring alone, distinguishing them from management or venture-backed buyouts (Bruining et al., 2013). All these features led us to choose to focus this paper on LBOs and to examine how sustainability-related information affects investment decisions by buyout investors.

minimum in 2009, reflecting the global financial crisis, they subsequently follow a generally positive trend, albeit with significant volatility (see Figure 1).

[Insert Table 1 & Figure 1 around here]

2.2 E&S incidents stylised facts

Analysing where the incidents occur, we observe that the US has the largest number of E&S incidents, accounting for almost 30 percent of the total, in part reflecting the size of the US economy. The top-10 countries reported in Table 2 Panel A account for 68 percent of the total E&S incidents. Moreover, the top five countries are Western countries (i.e., the US, UK, Canada, France, and Germany) and account for about 54 percent of the total incidents, at least to some extent due to better reporting than in many emerging markets. It is interesting to note that the top-3 countries in ESG incidents are also top-3, with the same ranking, in terms of LBO deals.[10]

[Insert Table 2 around here]

In Figure 2, we investigate E&S incidents by looking at their evolution over time. In Panel A, we show E&S incidents over time and by severity. We notice that overall E&S incidents have grown over time, largely reflecting the rise in low-severity events. On the other hand, the number of high-severity incidents fluctuates by little over time. One possible explanation for these findings is that the rise in low-severity incidents reflects greater media attention to E&S news, leading to more stories emerging in the public domain. At the same time, high-severity incidents are relatively rare. In Table 3, we analyse the sectors in which these incidents arise. The first three sectors alone account for almost 40 per cent of the total.

[10] Further exploring the geography of E&S incidents by allocating countries to their IMF economic region (based on the location of headquarters of firms), in Table 2 Panel B, we observe that Advanced Economies (AE) account for eighty percent of all E&S incidents, followed by Emerging Market Economies (EME) with nineteen percent and Low-Income Emerging Market Economies (LI EME) with only one percent of the incidents.

The top sector is 'oil and gas', accounting for 19 percent of all the incidents, followed by 'utilities' and 'mining', reporting 10 percent of the incidents.

[Insert Figure 2 and Table 3 around here]

2.3 PE and UN-PRI

To identify PEs' public commitment to responsible investment, we exploit investors' signatures to the UN Principles of Responsible Investment (UN PRI). A PE signatory is expected to adhere to the following six principles: (I) to incorporate ESG issues into investment analysis and decision-making processes; (II) to be active owners and incorporate ESG issues into ownership policies and practices; (III) to see appropriate disclosure on ESG issues by the entities in which they invest; (IV) to promote acceptance and implementation of the Principles within the investment industry; (V) to work together to enhance effectiveness in implementing the Principles; and (VI) to report their activities and progress toward implementing the Principles. Specific advice on how to implement these principles in fulfilment of the PRI signatory agreement is provided by the PRI here (see link). [11]

Once an institutional investor joins the initiative, the PRI reports on their website the signatory name, investor type (investment manager, asset owner, or service provider), country of headquarters, and signature date. It is worth noting the UN PRI has received considerable attention and endorsement from the PE industry. By 2023, a large fraction of the industry had subscribed to the PRI, especially the largest investors by asset under management (AUM) (see Table 4 Panel A). We also observe a larger number of signatories joining in more recent years

[11] According to the Pandian and Dunbar (2023) "…96 percent of private equity signatories reported that they include asset class-specific guidelines in their responsible investment policies". This would suggest that the vast majority of signatory PE investors comply with Principle I and include ESG issues in their investment screening and due diligence, implying that PE signatories have likely reduced exposure to firms with ESG issues, or increased their asset allocation to firms without these issues. On the contrary, if PE firms do not comply with the PRI, they may be more likely to invest in firms with a high number of ESG issues, given they may be seen as riskier and hence, undervalued, or simply not change their portfolio selection criteria, even after signature.

(see Table 4 Panel B). Exploiting these temporal differences allows us, in later empirical analysis, to explore the behaviour of early vs. late signatories. Given the lack of an institution-unique identifier reported on the PRI website matching our other databases, we manually match the list of PRI signatories with the list of PE investors included in our analysis sample by checking which investor in our list is also a PRI signatory. Performing this analysis, we find that out of our 404 PE investors, 106 are PRI signatories, while 298 are not.[12]

[Insert Table 4 around here]

3. Methodology

To perform our analysis, we use several regression estimations. We start by estimating the following Poisson Pseudo-Maximum Likelihood regression model:

$$Pr(LBO_{i,t+1}) = \exp(\alpha + \beta_1 \ln(1 + E\&S\ incidents_{i,t}) + \beta_2 PRI_{f,t} + \beta_3 \ln(1 + E\&S\ incidents_{i,t})\ PRI_{f,t} + \gamma' X_{i,t} + \mu_{c,j,y} + \varepsilon_{i,t+1}) \quad [1]$$

where $LBO_{i,t+1}$ is a dummy variable taking a value of 1 if a firm *i* is a target of an LBO in quarter *t+1*, it takes value of 0 otherwise. $\ln(1 + E\&S\ incidents_{i,t})$ is our core explanatory variable and is calculated as the natural logarithm of the total number of E&S incidents experienced by firm *i* in quarter *t*. PRI_f is also a dummy variable that takes value of 1 if a PE investor f is a PRI signatory, zero otherwise. $X_{i,t}$ is a vector of portfolio firm control variables considered by the literature as key drivers of LBOs (see, e.g., Bonaime et al., 2018; Kellard et al., 2022), including firms' return on assets ($\ln(ROA_{i,t})$), the 2-year moving standard deviation of their ROA ($sd(ROA_{i,\{t-8,t\}})$), their size ($\ln(Assets)_{i,t}$), sales growth ($\ln(\frac{Sales_{i,t}}{Sales_{i,t-1}})$),

[12] In the Online Appendix, we further analyse differences between conventional and PRI PE investors by analysing E&S incidents in PE-backed portfolio firms as well as performing a graphical investigation of the average number of E&S incidents around an LBO date (see Online Appendix A.2.3 and A.2.4).

leverage ($\ln(\frac{Debt}{Assets})_{i,t}$), and cash holdings ($\ln(\frac{Cash}{Assets})_{i,t}$). $\mu_{c,j,y}$ is a set of country of headquarters (c), industry (j) and year (y) fixed effects, which we use to control for unobserved differences at these levels. Ultimately, $\varepsilon_{i,t+1}$ are our standard errors, which we cluster at the industry-year level. In Online Appendix A.1, we provide definitions for the variables used in this regression and summary statistics for these variables.

We then use a Pooled-OLS regression to assess the undervaluation channel. In Section 4.2 and in Online Appendix A.3, we provide details on the rationale for and modelling of this channel. Our regression estimation is calculated as follows:

$$Mispriced_{i,t} = \alpha + \beta_1 \ln(1 + E\&S\ incidents_{i,t}) + \gamma' X_{i,t} + \mu_{c,j,y} + \varepsilon_{i,t} \quad [2]$$

where $Mispriced_{i,t}$ is the percentage mispricing of firm i in quarter t. All other variables are identical to those used in equation [1] specification.

4. Results

4.1 E&S incidents and LBO outcomes

Increased investors' attention to firm E&S profiles has mandated greater reporting and the creation of initiatives such as the PRI, presumably to strengthen investors' due diligence and sustainability.[13] Yet, there is little reliable evidence linking PE investment and target firms' E&S quality. Therefore, we begin by asking how investors account for E&S incident track records when choosing their investment targets. We run a Poisson Pseudo-Maximum Likelihood regression model (see equation [1]), allowing us to calculate the effect of E&S

[13] Recent work analysing M&A deals supports this idea, showing that acquirers, when choosing the company they want to merge with, consider several synergies, including the acquiree's ESG profile (Boone and Uysal, 2020; Maung et al., 2020). PE firms, unlike acquirers in an M&A, are, however, large diversified financial investors and own a large pool of portfolio firms at any given time. Therefore, they are much less exposed to the idiosyncratic ESG risk of an individual target firm. As a result, their investment choice might be driven by different considerations.

incidents experienced by our sample firms on the likelihood of a PE LBO taking place in the following quarter (*t+1*). This model has several advantages, including the provision of unbiased estimates when employing dependent variables with a large mass of values at zero, even with the inclusion of industry-year fixed effects. Table 5 reports the estimation results.

In Table 5 Panel A, we observe that firms subject to LBOs are positively associated with past E&S incidents in all regression specifications. In terms of magnitude, we observe that a 1 percent increase in the number of E&S incidents increases the probability of a buyout announcement the following quarter by approximately 50 percent in columns (1) and (3) and by about 13 percent in columns (2), (4) and (5), when including 'tighter' fixed effect structures.[14] Generally speaking, we observe that the magnitude of the coefficients reduces, but still remains positive and highly significant, when including country fixed effects (see Table 5). When analysing the effect of our control variables on LBOs' probability, we find that LBOs are positively associated with the assets of the target firm and their sales and negatively associated with the volatility of their ROA.

In Table 5 Panel B, we further decompose E&S incidents according to their severity. Strikingly, we found that more severe E&S incidents are negatively associated with the likelihood of a PE buyout. In particular, a 1 percent increase in highly severe E&S incidents reduces the probability of a buyout by 73 percent; this is significant at a 10 percent level. Conversely, E&S incidents of a medium, but especially those of low severity, typically increase the probability of buyout (about 55 percent). Moreover, the coefficients of our low-severity incidents are statistically significant. This shows that the previously discussed positive coefficients of Table

[14] The coefficient magnitudes are calculated as $e^{\beta} - 1$, as standard in fast Poisson regression models. The observed changes in LBO probability are *relative* increases, implying that the *absolute* increase in the probability of a buyout in response to a 1% increase in E&S incidents is from 0.8% (average probability; see Table A.2. with our summary statistics) to 1.2%.

5 Panel A are driven by low-severity incidents that are also the most common in our incident dataset.[15]

In Panel C of Table 5, we disaggregate E&S incidents into their 'E' and 'S' subcategories, and we extend our baseline analysis by incorporating governance (G) incidents. By doing this, we assess whether the observed relationship with LBO probability is specific to sustainability-related incidents or instead reflects broader firm-level distress. While 'G' issues are not typically considered part of sustainability in a narrow sense, they may nonetheless influence PE investment decisions. We define governance incidents based on RepRisk categories, including corruption, fraud, tax evasion, and board mismanagement. Our results show that, unlike E and S incidents, G incidents are not significantly associated with LBO probability once tighter fixed effects are included, suggesting that our core findings are not driven by general distress or poor management quality alone. Analysing the impact of 'E' and 'S' incidents separately, we note that while both categories of incidents strongly increase the probability of an LBO in a target firm, an 'S' incidents increase the probability of an LBO approximately 9 percent more than 'E' one.

In columns (10)-(13) of Table 5 Panel C, we also explore whether the impact of 'E', 'S', and 'G' incidents varies according to a firm's overall (un-)sustainability by studying firms' overall ESG exposure. We classify firms as having high or low ESG exposure (i.e., unsustainable vs sustainable) depending on whether their total number of E, S, and G incidents exceeds the sample median. Re-estimating our baseline regressions within these subgroups, we find that the positive association between E&S incidents and LBO likelihood is significantly stronger for firms with high ESG exposure. Notably, this pattern holds for both E&S and G

[15] See the pairwise correlations displayed in Online Appendix A.2.2). In Table A.6, displayed in Online Appendix A.3.3, we perform a VIF test for multicollinearity between E&S incidents (and their severity) and our accounting control variables. The results show that there are no multicollinearity concerns. For space reasons, we do not report the coefficients of the control variables in the Tables displayed after Table 5. The coefficients are, however, qualitatively identical in significance and magnitude to those shown in Table 5.

incidents, indicating that investors are more responsive to negative ESG signals when they appear persistent or symptomatic of deeper structural weaknesses. In contrast, similar incidents in firms with low ESG exposure are more likely to be perceived as isolated or transitory. These findings bolster the credibility of our identification strategy and address the concern that governance-related factors could be confounding our interpretation of E&S effects.

Finally, Table 5 Panel D presents formal F-tests to reinforce our identification and confirm that the effects of environmental and social incidents are statistically indistinguishable, whereas governance incidents differ significantly from both. Consistent with our interpretation, these tests indicate no meaningful difference between the effects of environmental and social incidents, whereas governance incidents differ significantly from both.

[Insert Table 5 around here]

4.2 (Under-)Valuation channel

The results in the previous section suggest that E&S incidents, particularly those of a minor nature, encourage PE LBOs; the converse is true for severe incidents. One potential reason for this result could be a lower valuation of the target following the incident; minor incidents may be cheaper to resolve, yet may negatively impact on investor sentiment. Consequently, we explore the existence of a 'valuation channel', suggesting that the observed increase in PE investment after an E&S incident might be motivated by a change in the targets' valuation after the incident rather than by the E&S information itself.[16] Given the long-term nature of ESG, investing after a temporary drop in ESG ratings or a worsening of E&S-related information may not necessarily indicate 'greenwashing'. Instead, such investment behaviour may be better explained by a 'valuation effect'. That is, if the E&S incident is exogenous –

[16] For instance, if E&S incidents reduce the cost of acquiring a target, PE might take advantage of a temporary undervaluation of the target's stocks and complete the buyout for a lower price. In this case, concluding that the PE investor is 'greenwashing' might be over-simplistic, as the investment itself is not directly motivated by the company's E&S profile. but rather by a misvaluation of the target portfolio firm.

unrelated to the firm's underlying sustainability practices – then PE investors may still be acting consistently with ESG principles. In such cases, the firm's fundamental E&S profile remains intact, and the post-incident investment reflects a response to temporary mispricing rather than a disregard for sustainability commitments. Thus, our next step is to measure the effect of E&S incidents of portfolio companies' mispricing and if this mispricing is the driver of the observed increased LBO probability. We look at the valuation channel from different angles. First, we discuss whether mispricing from a market value perspective might explain our results, followed by an approach that interprets undervaluation from an expectations revision perspective. To assess the existence of this channel, we use our equation [2] estimation.

4.2.1 E&S incident-led mispricing

In this section, we measure the impact of E&S incidents on firms' (under-)valuation separately from their impact on PE investment opportunities, focusing on changes in the market mispricing of a firm following an E&S incident. We then relate this back to PE investment choices to show why a company's attractiveness increases after E&S negative news. To test the suggested '(under-)valuation channel', we follow Vagenas-Nanos (2020) and Rhodes-Kropf et al. (2005) to develop a measurement of firms' mispricing (see Online Appendix A.3 for more details on the modelling of this variable) and deal premia and use this analysis to assess how a portfolio firm's valuation changes after an E&S incident. Finally, we relate this back to our results of Table 5 and the positive relationship between incidents of low severity and the probability of a buyout.

We find that a 1 percent increase in E&S incidents is associated with a 48 percent increase in portfolio firms' undervaluation (i.e., a decrease in the log-difference of firms' market value and intrinsic value - see column (1) of Table 6 Panel A), or an increase of 14 percent in the probability of a target undervaluation. As observed in Table 5, when including

country fixed effects, the magnitude of the coefficients decreases, but they all remain statistically significant at the 1 percent level.

In Panel B of Table 6, in columns (1) and (2), we analyse deal premia interacting increases in positive mispricing (i.e., overvaluations: $\ln\left(\frac{M}{V}\right)_{i,t}^{+} = 1$) with E&S incidents in period *t-1* to inspect the effect of an E&S-driven mispricing on the deal premium paid by PE. We observe that when a potential target is overvalued, a 1 percent increase in E&S incidents in the quarter prior to the LBO reduces the probability that a PE investor will overpay (the deal premium paid over the market) for a target by approximately 120 percent. The coefficient is significant at the 1 percent level (see columns (1)-(2) of Table 6 Panel B and Appendix A.3 for details on the deal premium estimation methodology). Finally, in Panel B, columns (3)-(4), we regress the probability of an LBO on our baseline proxy for contemporaneous mispricing ($\ln\left(\frac{M}{V}\right)_{i,t}$) interacted with lagged E&S incidents, providing a more direct test of the valuation channel. The results show that undervaluation significantly increases the likelihood of an LBO, and that this effect is amplified by approximately 3 percentage points when the firm has recently experienced an E&S incident. As in Table 5 and other specifications, the main effect of E&S incidents remains strong and statistically significant. Importantly, the positive and significant interaction term supports the interpretation that PE investors are particularly likely to acquire firms that are both undervalued and recently exposed to E&S negative news.

Ultimately, in Panel C, we break down the incidents by their severity and explore the effect of the severity of undervaluation. In columns (1)-(5), we include all indicators of severity in the same regression; in columns (6)-(20), we analyse each severity component one by one. In all regressions, the benchmark is either firms without any incidents or firms without incidents of the relevant (severity) category. Analysing Table 9 Panel C, we observe that most of the misvaluation effect is again captured by incidents of low severity – a 1 percent increase

in incidents of low severity increases negative misvaluation of 44 percent in our core regressions (less including country fixed effects), while it does so substantially less for other incidents severity categories (see columns (1)-(5)). Analysing each component of severity individually, we find that the most severe incidents have effects with greater absolute magnitudes but lower statistical significance (as reported in Table 5). This is also possibly driven by the rare nature of these incidents (see Table A.3 Panel A). Incidents of low severity and medium severity have almost identical magnitudes, which are slightly lower than those of high severity, but their effects are substantially more statistically significant (see columns (6)-(20)).

Overall, our evidence supports the view that PE is particularly likely to target undervalued firms (Nary, 2024). We find that minor E&S incidents may lead to the mispricing of the firm experiencing them, resulting in a more likely buyout of that firm. That said, the causes of this mispricing remain unclear. Given the broad consensus on the long-term nature of ESG and firms' progression towards this path, low-severity incidents, while affecting firms' pricing, should not have drastic and long-lasting effects on firm sustainability.

[Insert Tables 6 around here]

4.2.2 The role of expectations

Since (mis-)valuation is likely partially related to firm performance, E&S incidents and performance changes might present a contemporaneous effect on firm valuation. In this section, we explore the role of financial analyst expectations – and specifically forecast errors – in a firm's future performance, using forecast errors as a proxy of misvaluation and examining their effect on the probability of future LBO.

To explore the role of expectations following an incident, we follow Glossner (2021) – also analysing financial analysts' forecast revision after ESG controversies – and calculate

financial analysts' earnings yield forecast errors each quarter to assess the effect of incidents on such errors. Specifically, we observe the earnings per share (EPS) forecasts made in the quarter of the incidents for the following quarter and the difference between that forecast and actual EPS (of the forecasted quarter), using this quantity to predict future LBOs. By doing this, we create one additional lag between the misvaluation variable (forecasted in period *t-1*), firm performance (at time *t*) and the *t+1* probability of an LBO. To calculate 'Forecast Errors', we use firms' earnings yield, estimated using Equation [3] below. If financial analysts systematically underestimate the effects of E&S news, we should expect that firms with incidents will display larger earning yields forecast errors following an incident and a lower probability of a PE buyout (as these potential portfolio firms are overvalued). On the contrary, lower (or more negative) forecast errors should increase the likelihood of a buyout, consistent with the undervaluation of these firms.[17] As a measure of earning forecast errors, we use the following:

$$Forecast\ Error_{i,t} = \frac{\widetilde{EPS_{i.t}} - EPS_{i.t}}{P_{i,t}} \qquad [3]$$

Where $\widetilde{EPS_{i.t}}$ is the median of financial analyst forecasted earnings per share (EPS) for quarter *t*, $EPS_{i.t}$ is the actual firm EPS in a given quarter, and $P_{i,t}$ is a company stock price at the end of the quarter. Intuitively, if $\widetilde{EPS_{i.t}} > EPS_{i.t}$, i.e., the forecast error is positive, which implies that analysts underestimate the effect of an E&S incident on the companies' earnings. In other

[17] Ideally, we would compare investor-target expectations about the performance of a potential target in the aftermath of an incident to examine investor sentiment. However, that information is unobservable.

words, the stock might be overvalued since its valuation is based on overly optimistic expectations about future earnings.

The results of these regressions, shown in Table 7 columns (1)-(4), are consistent with the undervaluation channel. More specifically, we find, as expected, that E&S incidents are positively associated with the probability of an LBO. Moreover, after an E&S incident, a 1 percent increase in the earnings yield forecast error (i.e., a 1 percent increase in a firm's overvaluation) leads to a 14 percent lower likelihood of a PE LBO.

Finally, we address the concern that forecast errors may reflect general noise in analyst expectations rather than being driven specifically by E&S incidents. To disentangle the component of forecast error attributable to the incident itself, we construct a measure of excess forecast error by first estimating expected forecast errors using a baseline model trained on firm-quarters without E&S incidents. This model includes controls for firm fundamentals (lagged values of ROA, asset size, leverage, and sector-year fixed effects), capturing the systematic component of forecast dispersion unrelated to sustainability shocks. We then define the excess error as the residual from this prediction – that is, the difference between actual and expected forecast errors conditional on fundamentals. Finally, we repeat our LBO probability regressions using this excess forecast error and find that higher unexplained (i.e., incident-related) forecast errors are significantly negatively associated with subsequent buyouts, consistent with our baseline results. More specifically, performing this analysis, we find that a 1 percent increase in a firm's overvaluation leads to an approximately 11 percent lower likelihood of a PE LBO (see Table 7, columns (5)-(7)). This provides additional support for the undervaluation channel: when analysts' earnings expectations prove overly optimistic relative to realized performance – conditional on fundamentals and in the presence of E&S incidents – PE investors appear less likely to initiate acquisitions, likely due to perceived overvaluation (see Table 7 Panel B).

[Insert Tables 7 around here]

4.3 Differences in PRI vs non-PRI signatories' investment

Given the extensive survey-based that many PE actors believe in the importance of sustainability for their current and future fund success (see PwC, 2022) and the large number of investors joining the initiative (at least until the recent pushbacks by the US government), in this Section, we explore whether PE's commitment to responsible investment (the PRI) affects their portfolio selection. More explicitly, we assess whether PRI signatories are more likely to invest in firms with fewer E&S incidents compared to their non-signatory counterparts, keeping everything else constant.

To perform this analysis, in Table 8 Panel A, we interact our E&S incident variable with a PRI dummy capturing (i) firms that have subscribed to the PRI at any time (in columns (1)-(4)); and (ii) firms that are subscribed to PRI in a given quarter (in columns (5)-(8)), and taking a value of zero otherwise. This analysis will help us shed light on whether PRI signatories 'walk the talk' while keeping into account the fact that firms close to signing or that have not signed yet (analysed in columns (1)-(4) of Table 8 Panel A) might have practically the characteristics of a signatory.

Looking at the result of Table 8 Panel A, we find that E&S incidents still strongly predict the likelihood of a buyout. These results are statistically significant and comparable in magnitude to those reported in Table 5. Analysing instead the β_3 interaction coefficients (of equation [1]), we observe that PRI signatories are substantially less likely to invest in firms with high E&S incidents. This effect is statistically significant at the 5 and 1 percent levels. In terms of magnitudes of the PRI coefficients, we observe in the regressions that do not include country fixed effects that while E&S incidents increase the probability of buyout, they do so

29 percent less if the PE acquirer is a PRI signatory (or about 20 percent less in columns including country fixed effects). Finally, comparing the economic size of the coefficients of columns (5)-(8), including firms that are current signatories, with those in columns (1)-(4), treating as PRI signatories all investors that have been signatories at any point in the analysis period, we notice that coefficients of columns (5)-(8) are larger. This further supports our findings on the lower likelihood of observing UN PRI signatories invest in firms with E&S incidents.

Ultimately, in Table 8 Panel B, we re-estimate our baseline regression [1] for G incidents. The aim is to test whether the differential behaviour of PRI signatories observed in response to E&S incidents also applies to governance-related controversies. If PRI investors are more likely to avoid firms with recent E&S incidents, but not G incidents, this would lend further credibility to our interpretation that PRI firms are genuinely motivated by sustainability considerations, rather than general firm management quality. As shown in Table 8 Panel B, our results confirm this pattern. While the magnitude and coefficients of the main explanatory variables remain comparable in magnitude and significance to those in our baseline E&S regressions, the interaction term between PRI signatory status and G incidents is statistically insignificant. This suggests that, unlike E&S incidents, governance incidents do not significantly influence the likelihood of a buyout by PRI-affiliated investors.

Overall, these results are a testament to the importance of initiatives such as the UN PRI in promoting more sustainable investment practices.

[Insert Table 8 around here]

5. Robustness Checks

5.1. Robustness I: Baseline regressions for Non-Financial Corporations (NFCs)

A potential concern is that our results could be disproportionately influenced by firms in the financial services and banking sectors (see Tables 1 and 3). These sectors differ markedly from industrial and service-based firms in terms of regulation, accounting standards, and capital structure, which may distort the estimated relationship between E&S incidents and buyout probability. In light of that, in this robustness check, we re-estimate our baseline specification after excluding all firms with primary SIC codes corresponding to financial services and banking. We report the results of this robustness analysis in Table 9.

As displayed in Table 9, when restricting the sample to non-financial corporations NFCs, the positive and highly significant relationship between E&S incidents and the likelihood of a subsequent LBO remains intact - and if anything, becomes even stronger both statistically and economically. The coefficients on E&S incidents increase slightly (just a few basis points) relative to the full sample analysed in Table 5, suggesting that our core findings are not driven by financial-sector dynamics. Furthermore, the inclusion of firm-level controls and varying fixed-effects structures does not alter this conclusion. We conclude that our results are therefore robust.

[Insert Table 9 around here]

5.2. Robustness II: PRI vs non-PRI investors' behaviour and firms' short-term incident rates

In this Section, we replace (new) E&S incidents with the current firm incident rates ('current RRI') available in Reprisk as a proxy of the E&S information about the firm in our baseline regression model available to investors at time *t+1*. We then re-run our baseline regression to check whether our results showing that PRI investors are, on average, more responsible in their investments remain robust (see Table 10). Performing this regression, our results remain qualitatively unchanged and strongly statistically and economically significant. In particular, once again, we find that increases in ESG incident rates increase the probability

of an LBO and that increases in incidents act as a deterrent for PRI investors who appear more responsible in their target screening and, vice versa, less for conventional (non-PRI) investors.

[Insert Table 10 around here]

5.3. Robustness III: Other proxies for E&S incidents

In this Section, we test the robustness of our findings to additional (alternative) measures of E&S incidents to account for the fact that PE buyouts often involve prolonged due diligence processes that might exceed the one-quarter that we use in our analysis. As a result, in this Section, we include other proxies for E&S incidents and observe the response of PE LBOs at time *t+1* to these proxies. In particular, in Table 11, we replace E&S incidents with the moving average E&S incidents between time *t-8* and *t*; the moving average E&S incidents between time *t-8* and *t-2*; the first and second lag of E&S incidents.

If our results were dependent on the choice of the lag between an LBO deal announcement and the incident, then performing this test, we should find insignificant or different results. This, however, is not the case. As presented in Table 11, all our regressions have strongly significant coefficients with the expected signs. To be precise, the coefficients of these newly selected proxies have rather slightly larger coefficients' magnitudes, suggesting that our baseline regression might slightly underestimate the effect of E&S incidents on LBOs probability. That said, increases in E&S incidents using the previously mentioned proxies increase the probability of an LBO in all our regression specifications, as in our baseline regressions. We conclude, therefore, that our results are robust.

Finally, we replace E&S incidents with firm-level carbon emissions – using Scope 1 and 2, as well as Scope 1, 2, and 3 emissions data from ESG TrueCost – and re-estimate our baseline regressions (see Table 11, columns (9)-(12)). Specifically, we regress the probability of a buyout on carbon emissions and interact this with a PRI signatory indicator to examine

whether responsible investors respond differently to emissions intensity. The results remain robust. We find that higher carbon emissions are positively associated with the likelihood of a buyout for the average PE investor. However, for PRI-affiliated investors, the interaction term is negative and statistically significant, indicating that signatories are less likely to acquire high-emission firms. This supports our interpretation that PRI investors incorporate environmental externalities, beyond incident-based reputational risks, into their investment screening.

[Insert Table 11 around here]

5.4. Robustness IV: Diff-in-Diff analysis of the '(Under-)Valuation Channel'

Our evidence thus far suggests a positive relationship between the previous quarter's E&S incidents and the next period's probability of an LBO, driven by an undervaluation channel. Having established that PE investment is influenced by target firms' mispricing, which is exacerbated by E&S incidents, we now apply a difference-in-differences (DiD) strategy to robustify the relationship between E&S-driven changes in firms' mispricing and LBO probability. Specifically, we focus on pricing changes that are plausibly unrelated to firms' performance prior to the E&S incident and unlikely to drive contemporaneous changes in firms' financial fundamentals.

We begin by restricting our analysis to firms that have experienced at least one E&S incident and examine their mispricing behaviour using ln (Market Price-to-Intrinsic Value), which incorporates fundamental accounting and financial proxies to estimate intrinsic value. We focus on the three quarters surrounding the E&S incident and interact our mispricing proxy with a post-incident time dummy, or quarter-specific dummies depending on the regression specification, to measure its marginal effect on LBO probability. Secondly, we refine our sample and further restrict firms to a 95% confidence interval around their industry's average

mispricing in the year before they experience an E&S incident, ensuring that firms were similarly mispriced before the incident and helping rule out pre-existing financial distress as a confounding factor. A key advantage of this approach is that it allows us to observe natural sets of treatment and control events, facilitating meaningful comparisons.

Our sample consists of 15,110 firms for which we have valuation data, of which 8,697 have experienced at least one E&S incident. Among these, 5,789 cases involve undervaluation within three quarters following an E&S incident, while 2,908 cases involve undervaluation without an associated E&S incident, which serves as our primary treatment and control events, respectively. Secondly, we further refine our analysis and construct a secondary control group by filtering out firms that do not meet our 95% mispricing confidence interval criteria before an E&S incident. This results in a final sample of 168 treated firms, defined as those that have experienced at least one E&S incident, and 50 control firms that have never experienced an E&S incident. The treatment period corresponds to the three quarters following the E&S incident. Our primary identification strategy compares treatment and control firms within the same industry and mispricing range, providing evidence consistent with the effect of E&S-driven undervaluation on the likelihood of an LBO.

The marginal effects displayed in Figure 3 show that, across all specifications, there is a positive relationship between firm undervaluation (negative mispricing) and the probability of a buyout, with this relationship becoming statistically significant after the firm experiences an E&S incident. In Figure 3, Panel A presents the results from our DiD specification, showing the relationship between mispricing and LBO probability before and after an E&S incident. Panel B extends the analysis by using a time dummy variable ‘event’, which takes the value of 1 in each of the quarters surrounding the incident date {-3; +3} (instead of the before vs after dummy) and additional firm-level controls to ensure robustness. This specification allows us to track the marginal effect of mispricing across multiple quarters around the incident, rather

than assuming a uniform shift post-incident. Finally, Panel C tracks the evolution of marginal effects over the quarters surrounding an E&S incident, revealing a marked increase in the effect of mispricing post-incident. Our model findings show that the valuation channel effect on LBOs' probability "kicks in" after an E&S incident takes place – not before. This provides strong supporting evidence for the robustness of the valuation channel, reinforcing our conclusion that E&S-driven mispricing plays a role in shaping PE acquisition decisions.

[Insert Figure 3 around here]

5.5 Robustness V: Using media reach as a proxy for the strength of the valuation channel

In this Section, we test the effect of the media reach of the source reporting on the E&S incident on the probability of a next-period LBO. The idea for this test is that higher media reach should amplify the valuation effect, i.e. facilitating our 'valuation channel'. In particular, if investors struggle to assess the salience of E&S news, media sources with high reach and reputation might facilitate investors' embedding of E&S information in firms' valuation. In line with this, the more visible an incident is, the larger the stock market reaction and the more likely it is a buyout.

We test this channel in Table 12 and find support for it, further validating our postulated 'valuation channel' and its functioning through the E&S incident news. In particular, we find that E&S incidents have a strong and positive effect on the likelihood of a future buyout – in line with our baseline results, but crucially especially so when the incidents are covered by 'high reach' (in one instance, 'medium reach') media sources. Incidents covered by low-reach media coverage do not have any incremental effect on how E&S incidents affect the probability of a buyout at time $t+1$. These results align with Glossner (2021) and further support our baseline findings.

[Insert Table 12 around here]

5.6. Robustness VI: E&S (Under-)Valuation

After providing further validation for the valuation channel, we assess if an E&S incident (under) valuation is true even for targets with high (i.e., numerous) E&S incidents. If a new incident has temporarily downgraded a target firm's E&S performance, investing after an incident could be a fast and cheap way to show tangible E&S improvements in portfolio firms. In this case, our market (valuation)-driven interpretation might not be completely accurate.

We carry out this test by assessing investment in firms with 'high but decreasing' incidents. We do this by constructing a dummy variable 'Decreasing' equal to one $E\&S\ \widetilde{Incident}_{[t-8;t-5]} > E\&S\ Incident_{[t-4;t]}$, zero otherwise, and interacting it with the dummy variable 'High Incidents'. This dummy equals one if a firm has more incidents in a given quarter than the industry yearly median firm, zero otherwise (see Table 13 below). Second, we use the RepRisk variables 'current RRI' and 'peak RRI', indicating a company's short- and medium-term E&S incidents' rates, respectively, and interact these with new E&S incidents to observe the resulting change in PE investment as a result of this newly available information. If the suggested 'E&S (under-)valuation motif' is at play, we would expect greater investment in firms with high incidents but decreasing. Likewise, we would expect less investment in firms with worse E&S records after a new incident and vice versa.

Observing the results of Table 13 below, we note a strongly positive and significant association between incidents and the probability of a future buyout. However, all interaction terms are insignificant in all regression specifications. This suggests that, unlike the previously

tested valuation channel, the opportunistic E&S performance enhancement motif does not explain the observed PE investment behaviour.

[Insert Table 13 around here]

5.7. Robustness VII: Differences in PE signatory tiers

Finally, we assess whether the time at which PE investors joined the PRI initiative affects their "sustainability". More specifically, if our Table 8 findings are robust, we expect investors who joined the PRI initiative last (or late) to be less motivated to invest responsibly than their counterparts who joined when the initiative had just launched, and responsible investment was less popular.

To perform this check, we still use our baseline regression framework, but this time replace $PRI_{f,t}$ with a "PRI signatory tier" dummies. To create these dummies, using a quantile approach, we divide PRI investors into tiers depending on when they have joined the initiative. Investors are divided initially into three tiers using a previously mentioned quantile approach to ensure a similar representation of PRI investors in each tier. We then further split investors into two additional tiers (we increase the tiers to five) to check that the tier selection does not drive the results. After identifying each PRI tier, we create several dummy variables, taking a value of one if investor *f* belongs to a given tier and zero otherwise. We show the results of this regression in Table 14 below.

Looking at Table 14's result, we find that increases in E&S incidents reduced investment of PRI investors in the first tier more than non-PRI investors, no matter the number of tiers considered or the fixed effects structure we impose. The negative coefficients are both statistically and economically significant. In particular, a PRI investor from the first tier is, on average, between 20 percent and 28 percent less likely to acquire a target than a non-PRI investor would have been if that firm had experienced E&S incidents. The β_3 interaction

coefficients of the remaining tiers are sometimes significant when the tier represents an investor joining halfway through the 2006-2020 life of the PRI initiative (since the PRI was launched in 2006), showing that both early and follow-up investors comply with their PRI commitments. The coefficients for these tiers are statistically significant. However, crucially, the coefficients for late signatories – in the last tier – are never statistically significant, confirming that this category of investors invests in the same way as a non-signatory firm.

This supports our findings that investors who joined the PRI initiative last are unlikely to be driven by sustainability motives but rather likely joined due to the increasing popularity of this program and/or possibly because of external pressures from their funding-limited partners.

[Insert Table 14 around here]

5.8. Other PE Deals and E&S Incidents

In this robustness check, we expand our sample of considered deals to include all PE deals that we can match to our analysis sample, including all firms on Compustat-Capital IQ and that have a record on Reprisk. In such an effort, we consider both non-buyout deals by PE and PE exit from pre-existing buyout deals. This effort allows us to include not only leveraged buyouts, the focus of our paper, but also minority investments, recapitalizations, and tender offers involving PE sponsors. Our expanded sample allows us to assess whether our core findings are specific to traditional LBO structures or generalise to the broader universe of PE deal types (see Online Appendix A.2.4, for more information on the deals' distributional characteristics). We present the results of this robustness check in Table 15 below.

Table 15 Panel A shows that E&S incidents predict a higher future likelihood of PE investment. This relationship holds across deal types, suggesting that the valuation effects of E&S controversies extend to other forms of PE investment, not just buyouts. These findings

strengthen the argument that E&S incidents generate temporary mispricing, which PE investors exploit across a variety of transactional contexts. Moreover, PRI signatories still appear less likely to be involved in investment in portfolio firms with reported E&S incidents. In light of this, we conclude that our identified channels and results are robust.

Table 15 Panel B examines PE exits. Given our valuation-driven interpretation of PE investment behaviour – particularly among non-PRI investors exploiting temporary mispricing after E&S incidents – we would expect non-PRI investors to exit (i.e., sell or IPO) their investments once the firm's valuation recovers post-incident, effectively realising gains from short-term arbitrage. In contrast, PRI investors are expected to show greater sensitivity to E&S issues even post-acquisition, and thus would be less likely to exit immediately following new E&S incidents, especially if doing so would signal opportunism or conflict with their responsible investment commitments. Instead, they may delay exit or take corrective action to improve the portfolio firm's sustainability profile before divesting. In short, non-PRI PE firms are more likely to sell after valuation rebounds; PRI PE firms are more likely to stay engaged following E&S issues. That is what we find in Table 15 Panel B.

Our results suggest that non-PRI investors are more likely to exit a portfolio firm following an E&S incident, while PRI investors are less responsive to such incidents when deciding to exit, consistent with our baseline results around valuation-driven opportunism vs sustainability commitments. Overall, our results remain robust.

[Insert Table 15 around here]

5.9. Other robustness checks

Finally, we conducted additional robustness checks, including: (i) using the Deepwater Horizon oil spill to identify an undervaluation event for 'Oil and Gas' firms and testing its effect on the probability of an LBO in this industry; (ii) examining whether the death or retirement of an

'entrenched' board member, affecting firms' board quality, predicts E&S incidents (i.e., biasing our results); (iii) using alternative fixed effects specifications; and (iv) repeating our baseline regressions considering using ESG ratings (see Online Appendix A.3.4). These tests are not displayed due to space constraints, but our results remain robust.

6. Conclusion

This paper investigates the relationship between E&S incidents and PE decisions to invest. Our analysis demonstrates that PE investors are more likely to acquire firms following low-severity E&S incidents, suggesting that such incidents may present opportunities for PE firms to capitalise on temporary undervaluations. Meanwhile, high-severity incidents deter PE, most likely due to the greater open-ended risks and potential reputational costs associated with such investments. Hence, our findings highlight the importance of incident severity in shaping investment decisions. Our results also reveal notable distinctions between signatories to the United Nations Principles for Responsible Investment (PRI) and non-signatories. PE firms that are PRI signatories are significantly less likely to invest in firms with high levels of E&S incidents. This behaviour underscores the role of PRI commitments in promoting more responsible investment practices – even in the face of financial incentives to exploit undervalued firms. Future research could probe how this may change in the light of political developments in the US. With respect to the PRI framework, our finding that PRI and non-PRI PE firms exhibit similar exposure to sustainability risk, but differ markedly in their selection of portfolio firms highlights a novel dimension of heterogeneity in responsible investing, warranting further investigation in future research. Again, given the growing number of private to private secondary transactions, future research could probe differences and similarities in terms of approaches between privately held and listed firms with high E&S incidents. Finally, future research should further explore the longer-term impacts of PE investments on the sustainability and financial performance of portfolio firms.

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Tables

Table 1. The geographical and sectoral distribution of PE deals

Table 1 displays the country (in Panel A) and sector (in Panel B) distribution of the deals included in our data sample. Countries are identified in Panel A using the country of headquarters of the target portfolio firm (for which we present the ISO 3 code). We include the company 'Sector' as the primary sector of each company in Reprisk.

Panel A. Top-10 countries by LBO deals

Portfolio firm Country of Headquarters	*Total LBOs*	*Perc*	*Cumulative*
USA	463	61.82	61.82
GBR	42	5.61	67.43
CAN	28	3.74	71.17
JPN	19	2.54	73.71
AUS	18	2.4	76.11
IRL	18	2.4	78.51
CYM	17	2.27	80.78
SWE	14	1.87	82.65
DEU	12	1.6	84.25
IND	11	1.47	85.72

Panel B. LBO deals with sectoral decomposition

Primary Sector PE portfolio firms	Freq.	Perc	Cum.
Financial Services	62	8.28	8.28
Banks	50	6.68	14.96
Support Services (Industrial Goods and Services)	47	6.28	21.24
Retail	45	6.01	27.25
Oil and Gas	39	5.21	32.46
Food and Beverage	35	4.67	37.13
Personal and Household Goods	34	4.54	41.67
Health Care Equipment and Services	32	4.27	45.94
Software and Computer Services	31	4.14	50.08
Technology Hardware and Equipment	31	4.14	54.22
Industrial Engineering	29	3.87	58.09
Media	29	3.87	61.96
Utilities	29	3.87	65.83
Chemicals	26	3.47	69.3
Construction and Materials	26	3.47	72.77
Telecommunications	26	3.47	76.24
Pharmaceuticals and Biotechnology	24	3.2	79.44
General Industrials	23	3.07	82.51
Insurance	22	2.94	85.45
Travel and Leisure	22	2.94	88.39
Electronic and Electrical Equipment	15	2	90.39

Aerospace and Defence	13	1.74	92.13
Industrial Transportation	11	1.47	93.6
Automobiles and Parts	10	1.34	94.94
Alternative Energy	7	0.93	95.87
Mining	7	0.93	96.8
Paper	7	0.93	97.73
Industrial Metals	6	0.8	98.53
Airlines	4	0.53	99.06
Gambling	3	0.4	99.46
Forestry	2	0.27	99.73
Tobacco	2	0.27	100
Total	*749*	*100*	

Table 2. The Geography of E&S Incidents

Table 2 displays the country (in Panel A) and IMF Economic Region (in Panel B) distribution of the E&S incidents included in our data sample. Countries are identified in Panel A using the country of headquarters of the firm experiencing an E&S incident (for which we present the ISO 3 code).

Panel A. Top-10 countries by E&S incidents

Country of Headquarters	*Total Incidents*	*Perc*
USA	78,652	29%
GBR	25,579	10%
CAN	15,154	6%
FRA	13,275	5%
DEU	12,631	5%
CHN	9,773	4%
KOR	9,590	4%
BRA	8,712	3%
AUS	8,691	3%
CHE	8,016	3%

Panel B. Total E&S incidents by IMF economic region

IMF Region	*E&S Incidents*	*Perc*
Advanced Economies	214,996	80%
Emerging Market Economies	52,402	19%
Low Income Developing Countries	1,465	1%
Total	*268,863*	*100%*

Table 3. E&S Incident sectoral decomposition

Table 3 displays the sectoral distribution of the E&S incidents included in our data sample. To identify a company's sector experiencing an E&S incident, we use the company's primary sector, which is available in Reprisk.

Primary Sector	*E&S Incidents*	*Perc*
Oil and Gas	50,439	19%
Utilities	27,763	10%
Mining	26,687	10%
Banks	22,192	8%
Food and Beverage	19,805	7%
Chemicals	14,759	5%
Retail	10,727	4%
Industrial Metals	9,978	4%
General Industrials	8,908	3%
Construction and Materials	8,870	3%
Automobiles and Parts	7,732	3%
Personal and Household Goods	7,469	3%
Financial Services	5,810	2%
Support Services (Industrial Goods and Services)	4,509	2%
Technology Hardware and Equipment	4,321	2%
Electronic and Electrical Equipment	3,860	1%
Travel and Leisure	3,663	1%
Aerospace and Defence	3,471	1%
Industrial Transportation	3,382	1%
Software and Computer Services	3,293	1%
Industrial Engineering	3,218	1%
Pharmaceuticals and Biotechnology	3,213	1%
Telecommunications	3,168	1%
Media	3,126	1%
Airlines	2,262	1%
Insurance	2,038	1%
Paper	1,319	0%
Health Care Equipment and Services	891	0%
Forestry	674	0%
Tobacco	579	0%
Alternative Energy	427	0%
Gambling	249	0%
Development Banks, Central Banks, and Export Credit Agencies	56	0%
Unspecified	5	0%
Total	*268,863*	*100%*

Table 4. PRI signatories

Table 4 shows the number of PE firms that joined the PRI initiative. In Panel A, we show the top 10 PE firms by AUM and the date on which they signed up. In Panel B, we present how many of the PE firms in our samples have joined the PRI and when.

Panel A. Top 10 PE firms (by AUM) signing date

Investor	*PRI signature date*	*Assets Under Management (AUM)*
Thomas Bravo	21 October 2022	$114b
Carlyle	22 April 2022	$376b
Blackstone	30 July 2021	$941b
Advent International	05 May 2021	$89b
Vista Equity Partners	23 June 2020	$86b
TPG Capital Advisors	17 June 2013	$109b
CVC Capital Partners	14 September 2012	$127b
Neuberger Berman Group	29 June 2012	$460b
EQT	22 December 2010	$82b
Kohlberg Kravis Roberts and Co (KKR)	19 February 2009	$479b
Total AUM (Approx.)		*$2,863b*

Panel B. PE breakdown by PRI signature year

Signature year	*PE signatories*
2006	3
2008	1
2009	5
2010	3
2011	7
2012	5
2013	5
2014	1
2015	4
2016	1
2017	3
2018	2
2019	7
2020	14
2021	24
2022	21
Total	*106*

Table 5. Baseline regression results

Table 5 presents our baseline regression findings on the effect of E&S incidents on the probability of an LBO. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. In Panel A, we show the effect of the total number of incidents experienced by firm *i* in quarter *t* on the probability of an LBO in the following quarter. In Panel B, we break down the total number of incidents by severity and show how the incident's severity affects the probability of a future LBO. In Panel C, we further decompose ESG incidents in E, S, and G and rerun our baseline regressions. Panel D, instead, performs formal F-Tests on the key regression coefficients of E, S, and G incidents (all regressions in this Panel include industry-time FEs). All the regression models are estimated using our baseline fast Poisson regression model. *, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

Panel A. E&S incidents effect on the probability of PE buyouts

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$
E&S Incidents	0.449***	0.127**	0.490***	0.137**	0.129**
	(0.052)	(0.062)	(0.054)	(0.058)	(0.058)
ROA	0.530	-0.756	0.223	-0.243	-0.882
	(1.185)	(1.092)	(1.132)	(1.079)	(1.091)
ROA SD	-1.700*	-1.027	-1.567*	-0.914	-1.046*
	(0.987)	(0.811)	(0.853)	(0.734)	(0.550)
Assets	-0.031**	0.206***	-0.001	0.173***	0.211***
	(0.014)	(0.026)	(0.016)	(0.023)	(0.026)
Sales Growth	0.146**	-0.020	0.162***	-0.008	-0.017
	(0.058)	(0.063)	(0.059)	(0.061)	(0.053)
Leverage	1.050***	0.734***	1.491***	0.753***	0.702***
	(0.285)	(0.275)	(0.281)	(0.248)	(0.264)
Cash Holdings	-0.427	0.050	-0.547	0.341	0.076
	(0.446)	(0.407)	(0.471)	(0.357)	(0.588)
Constant	-6.544***	-7.666***	-6.263***	-7.214***	-6.902***
	(0.153)	(0.234)	(0.162)	(0.212)	(0.255)
Observations	371,968	251,031	266,036	164,237	121,109
Country FE	No	Yes	No	No	No
Ind FE	No	Yes	No	No	No
Year FE	No	Yes	No	No	No
Ind x Year FE	No	No	Yes	No	Yes
Country x Year FE	No	No	No	Yes	Yes

Panel B: Severity breakdown

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$	(6) $LBO_{i,t+1}$	(7) $LBO_{i,t+1}$	(8) $LBO_{i,t+1}$	(9) $LBO_{i,t+1}$	(10) $LBO_{i,t+1}$
High severity Inc	-1.314*	-1.423*	-1.373*	-1.425*	-1.439*	-0.639	-1.211*	-1.140*	-0.714	-1.240*
	(0.712)	(0.742)	(0.715)	(0.750)	(0.757)	(0.671)	(0.720)	(0.690)	(0.703)	(0.742)
Medium severity Inc	0.217**	0.093	0.114	0.191*	0.102					
	(0.107)	(0.103)	(0.100)	(0.113)	(0.104)					
Low severity Inc	0.445***	0.152*	0.149*	0.515***	0.147*					
	(0.080)	(0.079)	(0.077)	(0.086)	(0.081)					
Obs	371,968	251,031	164,237	266,036	121,109	371,968	251,031	164,237	266,036	121,109
Const. and Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No	No	Yes	No	No	No
Ind FE	No	Yes	No	No	No	No	Yes	No	No	No
Year FE	No	Yes	No	No	No	No	Yes	No	No	No
Country x Year FE	No	No	Yes	No	Yes	No	No	Yes	No	Yes
Ind x Year FE	No	No	No	Yes	Yes	No	No	No	Yes	Yes

... the Table continues below

	(11) $LBO_{i,t+1}$	(12) $LBO_{i,t+1}$	(13) $LBO_{i,t+1}$	(14) $LBO_{i,t+1}$	(15) $LBO_{i,t+1}$	(16) $LBO_{i,t+1}$	(17) $LBO_{i,t+1}$	(18) $LBO_{i,t+1}$	(19) $LBO_{i,t+1}$	(20) $LBO_{i,t+1}$
High severity Inc										
Medium severity Inc	0.491***	0.135	0.162*	0.507***	0.143					
	(0.078)	(0.089)	(0.085)	(0.081)	(0.090)					
Low severity Inc						0.519***	0.158**	0.166**	0.573***	0.156**
						(0.059)	(0.070)	(0.067)	(0.062)	(0.071)
Obs	371,968	251,031	164,237	266,036	121,109	371,968	251,031	164,237	266,036	121,109
Const. and Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No	No	Yes	No	No	No
Ind FE	No	Yes	No	No	No	No	Yes	No	No	No
Year FE	No	Yes	No	No	No	No	Yes	No	No	No
Country x Year FE	No	No	Yes	No	Yes	No	No	Yes	No	Yes
Ind x Year FE	No	No	No	Yes	Yes	No	No	No	Yes	Yes

Panel C. E, S, G Incident Decomposition

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$	(6) $LBO_{i,t+1}$	(7) $LBO_{i,t+1}$	(8) $LBO_{i,t+1}$	(9) $LBO_{i,t+1}$	(10) $LBO_{i,t+1}$	(11) $LBO_{i,t+1}$	(12) $LBO_{i,t+1}$	(13) $LBO_{i,t+1}$
E Incident	0.21***	0.218***	0.218***										
	(0.061)	(0.060)	(0.060)										
S Incident				0.291***	0.303***	0.30***							
				(0.033)	(0.031)	(0.030)							
G Incident							0.197***	0.229***	0.260				
							(0.066)	(0.073)	(0.168)				
E-S-G Incident										0.40***	0.441	0.46***	0.736
										(0.061)	(1.146)	(0.122)	(0.467)
Obs	371,968	363,582	266,036	371,968	363,582	266,036	72,880	64,194	17,192	129,677	68,441	7,846	2,501
Incident Type	E	E	E	S	S	S	G	G	G	E&S	E&S	G	G
ESG Exposure	-	-	-	-	-	-	-	-	-	High	Low	High	Low
Const. & Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind FE	No	Yes	No	No	Yes	No	No	Yes	No	No	No	No	No
Year FE	No	Yes	No	No	Yes	No	No	Yes	No	No	No	No	No
Ind x Year	No	No	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Panel D. Formal F-Tests on Incident Coefficients

Test	**X^2*(1)***	***p-value***	***Interpretation***
E = S	*0.77*	*0.38*	*No difference between E and S*
E = G	*4.92*	*0.03*	*Significant difference (5% level)*
S = G	*6.43*	*0.01*	*Significant difference (5% level)*

Table 6. (Under-) Valuation Channel

Table 6 presents evidence on the existence of a valuation channel through which E&S incidents lead to target firm undervaluation, thereby increasing the likelihood of an LBO. Panel A examines the effect of the total number of E&S incidents experienced by firm i in quarter t on (i) the degree of market mispricing and (ii) the probability that the firm is undervalued in the subsequent quarter. Panel B, columns (1)–(2), investigates whether E&S incidents reduce the deal premium paid by PE investors in transactions involving *overvalued* targets. Columns (3)–(4) directly regress LBO probability on E&S incidents to test the valuation mechanism. In Panel C, we disaggregate the total number of incidents by severity level and assesses how different levels of severity affect the relationship between incidents and firm undervaluation. All regressions include controls for ROA, ROA volatility (ROA_SD), firm size (Assets), Sales Growth, Leverage, and Cash Holdings. For definitions and construction of all variables, see Online Appendix A.1. Note that all regression results displayed in this Table are estimated using a pooled-OLS regression, exception made for those estimating $\Pr(Underval)_{i,t+1}$, estimated instead using our baseline fast Poisson regression model. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

Panel A. E&S incidents effect on the probability of Portfolio Firms Undervaluation

	(1) $Ln(\frac{M}{V})_{i,t}$	(2) $Ln(\frac{M}{V})_{i,t}$	(3) $Ln(\frac{M}{V})_{i,t}$	(4) $Ln(\frac{M}{V})_{i,t}$	(5) $\Pr(Underval)_{i,t+1}$
E&S Incidents	-0.480***	-0.063***	-0.451***	-0.067***	0.143***
	(0.008)	(0.017)	(0.020)	(0.017)	(0.004)
Observations	371,968	251,031	266,036	164,237	121,109
Constant	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No
Ind FE	No	Yes	No	No	No
Year FE	No	Yes	No	No	No
Ind x Year FE	No	No	Yes	Yes	Yes
Country x Year FE	No	No	No	Yes	No

Panel B. Misvaluation-driven LBO Premium and Deal Probability

	$\ln\left(\frac{M}{V}\right)^{+}_{i,t} = 1$		$\ln\left(\frac{M}{V}\right)_{i,t}$	
	(1) $Deal\ Premium_{i,t}$	(2) $Deal\ Premium_{i,t}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$
E&S $Incidents_{t-1}$	0.039	0.033	0.470***	0.471***
	(0.048)	(0.072)	(0.063)	(0.063)
$\ln\left(\frac{M}{V}\right)_{i,t}$	0.678**	0.587*	-0.042**	-0.038**
	(0.264)	(0.309)	(0.017)	(0.017)
E&S $Incidents_{t-1}$ x $\ln\left(\frac{M}{V}\right)_{i,t}$	-1.268**	-1.295**	0.028*	0.031*
	(0.586)	(0.537)	(0.017)	(0.018)
Observations	254	240	328,731	232,772
Constant	Yes	Yes	Yes	Yes
Acc. Controls	Yes	Yes	Yes	Yes
Ind FE	No	Yes	Yes	No
Year FE	No	Yes	Yes	No
Ind x Year FE	No	No	No	Yes

Panel C: Severity breakdown

	(1) $Ln(\frac{M}{V})_{i,t}$	(2) $Ln(\frac{M}{V})_{i,t}$	(3) $Ln(\frac{M}{V})_{i,t}$	(4) $Ln(\frac{M}{V})_{i,t}$	(5) $\Pr(U)_{i,t+1}$	(6) $Ln(\frac{M}{V})_{i,t}$	(7) $Ln(\frac{M}{V})_{i,t}$	(8) $Ln(\frac{M}{V})_{i,t}$	(9) $Ln(\frac{M}{V})_{i,t}$	(10) $\Pr(U)_{i,t+1}$
High severity Inc	-0.113**	0.056	-0.096**	0.057	0.015	-0.681***	-0.025	-0.632***	-0.028	0.189***
	(0.045)	(0.038)	(0.046)	(0.038)	(0.011)	(0.043)	(0.042)	(0.058)	(0.042)	(0.010)
Medium severity Inc	-0.276***	-0.049***	-0.285***	-0.053***	0.079***					
	(0.014)	(0.014)	(0.020)	(0.014)	(0.005)					
Low severity Inc	-0.441***	-0.062***	-0.399***	-0.065***	0.122***					
	(0.011)	(0.019)	(0.022)	(0.018)	(0.005)					
Obs	355,741	355,741	355,738	355,727	356,992	355,741	355,741	355,738	355,727	356,992
Const. and Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No	No	Yes	No	No	No
Ind FE	No	Yes	No	No	No	No	Yes	No	No	No
Year FE	No	Yes	No	No	No	No	Yes	No	No	No
Ind x Year FE	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Country x Year FE	No	No	No	Yes	No	No	No	No	Yes	No

... the Table continues below

	(11) $Ln(\frac{M}{V})_{i,t}$	(12) $Ln(\frac{M}{V})_{i,t}$	(13) $Ln(\frac{M}{V})_{i,t}$	(14) $Ln(\frac{M}{V})_{i,t}$	(15) $\Pr(U)_{i,t+1}$	(16) $Ln(\frac{M}{V})_{i,t}$	(17) $Ln(\frac{M}{V})_{i,t}$	(18) $Ln(\frac{M}{V})_{i,t}$	(19) $Ln(\frac{M}{V})_{i,t}$	(20) $\Pr(U)_{i,t+1}$
High severity Inc										
Medium severity Inc	-0.552***	-0.081***	-0.531***	-0.085***	0.158***					
	(0.012)	(0.019)	(0.027)	(0.019)	(0.005)					
Low severity Inc						-0.553***	-0.078***	-0.514***	-0.082***	0.157***
						(0.010)	(0.020)	(0.025)	(0.020)	(0.004)
Obs	355,741	355,741	355,738	355,727	356,992	355,741	355,741	355,738	355,727	356,992
Const. and Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No	No	Yes	No	No	No
Ind FE	No	Yes	No	No	No	No	Yes	No	No	No
Year FE	No	Yes	No	No	No	No	Yes	No	No	No
Ind x Year FE	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Country x Year FE	No	No	No	Yes	No	No	No	No	Yes	No

Table 7. The Expectation Channel

Table 7 examines the role of financial market expectations by analysing how analyst misvaluation of firms' earnings yield – following E&S incidents – affects the likelihood of a buyout. The dependent variable is the probability of an LBO in quarter *t+1*. In columns (1)-(4), the key explanatory variable is the earnings yield forecast error, defined as the difference between predicted and actual earnings yield. In columns (5)-(7), we instead use excess forecast errors, calculated as the residual from a baseline model that predicts expected forecast errors based on firm fundamentals in the absence of E&S incidents. All regressions control for ROA, ROA volatility (ROA_SD), firm size (Assets), Sales Growth, Leverage, and Cash Holdings. For definitions and construction of all variables, see Online Appendix A.1. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Earning Yields Forecast Error				Excess Earning Yields Forecast Error		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
E&S $Incidents_{t-1}$	0.242***	0.058	0.258***	0.031	0.202**	0.145	0.140
	(0.074)	(0.078)	(0.075)	(0.073)	(0.088)	(0.093)	(0.089)
$Forecast\ Error_{i,t}$	0.173*	0.182	0.111	0.187	0.249***	0.264***	0.267***
	(0.089)	(0.119)	(0.093)	(0.129)	(0.077)	(0.077)	(0.076)
E&S $Incidents_{t-1}$ x $Forecast\ Error_{i,t}$	-0.138***	-0.112*	-0.129**	-0.169**	-0.127**	-0.103**	-0.116**
	(0.051)	(0.059)	(0.056)	(0.079)	(0.051)	(0.052)	(0.054)
Observations	80,621	62,208	43,937	25,591	80,568	74,090	43,922
Constant and Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No	No	No
Ind FE	No	Yes	No	No	No	Yes	No
Year FE	No	Yes	No	No	No	Yes	No
Ind x Year FE	No	No	Yes	Yes	No	No	Yes
Country x Year FE	No	No	No	Yes	No	No	No

Table 8. PRI vs conventional PE investment

Table 8 presents our regression findings on the effect of E&S incidents on the probability of an LBO of a PRI vs non-PRI signatory. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. In columns (1)-(4), we classify an investor as a PRI signatory, i.e. give to firm *f* a value of 1 if, at any point in the regression period, the investor has signed up to the initiative and zero otherwise. In columns (5)-(8), we classify an investor as a PRI signatory if the investor in that quarter *t* is a PRI signatory. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

Panel A. E&S Incidents

	PRI Status				Currently PRI Signatory			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
E&S Incidents	0.434***	0.155*	0.463***	0.157**	0.437***	0.128**	0.475***	0.128**
	(0.064)	(0.083)	(0.063)	(0.062)	(0.056)	(0.062)	(0.058)	(0.063)
PRI Signatory	2.436***	1.601***	2.393***	1.603***	2.297***	1.651***	2.400***	1.716***
	(0.111)	(0.261)	(0.111)	(0.136)	(0.209)	(0.332)	(0.219)	(0.264)
PRI Signatory x E&S Incidents	-0.366***	-0.234**	-0.350***	-0.247***	-0.374***	-0.276*	-0.374***	-0.307*
	(0.109)	(0.098)	(0.101)	(0.086)	(0.139)	(0.159)	(0.143)	(0.161)
Observations	371,968	251,031	266,036	121,109	371,968	251,031	266,036	121,109
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No	Yes	No	No
Ind FE	No	Yes	No	No	No	Yes	No	No
Year FE	No	Yes	No	No	No	Yes	No	No
Ind x Year FE	No	No	Yes	No	No	No	Yes	Yes
Country x Year FE	No	No	No	Yes	No	No	No	Yes

Panel B. G Incidents

	PRI Status		Currently PRI Signatory	
	(1)	(2)	(3)	(4)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
G Incidents	0.496***	0.484***	0.523***	0.506***
	(0.122)	(0.124)	(0.115)	(0.117)
PRI Signatory	2.413***	2.357***	3.047***	2.731***
	(0.502)	(0.542)	(0.551)	(0.542)
PRI Signatory x G Incidents	-0.312	-0.269	-0.507	-0.327
	(0.288)	(0.336)	(0.314)	(0.391)
Observations	64,194	17,192	64,194	17,192
Constant	Yes	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes	Yes
Ind FE	Yes	No	No	Yes
Year FE	Yes	No	No	Yes
Ind x Year FE	No	Yes	No	No

Table 9. Baseline regressions for NFCs

Table 9 presents our baseline regression findings on the effect of E&S incidents on the probability of an LBO, excluding financial services and banking sector firms. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. The regression models are estimates using our baseline fast Poisson regression model. *, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
E&S Incidents	0.486***	0.533***	0.533***
	(0.055)	(0.057)	(0.057)
Observations	339,876	332,284	235,845
Constant	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes
Ind FE	No	Yes	No
Year FE	No	Yes	No
Ind x Year FE	No	No	Yes

Table 10. Robustness II: LBO and current E&S incident rates

Table 10 presents our regression findings on the effect of ESG short-term incident rates on the probability of an LBO of a PRI vs non-PRI signatory. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. In columns (1)-(4), we classify an investor as a PRI signatory, i.e. give to firm *f* a value of 1 if, at any point in the regression period, the investor has signed up to the initiative and zero otherwise. In columns (5)-(8), we classify an investor as a PRI signatory if the investor in that quarter *t* is a PRI signatory. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	PRI Status				Currently PRI Signatory			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
Current RRI	0.035***	0.017***	0.038***	0.017***	0.033***	0.013***	0.037***	0.013***
	(0.003)	(0.005)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
PRI Signatory	2.642***	1.804***	2.581***	1.812***	2.300***	1.695***	2.447***	1.769***
	(0.136)	(0.248)	(0.135)	(0.142)	(0.268)	(0.283)	(0.279)	(0.291)
PRI Signatory x Current RRI	-0.031***	-0.022***	-0.029***	-0.023***	-0.019*	-0.013	-0.020**	-0.015
	(0.007)	(0.006)	(0.007)	(0.007)	(0.010)	(0.010)	(0.010)	(0.010)
Observations	371,348	250,411	265,340	120,556	371,348	250,411	265,340	120,556
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	No	Yes	No	No
Ind FE	No	Yes	No	No	No	Yes	No	No
Year FE	No	Yes	No	No	No	Yes	No	No
Ind x Year FE	No	No	Yes	Yes	No	No	Yes	Yes
Country x Year FE	No	No	No	Yes	No	No	No	Yes

Table 11. Robustness III: Other E&S proxies

Table 11 presents our baseline regression findings on the effect of E&S incidents on the probability of an LBO. In this table, we use proxies for E&S incidents different from those used in Table 5. In particular, we replace E&S incidents with the moving average E&S incidents between time t-8 and t; the moving average E&S incidents between time t-8 and t-2; the first and second lag of E&S incidents. Furthermore, in columns (9)-(12), we also use as E&S proxies firms' CO2 Emissions: Scope 1&2 (columns (9)-(10)) and Scope 1,2&3 (columns (11)-(12)) respectively. We also consider emissions in relation to PE investors' PRI status, taking into account both their status over the entire period of analysis (columns (9) and (11)) and in the current quarter (columns (10) and (12)). The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

									CO2 Emission (Scope 1&2)		CO2 Emission (Scope 1,2&3)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
MA(E&S $Inc_{i,\{t-8,t\}}$)	0.584***	0.640***										
	(0.052)	(0.053)										
MA(E&S $Inc_{i,\{t-8,t-2\}}$)			0.580***	0.635***								
			(0.052)	(0.055)								
E&S $Inc_{i,t-1}$					0.438***	0.442***						
					(0.053)	(0.052)						
E&S $Inc_{i,t-2}$							0.484***	0.491***				
							(0.053)	(0.056)				
CO2 Emissions									0.202***	0.229***	0.319***	0.354***
									(0.040)	(0.039)	(0.046)	(0.046)
PRI									4.365***	4.808***	5.006***	5.245***
									(0.823)	(1.392)	(1.091)	(1.664)
CO2 Emissions x PRI									-0.158**	-0.210*	-0.19***	-0.225**
									(0.063)	(0.108)	(0.074)	(0.114)
Observations	371,968	266,036	360,769	256,503	363,507	259,204	355,115	252,152	77,565	77,565	77,566	77,566
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country x Year FE	Yes	No	Yes	No	Yes	No	Yes	No	No	No	No	No
Ind x Year FE	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes

Table 12. Robustness V: Media reach and E&S incidents effects

Table 12 presents our baseline regression findings on the effect of E&S incidents on the probability of an LBO but assesses the incremental effect brought by the reach of the media sources covering these incidents. In the table, 'high reach', 'medium reach' and 'low reach' represent the high-, medium- and low-reach of the media covering the incidents. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$	(6) $LBO_{i,t+1}$	(7) $LBO_{i,t+1}$	(8) $LBO_{i,t+1}$	(9) $LBO_{i,t+1}$
E&S Incidents	0.106*	0.279***	0.103	0.140**	0.307***	0.131*	0.120*	0.290***	0.111
	(0.057)	(0.065)	(0.071)	(0.070)	(0.068)	(0.072)	(0.070)	(0.069)	(0.074)
High Reach	-5.335**	-5.856***	-5.424***						
	(2.594)	(1.758)	(1.569)						
Medium Reach				0.873	0.675	1.192			
				(1.267)	(1.381)	(1.600)			
Low Reach							-1.106**	-1.418	-0.997
							(0.546)	(1.453)	(1.436)
High Reach x E&S Incidents	1.189**	1.352***	1.192***						
	(0.518)	(0.232)	(0.238)						
Medium Reach x E&S Incidents				-0.744*	-0.622	-0.819			
				(0.421)	(0.547)	(0.575)			
Low Reach x E&S Incidents							0.161	0.281	0.152
							(0.144)	(0.418)	(0.415)
Observations	83,783	70,929	32,836	83,783	70,929	32,836	83,783	70,929	32,836
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	No	No	Yes	No	No	Yes	No	No
Ind FE	Yes	No	No	Yes	No	No	Yes	No	No
Year FE	Yes	No	No	Yes	No	No	Yes	No	No
Ind x Year FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country x Year FE	No	No	Yes	No	No	Yes	No	No	Yes

Table 13. Robustness VI: E&S (Under-)Valuation motif

Table 13 displays the results of regressions testing whether the severity and current pattern ('decreasing' vs 'increasing') in firms' E&S incident rates affect our results. In columns (1)-(2), we interact two dummy variables, representing the trend in firms' incidents and severity and how these affect the probability of a future LBO. In columns (3)-(4), we show whether increases in incidents, given the current short-term incident rate, affect the probability of an LBO. In columns (5)-(6), we repeat the test made in columns (3)-(4), but this time using the medium-term incidents rate. All our regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$	(6) $LBO_{i,t+1}$
High E&S Incidents	0.856***	0.946***				
	(0.135)	(0.135)				
Decreasing	0.555***	0.669***				
	(0.124)	(0.176)				
High E&S Incidents x Decreasing	-0.221	-0.315				
	(0.241)	(0.268)				
E&S Incidents			-0.255	0.153	0.150	0.666
			(0.507)	(0.534)	(0.692)	(0.719)
ln(current RRI)			0.275***	0.334***		
			(0.034)	(0.036)		
E&S Incidents x ln(current RRI)			0.117	0.004		
			(0.133)	(0.140)		
ln(peak RRI)					0.223***	0.307***
					(0.030)	(0.032)
E&S Incidents x ln(peak RRI)					0.032	-0.102
					(0.174)	(0.180)
Constant	-6.64***	-6.32***	-6.52***	-6.29***	-6.61***	-6.44***
	(0.159)	(0.166)	(0.161)	(0.167)	(0.164)	(0.168)
Observations	371,968	266,036	371,348	265,340	371,348	265,340
Ind x Year FE	No	Yes	No	Yes	No	Yes

Table 14. Robustness VII: PRI signatory tiers

In Table 14, we use the same approach as in Table 9, but using a quantile approach, we classify each PRI investor into 'tiers' according to when they joined the initiative. In each quarter, the dummy variables Tier I-V take a value of 1 if the investor belongs to that given tier based on when they joined the PRI initiative and zero otherwise. In our categorisation, Tier I includes the investors who joined first, and Tier V includes those who joined last. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For information on all the variables included in these regressions and their calculations, check Online Appendix A.1. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
E&S Incidents	0.172	0.462***	0.177**	0.173	0.463***	0.177**	0.175	0.464***	0.179**
	(0.114)	(0.069)	(0.080)	(0.113)	(0.069)	(0.079)	(0.114)	(0.069)	(0.079)
Tier I Signatory	1.764***	2.443***	1.742***	1.735***	2.416***	1.724***	1.616***	2.331***	1.615***
	(0.332)	(0.154)	(0.171)	(0.343)	(0.187)	(0.174)	(0.335)	(0.216)	(0.212)
Tier II Signatory	1.736***	2.562***	1.756***	1.700***	2.463***	1.715***	1.841***	2.512***	1.813***
	(0.291)	(0.147)	(0.166)	(0.358)	(0.179)	(0.229)	(0.335)	(0.183)	(0.225)
Tier III Signatory	1.604***	2.444***	1.610***	1.816***	2.627***	1.816***	1.623***	2.440***	1.651***
	(0.269)	(0.182)	(0.201)	(0.281)	(0.158)	(0.154)	(0.279)	(0.199)	(0.216)
Tier IV Signatory				1.605***	2.445***	1.612***	1.712***	2.588***	1.734***
				(0.269)	(0.182)	(0.201)	(0.370)	(0.192)	(0.203)
Tier V Signatory							1.733***	2.547***	1.729***
							(0.252)	(0.184)	(0.209)
Tier I Signatory x E&S Incidents	-0.221**	-0.328***	-0.228*	-0.322**	-0.425***	-0.334**	-0.291**	-0.408**	-0.314*
	(0.111)	(0.118)	(0.126)	(0.129)	(0.138)	(0.146)	(0.131)	(0.165)	(0.167)
Tier II Signatory x E&S Incidents	-0.253	-0.407***	-0.272**	-0.022	-0.204*	-0.030	-0.056	-0.161	-0.042
	(0.156)	(0.133)	(0.114)	(0.130)	(0.111)	(0.129)	(0.229)	(0.160)	(0.188)
Tier III Signatory x E&S Incidents	-0.118	-0.274	-0.173	-0.571**	-0.654***	-0.595**	-0.266	-0.426**	-0.277
	(0.187)	(0.183)	(0.204)	(0.262)	(0.246)	(0.244)	(0.199)	(0.198)	(0.187)
Tier IV Signatory x E&S Incidents				-0.117	-0.274	-0.172	-0.229	-0.377*	-0.278
				(0.196)	(0.183)	(0.203)	(0.246)	(0.207)	(0.213)
Tier V Signatory x E&S Incidents							-0.126	-0.283	-0.178
							(0.188)	(0.198)	(0.232)
Observations	251,031	266,036	121,109	251,031	266,036	121,109	251,031	266,036	121,109
Constant and Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	No	No	Yes	No	No	Yes	No	No
Ind FE	Yes	No	No	Yes	No	No	Yes	No	No
Year FE	Yes	No	No	Yes	No	No	Yes	No	No
Ind x Year FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country x Year FE	No	No	Yes	No	No	Yes	No	No	Yes

Table 15. Robustness VIII: Other PE Deals

In Table 15, we apply the same empirical approach used in Tables 5 and 8 to examine the effect of E&S incidents on the probability of PE investment and exit. In Panel A, we analyse the likelihood of a PE investment deal (see Online Appendix A.2.4 for more information on the considered deals) following an E&S incident involving our sample of portfolio firms. In columns (4) and (5), we interact the E&S incident variable with the dummy variables 'PRI Status' and 'Current PRI', which indicate, respectively, investors that are PRI signatories at any point during our analysis period and those that are PRI signatories in the specific quarter when the deal takes place. Panel B replicates the same regression framework but focuses exclusively on exit deals. All regressions include the full set of control variables: ROA, ROA_SD, Assets, Sales Growth, Leverage, and Cash Holdings. Detailed definitions and calculations of all variables are provided in Online Appendix A.1. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. All Deals in Investment Life

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$
E&S Incidents	0.406***	0.441***	0.451***	0.414***	0.443***
	(0.055)	(0.058)	(0.058)	(0.064)	(0.061)
PRI Status				2.829***	
				(0.111)	
PRI Status x E&S Incidents				-0.372***	
				(0.107)	
Currently PRI					2.737***
					(0.218)
Currently PRI x E&S Incidents					-0.451**
					(0.179)
Observations	372,939	365,973	263,413	263,413	263,413
All Deals	Yes	Yes	Yes	Yes	Yes
Ind FE	No	Yes	No	No	No
Year FE	No	Yes	No	No	No
Ind x Year	No	No	Yes	Yes	Yes

Panel B. Exit Deals

	(1) $Exit_t$	(2) $Exit_t$	(3) $Exit_t$	(4) $Exit_t$	(5) $Exit_t$	(6) $Exit_t$	(7) $Exit_t$
$E\&S\ Incidents_{t-1}$	0.147*	0.169*	0.166*	0.280***	0.166*	0.340***	0.194**
	(0.081)	(0.090)	(0.088)	(0.058)	(0.090)	(0.063)	(0.085)
PRI Status				0.211	-0.157		
				(0.271)	(0.281)		
PRI Status x $E\&S\ Incidents_{t-1}$				0.099	0.006		
				(0.129)	(0.192)		
Currently PRI						1.006***	0.946***
						(0.296)	(0.330)
Currently PRI x $E\&S\ Incidents_{t-1}$						-0.301	-0.369
						(0.217)	(0.302)
Observations	48,326	38,153	13,989	61,257	13,989	61,257	13,989
Ind FE	No	Yes	No	No	No	Yes	No
Year FE	No	Yes	No	No	No	Yes	No
Ind x Year	No	No	Yes	No	No	No	Yes

Figures

Figure 1. LBOs over time

In this Figure, we plot the distribution of PE deals over time. We use the LBO date, available in SDC, to identify the year in which each LBO deal takes place.

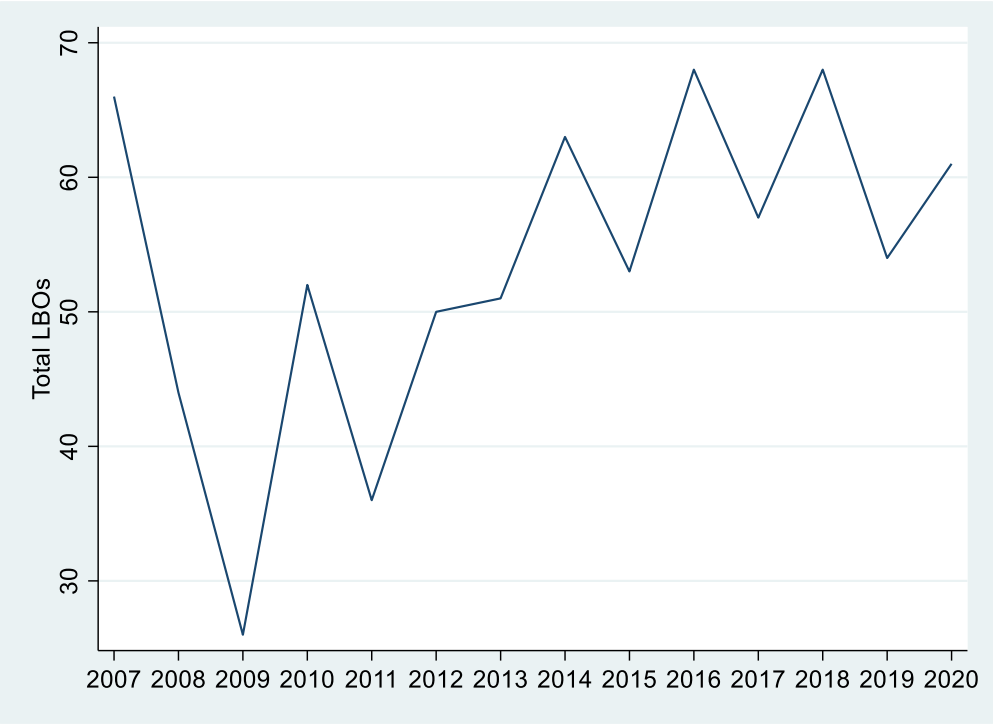


Figure 2. E&S Incidents, overall and according to severity

In this Figure, we display the distribution of E&S incidents over time, both overall and by separating them according to degree of severity.

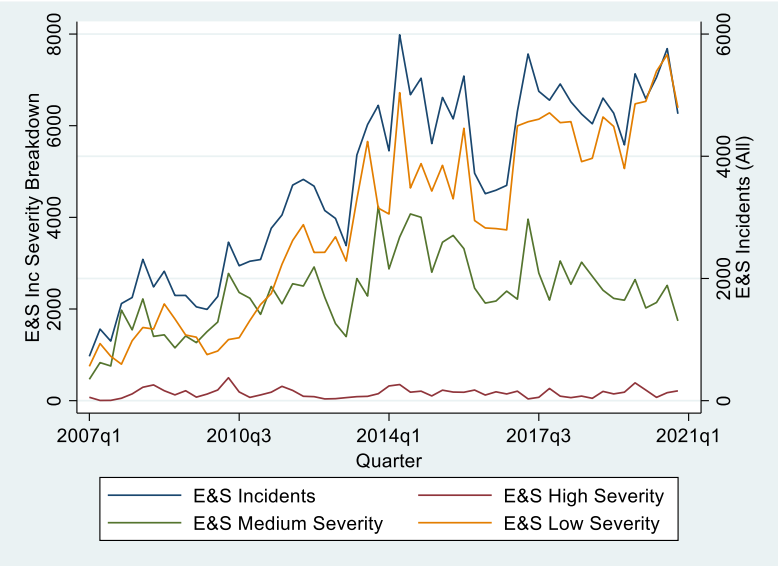
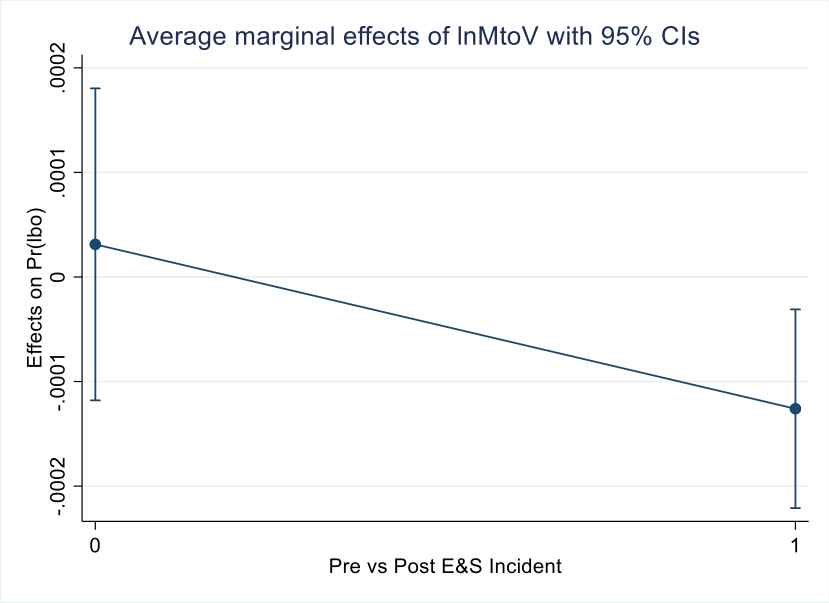


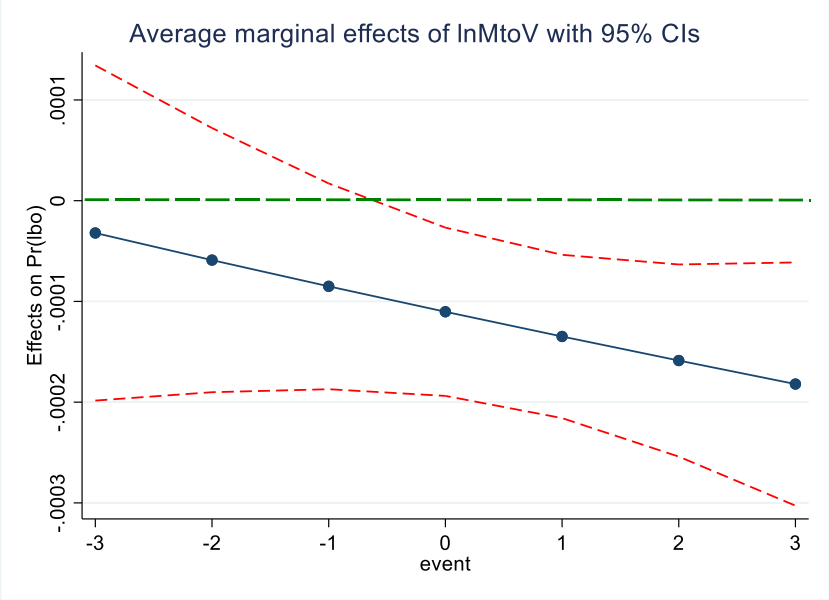
Figure 3. Undervaluation and LBO probability

Figure 3 displays the effect of firms' mispricing and specifically undervaluation on LBO probability in a diff-in-diff set-up. Panel A shows the marginal effects of a logistic regression interacting mispricing (lnMtoV) with a time dummy variable 'post-incident', taking values of 1 in the quarter of the incident and the three following quarters. Panel B shows the marginal effects of a logistic regression interacting mispricing (lnMtoV) with a time dummy variable 'event', taking values of 1 in each of the quarters around the incident date {-3; +3}. Panel C shows the changes in marginal effects of a logistic regression interacting mispricing (lnMtoV) with a time dummy variable 'event', taking values of 1 in each of the quarters around the incident date. In Panel C, we reduce our baseline sample to only consider firm-quarter observations in which the mispricing is within a 95 percent CI band using the industry-year observations as a benchmark for each firm-quarter assessment. Confidence bands are calculated assuming a 95 percent confidence level. For additional information on all the variables included in the PVAR model and their calculations, check Online Appendix A.1.

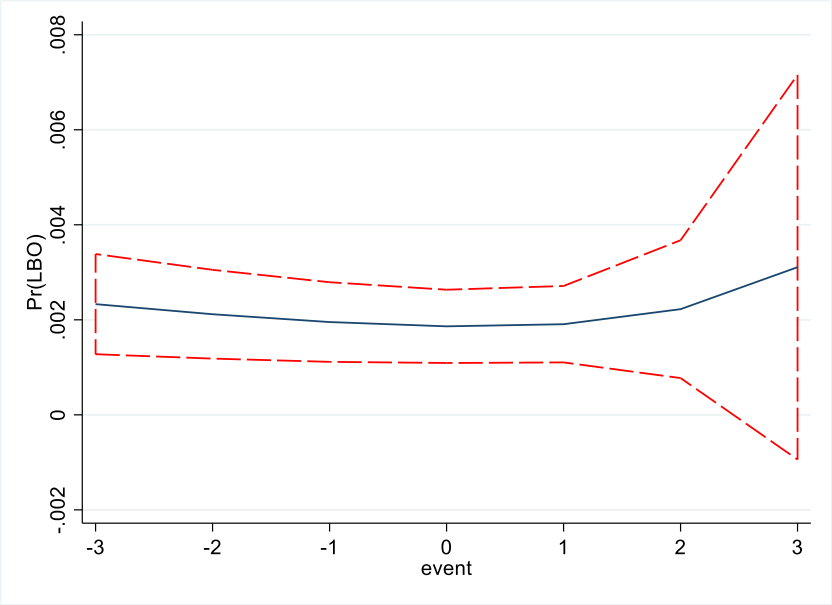
Panel A. Mispricing effects on LBOs (before vs after the E&S incident)



Panel B. Mispricing effects on LBOs in the quarters around the E&S incident



Panel C. Change in marginal effects of mispricing on LBOs



Online Appendix for

Environmental and Social Incidents and Misvaluation-driven Leveraged Buyouts

A.1. Variables description and calculation

In the interest of transparency, we present all our variables, their source, meaning, and calculation in this Appendix (see Table A.1).

Table A.1 Variables details

In Table A.1, we present the meaning (in Column (1)), the name (in column (2)), the source (in column (3)), the calculation (in column (4)) and some additional information (e.g., on the name the variable or the components used in their calculation in the used databases) on the variables used in this paper to facilitate the replicability of our findings (in column(5)).

Variable	*Name*	*Source*	*Calculation*	*Additional info*
Probability of an LBO	$LBO_{i,t}$	Thomson Financial SDC Mergers and Acquisitions Database (SDC)	$LBO_{i,t}$ takes a value of 1 if the LBO's deal date is equal to quarter t, zero otherwise.	
Environmental and Social Incidents	E&S Incidents	Reprisk	$\ln(1 + EandS\ incidents_{i,t})$	We consider incidents categorised as referred to the UN Global Compact Principles 7-9.
Information on PRI signatories	$PRI_{f,t}$	PRI website	$PRI_{f,t}$ is a dummy variable that takes a value of 1 if the PE investor is on the signatory list on the PRI website and zero otherwise. In follow-up regressions, the dummy takes a value of 1 if the investor is in a given tier and zero otherwise. Tiers are built using the distribution of signatories over the date range from the first to the last signatory in our sample joining the initiative.	
Return on Assets	ROA	Compustat Global and North America	$\ln(ROA_{i,t})$	In Compustat: ln(ibq/atq)
Standard Deviation Return on Assets	ROA_SD	Compustat Global and North America	$\frac{1}{4}\sum_{j=-4}^{0} ROA_{i,t+j}$	
Assets	Assets	Compustat Global and North America	$\ln(Assets_{i,t})$	In Compustat: ln(atq)

Sales Growth	SaleG	Compustat Global and North America	$\ln(\frac{Sales_{i,t}}{Sales_{i,t-1}})$	In Compustat: ln(saleq/saleq[_n-1])
Leverage	Leverage	Compustat Global and North America	$\ln(\frac{Total\ Debt_{i,t}}{Assets_{i,t}})$	In Compustat: ln(dlttq+dlcq)/atq
Cash Holdings	CH	Compustat Global and North America	$\ln(Cash\ Holdigs_{i,t})$	In Compustat: ln(cheq/atq)
Stock Returns	Returns	Compustat Global and North America	$\ln(\frac{Price_{i,t}}{Price_{i,t-1}})$	In Compustat: ln(prccq/prccq[_n-1])
High Severity/ Reach	High Severity/ Reach	Reprisk	$\ln(Total\ High\ Sev._{i,t})$	In Reprisk: high_severity high_reach_source
Medium Severity/ Reach	Medium Severity/ Reach	Reprisk	$\ln(Total\ Medium\ Sev._{i,t})$	In Reprisk: medium_severity medium _reach_source
Low Severity/ Reach	Low Severity/ Reach	Reprisk	$\ln(Total\ Low\ Sev._{i,t})$	In Reprisk: low_severity low_reach_source
Current RRI	Current RRI	Reprisk	$\ln(Current\ RRI_{i,t})$	In Reprisk: current_RRI
Peak RRI	Peak RRI	Reprisk	$\ln(Peak\ RRI_{i,t})$	In Reprisk: peak_RRI
$\widetilde{EPS_{i.t}}$	EPS	I/B/E/S	$\widetilde{EPS_{i.t}}$ is calculated as the median EPS forecast made at time *t-1* for the time *t* firm's EPS.	In I/B/E/S, we select FPI=6, representing the 1-quarter ahead forecast. We calculate the Forecast Error as: (VALUE-ACTUAL)/prcc_q, for the downloaded EPS ratio.
Earnings Calls date	EC	SandP Capital IQ	$EC_{i,t}$ takes a value of 1 if there has been an earnings call held by firm *i* in quarter *t*, zero otherwise.	In Capital IQ Key Developments: keydeveventtypeid==48

A.2. Additional descriptive statistics

A.2.1. Accounting variables summary statistics and pairwise correlations

In Table A.2, we show some basic descriptive statistics and pairwise correlations that can be used to understand and put in context the economic size of our regression coefficients (e.g., the unconditional probability of an LBO, which in our case is 0.1 percent).

We also show pairwise correlations between our variables of interest to rule out multicollinearity issues and understand the relationship between these variables. The correlation between our control variables is significant at the 5 percent level; however, it is not extremely large. A possible exception to this is the correlation between the firm's ROA and its medium-run volatility, which has a coefficient of -59 percent. In Table A.7, we show a VIF multicollinearity test highlighting that our models do not suffer from multicollinearity problems. Otherwise, the correlation between our control variables yields the expected signs:

ROA volatility is negatively associated with ROA and assets and positively associated with leverage and cash holdings. The ROA is positively associated with sales and assets and negatively with cash holdings and leverage. Leverage is positively associated with assets and sales. Cash holdings are positively associated with sales and negatively with assets.

Table A.2. Summary statistics and pairwise correlations

Table A.2 presents summary statistics and pairwise correlations for our dependent and core accounting independent variables. For further information on all the variables included here and their calculations, check Online Appendix A.1. Note that in this Table * denotes significance at a 5 percent level.

Panel A. Summary statistics

Dependent Variable	Obs	Mean	Std. dev.	Min	Max
LBO	631,648	0.001	0.03	0	1
Control Variable	Obs	Mean	Std. dev.	Min	Max
ROA	560,071	0.00	0.06	-0.82	0.10
ROA_SD	569,944	0.02	0.10	0.00	1.67
Assets	594,736	8.64	3.01	-1.51	15.89
Sales Growth	473,463	0.09	0.54	-11.60	14.41
Leverage	484,178	0.23	0.16	0.00	1.23
Cash Holdings	592,526	0.13	0.13	0.00	0.67

Panel B. Pairwise correlations (controls)

	ROA	ROA_SD	Assets	Sales Growth	Leverage	Cash Holdings
ROA	1					
ROA_SD	-0.59*	1				
Assets	0.28*	-0.29*	1			
Sales Growth	0.05*	-0.00	-0.01*	1		
Leverage	-0.19*	0.15*	0.05*	0.02*	1	
Cash Holdings	-0.13*	0.15*	-0.21*	0.02*	-0.29*	1

A.2.2. E&S incidents summary statistics and pairwise correlations

We perform a similar analysis to the one described in Online Appendix A.1.1 in this section. However, in this Appendix, we focus on our selected E&S incidents variables. Analysing Panel A of Table A.3, we can see that the current RRI ranges between 0 and 87, but most firms do not have a very risky E&S profile, as the mean score is about 6. We also note that about 43 percent of our quarter have E&S incidents (see the average Total E&S News). Looking at the severity and media reach of E&S incidents, we observe that – as expected – the most common E&S incidents are of low severity (26 percent), followed by medium (16 percent) and high severity (1 percent). Similar findings can be extended to the reach category, although medium-reach media sources appear to have more E&S incidents (21 percent) than low reach (21 percent).

These findings are reflected in the pairwise correlation panel (see Table A.3 Panel B). Total E&S news is strongly correlated with low and medium-severity incidents (with a correlation coefficient of 92 percent and 84 percent, respectively) and much less with highly severe incidents. Low and medium severity incidents are also highly correlated with the reach of the media sources reporting on these incidents. Low and medium-severity E&S incidents are strongly positively correlated with low and medium-reach media sources. Surprisingly, low-severity E&S incidents are also strongly correlated with high-reach media sources; vice versa, high-severity incidents do not significantly correlate with any media source (reach). This is by itself extremely interesting, as it suggests that highly severe incidents do not get much media attention compared to those of low severity, no matter the reach of the considered media.

Finally, in Table A.3 Panel C, we repeat the pairwise correlation analysis, including all our baseline regression independent variables in one table. Performing this analysis, we do not document a strong correlation between E&S incidents and firms' performance, suggesting that the relationship between E&S incidents and firms' characteristics might be less than straightforward and that individual performance indicators alone cannot explain changes in firms' E&S profiles. This is good news for us given that we try to isolate and understand the probability of a buyout conditional on firms' E&S incidents and related valuation effects, and we do not want to capture any "hidden" performance-driven effect.

Table A.3. Summary statistics and pairwise correlations

Table A.3 presents summary statistics and pairwise correlations for our E&S independent variables. For further information on all the variables included here and their calculations, check Online Appendix A.1. Note that * denotes significance at a 5 percent level.

Panel A. Summary statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Current RRI	630,621	5.92	10.40	0	87
E&S (High Severity)	631,648	0.01	0.27	0	57
E&S (Medium Severity)	631,648	0.16	1.33	0	154
E&S (Low Severity)	631,648	0.26	1.89	0	159
E&S (High Reach)	631,648	0.04	0.53	0	52
E&S (Medium Reach)	631,648	0.21	1.54	0	111
E&S (Low Reach)	631,648	0.17	1.37	0	111
Total E&S News	631,648	0.43	2.95	0	210
Total E&S News ≠ 0	268,863				
E&S (High Severity) ≠ 0	6,908				
E&S (Medium Severity) ≠ 0	98,467				
E&S (Low Severity) ≠ 0	163,488				

Panel B. Pairwise correlations

	Current RRI	E&S (High Sev.)	E&S (Medium Sev.)	E&S (Low Sev.)	E&S (High Reach)	E&S (Medium Reach)	E&S (Low Reach)	Total E&S News
Current RRI	1							
E&S (High Sev.)	0.15*	1						
E&S (Medium Sev.)	0.39*	0.30*	1					
E&S (Low Sev.)	0.43*	0.21*	0.57*	1				
E&S (High Reach)	0.29*	0.24*	0.50*	0.61*	1			
E&S (Medium Reach)	0.44*	0.33*	0.78*	0.84*	0.51*	1		
E&S (Low Reach)	0.40*	0.31*	0.75*	0.80*	0.41*	0.66*	1	
Total E&S News	0.47*	0.36*	0.84*	0.92*	0.63*	0.92*	0.88*	1

Panel C. Pairwise correlations (Incidents, Severity, Coverage and Accounting Fundamentals)

	E&S Inc.	E&S (High Severity)	E&S (Medium Severity)	E&S (Low Severity)	E&S (High Reach)	E&S (Medium Reach)	E&S (Low Reach)	ROA	sd(ROA)	Assets	Sale Growth	Leverage	Cash Hold.
E&S Inc.	1												
E&S (High Severity)	0.36*	1											
E&S (Medium Severity)	**0.84***	0.3*	1										
E&S (Low Severity)	**0.92***	0.21*	**0.57***	1									
E&S (High Reach)	**0.63***	0.24*	**0.5***	**0.61***	1								
E&S (Medium Reach)	**0.92***	0.32*	**0.78***	**0.84***	0.51*	1							
E&S (Low Reach)	**0.88***	0.31*	**0.75***	**0.8***	0.41*	**0.66***	1						
ROA	0.02*	0.01*	0.01*	0.02*	0.01*	0.02*	0.01*	1					
sd(ROA)	-0.02*	0*	-0.02*	-0.02*	-0.01*	-0.02*	-0.02*	**-0.59***	1				
Assets	0.11*	0.03*	0.09*	0.11*	0.07*	0.11*	0.1*	0.28*	-0.28*	1			
Sale Growth	0	0	0	0	0.01*	0	0	0.05*	0	-0.01*	1		
Leverage	0*	0	0	0*	0	0	0*	-0.19*	0.15*	0.05*	0	1	
Cash Hold.	-0.04*	-0.01*	-0.03*	-0.03*	-0.01*	-0.03*	-0.03*	-0.12*	0.15*	-0.21*	0.02*	-0.29*	1

A.2.3. E&S Incidents in PE-backed Portfolio Firms

In this section, we examine E&S incidents in PE-backed portfolio firms. To perform this analysis, we assess whether there are any discernible differences in the average number of E&S incidents over time and the overall average number of incidents per quarter. Second, we look specifically at the LBO targets and assess whether, on average, (i) the amount of incidents at the time of the LBO is less than before (i.e., whether ESG considerations are embedded into PE asset allocation choices), (ii) whether investment from PRI signatories is on average more "responsible", and (iii) whether PE investment improves the target E&S responsibility (i.e., the PE impact).

Analysing Figure A.2.1, which considers an average PE holding period of 5 years, we observe that there is no discernible difference in the growth rate of E&S incidents of PE portfolio firms compared to non-PE-backed firms. However, we note that the average number of incidents in PE-backed firms is substantially higher than that of non-PE-backed firms. This difference appears economically important and suggests that PE is unlikely to be "good news" for their more "responsible" targets and ESG-oriented limited partners.

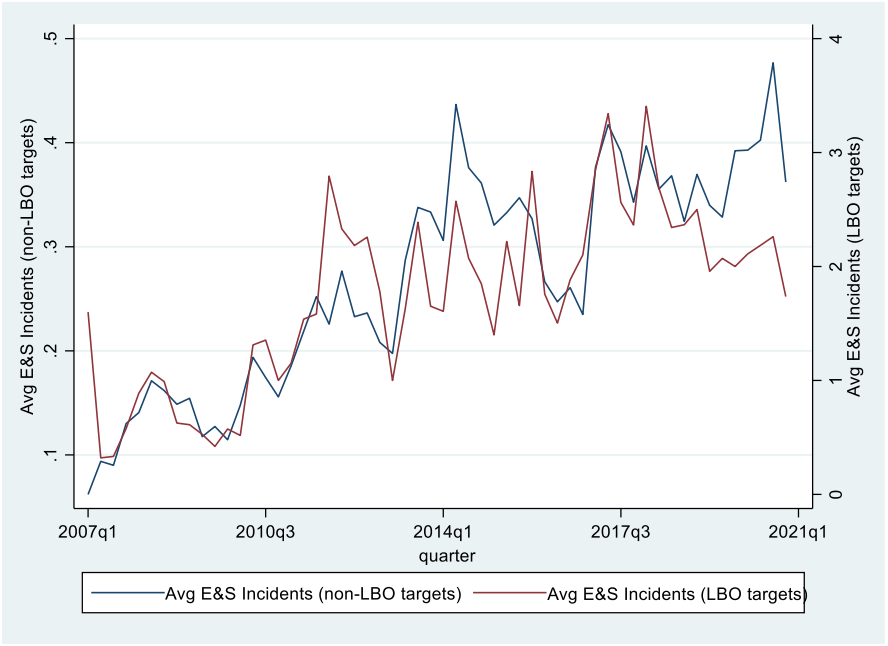
In Figure A.2.2, we assess the average number of incidents in PE portfolio firms in the quarters around the LBO date (i.e., quarter 0 is when the LBO takes place). In both graphs, we display with a blue dotted line the total number of incidents in LBO targets in our panel dataset; with an orange dashed line, we mark the number of LBO targets that survive in our dataset in the analysis period (several targets are either delisted or default in our dataset period, in which case they disappear from the dataset); and, finally, we denote with a green solid line the ratio of the two previously mentioned variables (i.e., we obtain the average number of E&S incidents of the considered LBO targets). The graph on the left-hand side shows all quarters and the average E&S incident patterns. In the graph on the right-hand side of Figure A.2.2, we show a 40-quarter (or 10-year) period in the literature vastly acknowledged as the average life of a PE fund. Analysing the two graphs, we notice that the dotted and dashed lines have an inverse U-shape, consistent with the greater number of firms (i.e., also E&S incidents) in the dataset close to time 0 (LBO date). Analysing our variable of interest (the green solid line), which is the average number of E&S incidents, we observe that PE, on average, invests at times in which E&S incidents are slightly higher, as testified by the small peak surrounded by the two valleys around the LBO date. Moreover, in the quarters before (after), the LBO incidents on average declined (increased) (see Table A.4 for additional details on all the series displayed in this Figure). This potentially suggests that PE is, on average, not good news for E&S sustainability, as PE targets, on average, increase the number of E&S incidents that they experience during the PE average holding period. This finding is consistent with what we previously documented by analysing Figure A.2.1.

In this paper, we do not specifically test the "impact" of PE by comparing PE targets' number of incidents before vs. after an LBO. Instead, we focus on whether PRI vs. non-PRI investors behave more sustainably and on the "responsible" incentives behind PE investment. We leave this analysis to future literature on this topic.

Finally, in Figure A.2.3, we decompose E&S incidents by geographical area to assess which economic region is more prone to report sustainability issues. As expected, advanced economies report the greatest number of incidents, consistent with what we documented in Figure 3.

Figure A.2.1. Incidents in conventional vs PE-backed companies

Figure A.2.1 presents the growth of E&S incidents over time for LBO targets compared to firms not receiving such deals. The left-hand side graph shows the growth of E&S incidents. The right-hand side aggregates the E&S incidents experienced by each firm in each quarter five years ahead and compares the five-year average number of incidents of LBO and non-LBO targets. We chose 5 years, as this is the average PE holding period. For further information on all the variables included here and their calculations, check Online Appendix A.1.



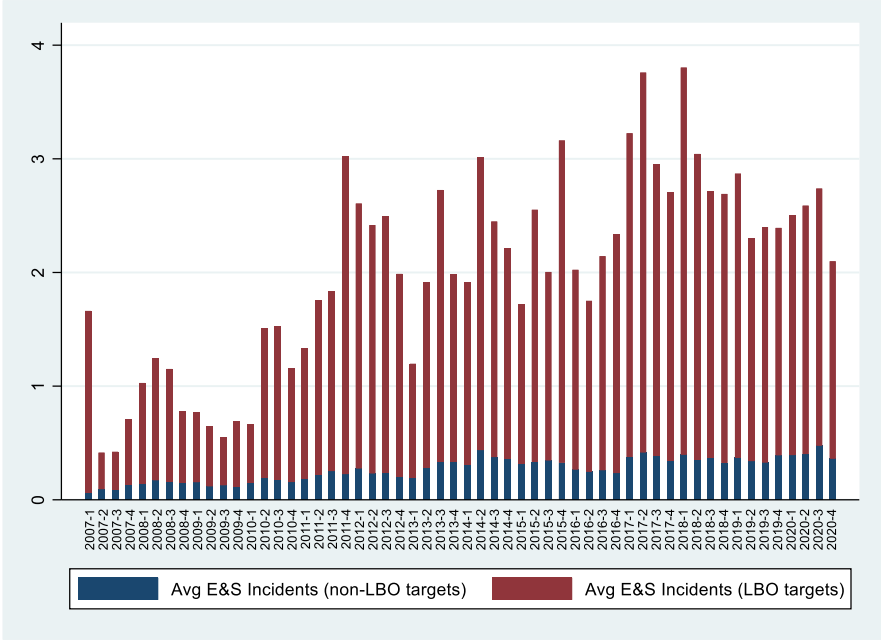


Figure A.2.2. E&S incidents around the LBO investment date

Figure A.2.2 displays the average number of incidents in PE portfolio firms in the quarters around the LBO date (i.e., t=0 is when the LBO takes place). A blue dotted line denotes the total number of incidents in LBO targets in our panel dataset; the orange dashed line marks the number of LBO targets in our dataset; finally, the green solid line shows the average number of E&S incidents of the considered LBO targets. Further information on these variables' calculations is in Online Appendix A.1 and/or Table A.4.

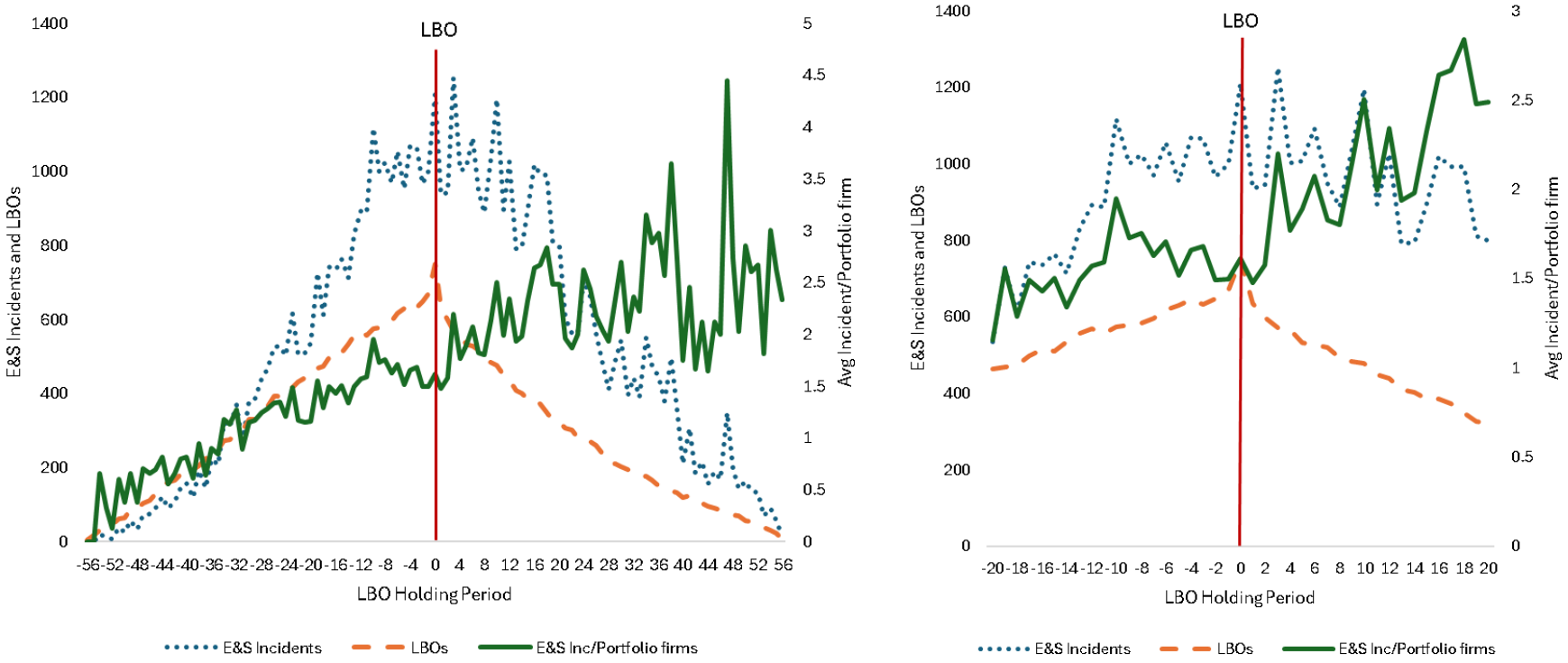


Figure A.2.3. Average E&S incidents Geographical Area breakdown

In this Figure, we display the distribution of E&S incidents over time. In the Figure, we include advanced economies ('AE'), emerging markets ('EME') and low-income emerging markets ('LI EME'). For the definition of these regions we rely on the IMF Fiscal Monitor categorisation.

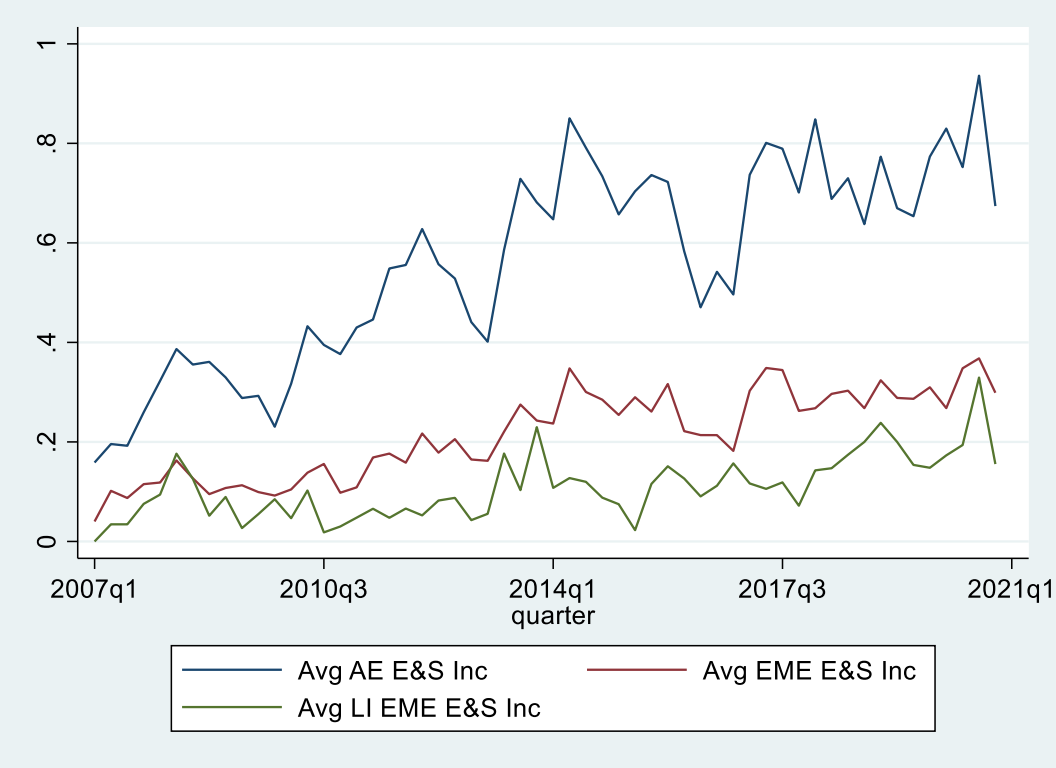


Table A.4. Portfolio firms and incidents distribution around the LBO date

This Table presents the numbers used to create Figure A.2.2. See Appendix A.2.3 for details on the calculation and interpretation of each column. For further information on all the variables included here and their calculations, check Online Appendix A.1.

Quarters before/after the LBO	E&S Incidents	Portfolio Firms (LBOs)
-56	0	4
-55	0	17
-54	19	29
-53	12	37
-52	6	47
-51	37	62
-50	24	64
-49	57	87
-48	34	91
-47	73	104
-46	74	112
-45	90	129
-44	122	149
-43	89	161
-42	109	167
-41	145	182
-40	159	195
-39	118	194
-38	193	205
-37	144	224
-36	222	246
-35	208	248
-34	322	273
-33	310	274
-32	370	292
-31	267	299
-30	380	329
-29	386	330
-28	439	353
-27	466	364
-26	525	392
-25	528	393
-24	503	416
-23	618	415
-22	506	432
-21	509	443
-20	535	463
-19	727	468
-18	611	474
-17	742	497

-16	735	515
-15	764	509
-14	714	534
-13	830	556
-12	893	569
-11	887	557
-10	1118	574
-9	999	578
-8	1025	584
-7	969	595
-6	1055	618
-5	954	629
-4	1069	645
-3	1065	633
-2	966	648
-1	1000	669
0	1209	749
1	937	634
2	944	599
3	1253	570
4	1002	567
5	1007	533
6	1092	527
7	947	519
8	888	493
9	1037	484
10	1195	477
11	895	449
12	1026	438
13	792	409
14	794	401
15	895	385
16	1019	386
17	992	372
18	991	349
19	811	327
20	798	321
21	603	307
22	563	302
23	562	281
24	706	269
25	661	271
26	563	259
27	478	235
28	411	213
29	489	209
30	543	201

31	395	195
32	442	187
33	389	175
34	552	175
35	475	165
36	446	150
37	380	148
38	496	136
39	357	131
40	210	120
41	307	125
42	183	110
43	216	102
44	156	95
45	189	89
46	168	84
47	347	78
48	197	72
49	142	70
50	163	57
51	138	53
52	131	49
53	69	38
54	90	30
55	55	21
56	14	6

A.2.4. All Deals considered in robustness checks

To test the robustness of our baseline findings, we extend our sample to include all PE transactions that we are able to match to firms covered in both Compustat-Capital IQ and RepRisk during the analysis period. This includes not only leveraged buyouts, the focus of our paper, but also minority investments, recapitalizations, and tender offers involving PE sponsors. Our expanded sample allows us to assess whether our core findings are specific to traditional LBO structures or generalise to the broader universe of PE deal types.

The sample comprises 64,303 matched firm-quarter observations, of which 96.55% are classified as LBOs, consistent with the predominance of buyouts in private equity activity. The remainder includes 1,292 tender offers (2.01%), 771 minority stake acquisitions (1.20%), and 158 recapitalizations (0.25%). While these non-LBO transactions represent a relatively small share of the total, their inclusion introduces meaningful variation that strengthens the external validity of our findings.

We present our robustness checks using this extended sample in Table 15, where we continue to find that E&S incidents significantly predict a higher likelihood of PE investment. This relationship holds across deal types, suggesting that the valuation effects of E&S controversies extend not only to initial LBOs but also to follow-on transactions involving PE portfolio firms.

Table A.5. Summary Statistics All Deal Types

Table A.5 present basic distributional characteristics of our PE deals. It shows that the majority of matched transactions are leveraged buyouts (96.55%), with tender offers (2.01%), minority stake acquisitions (1.20%), and recapitalizations (0.25%) representing a small but relevant share of the total deals used in our robustness checks.

Deal Type	Definition	Frequency	Percent (%)
Leveraged Buyouts	A leveraged buyout (LBO) is a transaction in which a private equity firm acquires a company in its entirety primarily using debt, with the target's assets serving as collateral. The objective is to enhance operational efficiency and cash flow to service the debt, ultimately facilitating a profitable exit.	62,082	96.55
Tender Offers	A tender offer is a secondary market transaction in which shareholders are invited to sell a specified number of their shares at a predetermined price, typically at a premium to the market price. The purchaser may be a private equity firm, a consortium of investors, or the issuing company itself (in the case of a share repurchase).	1,292	2.01
Minority Stake Acquisition	A minority stake investment involves a private equity firm acquiring a non-controlling interest (typically less than 50% of voting shares) in a company, allowing existing founders and management to retain operational control. These investments provide capital for growth, liquidity for existing shareholders, or partial risk reduction, while enabling the investor to influence strategic direction through board representation or advisory roles.	771	1.20
Recapitalization	A recapitalization is a transaction in which a PE firm restructures a portfolio company's capital structure (typically by increasing leverage to fund a dividend payout) allowing the firm to recover part of its investment without exiting. It may also involve raising new equity to refinance debt, support growth, or realign ownership, often providing liquidity to founders while preserving their equity stake.	158	0.25
All Firm-Quarters matched to PE Deals (Total)		64,303	100.00

A.3. Additional tests and regressions

In this Appendix, we display some of the additional tests and regressions that, for space reasons, we could not include in the paper's main text.

A.3.1. Valuation channel estimation and modelling

To test our suggested 'valuation channel', we follow Vagenas-Nanos (2020) and Rhodes-Kropf et al. (2005) and assess (i) private equity investment in response to a 'misvaluation' of a potential target, specifically focusing on the undervaluation of such a target, (ii) E&S incidents effect on the probability of a target misvaluation, and (iii) the effect of an E&S incidents-driven undervaluation on the probability of a buyout.

To perform this analysis, we follow the authors' approach and decompose a firm's market-to-book value into two components: the market-to-value and the value-to-book:

$$\ln\left(\frac{M}{B}\right) = \ln\left(\frac{M}{V}\right) + \ln(\frac{V}{B}) \qquad [3]$$

In equation [3], V is the 'value', or the 'intrinsic value' of a firm's equity (if a stock is 'fairly' priced), *M* is the stock market value, and *B* is the book value of a firm's equity. Even though *V* is unobservable, following Vagenas-Nanos (2020) and Rhodes-Kropf et al. (2005), we calculate it as a linear function of the book value of equity, net income and leverage. Moreover, as in the previous work, we allow this parameter to vary across the industry and time dimensions to capture changes in investment opportunities. This leads us to the following expression [4] for a firm's estimation of the market value of equity:

$$\ln(M_{i,t}) = \alpha_{0,j,t} + \alpha_{1,j,t}\ln(B_{i,t}) + \alpha_{2,j,t}\ln(|NI_{i,t}|) + \alpha_{3,j,t}I^{-}\ln(|NI_{i,t}|) + \alpha_{4,j,t}\frac{D}{V}_{i,t} + \varepsilon_{i,t} \qquad [4]$$

Where $NI_{i,t}$ is the net income of firm *i* at time *t, j* is the industry of belonging of firm *i*, I^{-} is a dummy variable capturing firms-quarters with negative net income and $\frac{D}{V}$ is the leverage ratio.

After defining a model to assess how to fairly value our companies' equity and, therefore calculate the intrinsic value of their stock, as in Vagenas-Nanos (2020) and Rhodes-Kropf et al. (2005), we run cross-sectional regressions to estimate [4] for each quarter and industry and calculate the long-run alpha parameter as $\overline{\alpha_J} = \frac{1}{T}\sum_t \hat{\alpha}_{j,t}$. Finally, we calculate our final misvaluation measure as:

$$\ln\left(\frac{M}{V}\right) = \ln(M_{i,t}) - [\overline{\alpha_{0,J}} + \overline{\alpha_{1,J}}\ln(B_{i,t}) + \overline{\alpha_{2,J}}\ln(|NI_{i,t}|) + \overline{\alpha_{3,J}}I^{-}\ln(|NI_{i,t}|) + \overline{\alpha_{4,J}}\frac{D}{V}_{i,t}] \qquad [5]$$

where the variable of interest is $\ln\left(\frac{M}{V}\right)$, calculated as the difference between market value and estimated intrinsic value of equity, and indicating a firm's overvaluation if $\ln\left(\frac{M}{V}\right) > 0$, an undervaluation if $\ln\left(\frac{M}{V}\right) < 0$ and finally suggesting that the firm is fairly valued if $\ln\left(\frac{M}{V}\right) = 0$ and therefore $\ln\left(\frac{M}{B}\right) = \ln(\frac{V}{B})$. After calculating a company's 'misvaluation', we assess how PE investors react to a potential target misvaluation and how portfolio firms' misvaluation is affected by E&S incidents (see Tables 5-6).

Ultimately, re-arranging equation [5], we also estimate the 'deal premium', which we defined as how much more PE misvalue a portfolio firm (i.e., over-pay for it) compared to the average market participant. Below is our mathematical definition [6]:

$$V_{i,t} = \frac{1}{(\frac{M}{V})_{i,t}} * M_{i,t} \qquad [6]$$

$$Deal\ Premium_{i,t} = \frac{LBO\ Value}{V}_{i,t} - \frac{M}{V}_{i,t} \qquad [7]$$

Given that the deal premium is observable only for LBO targets when the deal materialises, we estimate the following regression equation [7] to estimate the effect of an E&S incident on the deal premium paid by PE. This will allow us to assess if E&S incidents increase or decrease the likelihood that PE overpays for the acquisition of a given target firm. We do this by estimating the equation [8] below and reporting our results in Table 6 Panel B.

$$\begin{aligned}\ln(Deal\ Premium_{i,t}) &= \alpha_{i,t} + \beta_1 \ln\left(1 + E\&S\ incidents_{i,t-1}\right) \\ &+ \beta_2 \ln\left(\frac{M}{V}\right)_{i,t}^{+} + \beta_1 \ln\left(1 + E\&S\ incidents_{i,t-1}\right) x \ln\left(\frac{M}{V}\right)_{i,t}^{+} + \gamma' X_{i,t} + \mu_{j,y} \\ &+ \varepsilon_{i,t}\end{aligned} \qquad [8]$$

In Equation [8], $\ln\left(\frac{M}{V}\right)_{i,t}^{+}$ is a dummy variable taking a value of 1 if firm *i* is overvalued, 0 otherwise. All other variables remain identical to those used in our baseline regressions and to those used in follow-up regression models.

A.3.1.1 Firms' comparison across different valuation proxies

After presenting the calculation of our (mis-)valuation proxies in Online Appendix A.3.1, in this section, we present a descriptive comparison of their quarterly average values for firms

experiencing E&S incidents and without them, both before and after the incident takes place. Comparing our valuation variables for 'all firms', we observe that before experiencing an E&S incident, firms without E&S incidents have, on average, lower returns. Also, they are more fairly valued and have lower equity intrinsic value than their counterparts with incidents (see columns (1)-(3)). By analysing just LBO targets, we observe a similar pattern. In the case of LBO targets, the difference in returns between firms with and without incidents is not statistically significant. However, the differences in the equity intrinsic value of the two categories of firms appear substantially more pronounced.

Exploring differences in firms with and without E&S incidents after an E&S incident takes place, we observe that the firms without incidents have, on average, higher returns than firms without incidents (the difference is not significant for LBO targets). Vice versa, differences in other valuation proxies increase dramatically. While firms without E&S incidents appear as overvalued largely due to the negative financial market reaction to the incident (the ln-intrinsic value does not change substantially), firms with E&S incidents are two times more undervalued than before the incident. As a result, the differences in the mean of our mispricing variables are three times larger after the incident than before, four times larger for LBO targets, which appear substantially more undervalued than 'all firms'.

Table A.6. Firms' comparison across different valuation proxies

Table A.6 shows the quarterly mean and differences in means of our chosen valuation proxies (see Online Appendix A.1), calculated before and after firms experience E&S incidents and for both firms experiencing them and those that do not. In the left- vs right-hand side Panels of Table A.6., we compare these statistics for all considered firms with the same statistics but only calculated for LBO targets.

All Firms				LBO targets			
Pre-E&S Incident							
	No E&S Inc	E&S Inc	Diff		No E&S Inc	E&S Inc	Diff
$Ret_{i,t}$	-0.008	-0.006	-0.002***	$Ret_{i,t}$	-0.005	0.000	-0.005
$Ln(\frac{M}{V})_{i,t}$	-0.002	-0.333	0.332***	$Ln(\frac{M}{V})_{i,t}$	-0.100	-0.451	0.351***
$Ln(V)_{i,t}$	7.684	8.763	-1.079***	$Ln(V)_{i,t}$	7.611	8.773	-1.161***
Post-E&S Incident							
	No E&S Inc	E&S Inc	Diff		No E&S Inc	E&S Inc	Diff
$Ret_{i,t}$	0.013	-0.010	0.023***	$Ret_{i,t}$	-0.034	-0.007	-0.027
$Ln(\frac{M}{V})_{i,t}$	0.510	-0.742	1.251***	$Ln(\frac{M}{V})_{i,t}$	0.613	-1.229	1.842***
$Ln(V)_{i,t}$	6.940	10.465	-3.525***	$Ln(V)_{i,t}$	6.326	10.845	-4.519***

A.3.2. Incidents severity and investment by conventional vs PRI PE investors

In this section, we replace our core baseline regression variable: $\ln(1 + E\&S\ incidents_{i,t})$ with the severity of the incident keeping everything else unchanged.

Once we performed this test, we found results consistent with our baseline findings in Table 9. Increases in incidents of medium severity reduce the likelihood of a buyout from PRI investors more than it does for non-PRI ones and more than they do for incidents with low severity, consistent with the more responsible investment screening of this category of investors. Note that due to the low number of high-severity incidents in targets acquired by PRI investors, using our baseline model, we cannot estimate the regression. As a result, we do not show the results for that severity level in the Table below. This finding is consistent with the previously discussed findings on the greater responsible investment of PRI signatories.

Table A.7. Incidents severity and investment by conventional vs PRI PE investors

Table A.7 presents our regression findings on the effect of E&S incidents on the probability of an LBO of a PRI vs non-PRI signatory after we break down E&S incidents by their severity. The regressions include all our control variables: ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. We classify an investor as a PRI signatory, i.e. give to firm *f* a value of 1 if, at any point in the regression period, the investor has signed up to the initiative and zero otherwise. The results are qualitatively the same if we were classifying an investor as a PRI signatory if the investor in that quarter t is a PRI signatory. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$	(6) $LBO_{i,t+1}$	(7) $LBO_{i,t+1}$	(8) $LBO_{i,t+1}$
PRI Signatory	2.917***	2.170***	2.127***	2.940***	2.884***	2.118***	2.085***	2.911***
	(0.109)	(0.128)	(0.118)	(0.114)	(0.101)	(0.119)	(0.108)	(0.105)
High Severity	-1.074	-1.175	-1.124	-1.176	-0.434	-0.920	-0.883	-0.504
	(0.701)	(0.731)	(0.703)	(0.729)	(0.657)	(0.701)	(0.669)	(0.679)
Medium Severity	0.304**	0.190	0.192*	0.290**				
	(0.122)	(0.118)	(0.114)	(0.129)				
Low Severity	0.348***	0.093	0.079	0.399***				
	(0.098)	(0.098)	(0.095)	(0.104)				
PRI Signatory x Medium Severity	-0.473**	-0.397*	-0.399*	-0.454*				
	(0.234)	(0.233)	(0.232)	(0.242)				
PRI Signatory x Low Severity	-0.091	0.036	0.053	-0.115				
	(0.157)	(0.150)	(0.150)	(0.160)				
Observations	371,903	250,966	164,194	265,981	371,903	250,966	164,194	265,981
Country FE	No	Yes	No	No	No	Yes	No	No
Ind FE	No	Yes	No	No	No	Yes	No	No
Year	No	Yes	No	No	No	Yes	No	No
Country x Year	No	No	Yes	No	No	No	Yes	No
Ind x Year	No	No	No	Yes	No	No	No	Yes

Continued…

	(9) $LBO_{i,t+1}$	(10) $LBO_{i,t+1}$	(11) $LBO_{i,t+1}$	(12) $LBO_{i,t+1}$	(13) $LBO_{i,t+1}$	(14) $LBO_{i,t+1}$	(15) $LBO_{i,t+1}$	(16) $LBO_{i,t+1}$
PRI Signatory	2.934***	2.184***	2.144***	2.961***	2.909***	2.155***	2.115***	2.931***
	(0.106)	(0.123)	(0.113)	(0.110)	(0.108)	(0.127)	(0.117)	(0.113)
High Severity								
Medium Severity	0.499***	0.198**	0.198**	0.512***				
	(0.090)	(0.100)	(0.097)	(0.093)				
Low Severity					0.466***	0.148*	0.136	0.511***
					(0.075)	(0.086)	(0.084)	(0.077)
PRI Signatory x Medium Severity	-0.525***	-0.385*	-0.365*	-0.521***				
	(0.183)	(0.201)	(0.195)	(0.185)				
PRI Signatory x Low Severity					-0.331***	-0.152	-0.134	-0.349***
					(0.121)	(0.130)	(0.127)	(0.120)
Observations	371,968	251,031	164,237	266,036	371,968	251,031	164,237	266,036
Country FE	No	Yes	No	No	No	Yes	No	No
Ind FE	No	Yes	No	No	No	Yes	No	No
Year	No	Yes	No	No	No	Yes	No	No
Country x Year	No	No	Yes	No	No	No	Yes	No
Ind x Year	No	No	No	Yes	No	No	No	Yes

A.3.3. VIF multicollinearity test

In this section, to further robustify our correlation results of Table A.3 Panel C on the lack of a substantial degree of multicollinearity between E&S incidents and control variables, we perform a VIF multicollinearity test (see Table A.8). Looking at Table A.8 results, we observe that the variance inflator factors (VIF) are small and a lot smaller than 10, typically referred as the multicollinearity threshold, or 2.5 considered as the threshold in more conservative multicollinearity tests. Therefore, we conclude that there is no significant multicollinearity in our regressions.

Table A.8. VIF Test for multicollinearity of E&S incidents and firms' fundamentals

Table A.8 presents the results of our VIF multicollinearity test. We conclude that multicollinearity exists if the VIF coefficient is greater than 2.5; we do not otherwise. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1.

	Dep. Variable: E&S Inc.		Dep. Variable: E&S (High Severity)		Dep. Variable: E&S (Medium Severity)		Dep. Variable: E&S (Low Severity)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
ROA	1.50	0.66	1.50	0.66	1.50	0.66	1.50	0.66
sd(ROA)	1.48	0.68	1.48	0.68	1.48	0.68	1.48	0.68
Assets	1.19	0.84	1.19	0.84	1.19	0.84	1.19	0.84
Sale Growth	1.15	0.87	1.15	0.87	1.15	0.87	1.15	0.87
Leverage	1.10	0.91	1.10	0.91	1.10	0.91	1.10	0.91
Cash Holdings	1.01	1.00	1.01	1.00	1.01	1.00	1.01	1.00
Mean VIF	1.24		1.24		1.24		1.24	

A.3.4. Reprisk vs Asset4 ESG Ratings and LBO probability

As previously mentioned, we expect overall ESG ratings to yield broadly consistent but less "strong" or even inconsistent results. That is because we expect investors to adjust their valuation only in response to changes in salient information about a target company. Companies' ESG profiles do indeed contain relevant information about a company's performance (see, e.g., Sautner et al., 2023). However, interpreting this information might not be straightforward for an investor for several reasons, such as ESG rating disagreements (Berg et al., 2022), retrospective updates of ESG ratings (Berg et al., 2021), firms' undervaluation of intangible assets (see, e.g., Chan et al., 2001; Cohen et al., 2013), or the lack of reliable and comparable ESG information (Amel-Zadeh and Serafeim, 2018). Additionally, private equity is well-known for reshaping the governance of a target firm after its acquisition via an LBO (Wood and Wright, 2009). As a result, the levels of the 'G' component of ESG are unlikely to be a strong driver of a buyout. To illustrate this point in this section, we replace E&S incidents with ESG ratings.

In Reprisk, ESG ratings are constructed using a percentile approach applied to their calculated ESG score, which they compute as $Score_{i,t} = f\big(Peak\ RRI_{i,t}\big) + f\big(Country - Sector\ Average\ Peak\ RRI_{i,t}\big)$, where $f(x) = \begin{cases} 20, & x < 20 \\ x, & otherwise \end{cases}$. This suggests that based on this calculation, PE might find it difficult to understand whether an ESG rating change is driven by a sectoral or firm-specific effect (see Reprisk Methodology). Likewise, given this rating calculation, it might be difficult to pick a "good" firm in a "bad" sector.

As a result, in this robustness check, we first select the firm-level component of firms' ESG ratings in Reprisk and repeat our baseline regression [1]. Next, we collect ESG ratings from another rating provider, Refinitiv Asset4. Given that the companies' Asset4 ESG ratings are largely time invariant, to perform this analysis, we calculate the year-on-year percentage change in ESG ratings and use this in our baseline regression framework instead of E&S incidents. We display the regression results in Table A.9.

Analysing Table A.9's results, we observe that increases in the 'Peak RRI' (medium-run incident rates) are positively associated with the probability of an LBO. These increases in incident rates, however, reduce the probability of an LBO from a PRI investor by 2.5 percent more than it does for a conventional (non-PRI) one (in column (1)), or it leaves this probability unaffected in columns (2) (see Table A.9, columns (1)-(2)). Performing the same analysis but using percentage changes in ESG ratings, we find that changes in ESG ratings have no effect on the probability of an LBO (see Table A.9, columns (3)-(4)). Furthermore, the results remain unchanged when the PRI interaction term is added, indicating again that there is no ESG rating-driven difference.[18]

We believe that there might be several explanations for this result. First, it is possible that an incident of low severity may not be enough to drive upgrades or downgrades in ESG ratings (especially when ratings also include sectoral and country-specific factors), thereby

[18] The results remain unchanged when the same tests are performed using Asset4 E&S ratings. These results are not displayed but are available on request.

leading to a lower investment sensitivity. Second, this result might be driven by the lower frequency of (i.e., the less timely information contained in) ESG ratings, recorded only once per year, as opposed to incidents that have a higher frequency (quarterly in our regressions). Finally, as previously indicated, the lower informative power of ESG ratings compared to ESG controversies could also explain the lack of significance of these results.

Table A.9. Peak RRI vs Asset4 ESG Ratings

Table A.9 presents our findings on the effect of different measures of a firm's ESG profile on the probability of an LBO of a PRI vs a non-PRI signatory. In particular, we proxy a firm's 'ESG profile' with the Reprisk firm-level component of a firm's ESG rating, namely its 'Peak RRI' in columns (1)-(2). Instead, in columns (3)-(4), we use the year-on-year percentage change in Refinitiv Asset4 firms' ESG Scores. In columns (1) and (3), we classify an investor as a PRI signatory, i.e. give to firm *f* a value of 1 if, at any point in the regression period, the investor has signed up to the initiative and zero otherwise. In columns (2) and (4), we classify an investor as a PRI signatory if the investor in that quarter *t* is a PRI signatory. Also note that the data frequency in columns (1)-(2) is quarterly, compared to yearly in columns (3)-(4), according to the ESG recording frequency in Reprisk vs Asset4. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. ***, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	Peak RRI		Δ Asset4 ESG Ratings	
	PRI Status	Currently PRI Signatory	PRI Status	Currently PRI Signatory
	(1)	(2)	(3)	(4)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
ESG Profile	0.032***	0.031***	-0.018	-0.042
	(0.003)	(0.002)	(0.090)	(0.114)
PRI	3.314***	2.492***	1.825***	1.683***
	(0.153)	(0.356)	(0.225)	(0.341)
PRI x ESG Profile	-0.025***	-0.014	0.987	0.670
	(0.005)	(0.009)	(0.966)	(2.379)
Observations	5,268	5,268	4,620	4,620
Constant	Yes	Yes	Yes	Yes
Accounting Controls	No	No	No	No
Ind FE	No	No	No	No
Year FE	No	No	No	No
Ind x Year FE	Yes	Yes	Yes	Yes

A.3.5. Governance Issues and LBOs' reaction to E&S Incidents

While our core analysis shows that E&S incidents, particularly those of low severity, increase the probability of a PE buyout, these effects may not be uniform across all firms. One important dimension of heterogeneity is governance (G). Governance quality can shape how investors interpret and respond to sustainability-related shocks. For example, when an E&S incident occurs at a firm with strong governance structures, investors may view the event as an isolated failure likely to be managed effectively. In contrast, the same incident at a poorly governed firm may signal deeper structural problems, leading to more persistent reputational or operational concerns.

To explore this potential heterogeneity, we test whether the relationship between E&S incidents and the probability of a buyout differs across firms with varying governance quality.

Specifically, we interact firm-level E&S incident data with proxies for high governance quality, both as a binary classification (high-G dummy) and as a continuous governance score. This allows us to assess whether price pressure resulting from E&S incidents is perceived as more transitory for well-governed firms and more permanent for weakly governed ones.

Table A.10 presents the results of this analysis. Across all specifications, we find that E&S significantly and positively predict the likelihood of a PE buyout, consistent with our baseline findings. The interaction between E&S incidents and high governance (columns (1)-(3)) is negative but statistically insignificant, suggesting that strong governance may somewhat attenuate the effect of E&S incidents on buyout probability, though the evidence is not conclusive. Similarly, in columns (4)-(6), we use a continuous measure of governance quality and again find that the interaction term with E&S incidents is negative but statistically insignificant. While these results do not provide strong statistical evidence of moderation, the direction of the coefficients aligns with the idea that incidents at high-G firms are more likely to be viewed as temporary shocks, whereas incidents at low-G firms may reinforce concerns about long-term risks. Overall, they provide further support for the exogeneity of our results to dimensions of corporate governance that do not constitute a dimension of firm sustainability in a narrow sense.

Table A.10. Baseline regressions including G Interactions

Table A.10 presents our baseline regression findings on the effect of E&S incidents on the probability of an LBO, but further examines the moderating effect of corporate governance in this relationship. The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. The regression models are estimates using our baseline fast Poisson regression model. *, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	(1) $LBO_{i,t+1}$	(2) $LBO_{i,t+1}$	(3) $LBO_{i,t+1}$	(4) $LBO_{i,t+1}$	(5) $LBO_{i,t+1}$	(6) $LBO_{i,t+1}$
E&S Incidents	0.616***	0.648***	0.635***	0.606***	0.640***	0.625***
	(0.114)	(0.125)	(0.126)	(0.113)	(0.124)	(0.124)
High G	-0.189	0.047	-0.087			
	(1.129)	(1.160)	(1.237)			
High G x E&S Incidents	-0.276	-0.317	-0.278			
	(0.442)	(0.470)	(0.494)			
G				-0.489	-0.300	-0.407
				(0.908)	(0.930)	(0.927)
G x E&S Incidents				-0.048	-0.084	-0.054
				(0.316)	(0.336)	(0.331)
Observations	71,603	63,213	15,064	71,603	63,213	15,064
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes	Yes	Yes	Yes
Ind FE	No	Yes	No	No	Yes	No
Year FE	No	Yes	No	No	Yes	No
Ind x Year	No	No	Yes	No	No	Yes

A.3.6. LBOs' probability in extreme groups of environmental exposure

In this Appendix, we perform an additional analysis distinguishing between firms with no or low environmental incident exposure and those with extreme exposure. Specifically, we divide firms into five categories based on the distribution of their environmental accidents: firms with no reported incidents (control) and quartiles of firms with positive incident counts (Q1-Q4). This approach allows us to capture differences between low- and high-exposure firms while preserving the large share of "clean" firms in our sample.

Table A.11 presents the results. The coefficients increase monotonically across quartiles, with the probability of an LBO being significantly higher for firms in higher environmental exposure groups. Compared to firms with no incidents, the estimated coefficients for the quartile groups are 0.733, 0.783, 0.951, and 1.045 respectively, and all significant at the 1% level (see Table A.11, column (1)). These magnitudes further increase when we tighten the fixed effect specification of our regressions (see Table A.11, columns (2)-(3)).

This monotonic pattern indicates that PE investors react most strongly to firms with the most pronounced environmental incident histories (i.e., with a greater number of E&S incidents), consistent with a "valuation-driven" interpretation of our findings. That is, the effect of E&S incidents on LBO likelihood is concentrated among firms persistently exposed to environmental controversies. Conversely, low-exposure firms (Q1-Q2) exhibit weaker effects. Overall, this robustness check reinforces our main conclusion that PE investors are particularly active in acquiring firms that are both undervalued and exhibit persistent E&S incidents.

Table A.11. LBO's probability in extreme groups of environmental exposure

Table A.11 displays the probability of an LBO in firms characterised by extreme environmental exposure (Q1-Q4). The regressions include all our control variables, namely ROA, ROA_SD, Assets, Sales Growth, Leverage and Cash Holdings. For further information on all the variables included in these regressions and their calculations, check Online Appendix A.1. The regression models are estimates using our baseline fast Poisson regression model. *, ** and * reflect statistical significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)
	$LBO_{i,t+1}$	$LBO_{i,t+1}$	$LBO_{i,t+1}$
E&S Incident (Q1)	0.733***	0.761***	0.780***
	(0.204)	(0.205)	(0.208)
E&S Incident (Q2)	0.783***	0.935***	0.930***
	(0.194)	(0.195)	(0.194)
E&S Incident (Q3)	0.951***	1.039***	1.084***
	(0.225)	(0.227)	(0.230)
E&S Incident (Q4)	1.045***	1.123***	1.119***
	(0.208)	(0.202)	(0.203)
Observations	371,968	363,582	266,036
Constant	Yes	Yes	Yes
Accounting Controls	Yes	Yes	Yes
Ind FE	No	Yes	No
Year FE	No	Yes	No
Ind x Year	No	No	Yes

A.3.7. Firms' selection vs impact: are PRI investors different in impact?

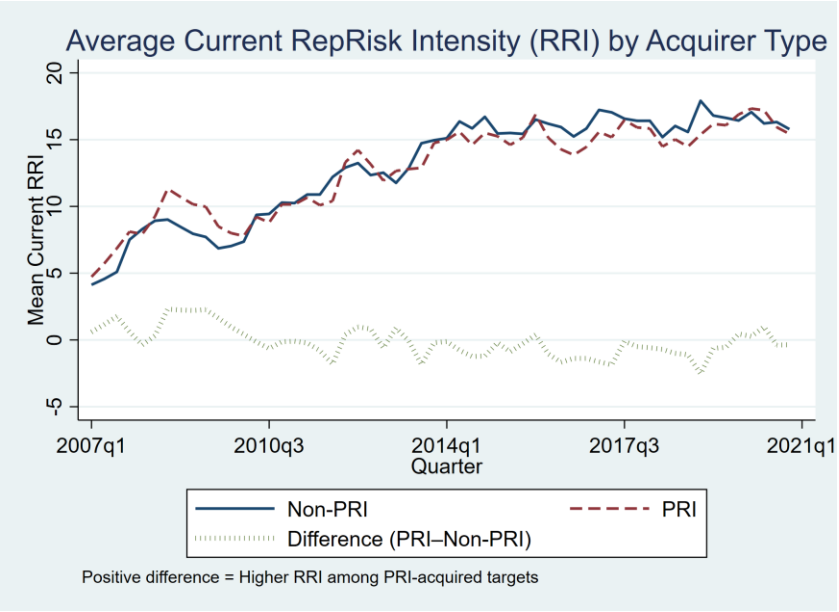
In this paper, we have demonstrated that PRI investors are more responsible in their *investment selection* compared to conventional PE firms. In particular, we have shown that PRI investors are less likely to invest in companies with more E&S (or with more ESG incidents). To further examine whether differences in sustainability arise at the investor level, we aggregate our analysis to the *PE firm* level. Each PE firm typically manages multiple funds that collectively invest in a portfolio of operating companies. By averaging the RepRisk Index (RRI) of all portfolio firms associated with each PE firm in each quarter, we obtain a time-varying measure of the average ESG incident exposure of that investor's entire portfolio. This aggregation allows us to assess whether PE firms that are PRI signatories (i.e., those publicly committed to responsible investment principles) manage portfolios that exhibit systematically lower or higher ESG incident rates over the lifecycle of their investments, compared to their non-PRI peers. In other words, it allows us to have a descriptive assessment of the "impact" of PRI firms on their portfolio firms, conditional on their PRI affiliation.

Figure A.3.1 Panel A and B display the quarterly evolution of mean peak and current RRI at the PE-firm level. The two series show that, on average, PRI and non-PRI investors manage portfolios with remarkably similar ESG controversy profiles throughout the sample period. The mean difference in portfolio-level RRI between PRI and non-PRI firms is small (0.14) and statistically insignificant at the 10% level. This pattern holds when using both the contemporaneous ("current") RRI and the maximum ("peak") RRI experienced by portfolio firms during their holding periods. That said, interestingly, the relative performance of PRI investors improves somewhat after the GFC. From 2010 onward, the average RRI of portfolios held by PRI PE firms declines slightly relative to that of non-PRI investors, suggesting incremental progress in PRI investors' ability to achieve impact in their investees. However, the difference remains economically modest and not statistically significant, indicating that, while PRI investors may be more attentive to sustainability considerations at the investment stage, over the life cycle of their portfolio firms, they do not manage their portfolio firms' E&S exposure. This finding aligns with recent evidence that the ESG performance of responsible investors tends to converge with that of conventional peers once sectoral and temporal factors are accounted for (Hoepner et al., 2019; Dyck et al., 2019; Albuquerque et al., 2020).

Figure A.3.1. Incident rates over PRI and non-PRI portfolio firms' investment life cycle

This figure plots the quarterly average RepRisk Intensity (RRI) of portfolio firms aggregated at the PE-firm level. Each observation represents the mean RRI across all portfolio companies owned by PRI and non-PRI PE firms in a given quarter. The dashed line shows PRI investors, the solid line non-PRI investors, and the dotted line the difference between the two (PRI - non-PRI). Positive values indicate higher average ESG controversy exposure among PRI portfolios. Panel A shows short-term incident rates – Current RRI. Panel B, instead, medium-term – Peak-RRI.

Panel A. Current (Short-term) RRI



Panel B. Peak (Medium-run) RRI