ESG Incidents and Fundraising in Private Equity*

Teodor Duevski† Chhavi Rastogi‡ Tianhao Yao§

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Abstract

We present novel evidence on how ESG incidents affect the capital-raising ability of Private Equity (PE) firms. Using a sample of global buyout investments, we find that PE firms experiencing environmental and social (E&S) incidents in their portfolio companies are less likely to raise a subsequent fund and subsequent funds are smaller. The relative size of subsequent funds is 9%-12% smaller for PE firms experiencing above-median number of E&S incidents. The negative effect is stronger for less reputable PE firms. We do not find similar effects for governance (G) incidents. The decrease in capital commitment does not seem to be related to performance, instead it comes from departure of ESG-concerned limited partners with whom the PE firm had a past relationship. Following an incident, PE firms hire more employees with an ESG background and experience fewer incidents in their new investments.

Keywords: private equity, fundraising, buyouts, limited partners, ESG, sustainability

JEL Classification: G10, G24, M14

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†HEC Paris, Email: teodor.duevski@hec.edu

‡International Finance Corporation, World Bank Group, Email: chhavi.rastogi@hec.edu

§Singapore Management University, Email: tianhaoyao@smu.edu.sg

1 Introduction

There has been a notable surge in global interest towards responsible investment practices, where many institutional investors are integrating (or claiming to integrate) environmental, social, and governance (ESG) factors into their investment decisions (Gibson Brandon et al., 2022). A large body of academic literature has studied the implications of investors' ESG considerations for public market funds.[1] While private market funds represent a substantial portion of institutional investor portfolios (Ewens and Farre-Mensa, 2022), due to the different market structure and regulatory scrutiny, the conclusions from research on responsible investment in public markets may not be easily generalized to private markets. In this paper, we provide the first evidence on whether and how ESG considerations of private equity investors (limited partners, or LPs) affect the capital raising ability of Private Equity (PE) firms.[2]

It is a-priori unclear how ESG considerations affect capital flows in private market funds. On the one hand, due to lower disclosure and regulatory requirements, private markets may not be subject to the same mounting ESG pressures as public markets. As a result, investors in private markets may not be as ESG-concerned as their public counterparts.[3] Moreover, because of illiquidity and search costs of switching to another private market fund, the cost of divestment in the private market is large, which may prevent investors from incorporating their ESG considerations into their portfolios. On the other hand, the investment and ownership structure of PE funds allow them to exert more influence on portfolio companies (Gompers et al., 2020). This potentially makes PE firms more likely to be held liable for "bad" ESG practices of their portfolio firms, which provides more rationale for ESG-concerned investors to tilt their capital to PE firms with better ESG-performing portfolio companies.

In the absence of ESG scores and key ESG indicators such as carbon emissions for private firms, we rely on ESG-related incidents from RepRisk to mitigate the data limitation. RepRisk

[1] See, for instance, Bollen (2007), Riedl and Smeets (2017), Hartzmark and Sussman (2019) and Ceccarelli et al. (2023) for mutual funds, and Liang et al. (2022) for hedge funds.

[2] Anecdotally, ESG considerations have aroused substantial interest in the private equity industry, in a survey conducted by PWC (2022), 63 % of Limited Partners (LPs) take into account ESG considerations when they allocate capital across General Partners (GPs), and more than 40% surveyed GPs claim to adopt ESG considerations when selecting and managing their investments

[3] For example, Duchin et al. (2022) show that public firms sells their most polluting assets to private firms that face lower ESG pressure.

produces daily indicators for negative ESG-related incidents reported in the media and regulatory or commercial documents for both public and private firms. We combine RepRisk with data on buyout investments from Preqin, and employment data from Crunchbase to examine the outcomes of ESG incidents. We restrict our analysis to GPs specializing in buyout investments since buyout funds invest in larger companies for which we have better coverage by RepRisk.

We conjecture that ESG incidents of portfolio companies in a fund affect the capital raising of follow-up funds of the same PE firm.[4] We begin our empirical analyses by confirming our hypothesis in the data. First, we show that GPs experiencing environmental and social ($E\&S$)[5] incidents in their portfolio companies are less likely to raise a follow-up fund (*extensive margin*). We estimate a proportional hazards model and document that the hazard rate of raising a follow-up fund decreases with the number of E&S incidents in the current fund. Comparing to a fund with no incidents, a fund with above-median number of $E\&S$ incidents has a 30.40% lower hazard ratio in raising a follow-up fund in a given year. This effect is economically large, as this is equivalent to the hazard rate of raising follow-up funds brought about by a scaling-up of fund performance by 1.5. Note that in the analysis we control for the performance, size, series number and industry composition of the current fund of the GP and market-level performance of buyout funds in a given year.

Next, we study the impact of $E\&S$ incidents on the size of the follow-up funds (*intensive margin*). We find that conditional on raising a follow-up fund, the follow-up funds are smaller. A one standard deviation increase in the average number of incidents lowers the relative size of follow-up funds by around 2.2%. Alternatively, compared to funds with no incidents in their portfolio, funds with above-median number of $E\&S$ incidents have 8.9%-12.6% smaller follow-up funds. This effect is equivalent to the size growth brought about by a scaling-up of fund performance by 1.6. Again, in all of the analyses we control for performance, size, series number and industry composition of the current fund of the GP. We also control for vintage year and region fixed effects both at the level of the current fund and the follow-up fund raised.

[4]The current fund experiencing ESG incidents is unlikely to be affected as the capital is already committed when the fund is raised.

[5]We separately analyse governance (G) incidents as corporate governance has long been a focus area in the private equity market and governance issues likely affect PE firms in very different ways than environmental and social issues.

We do not find a similar effect for governance (G) incidents, which is perhaps not surprising. G is quite different from $E\&S$ in nature as $E\&S$ is more related to social responsibility. Therefore, $E\&S$ incidents are likely viewed differently by investors of PE firms compared to G incidents.

Prior research has shown that reputation plays an important role in fund raising in private equity markets as it may help reduce agency costs between GPs and LPs and facilitate fundraising (Gompers and Lerner, 1999; Ljungqvist et al., 2020). Following Barber and Yasuda (2017), we define low reputation PE firms as small, young and low-performing PE firms. We find that the negative effect of E&S incidents on fund raising is stronger for low-reputation PE firms. Low reputation PE firms bear the brunt of the costs of incidents, both on the extensive and intensive margin. The result is consistent with that LPs may find it too costly to not invest in a high-reputation GP, since high reputation GPs are among the top performers.[6]

The results above have important implications for PE firms. Since, typically a large part of compensation in private equity (management fee) is tied to the size of the fund raised, successful fundraising is of paramount importance to PE managers.[7] Consequently, our findings indicate that experiencing environmental and social controversies may result in substantial financial repercussions for both the private equity firm and its fund managers. Our results highlight that $E\&S$ incidents are rather costly, especially for young, small or low-performing GPs.

After documenting that environmental and social incidents hurt GPs' capital raising ability, we turn to the mechanism. First, we examine the performance channel. If $E\&S$ incidents are negatively correlated with fund performance, even purely financially motivated LPs may stop committing to follow-up funds of GPs. We do not find significant evidence that environmental and social incidents are correlated with either current or future fund performance. At least in the short to medium run, experiencing environmental and social incidents does not seem to be strongly associated with the PE firm's performance. Given the limited time period of our sample, our data does not allow us to rule out the possibility that even profit-driven LPs may be concerned about long-term impact of ESG factors on performance.

[6]For instance, Kaplan and Schoar (2005) find performance persistence among buyout funds. More recent evidence on performance persistence is less conclusive Harris et al. (2023).

[7]For example, Metrick and Yasuda (2010) find that successful general partners (GPs) can raise their per partner compensation sharply by raising a larger follow-up fund.

Since performance does not seem to fully explain why LPs are reluctant to commit to GPs who experience environmental and social incidents, we turn to examine where the decrease in capital comes from. Private markets are characterised by the existence of relationships between GPs and their investors.[8] Investors, especially ESG-concerned investors, may break such relationships following $E\&S$ incidents. We start by confirming the importance of relationships in private equity. Indeed, LPs who financed a past fund of a GP are significantly more likely to commit capital to the current fund raised by the same GP.

We then show that experiencing $E\&S$ incidents breaks such relationships. Using a LP-fund data structure, we find that LPs who had a relationship with a PE firm are less likely to re-commit to a follow-up fund if the current fund has $E\&S$ incidents. A one standard deviation increase in the number of incidents decreases the likelihood of re-commitment by relationship LPs by about 9.6%, which is economically meaningful. Our results suggest that the deterioration in fund-raising ability comes from the reluctance of relationship LPs to re-commit capital after E&S incidents (rather than the inability of GPs to attract new LPs).

Next, we document that not all LPs react to $E\&S$ incidents to the same extent and the effect is stronger for investors with larger ESG concerns. We find that LPs in Europe, LPs in Democratic states in the US, and publicly listed LPs are more likely to end their relationship with GPs following $E\&S$ incidents. Institutional investors in Europe exhibit a higher interest in sustainability than their US counterparts (Gibson Brandon et al., 2022). Firms in Democratic states embrace social responsibility more than those in Republican states (Di Giuli and Kostovetsky, 2014). Public LPs who are under more scrutiny and disclosure pressure are presumably more ESG-concerned compared to private ones. The evidence suggests that the decrease in capital raising ability of GPs after E&S incidents can be attributed to ESG concerns of their Limited Partners, who break existing relationships to avoid future incidents. These ESG concerns may stem from intrinsic preferences of LPs, but may also come from regulatory pressure or public market scrutiny.

[8]For instance, due to variations in skill levels, style and the persistence of returns, certain General Partners (GPs) may be more favoured than others (Kaplan and Schoar, 2005; Harris et al., 2023). Simultaneously, due to their differing tolerance for illiquidity, some Limited Partners (LPs) become more desirable to certain GPs (Maurin et al., 2023).

Our evidence so far highlights that $E\&S$ incidents are costly to PE firms. A natural question that arises is whether PE firms adopt strategies to mitigate these costs and avoid such incidents in the future. We examine the employment decisions of PE firms and find that PE firms actively react to $E\&S$ incidents. Following E&S incidents, PE firms, especially low-reputation PE firms, hire more employees with an ESG background to screen portfolio companies for E&S risk and/or engage with them to reduce the likelihood or severity of incidents. We find that there is also a substantial decrease in the overall level of incidents at follow-up funds, which implies that cost-mitigation strategies are effective.

Our novel evidence in this paper highlights the materiality of ESG considerations in the private equity industry. Even in the absence of tight regulation, capital in the private market seems to flow away from GPs with high ESG risk, which is similar to public market funds. However, due to the unique structure of the private market, this capital flow happens in the form of a decrease in recommitment to follow-up funds of a GP, which is different from public market funds. This shift in capital allocation from LPs incentivize GPs to conduct ESG screening or engage with their portfolio companies on ESG considerations. This result is important because of its implications for PE fund managers (GPs) selection and monitoring decisions: PE fund managers (who want to attract fund flows) should carefully select and monitor firms to avoid ESG incidents. In the long-run, this ESG pressure may then be passed on to entrepreneurs and affect the types of firms they found or the way they manage these firms, which could potentially lead to a real impact of ESG-concerned PE capital on the economy.

The rest of the paper proceeds as follows. Section 2 reviews related literature. Section 3 describes the data and our sample. Section 4 presents evidence on how incidents affect raising follow-up funds. Section 5 investigates the relationship between incidents and performance. Section 6 tests how incidents affect the LP-GP relationship. Section 7 presents evidence on how PE firms react to incidents. Section 8 concludes.

2 Literature

Our primary contribution is to the nascent literature on ESG and asset management in the private market. Geczy et al. (2021) analyze LP-GP contractual terms of impact funds and do

not find direct evidence of tying managerial compensation of the GP directly to impact. Instead, they seem to emphasize the GP giving the LPs more oversight over the deal selection, due diligence, and other material processes. Barber et al. (2021) show that dual-objective VC funds (funds also aiming for positive social impact) have lower returns and Jeffers et al. (2022) analyze the risk and return of such funds. Bellon (2022) looks at the effect of PE ownership in the oil and gas industry and finds that PE ownership reduces pollution but only among firms in states with high environmental enforcement or greater political risk. Abraham et al. (2022) document the increasing voluntary ESG disclosure by PE firms and, subsequently, more environmental-friendly investment practices. Zhang (2022) studies whether impact investing helps VCs attract future startup deal-flow. We contribute to this strand of the literature by providing the first evidence that real portfolio level ESG incidents are material to GPs in the private equity industry. To the best of our knowledge, we are the first to document that ESG incidents affect capital raising ability of PE firms. Moreover, unlike previous work which either focuses on specialized impact funds (e.g., Geczy et al., 2021; Jeffers et al., 2022) or on specific industry (Bellon, 2022), we examine the materiality of ESG incidents to a broad class of buyout GPs.

We also contribute to the literature on the determinants of capital raising by private market intermediaries. A large body of literature starting with Kaplan and Schoar (2005) has studied the determinants of fund-raising in PE. Kaplan and Schoar (2005) document a high performance-flow sensitivity in the PE industry. Chung et al. (2012), Hochberg et al. (2014) and Barber and Yasuda (2017) find that interim performance affects the timing and likelihood of raising a follow-up fund. We contribute by showing E&S incidents in the portfolios are another determinant of capital raising ability, on top of the factors identified by prior work. We complement previous findings by showing that fund level E&S incidents affect fundraising at both extensive margin and intensive margin.

We also contribute to the broad literature on investor demand for ESG-conscious financial products. Survey and experimental evidence show that investors exhibit social preferences when making investment decisions (Riedl and Smeets, 2017; Bauer et al., 2021). Prior research finds that public market fund investors' social preferences drive capital into better ESG-performing funds (Bollen, 2007; Renneboog et al., 2011; Riedl and Smeets, 2017; Hartzmark and Sussman, 2019; Liang et al., 2022; Ceccarelli et al., 2023). Hartzmark and Sussman (2019) show that investors react to sustainability labels that mutual funds receive. Liang et al. (2022) show that

responsible hedge funds are able to attract additional flow and charge higher fees. In our paper, we contribute to this strand of the literature by documenting such a pattern for private market funds.

This paper is also related to a series of papers using RepRisk data for public firms. For instance, Gantchev et al. (2022) document divesting by responsible investors following negative E&S incidents. Gloβner (2021) show that RepRisk incidents predict negative future stock returns, and Derrien et al. (2021) document the negative analyst forecasts revision following such incidents. von Beschwitz et al. (2022) study how mutual funds react to ESG incidents in their portfolio and Bisetti et al. (2023) show how U.S. firms (customers) react to E&S controversies of their international suppliers. We complement these studies by analysing ESG incidents at private firms.

3 Data and sample

This paper explores the effect of ESG incidents on PE firms. This requires detailed data on funds raised by a PE firm, portfolio companies invested in and ESG incidents of the portfolio companies. We use private equity data from Preqin and we employ data from RepRisk to measure ESG incidents. This section describes the datasets in more detail.

3.1 Preqin

We collect our private equity data from Preqin. We focus on buyout funds in North America and Europe. This is because buyout firms are in general larger and have better matching rates to RepRisk database. Though RepRisk covers private firms, it typically covers slightly larger private firms. By focusing on buyout funds in North America and Europe, we are able to achieve a reasonable match rate. We use Preqin data spanning from 2000 to August 2023. In addition, we only keep funds with non-missing size, fund multiple and fund series number. We supplement the fund level data with the Limited Partner module, which allows us to identify the LPs that invest in a given fund. We also require the funds to have information on at least one LP from the Preqin LP module.

3.2 RepRisk

Our ESG incidents data come from RepRisk. RepRisk produces daily indicators for negative ESG-related incidents that make it to the public domain at the firm level for both public and private firms. It does so via daily analysis of a large set of documents in 20 languages obtained from public sources. The data go back to January 2007. RepRisk classifies ESG incidents according to 28 distinct issues. Environmental issues include news about climate change, pollution, waste issues, etc. Social issues relate to child labor, human rights abuses, etc. Governance issues capture issues such as executive compensation, corruption etc. While prior research uses RepRisk incidents as negative shocks to ESG profiles of public firms (e.g., Derrien et al., 2021), we extend the analysis to private firms. Our RepRisk data spans from 2007 to 2022.

Figure 1 about here.

RepRisk covers ESG incidents for 155,519 firms worldwide, out of which 17,024 are public and 138,495 are private. Figure 1 shows the average number of annual incidents over time. For both public and private firms, the number of incidents increase over time, potentially due to the increasing attention to ESG issues of firms. Public firms have more incidents than private firms, as public firms attract more media attention. In 2022, public (private) firms experience 1.7 (0.2) ESG incidents per year. Figure 2 plots E/S/G incidents separately over time. The number of governance incidents is low at the beginning of the sample and increases to similar levels by 2022. Environmental incidents are the lowest among the three categories. Figure A1 plots the detailed distribution of issues. Public and private firms exhibit similar distributions, though there are slightly more fraud and money-related issues for private firms.

Figure 2 about here.

An illustrative example of an incident of a private firm in our sample is the following. In July 2019, BC Partners, via their BC European Cap X fund, acquired a controlling stake in GardaWorld Security Corporation, a private Canadian security contractor.[9] In 2021, GardaWorld in the capacity of a US government contractor was tasked with building and operating a center for unaccompanied migrant children crossing the US border. Subsequently on June 23, a BBC

[9]Official statement for the investment can be found on BC Partners' website official website.

investigation finds allegations of sexual abuse, Covid and lice outbreaks, a child waiting hours for medical attention, a lack of clean clothes and hungry children being served undercooked meat.[10] This incident spreads through other media reports in the following months and is recorded in RepRisk as a social incident, with related issues "Human Rights Abuses", "Forced Labor" and "Poor Employment Conditions" .

3.3 Crunchbase

To study the PE firm's reaction to ESG incidents, we complement data from Preqin with time-varying employment data at the PE firm level from Crunchbase. To identify employment information for out sample of Preqin firms we name match the Crunchbase data and Preqin data on PE firm name, keeping only direct matches. We have 362 PE firms in our sample and 3,466 PE firm-year observations.

Crunchbase collects this information comes from multiple sources and includes data partners licensing information to Crunchbase and scanning public sources. The Crunchbase employment database contains an extensive history of PE firm employees. For a subset of employees, the data provides a detailed description of the background of the employee, which includes information on current and past employment spells, skills, educational background and committees served on. In addition, we observe the employment history of the employees including a start date and an end date for the employment spell.

We use text search to identify whether an employee is with an ESG background. An employee is classified as an ESG employee if the background contains one of the following terms: "ESG", "Diversity", "Diversity equity inclusion committee", "DEI", "environment", "Environmental Social Governance", "Responsible Invest", "impact invest", "Impact Officer", "Sustainability", "Sustainable Investing", "Corporate Social Responsibility", "Climate", "Energy Transition", "Labor Government Strategies", "governance risk control", "SRI", "corporate responsibility", "Stakeholder Engagement", "Clean Technology". Once we label an employee as an employee with an ESG background, we use the start date and end date of the employment spell to create a PE firm - year panel with the total number of people with an ESG background and the total number of people employed.

Figure 6 plots the average number of ESG employees at PE firms over time for our sample.

[10]The BBC report can be accessed here.

3.4 Sample construction and summary statistics

As there are no unified identifiers for private firms between Preqin and RepRisk, we match portfolio companies of PE funds from Preqin to firms in RepRisk using a fuzzy matching algorithm on firm names. We then manually verify the matches using other firm information (e.g., firm location, website, industry etc). We are able to match 1515 portfolio companies, which correspond to 14% of all Preqin buyout deals (in US and Europe after filtering on existence of fund information) and around 1% of RepRisk firms. The low matching rate reflects the low overlap between RepRisk and Preqin, as inclusion of a firm in each database is based on different criteria.

The 1515 firms are invested by 727 funds from Preqin, raised by 385 PE firms and committed by 2165 LPs. Figure 3 shows the distribution of vintage years of these funds. Out of the 385 PE firms in our sample, 123 are from Europe and 262 are from North America. As of 2023, PE firms in our sample have raised 3,763 billion US dollars in buyout funds, which accounts for 62% of buyout funds AUM in Preqin. The average number of buyout funds per PE firm in our sample is 6.2 and the average age is 28 years as of 2023, which is higher than that for the full Preqin buyout universe (2.6 funds and 20 years). The PE firms in our sample are larger and older, which is probably not surprising. If anything, this selection would work against our results as larger and older PE firms are more adept at fundraising. LPs in our sample on average invest in 41 buyout funds and 15 PE firms in our sample, which is also higher than the full Preqin LP universe (5 PE firms and 15 funds).

We only keep the buyout funds that have at least one portfolio company covered by RepRisk during the life of the fund. We, then, aggregate portfolio company level incidents to fund level. Because we do not observe the precise exit date of portfolio companies, we assume a holding period of 5 years from the deal year of each portfolio company, which is the average holding period for buyout funds.[11]

For our analysis, we focus on E&S related incidents. There are two reasons that we separate E&S incidents and G incidents. This follows prior work on ESG incidents (e.g., Gantchev et al., 2022; He et al., 2023) due to the fact that E&S incidents and G incidents are quite different in

[11]Kaplan and Strömberg (2009) provides statistics on average holding period, the median firm exits after 5 years. Recent holding periods seem to have increased to a median of 6 years i.e. Joenväärä et al. (2021). We make the assumption that the average holding period is 5 years during our sample period.

nature. Moreover, governance issues in the private equity market have already been extensively studied, and therefore are likely to affect PE firms in a different way than E&S incidents. To do so, we follow a two step procedures. First, we divide the total number of incidents of a fund in a year by the number of portfolio companies of the fund covered by RepRisk in that year. We normalise the incidents by RepRisk coverage to account for the size effect, i.e., larger PE funds have more firms covered by RepRisk and thus, may have more incidents. Second, throughout the analysis of the paper, when we accumulate incidents over multiple years, we also take an average across years. This is to avoid any mechanical effect that a longer holding period leads to more cumulative incidents.

We define follow-up funds as funds in the same series ($fund\_series\_id$ in Preqin) that have adjacent fund series number. In most cases, these funds have unified names. For example, *Kinderhook Capital Fund II* is the follow-up of *Kinderhook Capital Fund I*, and *Kinderhook Capital Fund III* is the follow-up fund of *Kinderhook Capital Fund II*. Such a definition allows us to better compare the size of similar funds, as funds in the same series usually have a similar strategy and comparable size (Fraser-Sampson, 2011). Out of 727 funds, 505 raise a follow-up fund.

In the analysis in which we investigate the change of relative fund size, we construct a fund pair dataset, in which each observation is a Fund N - Fund N+1 pair. This structure allows us directly test how relative size of fund N+1 and fund N is affected by the ESG incidents at fund N. Panel A of Table 1 shows the summary statistics for this data structure. On average, each fund has 2.64 portfolio companies that are covered by RepRisk. In this analysis, we focus on the average number of incidents 2 years before a follow-up fund is raised. Each year a fund experiences around 0.48 ESG incidents, 0.29 of them are E&S incidents and 0.20 are G incidents. This is larger than the full RepRisk private firms sample, likely because we only managed to match larger firms, which attract more media attention. Fund N has an average multiple of 1.86, average series number of 4.25, and average size of $2.93 billion. On average fund N+1 is 1.31 times (exp(0.27)) larger than fund N. In more than 75% of the sample, fund N+1 is larger than fund N. It takes on average 4.32 years to raise a follow-up fund. On average, a fund is invested by 29 LPs, but this varies a lot across funds.

Table 1 about here.

In addition, we also organise the data in the form of a fund-year panel. This data structure allows us to investigate the likelihood and timing of raising a follow-up fund. A fund exists in the sample until a follow-up fund is raised, as we estimate a hazard model. If, no follow-up fund is raised for a fund, it remains in the sample for 10 years since inception. In this sample, following Barber and Yasuda (2017), we restrict our sample to funds raised no later than 2018, to allow enough time to raise a follow-up fund. In the spirit of Barber and Yasuda (2017)'s interim fund performance measure, we construct our measure of E&S incidents by taking the average number of incidents from fund inception year till date. In addition, to control for aggregate time-variation of fund raising, we also control for year-level multiple for all buyout funds. Panel B of Table 1 shows the summary statistics for this data structure. The distribution of variables are similar to Panel A.

To investigate a LP level effect, we also construct a fund-LP dataset using the LP module from Preqin. Preqin contains information on LPs of the fund for most of the funds in our sample. The 505 funds and follow-up funds in our sample are invested by 2417 unique LPs. The data is structured in the form of a fund sequence with each observation representing a fund-LP pair with information on the follow-up fund raised. Therefore, in this data structure we have 1,051,915 (505×2083) observations. To capture the relationship between the PE firm and its LPs, we also construct a measure of how many previous buyout funds a LP has invested in for a given PE firm. The summary statistics are presented in Panel C of Table 1. As expected, in the fully expanded LP-fund data, only a small proportion (around 1%-2%) of LPs invest in a given fund. Around 1% of LPs have ever invested in a previous fund of a given PE firm. The distribution of incidents, fund size, fund multiple and fund series number are the same as in the fund sequence data structure in Panel A. On average, a LP invests in 12 funds in our sample.

Among all the LPs, 64% are based in North America and 28% are in Europe.[12] Among LPs in the US, 74% are based in Democratic states and 26% are based on Republican states based on 2016 election results. 8% of the LPs are publicly listed, out of which 30% are insurance companies, 19% are banks, 7% are asset managers, and 6% are listed fund of fund managers.

To test PE firms' reaction to E&S incidents, we also structure the data at PE-year level. For

[12]The rest of LPs are based in Aisa (3%), Middle East (2%), Australia (1%), and less than 1% in Latin America and Africa.

each year, we aggregate the number of E&S incidents by taking the average number of incidents across all funds in a PE firm in a given year. The summary statistics of this panel data is presented in Panel D of Table 1. On average a firm has 0.24 employees, an this correspond to 2% of all employees working at a PE firm in a given year.

4 ESG incidents and follow-up funds

GPs charge an annual management fees that is calculated as a percentage of committed capital. This links the compensation of the GP directly to its ability to raise capital via a follow-up fund. Failure to fundraising therefore presents a substantial cost for GPs. In this section, we study whether incidents at a fund hamper the ability of a GP to raise a follow-up fund. There are several reasons that investors may care about incidents. LPs may interpret incidents at a fund as a signal of performance of the GP. Alternatively, due to reputation concern or preferences, LPs may care about the ESG footprint of their investments independent of performance. This may lead LPs to reduce the commitment to the follow-up funds of the GP, hence impairing the fund-raising ability of the GP. We test the impact of incidents on fund raising on both the *intensive* and *extensive* margin.

4.1 Intensive Margin

We start with the impact on the intensive margin. In other words, we ask the question: Conditional on raising a follow-up fund, are follow-up funds smaller following ESG incidents? Following prior work (e.g., Gantchev et al., 2022; He et al., 2023), we split incidents into E&S incidents and G incidents as they are quite different in nature. In this analysis, we organise the data into a fund N-fund N+1 pair structure, in which each observation is a pair of fund N and follow-up fund, fund N+1. We investigate how the relative size of fund N+1 is associated with ESG incidents of fund N. The summary statistics of this sample are exhibited in Panel A of Table 1.

Specifically, we estimate the following equation:

$$\begin{aligned}\log(\frac{Size_{N+1}}{Size_N})_i = \alpha &+ \beta\ log(1 + E\&S\ incidents_{N,i}) \\ &+ \gamma\ log(multiple)_{N,i} + \theta\ log(size)_{N,i} + \eta\ log(series\ num)_{N,i} \\ &+ IndustryControls_{N,i} \\ &+ Vintage_{N,i} \times Vintage_{N+1,i} \times Region_i,\end{aligned} \tag{1}$$

where i denotes a fund N-fund N+1 pair. N indexes the current fund and $N+1$ indexes the follow-up fund in the same series raised by the same PE firm. The dependent variable is the natural logarithm of ratio of size of fund N+1 and fund N, which captures the size growth of the follow-up fund. $E\&S\ incidents_{N,i}$ is the average number of incidents two years ($[t-2, t-1]$) before fund N+1 is raised.[13] The coefficient of interest is β, which captures the effect of E&S incidents on the size growth of fund N+1. We add multiple control variables to the regressions. $log(multiple)_{N,i}$ is the natural logarithm of the multiple (performance) of fund N. $log(size)_{N,i}$ is the natural logarithm of size of fund N. $log(series)_{N,i}$ is the natural logarithm of the series number of fund N. $IndustryControls_{N,i}$ denotes the ratio of investments of fund N in each industry before fund $N+1$ is raised.[14] $Vintage_{N,i} \times Vintage_{N+1,i} \times Region_i$ denotes the interaction of {fund N vintage year, fund N+1 vintage year, PE region} fixed effects. We double cluster the standard errors by PE firm and by pairs of vintage years to correct for correlation of standard errors within PE firms and within vintage years (e.g. variation of capital supply).

We include granular vintage year of fund N and $N+1$ and PE Region fixed effects to control for capital supply effects, i.e. the fact that the availability of capital from investors tends to vary over time and across regions. We include the control variables to isolate the effect of E&S incidents from the performance, size, series number. For instance, without the control for performance the number of $E\&S$ incidents may be correlated with the quality of the GP's fund (e.g., GPs who are worse at managing there investments may be more likely to both have a lower performance and more incidents). Along the same lines, we control for fund N size since larger funds may attract more attention and hence experience more $E\&S$ incidents. Since the industry composition as well as the degree of specialization of fund N's portfolio may affect the likelihood

[13] We define the variable $num\ E\&S\ incidents = (\frac{\#\text{E\&S incidents}_{t-1}}{\#\text{Reprisk covered firms}_{t-1}} + \frac{\#\text{E\&S incidents}_{t-2}}{\#\text{Reprisk covered firms}_{t-2}})/2$, where t indicates the year fund $N+1$ is raised. We take the average, instead of sum, to have a fair comparison between funds with high vs. low number of firms covered by RepRisk.

[14] Essentially, $IndustryControls_{N,i}$ is a vector of 10 (10 industries), where each entry is the number of investments in a specific industry divided by total number of investments.

of incident and as well as the growth in size, we also control for the industry composition of fund N's portfolio.[15] Intuitively, coefficient β captures the difference in fund size growth, comparing two funds located in the same region, who have raised their fund N and $N+1$ in the same vintage years, but one experiences E&S incidents and the other does not.

Table 2 about here.

The results are presented in Table 2. The coefficients of all the control variables are as expected: Larger funds and funds in older series grow less and there is a strong performance-flow relationship (e.g., Kaplan and Schoar, 2005). In column 1, we present the results with only vintage year fixed effects and PE region fixed effects. We find the negative and significant association between E&S incidents and the relative size of funds. This negative association is robust to interacting PE region fixed effects with vintage year fixed effects (column 2). The result is also robust to and becomes economically stronger when we control for industry composition of fund N's portfolios (column 3). The economic magnitude of the coefficient is meaningful. A 100% increase in number of incidents decreases the size of follow-up funds by 8.3% (column 3). Alternatively, a one standard deviation increase in the log average number of incidents (0.27) leads to around 2.2% smaller follow-up funds. To better understand the magnitude, we categorize funds experiencing incidents into two groups based on the median number of incidents, and replace the independent variable with dummies indicating high vs. low number of incidents (the baseline is therefore the funds with no incidents). Relative to funds with no incidents, funds with higher than median incidents have 8.9% - 12.6% smaller follow-up funds (column 4-6). This effect is economically large. For example, to compensate for the 12.6% decrease in size from having higher-than-median number of incidents, the PE firm would have to increase its current fund performance by a scale of 1.6 (0.126/0.211), which is of considerable magnitude for a fund manager.

Our results are robust to using alternative measures. In Table A1, we change the horizon at which we accumulate incidents from 2 years to 1-6 years. Our results remain robust and the effect is weaker as we expand the window of incidents, which implies that incidents closer to fund raising have a stronger impact on the size of follow-up funds. In Table A2, we replicate

[15]For instance, funds that are more specialized and invest in an industry that is more likely to experience a high level of incidents may grow less.

the same regressions with using IRR as the measure of fund performance.[16] The result is robust and magnitudes remain similar despite the smaller sample size.

In Table A3, we estimate the same specification as in Equation (1), replacing E&S incidents with G incidents. We do not find any effect on fund size from experiencing portfolio level governance incidents. This is not surprising as corporate governance has already been a focus area in the PE industry and governance incidents likely affect PE firms in a different way than E&S incidents.[17]

In summary, we find that $E\&S$ incidents for the current fund affect the subsequent fund size growth. The effect increases by number of incidents and is particularly strong for funds experiencing an above median number of incidents, while the same does not hold for G incidents.

4.2 Extensive Margin

We, then, test the impact of E&S incidents on fund raising on the extensive margin. In other words, we ask the question: Do E&S incidents affect the likelihood of raising a follow-up fund? Since the probability of raising a follow-up fund is not constant across the life of the fund (it is initially low, then high in the middle and, subsequently, declines towards the end), we follow Barber and Yasuda (2017) and employ a proportional hazard model to study the timing of raising a follow-up fund.

We start by plotting the Kaplan-Meier survival graph that depicts the cumulative survival probabilities, i.e., probability for raising a follow-up fund. Figure A2 depicts the survival probability (the probability that a follow-up fund has not been raised) over years since fund N (the previous fund) is raised. Number at risk represents the number of funds at risk, i.e., those that have not yet raised a follow-up fund and have not been censored. We can see from the graph that most fundraising events occur between year 3 and year 8 of the fund, which is consistent with the results of Barber and Yasuda (2017). By 10 years since fund inception, about 75% of funds raise a follow-up fund.

[16] In other analysis we use fund multiple instead of IRR as a main variable for measuring performance due to better coverage of this measure by Preqin.

[17] For instance, survey evidence by Gompers et al. (2016) finds that GPs are particularly focused on adding value through improving governance.

We, then, estimate a hazard model, in which a "failure" event for a given fund N is defined as raising a follow-up fund. Fund N remains in the sample from inception for up to 10 years or until it raises a follow-up fund. We estimate the hazard rate using a Weibull proportional hazard model, which takes the following form:

$$\begin{aligned} h(t) &= h_0(t)exp(x_t\beta) \\ x_t\beta &= \alpha + \beta_1 log(1 + E\&S\ incidents_t) + \beta_2 log(multiple) + \beta_3 log(size) + \beta_4 log(series) \\ &+ \beta_5 log(buyout\ multiple)_t + Industry\ Controls_t, \end{aligned} \tag{2}$$

where x_t is a vector of covariates; $h_0(t)$ is the baseline hazard rate equal to pt^{p-1} with p as the shape parameter. Time t is measured in years since inception of fund N. $E\&S\ incidents_t$ is the average number of $E\&S$ incidents up to year $t-1$[18]. Similar to the intensive margin analysis, we also divide the incidents into $Low\ E\&S\ Incidents$ ($High\ E\&S\ Incidents$), which indicates below (above) median number of $E\&S$ incidents for each vintage year until year $t-1$ in the fund-year panel, conditional on an incident. As a result, the omitted category is funds with no E&S incidents. Similar to Equation 1, we include logarithm of fund size, fund multiple and fund series as control variables. $IndustryControls_t$ denotes separate controls for the proportion of investments in each industry sector at time t. In addition, since we cannot control for year fixed effect in the hazard model, we follow Barber and Yasuda (2017) and control for log of net multiple of all active buyout funds in a given year to control for the hot market effect (timing of raising a fund with respect to overall market performance).

Table 3 about here.

Table 3 reports the results. In column (1), the coefficient on $log(1 + E\&S\ incidents_t)$[19] is negative and statistically significant, which implies a lower likelihood of raising a follow-up fund following incidents. In column (3), we re-estimate the model including $IndustryControls$. Intuitively, this controls for the fact that funds with a given industry composition may be more likely

[18]Note that we normalize the number of incidents by the number of years before a follow-up fund is raised as described in Section 3. Therefore, the number of incidents do not increase with the number of years a fund exists in the sample.

[19]Since we cannot control for fixed effects in the hazard estimation, we demean log average number of incidents to remove the trend in number of incidents to make it consistent with the categorical variables used in columns 2 and 4. This is also consistent with the intensive margin regression with fixed effects in Equation (1).

to raise a follow-up fund (for instance, if they happen to specialize in an industry that is doing particularly well). Funds are more likely to fundraise when they perform better, if they have raised a larger fund in the past or if the buyout industry performs better. The magnitude on the log coefficients measures the percentage increase (decrease) in the hazard rate for a percentage increase (decrease) in the coefficient. In specification (3), we find that a 10% increase in the number of E&S incidents decreases the hazard rate by around 4.6 %. Our estimates imply that to compensate for this decrease funds would need to increase their performance by around 6.7 %.

In Columns (2) and (4), we estimate (2) using a categorical variable for number of $E\&S$ incidents. *Low E&S Incidents* (*High E&S Incidents*) takes a value 1 for below (above) median number of $E\&S$ incidents until year $t-1$ for each vintage year cohort for each region. The variable takes the value 0 for funds that do not experience any incidents until year $t-1$. Funds that experience incidents are less likely to raise a follow-up fund in the next year compared to fund that do not experience incidents. In terms of economic magnitude, the hazard ratio of raising a follow-up fund for below median number of incidents is 0.766 (exp(-0.267)). This implies that funds that experience below median number of incidents have a 23.43% (1-0.766) lower hazard rate of raising a follow-up fund in the next year compared to funds that do not experience any incidents. Similarly, funds that experience above median number of incidents have a 30.40% lower hazard rate of raising a follow up fund in the next year compared to funds that do not experience any incidents. This effect is also economically large, as this is equivalent to the hazard rate of raising follow-up funds brought about by a scaling-up of fund performance by 1.5 (0.352/0.687).

To visualize the effect, we then proceed to plot the post-estimation fitted failure function that corresponds to raising a follow-up fund in Figure 5. The conditional probability of raising a follow-up fund ("failure") for funds that do not experience an incident is higher that the probability of raising a follow-up fund for funds that experience below or above median number of incidents. The results above suggest that funds with E&S incidents have a lower likelihood of raising a follow-up fund.

One endogeneity concern regarding our analysis could be median bias or attention. We do not have an identification strategy due to the limited data availability for private markets, but median bias or attention does not seem to drive our results. One may argue that larger PE firms

or firms that invested in superstar firms are more likely to attract media attention and have more E&S incidents. To address this, we control for fund performance and fund size in all our specifications. Moreover, superstar firms (presumably high-return investments) would *increase* the probability of raising a follow-up fund and the size of follow-up funds and thus, go against us finding an effect. Similarly, in the extensive margin analysis, larger PE firms (with more incidents) are *more* likely to raise follow-up funds. Both these channels go against our finding that E&S incidents *lower* the ability of raising a follow-up fund and can not explain our results.

4.3 GP reputation and impact of E&S incidents

We then investigate heterogeneity in the effect of E&S incidents on fund size growth. When deciding to commit capital to GPs, LPs face a standard principal agent problem which leads to agency costs. One way to reduce these costs and facilitate financing is to rely on past performance or other informative signals by the GP. In other words GPs with a good reputation may find it easier to attract capital.[20] Prior research (e.g., Gompers and Lerner, 1999; Ljungqvist et al., 2020) has shown that reputation plays an important role in the PE industry. For instance, GPs who are young and raise their first fund have a hard time attracting capital from investors. Past work has shown that having a longer and better performance history typically helps in future fundraising since it may help reduce agency costs between GPs and their investors (Demiroglu and James, 2010).

We postulate that the high reputation of the private equity (PE) firm moderates the impact of E&S incidents on subsequent fund-raising ability. Given the variability in skill levels, historical capital-raising abilities, and track records among different general partners (GPs), some GPs may enjoy preferential treatment. For investors, not committing to the follow-up fund managed by these GPs could entail significant costs. Alternatively, investors may perceive GPs with established track records and a longer history as better equipped to address portfolio-related incidents. These arguments suggest that a firm's reputation can alleviate some of the adverse consequences of environmental and social incidents on follow-up fund-raising.

[20]This is analogous to the banking literature where a good reputation borrower is more likely to obtain a loan as stressed by Diamond (1991), or if we interpret a good reputation GP as a GP with lower private benefits as in Holmstrom and Tirole (1997).

Table 4 about here.

Following existing literature, such as Barber and Yasuda (2017), we categorize PE firms based on their age, size and performance. Specifically, we define a PE firm as low reputation if (i) if number of funds raised is in the bottom three quartiles of all PE firms, (ii) if total AUM raised in the past is in the bottom three quartiles, and (iii) if the PE firm has no top-quartile performing funds that are more than five years old. We also generate a combined measure of low reputation if (i), (ii), and (iii) hold at the same time.

We then estimate equations similar to Equation 1 and 2 but split the coefficients of interest into high and low reputation groups based on different reputation measures. The results are presented in Table 4, where Panel A presents the results for intensive margin and Panel B for extensive margin. The negative effect of E&S incidents mostly concentrate among smaller PE firms (column 1), younger PE firms (column 2) and worse-performing PE firms (column 3). This is also consistent with the combined reputation measure (column 4). This result supports our hypothesis that high PE firm reputation can attenuate the impact of E&S incidents.

Our results indicate that E&S incidents hurt low reputation PE firms more than high reputation PE firms. Reputable PE firms are PE firms with a long track record of fund-raising and good performance. The result is consistent with the mechanism that LPs may find it too costly to not commit capital to high-reputation GPs.

Overall, the results suggest that for funds experiencing E&S incidents, it is harder to raise follow-up funds and the follow-up funds are smaller. And this effect mainly comes from the low-reputation PE firms. Raising a follow-up fund is an outcome that GPs care about to a great extent since it is directly linked to their compensation. These results indicate that $E\&S$ incidents are material for GPs.

5 Incidents as a signal of weak performance?

In the previous sections, we documented that experiencing environmental and social incidents negatively affects GPs' ability to raise follow-up funds. In this section we investigate why this happens. In particular, we study whether E&S incidents can be interpreted as a signal of fund

performance. If E&S incidents are associated with lower performance either of the current fund or the follow up fund of the GP, LPs may interpret these incidents as a lack of GP skill, in which case even purely profit motivated LPs may not be willing to commit capital to the GPs follow up fund. In other words, do LPs (with imperfect information on fund performance) learn about fund performance by observing negative E&S incidents? We start by testing whether the performance of funds is correlated with the *same* fund's level of E&S incidents. Note that full performance of the current fund is typically not fully realized and available to LPs when the follow-up fund is raised (see, e.g., Phalippou, 2019). If such a correlation exists, the LPs can rationally learn about current fund performance by observing realized E&S incidents.

We test this hypothesis by estimating the following regression:

$$\begin{aligned} Perf_{N,i} = \alpha + \beta\, log(1 + E\&S\ incidents_{N,i}) \\ + Controls_{N,i} + Vintage_{N,i} \times Vintage_{N+1,i} \times Region_i, \end{aligned} \tag{3}$$

where $Perf_{N,i}$ is the performance of fund N, measured by the natural logarithm of the fund's net multiple or IRR. We use the same measure of environmental and social incidents, set of control variables and fixed effects as in Equation (1).

Table 5 about here.

The results are reported in Table 5. In columns (1) to (4) we measure performance using the fund multiple of invested capital. In columns (5) - (8) we measure performance using IRR. First, we confirm a negative relationship between fund size and performance, which is consistent with previous findings (e.g, Kaplan and Schoar, 2005; Lopez-de Silanes et al., 2015). The number of observations in columns (5) - (8) is lower since, the coverage of fund IRR as a performance metric for our sample is lower than fund multiple. Across all specifications, we do not find a robust significant correlation between the level of E&S incidents and fund performance. Funds with high and low incidents raised in the same region and in the same vintage year do not seem to differ in performance.

Even though the current fund's performance seems uncorrelated with incidents, experiencing an incident may be correlated with future fund performance. For instance, LPs may believe that

experiencing a high number of incidents may hurt the GP's future performance, through affecting its deal flow; the ability to source future deals.[21]

Table 6 about here.

Alternatively, LPs may rationally expect fund manager turnover following E&S incidents, which affects performance of future funds. We estimate a cross-sectional regression similar to Equation (3) and replace the dependent variable as performance of fund N+1. In the regression, we control for performance of fund N to control for persistence in performance at the GP level. Table 6 presents the results. In specifications (1)-(4), we use the follow-up fund's multiple and in specifications (5)-(8) we use the follow-up fund's IRR as measures of performance. First, note that over our sample period we confirm a strong performance persistence, which has been previously documented by prior work for buyout funds (e.g., Kaplan and Schoar, 2005; Korteweg and Sorensen, 2017; Harris et al., 2023). The coefficients of E&S incidents are significantly negative when using IRR as performance measure is significant and negative. However, this relationship does not exist when using multiple as the measure. This significance may be driven by the smaller sample size and potentially some extreme value in the IRR measure. Therefore, we conclude with the absence of significant correlation between the level of E&S incidents and the performance of follow-up funds.

Overall, we do not find a strong correlation between E&S incidents and the performance of the current or the follow-up fund. This suggests that at least in the short run, incidents do not seem to be strongly correlated with performance. Of course, LPs may be concerned that over the long run, due to high likelihood of environmental regulation, the performance of GPs facing E&S incidents cannot be sustainable, in which case they may prefer to exit early. However, we do not have a long enough period to test this hypothesis. Another caveat of this analysis is that we do not have statistical power due to limited sample size. In general, we conclude that we do not find significant evidence that LPs interpret E&S incidents as a signal for fund performance.

[21] Several papers have argued that deal flow is an important factor in determining venture capital and private equity performance e.g., Ewens and Rhodes-Kropf (2015), Fuchs et al. (2021) Korteweg and Sorensen (2017). For instance, in an experimental setting and in the VC context, Zhang (2022) finds that impact VCs focused on social issues are favoured by certain founders.

6 LP-GP relationship

In the previous section, we document that environmental and social incidents do not seem to correlate with performance of GPs. Since environmental and social incidents do affect the capital raising ability of GPs, we then dig deeper on which are the LPs reducing the capital commitment to GPs following the incidents.

Unlike the public market, the private market is characterised by the existence of relationships between GPs and their investors. LPs who invested in a past fund of a GP are more likely to participate in future funds raised by the same GP.[22] Given that we have documented an effect of environmental and social incidents on future fund raising, in this section we explore whether this decrease in capital commitments comes from the GP's failure to maintain its existing LP base (i.e., relationship LPs) or failure to attract investments from new LPs.

It is important to note that losing a relationship LP, i.e. failure to get an LP recommitting to new funds, may be rather costly for the GP. In Appendix Table A5, we show that relationship LPs on average commit more capital to the GP than other LPs. Therefore, it's not easy for a GP to substitute the capital loss with new GPs. Non-relationship LPs may interpret the loss of a relationship LP as a negative signal and may be reluctant to invest in the GPs' follow-up funds.

This motivates us to first examine whether E&S incidents affect the LP-GP relationship. In the spirit of the relationship banking literature (e.g., Chodorow-Reich, 2014), we structure the data as a fund N+1 - LP network structure, where each observation is a pair of fund N+1 and LP. We include all LP-fund pairs in the sample. We, then, estimate the following regression:

$$\begin{aligned} D(Invest)_{l,N+1} = \alpha &+ \beta Relationship\ LP_{l,N+1} \times E\&S\ incidents_N \\ &+ \theta Relationship\ LP_{l,N+1} + \psi E\&S\ incidents_N \\ &+ Controls_N + \\ &+ \gamma_{l,vintage,region} + \varepsilon_{l,N}, \end{aligned} \tag{4}$$

where l denotes an LP, N denotes current fund, and $N+1$ denotes the follow-up fund. $D(Invest)_{l,N+1}$

[22] For instance, due to variations in skill levels, style and the persistence of returns, certain General Partners (GPs) may be more favoured than others (Kaplan and Schoar, 2005; Harris et al., 2023). Simultaneously, due to their differing tolerance for illiquidity, some Limited Partners (LPs) become more desirable to certain GPs (Maurin et al., 2023).

is a dummy variable indicating LP l invests in fund $N+1$. *Relationship* $LP_{l,N+1}$ is a dummy variable which equals 1 if LP l invested in any other fund of PE firm of fund $N+1$ before fund $N+1$ is raised. γ_l denotes the LP $\times$ fund raising year $\times$ region fixed effects. Coefficient θ captures the persistence of the LP-GP relationship, i.e., the likelihood of investing in a fund if LP has an relationship with the GP. β captures how E&S incidents affects this relationship.

Table 7 about here.

First, in columns (1) and 2 in Table 7 confirms existence of the LP-GP relationship. Column 1 suggests that after controlling for LP average market share, an LP who has had a prior relationship with the GP is 31.0 percentage points more likely to invest as a LP in the follow-up fund of the GP. We include LP $\times$ PE region $\times$ vintage year of fund $N+1$ fixed effects to control for supply of capital at the investor level that may cause LPs to invest more or less (or to specialise) in certain regions in certain years. In column 2, we include fund FE, which absorbs underlying fund characteristics such as size, performance and series of a fund and overall GP style focus. The relationship still remains.

In column 3, we add log number of incidents in the equation where we do not observe any significant overall effect. In column (4), the interaction between *Relationship LP* and *E&S incidents* is negative, which suggests the having E&S incidents lowers the likelihood that relationship LPs re-invest in a follow-up fund. This effect remains robust to controlling for fund fixed effects (column 5). It is also robust to controlling for the interaction between relationship LP and fund performance. In terms of economic magnitude, a one standard deviation increase in the number of incidents implies a 9.6% ($0.27 \times 0.120/0.336$) decrease in the re-investment propensity.

Our analysis indicates that E&S incidents reduce the likelihood of reinvestment by already existing investors. We next examine which subgroups of investors react more strongly to E&S incidents. We hypothesize that LPs with higher ESG concerns are more likely to end their relationship with GPs following E&S incidents.[23] First we classify LPs into *Europe*, *NorthAmerica* and *Others* based on where the LP is based. Since institutional investors in Europe exhibit more sustainability interests than their US counterparts (Gibson Brandon et al., 2022), we expect

[23]These ESG concerns can be arise from inherent LP preferences or induced by regulation or scrutiny pressure

European LPs are more ESG-concerned than US LPs and are more likely to cut their relationship following E&S incidents. Moreover, within US LPs, we categorize LPs based on their political-leaning into Republicans and Democratics based on the headquarter of LPs. We define Republican and Democratic states based on the 2016 election results. Di Giuli and Kostovetsky (2014) show that firms located in Democratic-leaning states invest more in corporate social responsibility and have higher ESG scores. We expect LPs in Democratic states to be more ESG concerned and are more likely to end relationship with GPs following E&S incidents. We also categorize LPs into public and private LPs based on LPs' listing status. We hypothesize that public LPs are more ESG-concerned due to disclosure requirements and public market pressure compared to private LPs.

Table 7 about here.

Figure 4 about here.

We run regressions similar to Equation 4 but splitting the coefficients into subgroups. Table 8 presents the regression results and Figure 4 plots the key coefficients of interests. In column 1 of Table 8 and subfigure (a) of Figure 4, the results show that European LPs are more likely to break the relationship with GPs following E&S incidents. The economic magnitude for European LPs is more than 5 times as larger as North American LPs. LPs based in other regions have a propensity of ending relationship that is between Europe and US.[24] Within US, LPs located in democratic states are more than three times more likely to cut relationship than LPs located in republican states following E&S incidents (column 2 and subfigure b). Finally public LPs are more than three times more likely to cut relationship compared to private LPs (column 3 and subfigure c). Overall, the results show that LPs with higher ESG concern are more likely to end their relationship with GPs following E&S incidents. This result also provides rationale on why E&S incidents decreases the size of follow-up funds as shown in section 3. The decrease comes from the fact that ESG-concerned LPs stop recommitting to follow-up funds of PE firms.

Overall, our results highlight the existence of LP-GP relationships and show that E&S incidents at a fund impede persistence in the relationship. ESG-concerned LPs are less likely to

[24]The top countries (regions) that LPs in *Others* category are: Australia, Israel, Japan, South Korea, Taiwan, Hong Kong SAR. In total they account for 62% of number of LPs in the *Others* category.

commit to a follow-up fund if the current fund experiences E&S incidents. Incidents are costly for PE firms as they lose relationship investors. This in turn hampers their ability to raise a follow-up fund.

7 PE firm reaction

We have established that incidents are costly for PE firms and impede their ability to raise capital. In this section, we investigate whether PE firms try to mitigate the cost and respond to E&S incidents. Specifically, we test whether GPs tilt their employee base towards persons with an ESG background, and whether they reduce the level of incidents for the follow-up funds.

We start by testing whether PE firms tilt their employment towards persons with an ESG background following ESG incidents in their portfolio. We classify employees as having an ESG background based on text analysis of the person's description. The methodology is outlined in the data section. We then estimate the following specification in a PE firm-year panel:

$$Y_{i,t} = \alpha + log(1 + E\&S\ incidents_{i,t}) + \theta_t + \gamma_i + \epsilon_{i,t}, \tag{5}$$

where Y is the ratio of employees with an ESG background to total number of employees at the PE firm in year t. $log(1 + E\&S\ incidents_{i,t})$ is the average number of $E\&S$ incidents experienced by PE firm i in the last two years, i.e., [t-2,t-1]. The incidents have been aggregated to a PE firm $\times$ year level as the employment data from Crunchbase is at a PE firm-year level. θ_t indicates Year fixed effects and γ_i indicates PE firm fixed effects. Therefore, we are comparing the ratio of ESG employees to total employees for the same PE firm in years after experiencing an E&S incident to years when the PE firm has not experienced E&S incidents.

Table 9 about here.

Column 1 of Table 9 reports the results and column 2 replaces the independent variable with dummies indicating high and low number of incidents. The results indicate that experiencing $E\&S$ incidents in the past two years is associated with an increase in the ratio of ESG employees to total employees. PE firms that experience above median number of $E\&S$ incidents increase the ratio of employees with an ESG background by 0.002. This effect is economically meaningful

and corresponds to 12.4% of the mean ratio of ESG employees. Similarly, the coefficient in column (1) implies that a 20% increase in the number of incidents corresponds to an increase of 8.7% of the mean ratio of ESG employees. In columns (3) and (4), we split the coefficients by reputation of PE firms. Consistent with previous results that E&S incidents are more costly to low reputation firms, we find that it is the low-reputation PE firms that respond by increasing the proportion of employees with an ESG background. The effect is statistically significant and economically meaningful.

Table 10 about here.

We, then, move on to investigate whether PE firms do more ESG screening or monitoring for their follow-up fund conditional on raising a follow-up fund. We estimate a regression similar to Equation 1 but replace the dependent variable with the ratio of number of incidents in fund $N+1$ to fund N, and dummy variables indicating that number of incidents of fund $N+1$ is smaller than fund N. In addition, we include a control for the relative size of fund N and fund $N+1$ to control for any mechanical effects driven by size. The results, presented in Table 10, show that the number of incidents decrease with fund sequence. The coefficient in column 4 implies a 63.1% increase in the probability of having lower incidents at fund $N+1$ following high level of incidents at fund N.

Overall, the evidence above suggests that PE firms respond to incidents to mitigate the negative consequences. This effort, indeed, turns into lower number of future incidents.

8 Conclusion

This paper examines the impact of environmental and social incidents on the capital raising ability of Private Equity (PE) firms. Using a sample of global buyout investments, we document a negative effect of experiencing environmental and social incidents on the PE's ability to raise capital in the future both on the extensive and intensive margin. PE firms who experience an environmental and social incident lose valuable relationship LPs, especially ESG-concerned LPs. PE firms respond to E&S incidents by employing more employees with an ESG background and effecitively reduce their future incidents.

Our results highlight the materiality of environmental and social incidents in the private equity industry. Through their negative impact on capital raising, PE firms who are unable to mitigate ESG risk in their portfolios are likely to experience substantial costs. This channel provides incentives for PE firms to do more ESG screening and to engage more with portfolio companies on ESG considerations.

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9 Figures

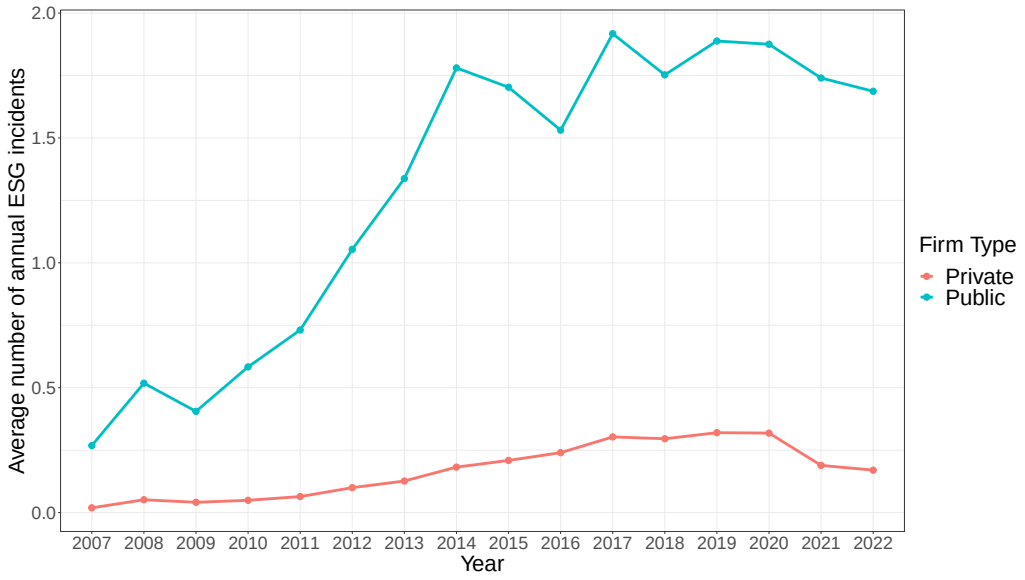


Figure 1: **Average number of RepRisk ESG incidents by time**: This figure plots the average number of incidents per year for public and private firms in RepRisk. This plot includes all firms covered by RepRisk. The blue line represents public firms and red line represents private firms.

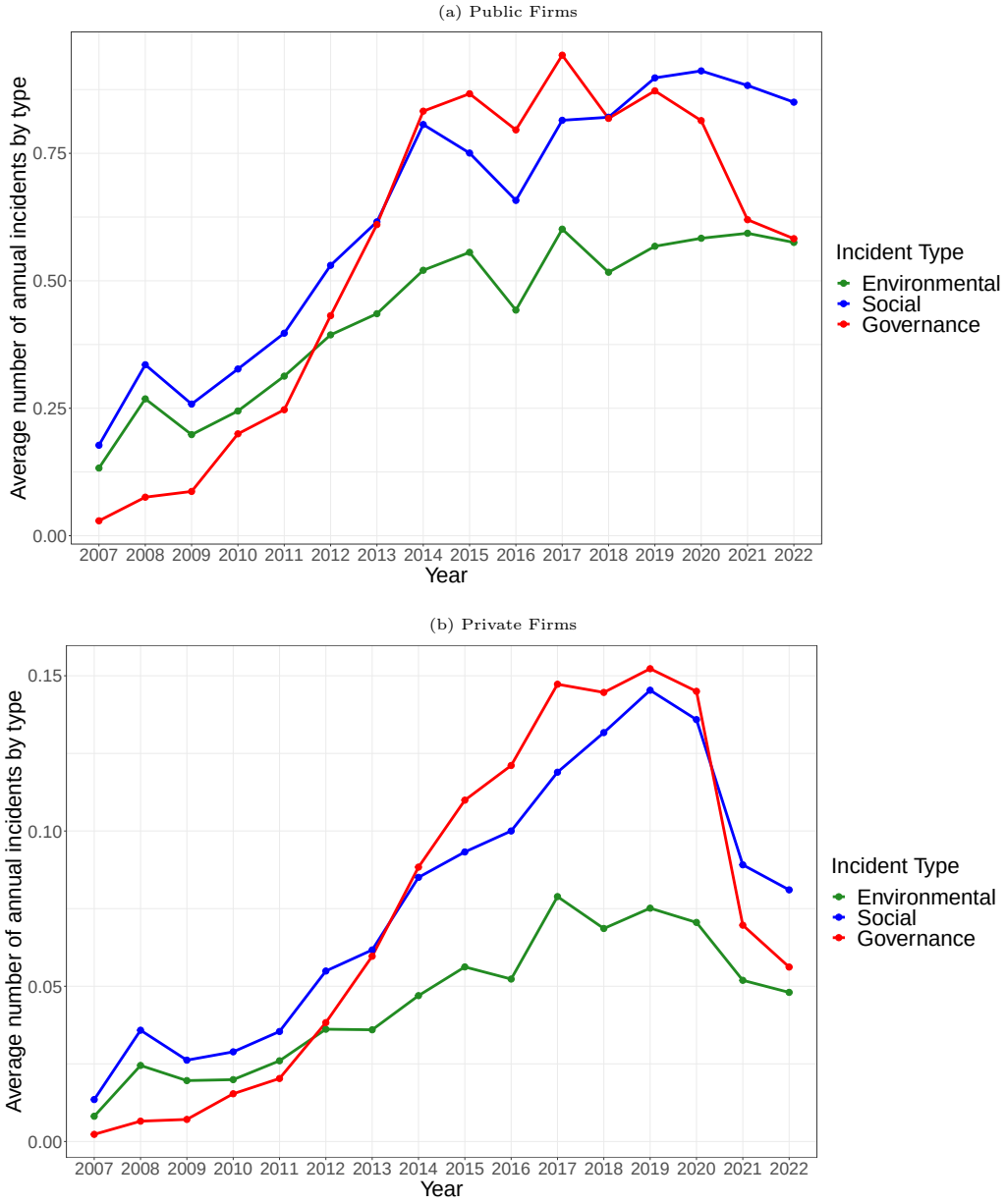
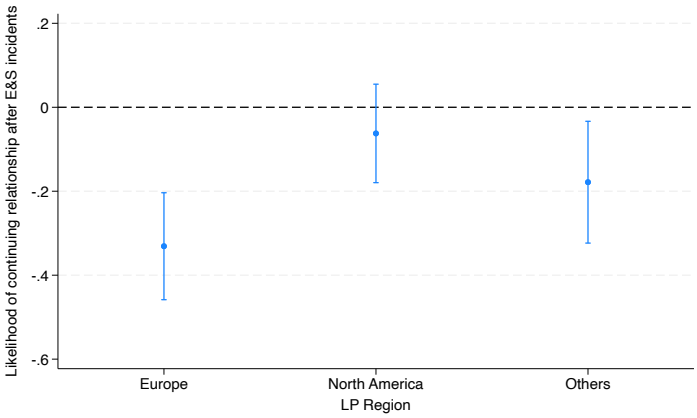


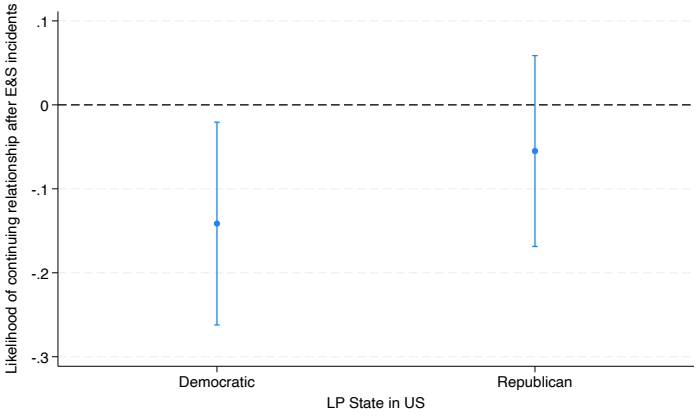
Figure 2: **Average number of incidents by incident type**: This figure plots the number of annual incidents by E/S/G types per year. This plot includes all firms covered by RepRisk. Green, blue and red lines correspond to environmental, social and governance incidents respectively. Subfigure (a) plots the trend for public firms and subfigure (b) plots the trend for private firms.

Figure 3: **Number of funds by vintage year:** This figure plots the number of funds per vintage year in the sample. The sample includes funds with at least one RepRisk firm coverage.

(a) By Investor Region



(b) By Investor State (US)



(c) By Listed Status

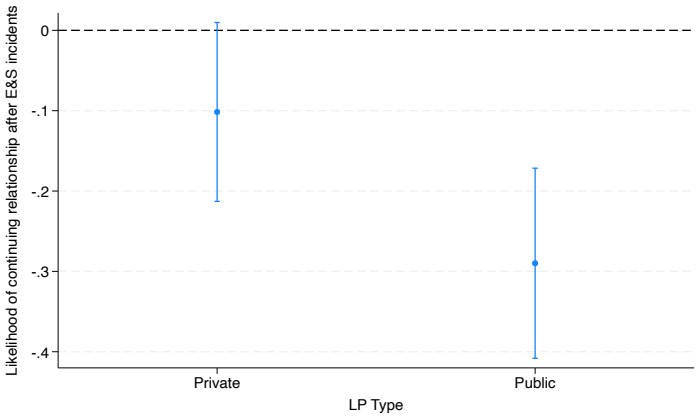


Figure 4: **Likelihood of continuing relationships after ESG incidents for different investors**: This figure plots the coefficients of the estimation in Table 8.

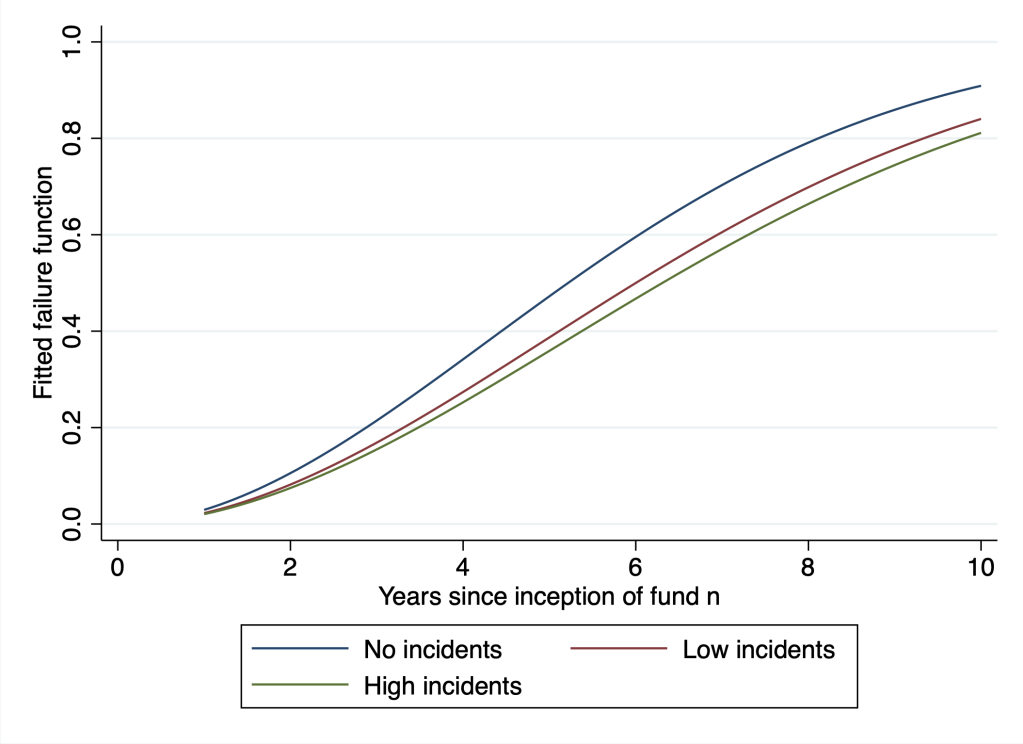


Figure 5: **Fitted Failure Function:** The figure depicts the fitted failure function that corresponds to raising a follow-up fund for funds that experience above median, below median and no E&S incidents. Failure corresponds to raising a follow-up fund and a higher value of the fitted failure function implies a higher probability of raising a follow-up fund.

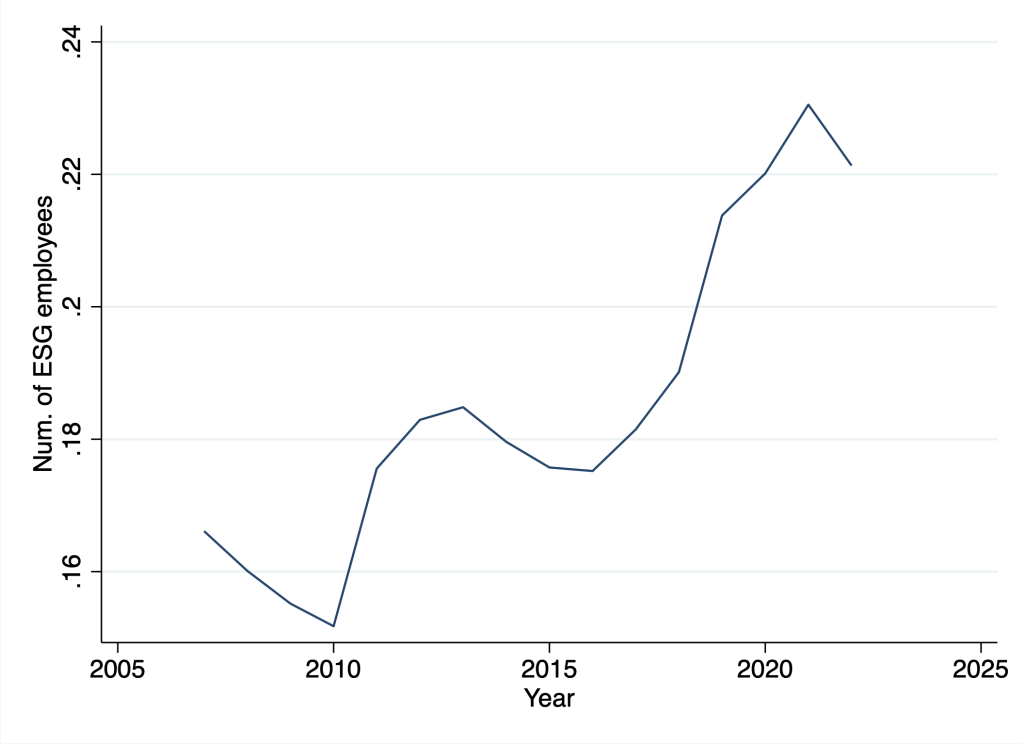


Figure 6: **Number of ESG employees over time:** The figure depicts the average number of employees with an ESG background employed at a PE firm over time.

10 Tables

Panel A: Fund N+1 - Fund N data structure

	Obs	Mean	Sd	5%	25%	50%	75%	95%
Num. of RepRisk firms	505	2.64	2.56	1.00	1.00	2.00	3.00	8.00
Avg. num. ESG incidents	505	0.48	3.10	0.00	0.00	0.00	0.49	1.25
Avg. num. E&S incidents	505	0.29	2.14	0.00	0.00	0.00	0.17	1.00
Avg. num. G incidents	505	0.20	1.38	0.00	0.00	0.00	0.00	0.61
Fund N multiple	505	1.86	0.61	1.08	1.45	1.74	2.11	3.04
Fund N fund series number	505	4.25	2.49	1.00	2.00	4.00	6.00	9.00
Fund N size (billion USD)	505	2.93	4.10	0.19	0.50	1.20	3.50	11.94
Fund N+1 size (billion USD)	505	3.69	4.86	0.24	0.72	1.75	4.66	14.50
log(fund N+1 size / fund N size)	505	0.27	0.41	-0.47	0.09	0.30	0.51	0.81
Years btw. fund N. and N+1	505	4.43	1.54	2.00	3.00	4.00	5.00	7.00
Num. LPs fund N	505	29.06	27.60	3.00	10.00	19.00	37.00	88.00
Num. LPs fund N+1	505	22.69	23.23	1.00	7.00	15.00	31.00	72.00

Panel B: Fund N-year panel

	Obs	Mean	Sd	5%	25%	50%	75%	95%
Years since fund N is raised	3,114	4.64	2.43	1.00	3.00	4.00	6.00	9.00
Cum. num. E&S incidents	3,114	0.12	0.34	0.00	0.00	0.00	0.08	0.67
Fund N multiple	3,114	1.79	0.67	0.94	1.38	1.68	2.06	3.06
Fund N size (billion USD)	3,114	2.15	3.41	0.14	0.39	0.81	2.18	8.82
Fund N fund series number	3,114	3.87	2.20	1.00	2.00	3.00	5.00	8.00
Buyout multiple	3,114	1.82	0.04	1.79	1.80	1.81	1.86	1.88

Panel C: Fund N+1 - Fund N - LP data structure

	Obs	Mean	Sd	5%	25%	50%	75%	95%
D(LP invest in Fund N)	1051915	0.02	0.13	0.00	0.00	0.00	0.00	0.00
D(LP invest in Fund N+1)	1051915	0.01	0.12	0.00	0.00	0.00	0.00	0.00
Num. of previous funds an LP has invested	1051915	0.04	0.36	0.00	0.00	0.00	0.00	0.00
D(an LP has invested in previous funds)	1051915	0.02	0.14	0.00	0.00	0.00	0.00	0.00
Num. of E&S incidents	1051915	0.29	2.14	0.00	0.00	0.00	0.17	1.00
Fund N size (billion USD)	1051915	2.93	4.10	0.19	0.50	1.20	3.50	11.94
Fund N multiple	1051915	1.86	0.61	1.08	1.45	1.74	2.11	3.04
Fund N fund series number	1051915	4.25	2.48	1.00	2.00	4.00	6.00	9.00
Avg. num. of fund N an LP invests	1051915	9.16	23.57	0.00	1.00	3.00	7.00	37.00
Avg. num. of fund N+1 an LP invests	1051915	7.34	21.05	0.00	1.00	2.00	5.00	33.00

Panel D: PE firm - year data structure

	Obs	Mean	Sd	5%	25%	50%	75%	95%
Num. E&S incidents	3,466	0.13	0.29	0.00	0.00	0.00	0.12	0.56
Num. of ESG employees	3,466	0.24	0.71	0.00	0.00	0.00	0.00	1.00
Ratio ESG employment	3,466	0.02	0.05	0.00	0.00	0.00	0.00	0.11

Table 1: **Summary statistics**: This paper reports the summary statistics of main variables used in the analysis. Panel A presents the summary statistics of variables in the fund N+1 - Fund N data structure, in which each observation is a fund N+1 - fund N pair. *Number of RepRisk firms* is the number of firms covered by RepRisk in funds' portfolio companies. *Avg. num. ESG* $(E\&S, G)$ *incidents* is the average number of ESG (E&S,G) incidents two years before fund N+1 is raised. *Years btw. fund N and* $N+1$ is defined as the gap between the vintage years of fund N and fund N+1. *Number LPs* is the average number of LPs that have committed to a fund. Panel B presents a fund-year panel data structure. *Years since fund N is raised* is the number of years from fund N inception year and year t. *Cum. num. E&S incidents* is the average number of incidents from fund inception year until year t. *Buyout multiple* is the year-level aggregate multiple for buyout funds. Panel C presents the an fund N-Fund N+1-LP data structure. D(*LP invest in fund N*) is a dummy indicating one if the LP invests in fund N. *Num. of previous funds an LP has invested* denote the number of funds that an LP invests in the same PE firm before fund N+1 is raised. D(*an LP has invested in previous funds*) is a dummy indicating *Num. of previous funds an LP has invested*>0. *Avg. num .of fund N an LP invests* denotes average number of funds that an LP invest in the sample. Panel D presents the PE firm -year data structure. *Number of ESG employees* is the number of employees with an ESG background at a PE firm in a given year. *Ratio ESG employees* is the ratio of employees with an ESG background to total employees at a PE firm in a given year.

	log(Fund N+1 Size/Fund N Size)					
	(1)	(2)	(3)	(4)	(5)	(6)
log(1 + num. E&S incidents)	-0.073**	-0.077**	-0.083**			
	(0.033)	(0.036)	(0.039)			
Low number of E&S incidents				-0.005	-0.023	-0.035
				(0.037)	(0.034)	(0.036)
High number of E&S incidents				-0.089**	-0.101**	-0.126***
				(0.042)	(0.040)	(0.041)
log(fund N size)	-0.081***	-0.077***	-0.066***	-0.081***	-0.075***	-0.060***
	(0.017)	(0.017)	(0.018)	(0.019)	(0.019)	(0.020)
log(fund N multiple)	0.238***	0.231***	0.212***	0.234***	0.230***	0.211***
	(0.064)	(0.064)	(0.065)	(0.064)	(0.065)	(0.066)
log(fund N series number)	-0.065*	-0.085**	-0.103***	-0.064*	-0.084**	-0.104***
	(0.034)	(0.034)	(0.034)	(0.035)	(0.034)	(0.035)
Fund N Vintage Year × Fund N+1 Vintage Year FE	✓			✓		
PE Region FE	✓			✓		
Fund N Vintage Year × Fund N+1 Vintage Year × PE Region FE		✓	✓		✓	✓
Industry Controls			✓			✓
Observations	505	505	505	505	505	505
R^2	0.45	0.51	0.54	0.45	0.51	0.54

Table 2: **Effect of E&S incidents on relative size of follow-up funds:** This table reports the results of regression of fund size growth on previous fund's E& S incidents. The dependent variable in columns (1)-(6) is the fund size growth defined by $\log(\frac{Size_{N+1}}{Size_N})$, which is committed capital to fund $N+1$ over committed capital to fund N. In columns (1)-(3), $log(1 + num.\, E\&S\, incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. In column (4) -(6), $Low\, E\&S\, incidents$ ($High\, E\&S\, incidents$) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. The omitted category is the ones with no incidents two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. Columns (1) and (4) includes Fund N × Fund $N+1$ vintage year fixed effects and PE Region FE. Columns (2) and (5) includes Fund N × Fund $N+1$ vintage year × PE Region FE fixed effects. In Columns (3) and (6) Industry Controls includes separate controls for the fraction of investments made by fund N in each industry sector one year prior to raising fund $N+1$. Standard errors reported in parentheses are clustered by PE firms and by fund vintage year pairs. * p<.10; ** p<.05; *** p<.01.

	Duration since fund inception			
	(1)	(2)	(3)	(4)
Low cum num. E&S incidents		-0.267**		-0.252**
		(0.118)		(0.120)
High cum num. E&S incidents		-0.362**		-0.352**
		(0.144)		(0.143)
log(1+ cum num. E&S incidents)	-0.509*		-0.463*	
	(0.268)		(0.258)	
log(fund multiple)	0.663***	0.675***	0.676***	0.687***
	(0.133)	(0.134)	(0.135)	(0.135)
log(fund size)	0.284***	0.311***	0.260***	0.288***
	(0.046)	(0.047)	(0.048)	(0.050)
log(buyout multiple)	9.432***	9.956***	9.091***	9.548***
	(1.975)	(2.048)	(1.971)	(2.050)
log(fund series)	-0.043	-0.027	-0.044	-0.029
	(0.102)	(0.101)	(0.103)	(0.102)
Observations	3114	3114	3114	3114
Industry controls	No	No	Yes	Yes

Table 3: **Effect of E&S incidents on the probability of raising a follow-up fund:** This table presents the effect of E&S incidents on the likelihood of raising a follow-up fund. The analysis is done in a fund-year panel, in which each fund exists in the sample until raising a follow-up fund or the sample end. The dependent variable is the hazard rate of raising a follow-up fund in a given year for fund N. In columns (1) and (3) , $log(1 + cum\,num.\,E\&S\,incidents)$ is demeaned log cumulative average number of incidents from fund N inception till year $t-1$. The variable is demeaned by each vintage year of fund, year and PE firm region. In columns (2) and (4), $Low\,cum\,E\&S\,incidents$ ($High\,cum\,E\&S\,incidents$) are dummy variables indicating below (above) below median cumulative average number of incidents from fund N inception till year $t-1$, conditional on any incidents happen in this period. The omitted category is funds with no incidents from fund N inception till year $t-1$.. $log(fund\,size)$ is the natural logarithm of AUM of fund N. $log(fund\,multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\,series)$ is natural logarithm of the sequence number of fund N of a given series. $log(buyout\,multiple)$ is the natural logarithm of overall performance of buyout funds of each year. In columns (3) and (4) we include separate industry controls for the fraction of investments by fund N at $t-1$ in each industry sector. Standard errors reported in parentheses are clustered by fund. * p<.10; ** p<.05; *** p<.01.

Panel A: Intensive Margin

	log(Fund N+1 Size/Fund N Size)							
	(1) Young	(2) Old	(3) Small	(4) Large	(5) Low-perf	(6) High-perf	(7) Low-reputation	(8) High-reputation
Low number of E&S incidents	-0.071 (0.047)	0.030 (0.047)	-0.013 (0.039)	-0.049 (0.056)	-0.081* (0.043)	-0.012 (0.041)	-0.037 (0.048)	-0.031 (0.041)
High number of E&S incidents	-0.149*** (0.054)	-0.073 (0.050)	-0.175*** (0.053)	-0.063 (0.063)	-0.165** (0.070)	-0.103** (0.048)	-0.200*** (0.063)	-0.087* (0.047)
log(fund N size)	-0.063*** (0.020)		-0.062*** (0.021)		-0.062*** (0.020)		-0.062*** (0.020)	
log(fund N multiple)	0.219*** (0.066)		0.207*** (0.066)		0.210*** (0.066)		0.209*** (0.066)	
log(fund N series number)	-0.108*** (0.034)		-0.103*** (0.034)		-0.106*** (0.035)		-0.105*** (0.035)	
Fund N Vintage Year × Fund N+1 Vintage Year × PE Region FE	✓		✓		✓		✓	
Industry Controls	✓		✓		✓		✓	
Observations	505		505		505		505	
R^2	0.54		0.54		0.54		0.54	

Panel B: Extensive Margin

	Duration since fund inception							
	(1) Young	(2) Old	(3) Small	(4) Large	(5) Low-perf	(6) High-perf	(7) Low-reputation	(8) High-reputation
Low cum. number of E&S incidents	-0.447*** (0.155)	0.034 (0.170)	-0.441*** (0.153)	-0.021 (0.172)	-0.492*** (0.161)	0.025 (0.158)	-0.549*** (0.189)	-0.063 (0.148)
High cum. number of E&S incidents	-0.397** (0.161)	-0.184 (0.232)	-0.422** (0.190)	-0.187 (0.195)	-0.714*** (0.221)	0.025 (0.166)	-0.596** (0.251)	-0.160 (0.168)
log(fund N size)	0.269*** (0.056)		0.253*** (0.052)		0.268*** (0.050)		0.258*** (0.052)	
log(fund N multiple)	0.662*** (0.135)		0.663*** (0.135)		0.673*** (0.134)		0.672*** (0.135)	
log(fund N series number)	-0.063 (0.105)		-0.043 (0.102)		-0.070 (0.104)		-0.066 (0.103)	
log(buyout multiple)	9.650*** (2.037)		9.804*** (2.051)		9.876*** (2.035)		9.733*** (2.051)	
Observations	3114		3114		3114		3114	
Industry Controls	✓		✓		✓		✓	

Table 4: **Intensive and Extensive margin effects of E&S incidents for Low and High Reputation PE firms Panel A** reports reports the results of regression of fund size growth on previous fund's E&S incidents splitting the coefficient by different measures of PE firm reputation. The dependent variable in columns (1)-(8) is the fund size growth defined by $\log(\frac{Size_{N+1}}{Size_N})$, which is committed capital to fund $N+1$ over committed capital to fund N. The independent variables *Low E&S incidents* (*High E&S incidents*) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. **Panel B** presents the effect of E&S incidents on the likelihood of raising a follow-up fund. The independent variables are *Low cum E&S incidents* (*High cum E&S incidents*) are dummy variables indicating below (above) below median cumulative average number of incidents from fund N inception till year $t-1$, conditional on any incidents happen in this period. In column (1) Young is a dummy variable equal to 1 if the PE firm is in the bottom three quartiles in terms of the number of funds raise. In column (3) Small is a dummy variable equal to 1 is the PE firm is in the bottom three quartiles in terms of total AUM raise. In column (5) Low-perf is a dummy variable equal to 1 if the PE firm has no top quartile performing funds old more than 5 years one year prior to new fund fundraise. In column (7) Low-reputation is a dummy variable taking on value 1 if the PE firm is Young, Small and Low-pef. Industry Controls includes separate controls for the fraction of investments made by fund N in each industry sector one year prior to raising fund $N+1$. Standard errors reported in parentheses in Panel A are clustered by PE firms and by fund vintage year pairs. Standard errors reported in parentheses in Panel B are clustered by fund. * p<.10; ** p<.05; *** p<.01.

	log(Fund N Multiple)				log(Fund N IRR)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(1 + num. E&S incidents)	0.018	0.028			0.107	0.118*		
	(0.030)	(0.026)			(0.070)	(0.065)		
Low number of E&S incidents			0.022	0.054*			0.100	0.163**
			(0.030)	(0.031)			(0.070)	(0.077)
High number of E&S incidents			-0.033	-0.011			-0.003	0.029
			(0.038)	(0.038)			(0.093)	(0.092)
log(fund N size)		-0.031**		-0.037**		-0.046		-0.062*
		(0.015)		(0.016)		(0.029)		(0.032)
log(fund N series number)		0.017		0.015		-0.006		-0.014
		(0.027)		(0.027)		(0.059)		(0.059)
Fund N Vintage Year × PE Region FE	✓	✓	✓	✓	✓	✓	✓	✓
Industry Controls	✓	✓	✓	✓	✓	✓	✓	✓
Observations	505	505	505	505	455	455	455	455
R^2	0.20	0.21	0.21	0.22	0.28	0.29	0.28	0.29

Table 5: **Association of current fund performance with E&S incidents:** This table reports the results of a regression of fund performance on E& S incidents. The dependent variable in columns (1)-(4) is the fund performance measured by natural logarithm of net multiple of funds. The dependent variable in columns (5)-(8) is the fund performance measured by natural logarithm of the internal rate of return (IRR) of funds. In column (1),(2),(5) and (6), $log(1 + num.\, E\&S\, incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. In column (3), (4), (7) and (8), $Low\, E\&S\, incidents$ ($High\, E\&S\, incidents$) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. The omitted category is the ones with no incidents two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. In all columns we include fund N vintage year × PE Region fixed effect. In all specifications Industry Controls includes separate controls for the fraction of investments made by the fund in each industry sector. Standard errors reported in parentheses are clustered by PE firms. * p<.10; ** p<.05; *** p<.01.

	log(Fund N+1 Multiple)				log(Fund N+1 IRR)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(1 + num. E&S incidents)	-0.060	-0.064			-0.245**	-0.251**		
	(0.044)	(0.045)			(0.096)	(0.097)		
Low number of E&S incidents			-0.030	-0.049			-0.021	0.001
			(0.036)	(0.037)			(0.087)	(0.090)
High number of E&S incidents			-0.047	-0.059			-0.425***	-0.429***
			(0.048)	(0.050)			(0.135)	(0.136)
log(Fund N Multiple)	0.203***	0.211***	0.202***	0.213***				
	(0.071)	(0.072)	(0.072)	(0.072)				
log(Fund N IRR)					0.104	0.100	0.090	0.084
					(0.067)	(0.068)	(0.068)	(0.069)
log(fund N size)		0.022		0.029		-0.018		-0.015
		(0.019)		(0.020)		(0.034)		(0.035)
log(fund N series number)		-0.031		-0.030		-0.029		-0.035
		(0.040)		(0.040)		(0.071)		(0.071)
Fund N Vintage Year × Fund N+1 Vintage Year × PE Region FE	✓	✓	✓	✓	✓	✓	✓	✓
Industry Controls	✓	✓	✓	✓	✓	✓	✓	✓
Observations	424	424	424	424	329	329	329	329
R^2	0.49	0.49	0.49	0.49	0.38	0.39	0.39	0.39

Table 6: **Association of E&S incidents with follow-up performance:** This table reports the results of a regression of follow-up fund performance on E& S incidents of current fund. The dependent variable in columns (1)-(4) is the follow-up fund performance measured by natural logarithm of net multiple of funds. The dependent variable in columns (5)-(8) is the follow-up fund performance measured by natural logarithm of the internal rate of return (IRR) of funds. In column (1),(2),(5) and (6), $log(1 + num.\, E\&S\, incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. In column (3), (4), (7) and (8), $Low\, E\&S\, incidents$ ($High\, E\&S\, incidents$) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. The omitted category is the ones with no incidents two years prior to raising a follow-up fund. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple current fund (fund N), and $log(fund\ N\ IRR)$ is the natural logarithm of IRR of current fund (fund N). $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. All columns include the interaction of Fund vintage year N × Fund $N+1$ vintage year × PE region fixed effects. In all specifications Industry Controls includes separate controls for the fraction of investments made by the fund in each industry sector. Standard errors reported in parentheses are clustered by PE firms. * p<.10; ** p<.05; *** p<.01.

	Dummy(Invest in Fund N+1)				
	(1)	(2)	(3)	(4)	(5)
Relationship LP	0.311***	0.314***	0.311***	0.331***	0.335***
	(0.032)	(0.031)	(0.032)	(0.036)	(0.035)
log(1 + num. E&S incidents)			-0.000	0.002*	
			(0.002)	(0.001)	
Relationship LP × log(1 + num. E&S incidents)				-0.116**	-0.120**
				(0.055)	(0.054)
log(fund N series number)	-0.000		-0.000	0.000	
	(0.001)		(0.001)	(0.001)	
log(fund N size)	0.004***		0.004***	0.004***	
	(0.001)		(0.001)	(0.001)	
log(Fund N Multiple)	0.005***		0.005***	0.005***	
	(0.001)		(0.001)	(0.001)	
Fund N+1 Vintage Year × PE Region × LP FE	✓	✓	✓	✓	✓
Fund N+1 FE		✓			✓
Industry Controls	✓	✓	✓	✓	✓
Observations	1051915	1051915	1051915	1051915	1051915
R^2	0.31	0.31	0.31	0.31	0.31

Table 7: **LP-GP relationship and E&S incidents**. This table reports the results of a regression of the propensity of LP to finance fund $N+1$ and how this propensity changes with the number of E&S incidents. This analysis is done in an LP-fund N data structure. The dependent variable is a dummy variable taking a value 1 if a given LP invests in fund $N+1$ and 0 otherwise. *Relationship LP* is a dummy variable indicating that an LP has invested in other funds of a given PE firm before fund $N+1$ is raised. $log(1+ num.\ E\&S\ incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. In columns (1), (3) and (4) we include Fund $N+1$ vintage year × PE Region × LP fixed effects. In columns (2) and (5) we include Fund $N+1$ vintage year × PE Region × LP fixed effects and Fund $N+1$ fixed effects. Industry Controls includes separate controls for the fraction of investments made by fund N in each industry sector one year prior to raising fund $N+1$ Standard errors reported in parentheses are clustered by PE firms. * p<.10; ** p<.05; *** p<.01.

	Dummy(Invest in Fund N+1)		
	(1)	(2)	(3)
log incidents × Relationship LP, EU	-0.219***		
	(0.071)		
log incidents × Relationship LP, NA	-0.041		
	(0.053)		
log incidents × Relationship LP, Others	-0.143**		
	(0.067)		
log incidents × Relationship LP, Democratic		-0.118**	
		(0.057)	
log incidents × Relationship LP, Republican		-0.034	
		(0.052)	
log incidents × Relationship LP, Private LP			-0.072
			(0.048)
log incidents × Relationship LP, Public LP			-0.252***
			(0.060)
Relationship LP	0.325***	0.358***	0.327***
	(0.035)	(0.036)	(0.036)
log(1 + num. E&S incidents)	0.002**	0.002*	0.002**
	(0.001)	(0.001)	(0.001)
log(fund N series number)	-0.000	0.001	0.000
	(0.001)	(0.001)	(0.001)
log(fund N size)	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)
log(Fund N Multiple)	0.005***	0.006***	0.005***
	(0.001)	(0.002)	(0.001)
Fund N+1 Vintage Year × PE Region × LP FE	✓	✓	✓
Industry Controls	✓	✓	✓
Observations	1051915	636,805	1051915
R^2	0.31	0.32	0.31

Table 8: **Heterogeneity on LP reaction and E&S incidents**. This table reports the results of a regression of the propensity of LP to finance fund $N+1$ and how this propensity changes with the number of E&S incidents. This analysis is done in an LP-fund N data structure. The dependent variable is a dummy variable taking a value 1 if a given LP invests in fund $N+1$ and 0 otherwise. *Relationship LP* is a dummy variable indicating that an LP has invested in other funds of a given PE firm before fund $N+1$ is raised. $log(1 + num.\, E\&S\, incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. $Relationship\, LP, EU$, $Relationship\, LP, NA$, $Relationship\, LP, Other$ are indicators taking a value of 1, if the LP is headquartered in the European Union, North America or in other regions respectively. $Relationship\, LP, Democratic$ and $Relationship\, LP, Republican$ are indicators taking a value of 1 if the LP is headquartered in a Democratic or Republican state respectively. $Relationship\, LP, Public$, $Relationship\, LP, Private$ are indicators taking a value 1 if the LP is Public or Private respectively. In all specifications we include Fund $N+1$ × Vintage Year × PE Region × LP fixed effects. Industry Controls are separate controls for the fraction of investments by fund N at $t-1$ in each industry sector. Standard errors reported in parentheses are clustered by PE firms. * p<.10; ** p<.05; *** p<.01.

	Ratio of ESG employees to total employees			
	(1)	(2)	(3)	(4)
log(1+num. E&S incidents)	0.007*			
	(0.004)			
Low E&S incidents		0.001		
		(0.001)		
High E&S incidents		0.002*		
		(0.001)		
High reputation × log(1+num. E&S incidents)			0.006	
			(0.006)	
Low reputation × log(1+num. E&S incidents)			0.007**	
			(0.003)	
Low E&S incidents × High reputation				-0.001
				(0.001)
High E&S incidents × High reputation				0.002
				(0.002)
Low E&S incidents × Low reputation				0.004*
				(0.002)
High E&S incidents × Low reputation				0.003**
				(0.001)
Year FE	Yes	Yes	Yes	Yes
PE firm FE	Yes	Yes	Yes	Yes
Observations	3466	3466	3466	3466
R^2	0.948	0.948	0.948	0.948

Table 9: **Effect of E&S incidents on ESG Employment.** This tale shows the results of a regression of the ratio of ESG employees to total employees on E&S incidents. The estimation is done on a PE firm - year panel. The dependent variable is the ratio of employees with an ESG background to total employees by each firm in each year. In column (1), $log(1 + num.\,E\&S\,incidents)$ is log of one plus the average number of E&S incidents of the PE firm over the two years prior. In column (2), $Low\,E\&S\,incidents$ ($High\,E\&S\,incidents$) are dummy variables indicating that the PE firm has had an below (above) median average number of incidents (conditional on having incidents) two years prior. In columns (3) and (4) $High\ reputation$ is an indicator taking a value of 1 if the PE firm has had either (i) top performing quartile fund which is more than five years old (ii) is in top quartile in terms of AUM (iii) is in top quartile in terms of the number of funds raised in the past. $Low\ reputation$ is defined as the complement of $High\ reputation$. In all specifications we include PE firm and Year fixed effects. Standard errors reported in parentheses are clustered by PE firm. * p<.10; ** p<.05; *** p<.01.

	log(fund N+1 incidents/fund N incidents)		D(Decrease Incidents)	
	(1)	(2)	(3)	(4)
log(1 + num. E&S incidents)	-2.048***		0.906***	
	(0.666)		(0.287)	
Low number of E&S incidents		-0.166		0.014
		(0.264)		(0.129)
High number of E&S incidents		-1.353***		0.631***
		(0.478)		(0.193)
log(fund N+1 size/fund N size)	0.112	0.140	-0.040	-0.057
	(0.301)	(0.286)	(0.165)	(0.159)
log(fund N size)	0.159	0.074	0.035	0.089
	(0.163)	(0.191)	(0.092)	(0.093)
log(fund N multiple)	-0.094	-0.110	0.053	0.079
	(0.525)	(0.548)	(0.261)	(0.255)
log(fund N series number)	-0.002	-0.037	-0.094	-0.085
	(0.303)	(0.321)	(0.142)	(0.143)
Fund N Vintage Year × Fund N+1 Vintage Year × PE Region FE	✓	✓	✓	✓
Industry Controls	✓	✓	✓	✓
Observations	112	112	112	112
R^2	0.38	0.38	0.45	0.46

Table 10: **E&S incidents and follow-up funds and current funds:** This table shows the result of regressing ratio of incidents between fund N+1 and fund N on incidents on fund N. In columns (1) and (2), the dependent variable is the log ratio of number of incidents in fund N+1 to number of incidents in fund N, defined as, $log(1+num.\,E\&S\,incidents\,fund\,N+1)/log(1+num.\,E\&S\,incidents\,fund\,N+1))$. In columns (3) and (4), the dependent variable is a dummy variable indicating taking a value of 1 if the number of incidents of fund N+1 is smaller than fund N. In columns (1) and (3), $log(1+num.\,E\&S\,incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. In columns (2) and (4), $Low\,E\&S\,incidents$ ($High\,E\&S\,incidents$) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. The omitted category is the ones with no incidents two years prior to raising a follow-up fund. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple current fund (fund N). $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. All columns include the interaction of Fund vintage year N × Fund $N+1$ vintage year × PE region fixed effects. Industry controls includes separate controls for the fraction of investments made by fund N in each industry sector one year prior to raising fund $N+1$ Standard errors reported in parentheses are clustered by PE firms. * p<.10; ** p<.05; *** p<.01.

Appendix

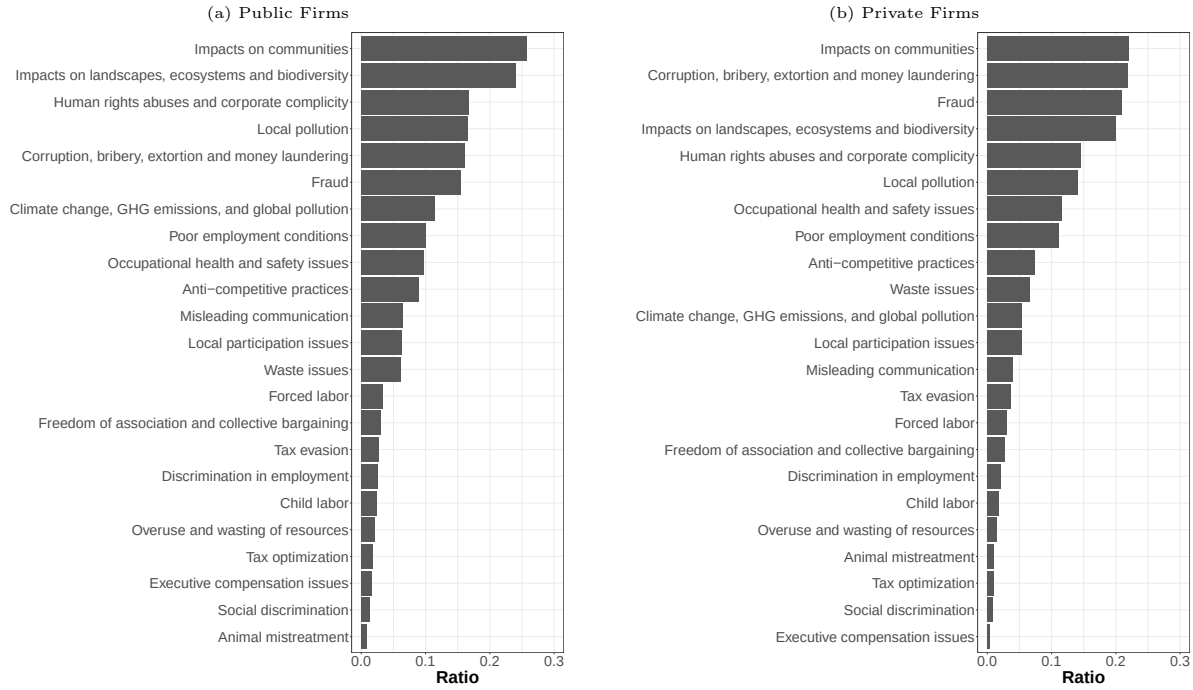


Figure A1: **Distribution of ESG issues**: This figure plots the distribution of ESG issues for public and private firms. Note that one incident can be associated with multiple issues so the distribution does not sum to 1. The y-axis shows the issue names and x-axis is the ratio of incidents related to a particular issue our of total incidents. Subfigure (a) plots the distribution for public firms and subfigure (b) plots the distribution for private firms.

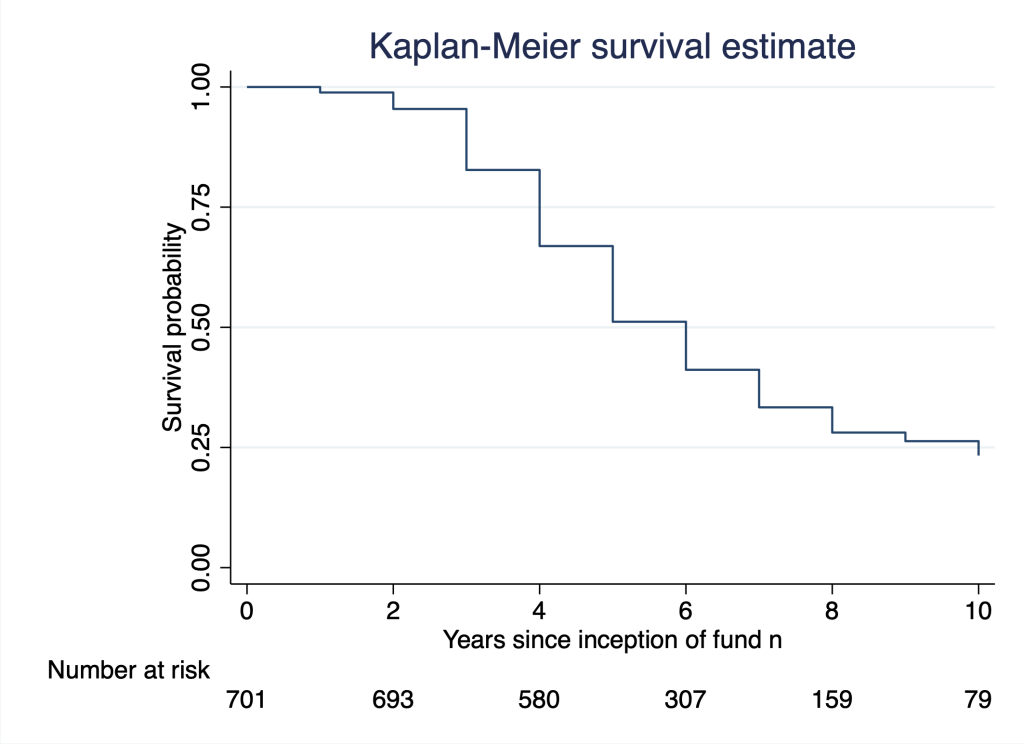


Figure A2: **Kaplan-Meier survival probability:** The figure depicts the survival probability, the probability that a follow-up fund has not been raised by years since fund N is raised. Number at risk represents the number of funds at risk, i.e., the number of funds that have not yet raised a follow-up fund and have not been censored.

	log(Fund N+1 Size/Fund N Size)					
	(1)	(2)	(3)	(4)	(5)	(6)
log(1 + num. E&S incidents) in year $[t-1, t-1]$	-0.086**					
	(0.037)					
log(1 + num. E&S incidents) in year $[t-2, t-1]$		-0.083**				
		(0.039)				
log(1 + num. E&S incidents) in year $[t-3, t-1]$			-0.079**			
			(0.039)			
log(1 + num. E&S incidents) in year $[t-4, t-1]$				-0.073*		
				(0.038)		
log(1 + num. E&S incidents) in year $[t-5, t-1]$					-0.068*	
					(0.038)	
log(1 + num. E&S incidents) in year $[t-6, t-1]$						-0.068*
						(0.038)
log(fund N size)	-0.063***	-0.066***	-0.066***	-0.067***	-0.067***	-0.067***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
log(fund N multiple)	0.211***	0.212***	0.211***	0.211***	0.211***	0.211***
	(0.065)	(0.065)	(0.065)	(0.066)	(0.066)	(0.066)
log(fund N series number)	-0.105***	-0.103***	-0.104***	-0.103***	-0.103***	-0.103***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Fund N Vintage Year × Fund N+1 Vintage Year × PE Region FE	✓	✓	✓	✓	✓	✓
Industry Controls	✓	✓	✓	✓	✓	✓
Observations	499	505	505	505	505	505
R^2	0.52	0.54	0.54	0.54	0.54	0.54

Table A1: **Effect of E&S incidents on relative size of follow-up funds, with different horizon to accumulate incidents:** This table reports the results of regression of fund size growth on previous fund's E& S incidents by varying the window to accumulate incidents. The dependent variable in columns (1)-(6) is the fund size growth defined by $\log(\frac{Size_{N+1}}{Size_N})$, which is committed capital to fund $N+1$ over committed capital to fund N. $log(1 + num.\, E\&S\, incidents)$, $[t-s, t-1]$ indicates log of one plus the average number of E&S incidents of the previous fund (fund N) in the s years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of size of fund N. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. All columns include the interaction of Fund vintage year N × Fund $N+1$ vintage year × PE region fixed effects. Industry Controls includes separate controls for the fraction of investments made by fund N in each industry sector one year prior to raising fund $N+1$. Standard errors reported in parentheses are clustered by PE firms and by fund vintage year pairs. * p<.10; ** p<.05; *** p<.01.

	log(Fund N+1 Size/Fund N Size)					
	(1)	(2)	(3)	(4)	(5)	(6)
log(1 + num. E&S incidents)	-0.077**	-0.083**	-0.085**			
	(0.036)	(0.040)	(0.041)			
Low number of E&S incidents				-0.019	-0.036	-0.047
				(0.035)	(0.033)	(0.038)
High number of E&S incidents				-0.095**	-0.112**	-0.126***
				(0.045)	(0.044)	(0.046)
log(fund N size)	-0.072***	-0.072***	-0.064***	-0.070***	-0.068***	-0.057***
	(0.017)	(0.018)	(0.018)	(0.019)	(0.019)	(0.020)
log(fund N IRR)	0.069**	0.059**	0.050*	0.068**	0.059**	0.049*
	(0.033)	(0.028)	(0.029)	(0.033)	(0.028)	(0.029)
log(fund N series number)	-0.066*	-0.083**	-0.097**	-0.066	-0.082**	-0.098**
	(0.040)	(0.037)	(0.037)	(0.040)	(0.038)	(0.038)
Fund N Vintage Year × Fund N+1 Vintage Year FE	✓			✓		
PE Region FE	✓			✓		
Fund N Vintage Year × Fund N+1 Vintage Year × PE Region FE		✓	✓		✓	✓
Industry Controls			✓			✓
Observations	456	456	456	456	456	456
R^2	0.43	0.50	0.53	0.43	0.50	0.53

Table A2: **Effect of E&S incidents on relative size of follow-up funds: Sample with IRR performance measure** This table reports the results of regression of fund size growth on previous fund's E& S incidents. The dependent variable in columns (1)-(6) is the fund size growth defined by $\log(\frac{Size_{N+1}}{Size_N})$, which is committed capital to fund $N+1$ over committed capital to fund N. In columns (1)-(3), $log(1 + num.\, E\&S\, incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. In column (4) -(6), $Low\, E\&S\, incidents$ ($High\, E\&S\, incidents$) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. The omitted category is the ones with no incidents two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of size of fund N. $log(fund\ N\ IRR)$ is the natural logarithm of IRR of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. Columns (1) and (4) include Fund N × Fund $N+1$ vintage year fixed effects and PE Region FE. Columns (2) and (5) includes Fund N × Fund $N+1$ vintage year × PE Region FE fixed effects. In columns (3) and (6) Industry Controls includes separate controls for the fraction of investments made by fund N in each industry sector one year prior to raising fund $N+1$. Standard errors reported in parentheses are clustered by PE firms and by fund vintage year pairs. * p<.10; ** p<.05; *** p<.01 * p<.10; ** p<.05; *** p<.01.

	log(Fund N+1 Size/Fund N Size)					
	(1)	(2)	(3)	(4)	(5)	(6)
log(1 + num. G incidents)	0.009	0.015	0.030			
	(0.043)	(0.048)	(0.046)			
Low number of G incidents				0.056	0.043	0.052
				(0.041)	(0.040)	(0.038)
High number of G incidents				0.003	0.014	0.038
				(0.066)	(0.064)	(0.058)
log(fund N size)	-0.083***	-0.080***	-0.069***	-0.089***	-0.085***	-0.076***
	(0.017)	(0.017)	(0.018)	(0.019)	(0.019)	(0.019)
log(fund N multiple)	0.238***	0.232***	0.211***	0.236***	0.230***	0.209***
	(0.064)	(0.065)	(0.066)	(0.062)	(0.064)	(0.065)
log(fund N series number)	-0.062*	-0.083**	-0.100***	-0.056	-0.079**	-0.095***
	(0.034)	(0.033)	(0.034)	(0.036)	(0.034)	(0.035)
Fund N Vintage Year × Fund N+1 Vintage Year FE	✓			✓		
PE Region FE	✓			✓		
Fund N Vintage Year × Fund N+1 Vintage Year × PE Region FE		✓	✓		✓	✓
Industry Controls			✓			✓
Observations	505	505	505	505	505	505
R^2	0.45	0.51	0.54	0.45	0.51	0.54

Table A3: **Effect of G incidents on relative size of follow-up funds:** This table reports the results of regression of fund size growth on previous fund's G incidents. The dependent variable in columns (1)-(6) is the fund size growth defined by $\log(\frac{Size_{N+1}}{Size_N})$, which is committed capital to fund $N+1$ over committed capital to fund N. In columns (1)-(3), $log(1 + num.\,G\,incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. In column (4) -(6), $Low\,G\,incidents$ ($High\,G\,incidents$) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. The omitted category is the ones with no incidents two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of size of fund N. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. Columns (1) and (4) include Fund N × Fund $N+1$ vintage year fixed effects and PE Region FE. Columns (2) and (5) includes Fund N × Fund $N+1$ vintage year × PE Region FE fixed effects. In columns (3) and (6) Industry Controls includes separate controls for the fraction of investments made by fund N in each industry sector one year prior to raising fund $N+1$. Standard errors reported in parentheses are clustered by PE firms and by fund vintage year pairs. * p<.10; ** p<.05; *** p<.01.

	Duration since fund inception			
	(1)	(2)	(3)	(4)
Low cum num. G incidents		-0.045 (0.129)		-0.049 (0.130)
High cum num. G incidents		-0.044 (0.145)		-0.078 (0.149)
log(1+ cum num. G incidents)	-0.016 (0.251)		-0.094 (0.262)	
log(fund multiple)	0.662*** (0.133)	0.662*** (0.133)	0.675*** (0.135)	0.676*** (0.135)
log(fund size)	0.269*** (0.045)	0.274*** (0.047)	0.246*** (0.047)	0.253*** (0.050)
log(buyout multiple)	9.500*** (1.965)	9.602*** (1.981)	9.120*** (1.967)	9.246*** (1.986)
log(fund series)	-0.043 (0.102)	-0.043 (0.102)	-0.045 (0.104)	-0.045 (0.104)
Observations	3114	3114	3114	3114
Industry controls	No	No	Yes	Yes

Table A4: **Effect of G incidents on the probability of raising a follow-up fund:** This table presents the effect of G incidents on the likelihood of raising a follow-up fund. The analysis is done in a fund-year panel, in which each fund exists in the sample until raising a follow-up fund or the sample end. The dependent variable is the hazard rate of raising a follow-up fund in a given year for fund N. In columns (1) and (3) , $log(1 + cum\,num.\,G\,incidents)$ is demeaned log cumulative average number of incidents from fund N inception till year $t-1$. The variable is demeaned by each vintage year of fund, year and PE firm region. In columns (2) and (4), $Low\,cum\,G\,incidents$ ($High\,cum\,G\,incidents$) are dummy variables indicating below (above) below median cumulative average number of incidents from fund N inception till year $t-1$, conditional on any incidents happen in this period. The omitted category is funds with no incidents from fund N inception till year $t-1$.. $log(fund\,size)$ is the natural logarithm of AUM of fund N. $log(fund\,multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\,series)$ is natural logarithm of the sequence number of fund N of a given series. $log(buyout\,multiple)$ is the natural logarithm of overall performance of buyout funds of each year. In columns (3) and (4) we include separate industry controls for the fraction of investments by fund N at $t-1$ in each industry sector. Standard errors reported in parentheses are clustered by fund. * p<.10; ** p<.05; *** p<.01.

	USD (Mill.) committed to a fund			log(USD committed to a fund)		
	(1)	(2)	(3)	(4)	(5)	(6)
Relationship LP	36.512*** (3.596)	27.613*** (2.703)	14.834*** (1.731)	0.583*** (0.040)	0.350*** (0.025)	0.166*** (0.017)
Vintage Year × PE Region FE	✓			✓		
Vintage Year × PE Region × LP FE		✓	✓		✓	✓
Fund FE			✓			✓
Observations	16,139	13,195	12,230	16,139	13,195	12,230
R^2	0.11	0.66	0.79	0.17	0.80	0.90

Table A5: **Association of LP relationships and size of Capital Commitment** This table reports the results of a regression of LP - fund commitment on whether the LP is a Relationship LP. The dependent variable is the amount in USD (Mill) committed by a given LP to a given fund. $Relationship\,LP$ is a dummy variable indicating that an LP has invested in other funds of a given PE firm before fund $N+1$ is raised. In columns (1) and (4) we include Vintage Year × PE Region FE. In columns (2) and (5) we include Vintage Year × PE Region FE × LP fixed effects. In columns (3) and (6) we include Vintage Year × PE Region FE × LP fixed effects and Fund fixed effect. Standard errors are clustered by PE firms. * p<.10; ** p<.05; *** p<.01.

	Dummy(Invest in Fund N+1)		
	(1)	(2)	(3)
Low number of E&S incidents	-0.003***	-0.001	
	(0.001)	(0.001)	
High number of E&S incidents	-0.001	0.002	
	(0.001)	(0.001)	
Low number of E&S incidents × Relationship LP		-0.106***	-0.107***
		(0.023)	(0.023)
High number of E&S incidents × Relationship LP		-0.103***	-0.104***
		(0.027)	(0.027)
Relationship LP	0.311***	0.363***	0.367***
	(0.032)	(0.037)	(0.036)
log(fund N series number)	0.000	0.000	
	(0.001)	(0.001)	
log(fund N size)	0.005***	0.004***	
	(0.001)	(0.001)	
log(Fund N Multiple)	0.007***	0.007***	
	(0.001)	(0.001)	
Fund N+1 Vintage Year × PE Region × LP FE	✓	✓	✓
Fund N+1 FE			✓
Observations	1051915	1051915	1051915
R^2	0.31	0.31	0.32

Table A6: **LP-GP Relationship and ESG Incidents** This table reports the results of a regression of the propensity of LP to finance fund $N+1$ and how this propensity changes with the number of E&S incidents. This analysis is done in an LP-fund N data structure. The dependent variable is a dummy variable taking a value 1 if a given LP invests in fund $N+1$ and 0 otherwise. *Relationship LP* is a dummy variable indicating that an LP has invested in other funds of a given PE firm before fund $N+1$ is raised. *Low E&S incidents* (*High E&S incidents*) are dummy variables indicating fund N has had an below (above) median average number of incidents (conditional on having incidents) two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. In columns (1) and (2) we include Fund $N+1$ vintage year × PE Region × LP fixed effects. In column (3) we include Fund $N+1$ vintage year × PE Region × LP fixed effects and Fund $N+1$ fixed effects. Standard errors reported in parentheses are clustered by PE firms and by fund vintage year pairs. * p<.10; ** p<.05; *** p<.01.

	Dummy(Invest in Fund N+1)				
	(1)	(2)	(3)	(4)	(5)
Relationship LP	0.378***	0.383***	0.378***	0.397***	0.403***
	(0.030)	(0.028)	(0.030)	(0.034)	(0.032)
log(1 + num. E&S incidents)			-0.001	0.005	
			(0.005)	(0.004)	
Relationship LP × log(1 + num. E&S incidents)				-0.114*	-0.120**
				(0.059)	(0.056)
log(fund N series number)	0.001		0.001	0.001	
	(0.003)		(0.003)	(0.003)	
log(fund N size)	0.012***		0.012***	0.012***	
	(0.002)		(0.002)	(0.002)	
log(Fund N Multiple)	0.018***		0.018***	0.018***	
	(0.004)		(0.004)	(0.004)	
Fund N+1 Vintage Year × PE Region × LP FE	✓	✓	✓	✓	✓
Fund N+1 FE		✓			✓
Observations	352,983	352,983	352,983	352,983	352,983
R^2	0.32	0.33	0.32	0.32	0.33

Table A7: **LP-GP relationship and E&S incidents, robustness to active LP sample:**. This table reports the results of a regression of the propensity of LP to finance fund $N+1$ and how this propensity changes with the number of E&S incidents. This analysis is done in an LP-fund N data structure. This sample is conditional on LP who invests in at least one fund in a given year. The dependent variable is a dummy variable taking a value 1 if a given LP invests in fund $N+1$ and 0 otherwise. *Relationship LP* is a dummy variable indicating that an LP has invested in other funds of a given PE firm before fund $N+1$ is raised. $log(1+num.\ E\&S\ incidents)$ is log of one plus the average number of E&S incidents of the previous fund (fund N) in the two years prior to raising a follow-up fund. $log(fund\ N\ size)$ is the natural logarithm of AUM of fund N. $log(fund\ N\ multiple)$ is the natural logarithm of net multiple of fund N. $log(fund\ N\ series)$ is natural logarithm of the sequence number of fund N of a given series. In columns (1) - (5) we include Fund $N+1$ vintage year × PE Region × LP fixed effects. In columns (2) and (5) we include Fund $N+1$ vintage year × PE Region × LP fixed effects and Fund $N+1$ fixed effects. Standard errors reported in parentheses are clustered by PE firms. * p<.10; ** p<.05; *** p<.01.