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Article

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Does the disclosure of ESG information by private equity firms impact the success of their fundraising efforts?

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Abstract

This study examines the impact of private equity fund managers' (GPs') ESG disclosure on fundraising. To this end, a sample of global private equity and venture capital funds that completed fundraising between 2020 and 2022 is employed. Our findings indicate that an increase in ESG disclosure by GPs is associated with an increase in fundraising. This indicates that GPs' ESG disclosure diminishes information asymmetry and has a favorable impact on fundraising. Conversely, the level of ESG disclosure among limited partners (LPs) has no significant impact on the relationship between GPs' ESG disclosure level and fundraising. The findings of this study have significant implications for private equity stakeholders, including GPs, given the current context of declining investment demand due to rising interest rates, recessionary concerns, poor performance and tighter regulations on private equity management. In this environment, ESG disclosure is becoming increasingly challenging for private equity firms to utilize as a fundraising strategy.

Keywords Private equity, ESG, Disclosure, Fundraising

Paper type Research paper

1. Introduction

The growth of global private equity assets under management (AUM) has been substantial over the past decade, with a compound annual growth rate of approximately 10%. By the end of 2020, the value of these assets had reached \$4.4 trillion, and projections indicate that it will reach \$9 trillion by 2025 (Joyce, 2020). Moreover, there has been a notable surge in interest among market participants in ESG investing across various capital markets, including domestic and international private markets. Since the release of the United Nations' Principles for Responsible Investment (UN PRI) in 2006, the number of investment organizations that have signed on to ESG initiatives, including the UN PRI, has continued to grow. As a result, ESG has emerged as an underwriting criterion for investors in the private equity market. The number of investors who are actively incorporating ESG considerations

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into their investment decisions through ESG due diligence has increased, and the number of private equity funds pursuing impact investing strategies continues to grow.

Notwithstanding the accelerated expansion of the global private equity market and the heightened interest of investors in ESG, the disclosure of ESG-related information by private equity funds has been markedly constrained. This is due to the fact that private equity funds are exempt from disclosure obligations on account of their private nature. However, in recent years, there has been a growing discourse on ESG disclosure and disclosure by private equity firms at the global level, both in the academic and policy spheres (Krueger *et al.*, 2020; Christensen *et al.*, 2021; Serafeim and Yoon, 2022). Notably, the European Union and the United States have enacted specific legislation aimed at preventing greenwashing by private equity firms. For instance, the EU's Sustainable Finance Disclosure Regulation (SFDR), which took effect on March 10, 2021, mandates that all funds within the EU, including private equity funds, must disclose on their websites information regarding the sustainability risks associated with their investments and the impact of those investments on society and the planet. Furthermore, the U.S. Securities and Exchange Commission (SEC) has enacted the Names Rule.

To date, the majority of academic research on ESG disclosure has concentrated on public markets based on ESG ratings issued by ESG rating agencies (e.g. Darendeli *et al.*, 2022; Fiechter *et al.*, 2022; Rajgopal and Tantri, 2023; Krueger *et al.*, 2023). In contrast, despite the rapid growth of the private equity market and investor interest in ESG, there is a paucity of research on ESG disclosure in private equity. Recent studies by Abraham *et al.* (2022), Ceccarelli *et al.* (2023), and Boni *et al.* (2022) have sought to ascertain whether ESG disclosure in the private equity market is associated with ESG activities and to identify the factors that influence ESG disclosure.

This study examines the multifaceted effects of ESG disclosure on the private equity market, with a particular emphasis on fundraising. In private equity funds that are not subject to disclosure obligations, ESG disclosure by general partners (GPs) [1] is necessary to facilitate the analysis presented in this study. In order to ensure clarity and consistency in the presentation of findings, it is essential to define the following terms. The investors who provide capital to a private equity fund are designated as limited partners (LPs), while the private equity firm bearing responsibility for the fund's operational management and assuming liabilities exceeding the contributed amount is referred to as a general partner (GP).

It reduces information asymmetry between stakeholders and lowers monitoring costs for LPs and the ESG-related risks potentially faced by investors. Furthermore, ESG disclosure can enhance investor confidence and stimulate increased investor demand, as it offers greater transparency regarding compliance. Conversely, in private markets, limited partners (LPs) are classified as "accredited investors," affording them access to confidential information regarding the GP's investment activities. Consequently, ESG disclosures may not represent novel information for LPs to utilize in their investment decision-making processes. Furthermore, the motivation behind GPs' ESG disclosures may extend beyond the reduction of information asymmetry to encompass regulatory compliance and the mitigation of litigation concerns and related costs. In such a case, it can be posited that the ESG disclosures of GPs in private markets may not exert any influence on the investment decisions of LPs. In light of these considerations, this study aims to empirically assess whether the extent of ESG disclosure by GPs in private equity funds influences the fundraising capabilities of GPs.

Regression analysis reveals that higher levels of ESG disclosure by GPs lead to improved fundraising outcomes. This indicates that GPs who actively manage ESG factors are positively evaluated by LPs, resulting in the attraction of more capital. In contrast, the level of ESG disclosure by LPs does not significantly influence the relationship between GP's ESG

disclosure and fundraising. This suggests that some LPs might be engaging in greenwashing, publicly claiming to adopt ESG practices more for marketing purposes rather than genuine sustainable investment actions.

The contributions of this study are as follows: First, it extends recent research on ESG disclosure in the private market. [Abraham et al. \(2022\)](#) use ESG-related terms from GPs' past websites as a measure of voluntary ESG disclosure and argue that higher levels of voluntary ESG disclosure by GPs are associated with pursuing ESG-conscious investment strategies and higher levels of ESG activities. [Ceccarelli et al. \(2023\)](#) utilize the UN PRI's Reporting & Assessment (R&A) score as a measure of ESG disclosure and find that GPs with higher ESG disclosure levels receive more inflows from mutual funds. Lastly, [Boni et al. \(2022\)](#) analyze the determinants of ESG disclosure decisions by GPs using the Preqin ESG Transparency database. Our study differs from prior research by examining how ESG disclosure affects the core activity of GPs in the private market: fundraising.

Second, this study provides additional evidence on the factors influencing fundraising in private equity funds. Prior research on fundraising has identified several key characteristics of GPs that significantly impact fundraising, including GP's reputation, investment experience, past fund performance, experience with initial public offerings (IPOs), and misconduct ([Gompers and Lerner, 1998](#); [Gompers et al., 1998](#); [Cumming et al., 2005](#); [Chung et al., 2012](#); [Hochberg et al., 2014](#); [Barber and Yasuda, 2017](#); [Jiang et al., 2023](#)). Our study differs from previous research by linking the level of ESG disclosure to fundraising among various GP characteristics. The most similar study to ours, [Campbell et al. \(2023\)](#), finds that higher levels of environmental disclosure in Form ADV reduce the likelihood of GPs raising new funds.

This study addresses a highly timely topic, given the growing concerns about greenwashing. Additionally, in the current macroeconomic environment characterized by decreased investment demand due to rising interest rates, economic recession and poor performance caused by the pandemic, and strengthened regulations on private equity fund operations, this study is expected to provide meaningful insights for GPs and other stakeholders in private equity funds. Effective disclosure systems are crucial for accurately assessing the risks and opportunities arising from sustainability concerns in financial markets. Therefore, by examining the impact of ESG disclosure in the opaque investment environment of private equity funds, our study aims to enhance transparency in the private equity market and help allocate capital more efficiently to ESG investments.

2. Literature review and hypothesizing

2.1 ESG disclosure effects and determinants

Recently, ESG disclosure has emerged as a significant topic from the perspectives of policymakers (EU, SEC) and investment practitioners ([Krueger et al., 2022](#)). Through disclosed ESG information, market participants can identify potential risks and opportunities arising from sustainability issues. Consequently, the ESG reporting systems of companies in major countries are improving, and the number of countries mandating ESG information disclosure is increasing. The academic field has also shown considerable interest in ESG disclosure for a long time, and numerous studies focus on its effects. [Dhaliwal et al. \(2011\)](#) find that voluntary ESG disclosure reduces a firm's cost of capital. [Matsumura et al. \(2014\)](#) and [Grewal et al. \(2019\)](#) demonstrate the effects of greenhouse gas emissions disclosure on stock markets. [Christensen et al. \(2021\)](#) review various prior studies and confirm the effects of ESG disclosure on aspects such as cost of capital, asset prices (stock prices), decision-making, and liquidity.

Disclosure is crucial as it helps resolve information asymmetry between two economic agents. While previous research focuses on corporate disclosure from the shareholders' perspective, recent ESG disclosures attract attention in the capital market as a means to address

information asymmetry between institutional investors and clients, or asset owners and managers (LP and GP). Unlike the past focus on corporate social responsibility (CSR), which emphasizes corporate actions, ESG originates from investors aiming to enhance long-term returns. The following are prior studies on the effects of ESG disclosure between LPs and GPs.

[Abraham et al. \(2022\)](#) find that GPs are more likely to engage in voluntary ESG disclosure when their portfolios are exposed to countries mandating ESG reporting, with UN PRI signatories disclosing more compared to non-signatories, especially leading up to fundraising. [Boni et al. \(2022\)](#) similarly examine GPs managing global private equity and debt funds, showing that ESG disclosure levels in private markets are generally lower than in public markets, with disclosure influenced by factors like GP size, listing status, experience, fundraising activity, and portfolio company ESG characteristics. [Hartzmark and Sussman \(2019\)](#) provide evidence from the U.S. mutual fund market that investors prefer high-sustainability funds, resulting in over \$24 billion in net inflows, though there is no performance advantage for high-sustainability funds. [Ceccarelli et al. \(2023\)](#) further demonstrate that institutions with higher UN PRI Reporting & Assessment (R&A) scores attract more assets from mutual fund investors.

2.2 Determinants of fundraising

Numerous prior studies analyze the factors determining fundraising in private equity investments. For instance, extreme market regulations negatively impact fundraising ([Cumming and Zambelli, 2013](#)), and there is a positive relationship between stock market performance and private equity fundraising ([Huson et al., 2009](#)), indicating that market factors are major determinants of fundraising. Other literature ([Gompers and Lerner, 1998](#); [Gompers et al., 1998](#); [Cumming et al., 2005](#)) reports that GP's reputation, investment experience, past performance, and IPO experience significantly influence fundraising. Additionally, prior research shows that the interim performance of private equity funds affects the fundraising of follow-on funds ([Chung et al., 2012](#); [Hochberg et al., 2014](#); [Barber and Yasuda, 2017](#)), and GP's ability to meet performance targets impacts new fundraising ([Lerner et al., 2007](#)). Moreover, studies find that GP's investment stage, location, and expertise in specific industries or sectors significantly affect fundraising speed ([Gejadze et al., 2017](#)). Collectively, these studies suggest that both market factors and GP characteristics influence fundraising.

In the U.S., under the Dodd-Frank Act, GPs have been required to disclose information about individual funds in Form ADV since 2012, and the SEC recently allowed online access to this information without a Freedom of Information Act request. Consequently, research on the impact of Form ADV disclosures on private equity fundraising has begun. [Campbell et al. \(2023\)](#) find that higher levels of environmental disclosures reduce the likelihood of raising new funds, attributing this to the negative tone linked to ESG risks. [Jiang et al. \(2023\)](#) show that misconduct disclosures decrease both the likelihood and size of new funds, while [Gaver et al. \(2023\)](#) report no significant impact of financial reporting disclosures on new fund formation.

2.3 Research hypothesis

Disclosure mitigates information asymmetry between capital seekers and providers in the capital market, enabling the efficient allocation of resources in the economy ([Ross, 1973](#); [Jensen and Meckling, 1976](#)). In private equity, GPs have more information about investment targets than LPs, who have limited information. Given the structural peculiarities, opacity, and illiquidity of private equity, LPs utilize as much information as possible during due diligence and screening processes to make investment decisions. Therefore, ESG disclosure by GPs is expected to contribute to more efficient capital

allocation by resolving information asymmetry between GPs and LPs aiming to allocate capital to ESG investments.

Private equity investments are long-term and illiquid, making ESG factors critical risks that LPs need to actively manage. Additionally, since one of the main exit strategy in private equity is an IPO [2] and given the global trend towards mandatory ESG disclosure for listed companies, ESG can also represent an opportunity for private equity firms that are actively involved in portfolio company management. Therefore, signals that a GP is actively managing ESG factors can create a favorable impression among LPs and increase the likelihood of attracting more capital from global LPs focused on sustainable investments.

The trend of PRI signatories shows that asset owners and LPs interested in ESG investments are steadily increasing. Although ESG disclosure regulations primarily target large listed companies (Christensen *et al.*, 2021; Krueger *et al.*, 2022), GPs must compete with public markets to attract investments from global institutional investors allocating assets across both private and public markets (Minnis, 2022). While GPs are not required to disclose their ESG activities, their level of ESG disclosure is gradually increasing (Abraham *et al.*, 2022). In this context, active ESG disclosure by GPs is expected to provide more information to LPs, reduce information asymmetry, and ultimately have a positive impact on capital raising.

Conversely, unlike public market investors, LPs in private equity have the ability to access internal information about GPs' investment activities as "Accredited Investors," which may result in different disclosure effects compared to public markets (Borysoff *et al.*, 2024). LPs are sophisticated and informed investors who can actively resolve information asymmetry when necessary (Gaver *et al.*, 2023). This is why the SEC applies limited disclosure requirements in private markets, unlike public markets. Additionally, ESG disclosure by GPs may be motivated more by regulatory compliance or reducing litigation risks and costs than by mitigating information asymmetry. For instance, Cazier *et al.* (2021) find that lengthy and boilerplate disclosures about risk factors benefit the disclosing firms rather than investors in litigation contexts.

Summarizing the above, ESG disclosure by GPs may facilitate fundraising but may also have no impact. Therefore, this study sets the following null hypothesis.

H1. The level of ESG disclosure by GPs will not affect fundraising.

Meanwhile, examining the trend of UN PRI signatories reveals that asset owners have been leading responsible investment in the capital market, while GPs have followed suit to meet the demands of investors allocating capital to ESG investments (Noh, 2022) [3]. Ceccarelli *et al.* (2023) confirm this phenomenon in mutual funds, finding that mutual fund investors allocate more assets to institutional investors with excellent ESG practices. They also observe that PRI signatories with high ESG scores tend to invest in companies with good ESG performance. This suggests that ESG disclosure enables efficient resource allocation in the market by directing responsible investment capital to GPs integrating ESG factors into their investment decisions. If LPs genuinely committed to responsible investment allocate more funds to ESG-active GPs, GPs with higher ESG disclosure levels are expected to receive more investments from LPs with high ESG disclosure levels.

However, recent empirical studies on public markets (Gibson Brandon *et al.*, 2022; Kim and Yoon, 2023) suggest that institutional investors tend to exaggerate their ESG activities. Some investors may claim to consider ESG factors in their investments through ESG disclosures, but in reality, engage in greenwashing for promotional or political reasons. Therefore, considering the possibility of greenwashing by LPs, the level of ESG disclosure by

LPs may not affect the relationship between GP's ESG disclosure and fundraising. Hence, the second null hypothesis is set as follows.

- H2.* The relationship between GP's ESG disclosure level and fundraising will not differ based on the ESG disclosure level of LPs.

3. Research methodology

3.1 Measuring variables

In this study, we measure the ESG disclosure levels of GPs and LPs using Preqin's ESG transparency metrics. Preqin is a leading provider of alternative investment data, offering information on private equity, hedge funds, real estate, infrastructure, and natural resource investments, as well as detailed profiles of GPs and LPs. Preqin's ESG transparency metrics are based on key ESG initiatives and organizations such as the PRI, the Sustainability Accounting Standards Board (SASB), the Institutional Limited Partnership Association (ILPA), and the Task Force on Climate-Related Financial Disclosures (TCFD). These metrics are designed with considerations of redundancy, representativeness, relevance to the private markets, and measurability.

The ESG transparency for GPs consists of 37 indicators, while for LPs it comprises 12 indicators, reflecting the extent of external disclosure on critical ESG issues. Thus, a higher ESG transparency score indicates a greater level of transparency in disclosing key ESG issues. Preqin's ESG transparency score ranges from 0 to 100, and for analysis purposes, these scores are normalized to a scale between 0 and 1.

$$\text{ESG Disclosure} = \frac{\text{ESG core data disclosure}}{\text{Total ESG core data points}}$$

Fundraising is an essential activity for private equity funds (Cumming *et al.*, 2005), involving the process by which GPs raise capital from LPs. During the fundraising process, GPs provide potential LPs with information about the fund's investment objectives, strategies, and managers. In turn, LPs conduct due diligence on the GP, negotiate investment terms such as the amount of capital to be invested, investment period, fees, and expenses related to the fund, and decide whether to commit their capital (Gejadze *et al.*, 2017). Once the fundraising is completed (closing), GPs issue capital calls to LPs within the committed amount, and LPs provide the funds for actual investments. Fundraising typically depends on various factors, including the size of the fund, investment strategy, GP's reputation and track record, and macroeconomic conditions. Completing the fundraising process can take several months to over a year, and some funds may conduct multiple fundraising rounds to reach their target amount.

In this study, the fundraising level of GPs is measured by the ratio of the actual amount raised to the target amount [4]. A higher ratio of the actual amount raised to the target amount (FR1) is considered indicative of a higher level of fundraising.

$$\text{FR1} = \text{Actual Amount Raised} / \text{Target Amount}$$

Additionally, we account for the relative fundraising level by grouping funds based on their target industry, strategy, and fund size, and then adjusting the average fundraising level within these groups. Fundraising in private equity is influenced by factors such as fund size, investment strategy, GP's past performance, and economic conditions. Larger funds often raise capital in multiple rounds, necessitating an adjustment for these effects to accurately assess fundraising levels. Therefore, this study considers both the absolute level of

fundraising (FR1) and the relative level within groups of similar characteristics (asset class, industry, size, strategy, year, etc.) (FR2).

$$FR2 = FR1 - (\text{Average FR1 of Funds with Similar Characteristics})$$

3.2 Research model

In this study, we analyze the impact of GP's ESG disclosure on their fundraising for global private equity and venture capital funds by testing two hypotheses. The first hypothesis examines the relationship between the level of ESG disclosure by GPs and their fundraising success, which we test using Model (1). The dependent variable in Model (1) is the annual fundraising level of the fund, measured by variables FR1 and FR2. The independent variable ($GP_ESG_{i,t}$) is the ESG disclosure level of the GP managing the fund, measured by Preqin's Transparency score. If GP's ESG disclosure mitigates information asymmetry with LPs and positively influences capital raising, we expect the coefficient of to be positive ($\alpha_1 > 0$). Conversely, considering the characteristics of the private market, where a small number of LPs with high information access participate, the ESG information disclosed by GPs may not influence LPs' investment decisions (α_1 : nonsignificant). Alternatively, if the motivation for GP's ESG disclosure is regulatory compliance or reducing litigation costs related to risk factors (Cazier *et al.*, 2021), the disclosure may act in favor of the GP, potentially negatively impacting fundraising ($\alpha_1 < 0$). Therefore, we do not predict a specific sign for α_1 .

$$\text{Fundraising}_{i,t} = \alpha_0 + \alpha_1 GP_ESG_{i,t} + \sum_{i=2}^n \alpha_i \text{Control_variables}_{i,t} + \varepsilon_{i,t} \quad (1)$$

$\text{Fundraising}_{i,t}$: The fundraising level of fund i in year t , measured by FR1 and FR2. Here, t is the year in which fund i completed its fundraising. A higher value indicates that fund i raised a larger amount relative to its target amount.

$GP_ESG_{i,t}$: The ESG disclosure level of the GP managing the fund i , measured by Preqin's Transparency score. A higher value indicates that the GP has disclosed ESG-related major issues transparently.

The second hypothesis examines the impact of LPs' ESG disclosure levels on the relationship between GPs' ESG disclosure levels and their fundraising success. Considering the increasing number of LPs integrating ESG factors into their investment decisions, it is expected that GPs with higher ESG disclosure levels will receive more favorable investments from LPs with a strong interest in ESG. Conversely, if LPs are engaged in greenwashing or if their ESG disclosures are exaggerated, the ESG disclosure levels of LPs may not significantly influence the relationship between GPs' ESG disclosures and their fundraising success. Therefore, we do not predict a specific sign for the coefficient for β_2 in Model (2).

$$\text{Fundraising}_{i,t} = \beta_0 + \beta_1 GP_ESG_{i,t} + \beta_2 GP_ESG_{i,t} \times LP_ESG_{i,t} + \beta_3 LP_ESG_{i,t} + \sum_{i=4}^n \beta_i \text{Control_variables}_{i,t} + \varepsilon_{i,t} \quad (2)$$

$\text{Fundraising}_{i,t}$: The fundraising level of fund i in year t , measured by FR1 and FR2. Here, t is the year in which fund i completed its fundraising. A higher value indicates that fund i raised a larger amount relative to its target amount.

GP_ESG_{*i,t*}: The ESG disclosure level of GP *i* in year *t*, measured by Preqin's Transparency score. A higher value indicates that the GP has disclosed key ESG issues more transparently.

LP_ESG_{*i,t*}: A dummy variable indicating the ESG disclosure level of LPs. It takes the value of 1 if the LPs investing in GP *i* belong to the highest group based on the average ESG disclosure level of the LPs, and 0 otherwise. This classification is done by dividing LPs into three groups according to their average ESG disclosure levels, with the top group being assigned a value of 1 [5].

Control variables include GP characteristics, fund characteristics, and market variables that have been shown in previous research to influence private equity fundraising. First, GP characteristics include the age of the GP (AGE), the size of the GP (GP SIZE), the past performance of the GP (RET), whether the GP is publicly listed (Listed), and whether the CEO is female or a minority (WOMEN, MINORITY). Additionally, we control for GP type, ownership structure, and region. According to previous research, the performance of a private equity fund significantly impacts the fundraising of follow-on funds (Lerner *et al.*, 2007; Chung *et al.*, 2012; Hochberg *et al.*, 2014), with this impact being more pronounced for GPs with lower reputations (Barber and Yasuda, 2017). Furthermore, Gejadze *et al.* (2017) demonstrated that private equity fundraising is influenced by the expertise of the GP, investment strategy, and investment stage. Based on these findings, we control for various GP characteristics.

We control for fund characteristics including fund size (SIZE), vintage year (VINTAGE), investment strategy (Strategy), asset class (distinguishing between private equity and venture capital), industry, and fundraising year. Recent trends in the private market have shown capital concentration in large funds [6]. Additionally, the disparity in sector performance has widened since COVID-19, leading to differential fundraising levels across sectors. Vintage year [7] is also a critical factor in private equity fund selection. To account for the effects of regulation (Cumming and Zambelli, 2013), we control for industry, year, and the region where the GP is located. Lastly, market conditions such as interest rates and stock market performance can influence fundraising (Huson *et al.*, 2009). IPOs, the primary exit strategy for private equity funds (Barber and Yasuda, 2017), are influenced by stock market performance. Furthermore, buyout strategies, which are prevalent in private equity, are directly affected by market interest rates due to leveraged capital. Therefore, we include stock market performance (S&P500) and market interest rates (T_BILL) as control variables.

3.3 Sample composition

The objective of this study is to analyze the impact of GPs' ESG disclosure levels on private equity fundraising. To this end, we selected a sample of global private equity and venture capital funds that completed fundraising between 2020 and 2022, considering the measurement period of Preqin's ESG data. All information on fundraising and ESG-related data for GPs and LPs was sourced from Preqin [8], a global data provider specializing in alternative investments.

Construction of the sample is presented in Table 1. During the analysis period, there were a total of 15,548 private capital funds tracked by Preqin that completed fundraising. Of these, 2,576 funds related to real assets and 827 private debt funds were excluded. Additionally, 5,381 funds were excluded due to the lack of information on target and actual fundraising amounts. Furthermore, 1,013 funds without ESG information on the GPs and funds lacking data on fund and GP characteristics were also excluded. Ultimately, 1,050 funds were used for the regression analysis.

Table 1.
Construction of the
sample

Total number of the private capital funds that closed their fundraising from 2020 to 2022	15,548
(less) Funds of GPs without ESG transparency information	(1,013)
(less) Natural resources private capital funds	(110)
(less) Real estate private capital funds	(1,963)
(less) Infra structure private capital funds	(503)
(less) Private debt funds	(827)
(less) Multi private capital funds	(57)
(less) Funds without information about fundraising launch date	(5,381)
(less) Funds without GP characteristics variables	(4,644)
Final dataset to examine the relationship between GP ESG and fundraising	1,050

Source(s): Table by authors

4. Empirical results

This section presents the results of the empirical analysis. While numerous academic studies have analyzed ESG-related issues in the public market, research focusing on the private market is scarce. The final sample used in our regression analysis represents a small proportion of the total number of private equity funds that completed fundraising during the analysis period. Additionally, information on ESG levels in the private market is extremely limited. Therefore, we first present the descriptive statistics on the ESG levels of GPs and LPs in the global private market. Following this, we present the results of the hypothesis testing.

4.1 ESG characteristics of global private equity GPs and LPs

Table 2 presents the descriptive statistics for GP characteristics. There are a total of 43,224 global GPs evaluated by Preqin for ESG transparency. The average ESG transparency score for GPs is 9.69 out of 100, with a median of 3.0, indicating a positively skewed distribution. The scores range from a minimum of 0 to a maximum of 100, showing that while a few GPs have extremely high ESG disclosure levels, most have low levels of disclosure. Approximately 1% of the GPs in the global private equity industry are publicly listed, with an average operational history of 15.16 years. The oldest GP has been in existence for 433 years. On average, each GP manages around 800 funds, with an average fund size of \$9.849 billion.

Type	Obs.	Mean	Std	Min	P25	Med	P75	Max
ESG_GP	43,224	9.69	15.42	0.0	3.0	3.0	11.0	100.0
LISTED	43,224	0.01	0.12	0.0	0.0	0.0	0.0	1.0
WOMEN	43,224	0.03	0.18	0.0	0.0	0.0	0.0	1.0
MINORITY	43,224	0.01	0.09	0.0	0.0	0.0	0.0	1.0
AGE	38,675	15.16	15.84	0.0	7.0	11.0	19.0	433.0
TOTAL_FUNDS	10,531	800.6	4363.1	0.0	26.3	98.5	367.7	132988.3
AUM	11,093	9,849	121,920	0.0	107	450	1,860	9,100,825

Note(s): This table presents descriptive statistics for GP characteristics. ESG_GP is the GP's ESG transparency score. LISTED indicates whether the GP is listed, and WOMEN and MINORITY indicate whether the CEO is a woman and a minority, respectively. AGE is the age of the company, and TOTAL_FUND is the number of funds managed by the GP. AUM is the amount of assets managed by the GP, in millions of US dollars. MGE_TEAM_STAFF and INV_TEAM_STAFF are the number of employees on the GP's operations and investment teams, respective

Source(s): Table by authors

Table 2.
GP characteristics

Next, we present the results of the regression analysis conducted to identify the GP characteristics that influence the level of ESG disclosure. The analysis reveals that GPs with longer operational histories, larger sizes, and public listings tend to have higher levels of ESG disclosure. These findings are consistent with [Boni et al. \(2022\)](#). An interesting result from [Table 3](#) is that GPs with poorer past performance tend to have higher levels of ESG disclosure. Considering that past performance is a critical factor in determining the success of future fundraising ([Lerner et al., 2007](#); [Chung et al., 2012](#); [Hochberg et al., 2014](#)), the results suggest that GPs anticipating difficulties in future fundraising due to poor past performance may increase the transparency of their ESG disclosures. Alternatively, it may indicate that GPs with strong past performance, confident in their ability to successfully raise future funds, may not feel the need to disclose ESG information as extensively.

Next, we present the descriptive statistics for the characteristics of LPs in the global private equity industry in [Table 4](#). There are a total of 18,385 global LPs evaluated by Preqin for ESG transparency. The average ESG transparency score for LPs is 14.3 out of 100, which is higher than the average score for GPs. However, the median score is 0.0, indicating that over half of the LPs have very low levels of ESG disclosure. On average, LPs in the global private market invest in 14.2 private equity funds, with a maximum of 1,404 funds. The average operational history of LPs is 44.3 years, significantly longer than that of GPs. This reflects the fact that major investors in private equity, such as pension funds, insurance companies, sovereign wealth funds, and endowments, are typically long-term investors due to the illiquid and long-term nature of private equity investments. The average allocation of LPs to alternative investments is 35.4%, with 36.8% allocated to equities and 28.9% to bonds.

[Table 5](#) presents the average ESG transparency scores of LPs by region. Similar to GPs, LPs located in Europe have the highest average ESG transparency score of 23.6, while those in the Middle East have the lowest at 6.2. The average score for LPs in Asia is 13.1, and in North America, it is 10.9, indicating that LPs in North America have a lower average ESG transparency than those in Asia. This suggests that while the ESG transparency of LPs in Asia is close to the global average, the ESG transparency of GPs in Asia is significantly lower than the global average.

Independent variable	Dependent variable: ESG_GP
AGE	0.22*** (0.00)
GP_SIZE	3.16*** (0.00)
RET	-3.64*** (0.00)
LISTED	32.56*** (0.00)
WOMEN	-4.27* (0.06)
MINORITY	3.96 (0.11)
Region	Control
N	1,825
r ²	0.47

Table 3.
GP characteristics
related to GP's ESG

Note(s): (1) *p*-values in parentheses: * *p* < 0.10, ** *p* < 0.05, *** *p* < 0.010

(2) Standard errors are robust and clustered at the GP region level

Source(s): Table by authors

Type	Obs.	Mean	Std	Min	P25	Med	P75	Max
ESG (%)	18,385	14.3	27.0	0.0	0.0	0.0	8.3	100.0
FUNDS_COUNT	15,894	14.2	54.1	0.0	0.0	1.0	7.0	1404.0
AUM (mUSD)	12,367	25,868	184,943	0.0	205	1,025	5,899	9,324,300
AGE	13,372	44.3	42.5	1.0	16.0	30.0	60.0	686.0
ALTERNATIVES (%)	6,634	35.4	31.4	0.0	11.2	25.6	48.4	100.0
EQUITY (%)	5,488	36.8	22.6	0.0	18.9	36.9	52.8	100.0
FIXED_INCOME (%)	5,251	28.9	22.8	0.0	12.2	22.0	39.7	117.0

Note(s): This table shows the descriptive statistics of LPs with ESG transparency scores in preqin's database. FUNDS_COUNT is the number of private equity funds the LP invests in, AUM (USD MN) is the LP's total AUM (in USD million), and AGE is the firm's age. ALTERNATIVES (%), EQUITY (%), and FIXED_INCOME (%) are the percentage of the LP's AUM allocated to alternatives, equity, and fixed income, respectively

Source(s): Table by authors

Table 4.
LP characteristics

Region	Count	Percent (%)	ESG
Africa	215	1.2	18.7
Asia	3,392	18.4	13.1
Australasia	351	1.9	23.5
Europe	3,857	21.0	23.6
Latin America and Caribbean	312	1.7	9.4
Middle East	532	2.9	6.2
North America	7,232	39.3	10.9
None	2,494	13.6	12.0
Total	18,385	100.0	14.3

Source(s): Table by authors

Table 5.
The average of ESG
transparency by LP
region

4.2 Descriptive statistics and correlation analysis

Table 6 presents the descriptive statistics of the sample used in the regression analysis. The average ESG transparency score of the GPs in the sample is 36, significantly higher than the overall average ESG score for all GPs. Considering that the median GP_ESG score is 27, the distribution of the GP ESG variable in the sample is positively skewed. The average ESG transparency score for LPs in the sample is 32, with a median of 29, showing a similar distribution pattern to that of the GPs. The average score for the LPs in the sample is also considerably higher than the overall average ESG transparency score for all LPs.

The average past performance (Multiple) of the GPs, represented by RET, is 1.85, indicating that, on average, the GPs have returned 1.85 times the invested capital. The distribution of past performance shows that the bottom 1% have a multiple of 0.76, while the top 1% have a multiple of 5.76, indicating extremely high performance for the top GPs. The average operational history of the GPs in the sample is 25.93 years, longer than the industry average of 15 years. Additionally, 4% of the GPs in the sample are publicly listed, and the percentages of GPs with female or minority CEOs are 5 and 3%, respectively.

The vintage years of the funds that completed fundraising between 2020 and 2022 range from 2017 to 2022. This indicates that some funds started fundraising in 2022 and completed it within a year. During the period from 2020 to 2022, the T-BILL rate saw significant fluctuations, from a low of 0.003% during the COVID-19 pandemic to a high of 4.26%. The average monthly return of the S&P500 during the same period was 0.50%.

	<i>N</i>	Mean	sd	p1	p25	p50	p75	p99
FR1	1,050	1.05	0.22	0.40	1.00	1.00	1.13	1.71
FR2	1,041	-0.03	0.21	-0.60	-0.12	-0.02	0.05	0.57
ESG_GP	1,050	0.36	0.27	0.03	0.14	0.27	0.57	0.95
ESG_LP	651	0.32	0.24	0.00	0.15	0.29	0.44	1.00
RET	1,050	1.85	0.88	0.76	1.36	1.65	2.00	5.76
AGE	1,050	25.93	17.21	4.00	16.00	23.00	34.00	88.00
GP_SIZE	1,050	7.40	2.91	1.00	7.00	8.00	9.00	10.00
LISTED	1,050	0.04	0.20	0.00	0.00	0.00	0.00	1.00
WOMEN	1,050	0.05	0.22	0.00	0.00	0.00	0.00	1.00
MINORITY	1,050	0.03	0.16	0.00	0.00	0.00	0.00	1.00
VINTAGE	1,050	2,020	1	2,017	2,020	2,020	2,021	2,022
Fund SIZE	1,050	5.58	1.93	0.69	4.55	5.75	6.85	9.68
T BILL	1,050	0.69	1.20	0.00	0.04	0.08	0.81	4.26
S&P500	1,050	0.50	5.83	-12.51	-3.92	2.22	4.36	12.68

Note(s): FR1 and FR2 are variables representing fundraising levels, where FR1 is the actual raised amount to the target raised amount, and FR2 is calculated by subtracting the average of FR1 for similar groups (industry, strategy, size, etc.) from FR1. ESG_GP and ESG_LP are Preqin's ESG transparency scores, ranging from 0 to 1. RET is the past performance of the GP and AGE is the age of the GP. GP_SIZE is calculated by dividing GP_SIZE into decile portfolio. LISTED is whether the GP is listed, and WOMEN and MINORITY are dummy variables that distinguish whether the CEO of GP is a woman and a minority, respectively. VINTAGE is the vintage of the fund, and Fund SIZE takes the natural logarithm of the fund size. T BILL is the 3-month t-bill rate in the month of closing the fundraising, and S&P500 is the monthly return in the month of closing the fundraising

Source(s): Table by authors

Table 6.
Descriptive statistics

According to the Pearson correlation analysis results shown in [Table 7](#), there is a significant positive correlation between the ESG levels of GPs and fundraising. However, the correlation between the ESG disclosure levels of LPs and the fundraising variables is not significant. Additionally, there is no statistically significant relationship between past performance (RET) of GPs and fundraising. On the other hand, larger GP size, more recent vintage, and larger fund size are positively associated with higher levels of fundraising. Nevertheless, simple correlation coefficients do not account for other factors influencing fundraising, thus limiting the interpretive value of these correlations. Therefore, it is appropriate to verify these relationships using the multivariate regression analysis discussed in the following sections.

4.3 Regression analysis

[Table 8](#) presents the results of testing [Hypothesis 1](#), which examines the relationship between the ESG disclosure levels of GPs and fundraising. The dependent variables are FR1 and FR2, representing the levels of fundraising, and the main independent variable is the ESG level of the GPs (ESG_GP). The analysis reveals that the regression coefficients for the ESG_GP variable are statistically significant and positive in both columns. This indicates that higher ESG disclosure levels by GPs are associated with higher fundraising levels. In other words, signaling active management of ESG factors by GPs is positively evaluated by LPs, leading to greater capital raised. Although GPs in private equity are not required to disclose ESG information, the increasing interest of investors in ESG investments and the rise in related regulations have led to a gradual increase in the level of ESG disclosure by GPs. These efforts by GPs provide more information to investors, thereby reducing information asymmetry and ultimately having a positive impact on capital raising.

	FR1	FR2	ESG_GP	ESG_LP	RET	AGE	GP_SIZE	LISTED	WOMEN	MINORITY	VINTAGE	Fund SIZE	T BILL	S&P500
FR1	1													
FR2	0.8192*	1												
ESG_GP	0.1615*	0.1063*	1											
ESG_LP	-0.0045	-0.0129	0.1195*	1										
RET	0.0079	-0.0122	-0.1880*	-0.021	1									
AGE	0.0883*	0.0414	0.2908*	-0.0179	0.1542*	1								
GP_SIZE	0.1720*	0.0779*	0.4488*	0.0695	-0.1936*	0.2653*	1							
LISTED	0.0284	-0.0066	0.3629*	0.1015*	-0.0058	0.2722*	0.1496*	1						
WOMEN	-0.0635*	-0.0405	-0.1136*	-0.0485	-0.0938*	-0.0872*	-0.1272*	-0.0484	1					
MINORITY	0.0182	0.0214	-0.031	0.0284	-0.0698*	-0.0794*	0.0117	-0.0354	0.0726*	1				
VINTAGE	0.0946*	0.0665*	-0.1139*	0.0485	0.0239	-0.0152	-0.0175	-0.0720*	-0.0403	-0.0267	1			
Fund SIZE	0.3311*	0.0793*	0.3359*	0.0623	-0.0057	0.2380*	0.4159*	0.1879*	-0.1049*	0.0092	-0.0337	1		
T BILL	-0.0913*	-0.0882*	0.0393	0.0577	0.002	0.0011	0.0491	0.0251	-0.0588	0.0186	0.3776*	0.0219	1	
S&P500	0.0206	0.0214	0.0147	-0.0218	-0.0144	-0.0258	-0.0216	-0.0598	0.0015	-0.0071	-0.0726*	0.0026	-0.1694*	1

Note(s): This table shows the Pearson correlation coefficients between variables. * indicates statistical significance at the 5% or less significance level

Source(s): Table by authors

Variable characteristics	Independent variable	Dependent variable	
		FR1 (1)	FR2 (2)
Main	ESG_GP	0.09* (0.06)	0.09** (0.04)
	GP characteristics control		
	AGE	-0.00 (0.64)	-0.00 (0.59)
	GP SIZE	0.00 (0.36)	-0.00 (0.58)
	RET	0.01 (0.17)	0.01 (0.27)
	LISTED	-0.05 (0.24)	-0.02 (0.71)
	WOMEN	-0.02 (0.50)	-0.01 (0.82)
	MINORITY	0.04 (0.31)	0.07 (0.07)
Fund characteristics control	Region	YES	YES
	Fund SIZE	0.04*** (0.00)	0.01*** (0.00)
	VINTAGE	0.03*** (0.00)	0.03*** (0.00)
	Strategy	YES	YES
Market characteristics control	Asset class	YES	YES
	Industry	YES	YES
	Year	YES	YES
	T-Bill	-0.03*** (0.00)	-0.02*** (0.01)
	SP500	-0.00 (0.93)	0.00 (0.91)
	Number of observations	1,050	1,041
Adj. R ²	0.17	0.07	

Table 8.
GP's ESG and
fundraising (OLS)

Note(s): (1) *p*-values in parentheses: * *p* < 0.10, ** *p* < 0.05, *** *p* < 0.010
(2) Standard errors are robust and clustered at the GP region level
Source(s): Table by authors

Examining the control variables reveals that fund characteristics have a more significant impact on fundraising performance than GP characteristics. Funds with more recent vintages and larger sizes tend to have higher fundraising performance. Among market characteristics, the market interest rate shows a significant negative relationship with fundraising levels. Considering that a major strategy for private equity, especially buyouts, relies heavily on leverage, lower market interest rates can increase the expected returns on buyouts, thus significantly influencing private equity fundraising.

Table 9 presents the results of testing Hypothesis 2, which examines whether the ESG disclosure levels of LPs significantly influence the relationship between the ESG disclosure levels of GPs and fundraising. The ESG disclosure level of LPs is measured by dividing LPs into three groups based on the average transparency scores of the LPs investing in the fund, with a dummy variable indicating 1 for those in the highest transparency score group and 0 otherwise. The key interaction term in Hypothesis 2 is ESG_GP_LP, representing the interaction between the ESG disclosure levels of GPs and LPs. The analysis results indicate that the ESG disclosure level of LPs does not significantly affect the relationship between the ESG disclosure level of GPs and fundraising. This suggests that LPs with high ESG

Variable characteristics	Independent variable	Dependent variable	
		FR1 (1)	FR2 (2)
Main	ESG_GP	0.11** (0.04)	0.11** (0.02)
	ESG_GP_LP	-0.05 (0.26)	-0.05 (0.22)
	ESG_LP	0.01 (0.64)	0.02 (0.40)
GP characteristics control	AGE	-0.00 (0.56)	-0.00 (0.52)
	GP SIZE	0.00 (0.38)	-0.00 (0.53)
	RET	0.01 (0.16)	0.01 (0.25)
	LISTED	-0.04 (0.28)	-0.01 (0.78)
	WOMEN	-0.02 (0.52)	-0.01 (0.84)
	MINORITY	0.04 (0.30)	0.07* (0.07)
Fund characteristics control	Region	YES	YES
	Fund SIZE	0.04*** (0.00)	0.01*** (0.00)
	VINTAGE	0.03*** (0.00)	0.03*** (0.00)
	Strategy	YES	YES
	Asset class	YES	YES
	Industry	YES	YES
Market characteristics control	Year	YES	YES
	T-Bill	-0.03*** (0.00)	-0.02*** (0.01)
	SP500	-0.00 (0.95)	0.00 (0.89)
Number of observations		1,050	1,041
Adj. R ²		0.17	0.07

Note(s): (1) *p*-values in parentheses: * *p* < 0.10, ** *p* < 0.05, *** *p* < 0.010

(2) Standard errors are robust and clustered at the GP region level

Source(s): Table by authors

Table 9.
GP's and LP's ESG and
fundraising (OLS)

transparency do not preferentially commit capital to funds managed by GPs with high ESG transparency.

Various interpretations are possible for these findings, one of which is the potential for greenwashing by LPs. The results of this study are contrary to those of [Ceccarelli et al. \(2023\)](#), who examine the effects of ESG disclosures in public funds, but align with studies by [Gibson Brandon et al. \(2022\)](#), which suggest that institutional investors may overstate their ESG activities. The results for the control variables are consistent with those presented in [Table 8](#).

4.4 Robustness analysis

[Table 10](#) presents the robustness analysis results for testing [Hypothesis 1](#) using Propensity Score Matching (PSM) to control for endogeneity. The previously presented results suggest that higher levels of ESG disclosure by GPs are associated with better fundraising performance. If GPs have an excellent track record or expects to complete fundraising

successfully due to favorable market conditions, they may not feel the need to disclose ESG information. Conversely, if fundraising is anticipated to be challenging, GPs may engage in various efforts, including ESG disclosure. The results in Table 3 show that among the GPs' characteristics influencing ESG disclosure, past performance has a negative relationship with ESG disclosure levels. This suggests that GPs with poorer past performance tend to disclose ESG information more transparently. In such cases, the relationship between ESG disclosure and fundraising may be endogenously determined.

To address this, we analyze funds that disclose ESG information and match them with funds that do not, using PSM to ensure similar characteristics. In the logit model for the PSM, the dependent variable is a dummy variable that takes the value of 1 if the GP's ESG transparency score is equal to or greater than 1, and 0 otherwise. This approach allows us to identify the additional impact of ESG disclosure on fundraising when the fundraising capabilities of the two funds are similar. We perform PSM based on GP characteristics that influence ESG disclosure levels, such as operational history, fund size, past performance, and whether the GP is publicly listed, as identified in Table 3. The analysis results indicate that

Variable characteristics	Independent variable	Dependent variable	
		FR1 (1)	FR2 (2)
Main	ESG_GP	0.08* (0.07)	0.09** (0.02)
GP characteristics control	AGE	-0.00 (0.72)	-0.00 (0.67)
	GP SIZE	0.00 (0.12)	-0.00 (0.31)
	RET	0.01 (0.45)	0.01 (0.48)
	LISTED	-0.05 (0.24)	-0.02 (0.67)
	WOMEN	-0.02 (0.46)	-0.01 (0.83)
	MINORITY	0.08** (0.03)	0.03 (0.38)
	Region	YES	YES
Fund characteristics control	Fund SIZE	0.04*** (0.00)	0.01*** (0.00)
	VINTAGE	0.04*** (0.00)	0.03*** (0.00)
	Strategy	YES	YES
	Asset class	YES	YES
	Industry	YES	YES
	Year	YES	YES
Market characteristics control	T-Bill	-0.03*** (0.00)	-0.03*** (0.00)
	SP500	-0.00 (0.58)	-0.00 (0.98)
Number of observations		2,465	2,456
Adj. R ²		0.33	0.23

Table 10.
GP's ESG and
fundraising (PSM)

Note(s): (1) *p*-values in parentheses: * *p* < 0.10, ** *p* < 0.05, *** *p* < 0.010
(2) Standard errors are robust and clustered at the GP region level
Source(s): Table by authors

even after controlling for endogeneity, there remains a significant positive relationship between GP ESG disclosure and fundraising.

Table 11 tests Hypothesis 2 using PSM to control for endogeneity and finds a statistically significant positive relationship between GP ESG disclosure and fundraising at the 5% level. However, the interaction term between LP ESG and GP ESG, the key variable for testing Hypothesis 2, remains statistically insignificant.

Finally, we conduct additional analysis to examine whether the impact of ESG disclosure on fundraising varies according to key GP characteristics. Specifically, we explore whether the impact is greater for smaller GPs, those with shorter operational histories, or those with poorer past performance. To do this, we divide the sample into quartiles based on fund size, past performance, and operational history, creating dummy variables for the smallest fund group, the lowest past performance group, and the shortest operational history group. We then test the statistical significance of the interaction terms between these dummy variables

Variable characteristics	Independent variable	Dependent variable	
		FR1 (1)	FR2 (2)
Main	ESG_GP	0.10** (0.04)	0.12** (0.01)
	ESG_GP_LP	-0.05 (0.22)	-0.05 (0.21)
	ESG_LP	0.01 (0.56)	0.02 (0.34)
GP characteristics control	AGE	-0.00 (0.63)	-0.00 (0.59)
	GP SIZE	0.00 (0.13)	-0.00 (0.27)
	RET	0.01 (0.42)	0.01 (0.43)
	LISTED	-0.04 (0.29)	-0.02 (0.74)
	WOMEN	-0.02 (0.47)	-0.01 (0.85)
	MINORITY	0.08** (0.03)	0.04 (0.37)
	Region	YES	YES
Fund characteristics control	Fund SIZE	0.04*** (0.00)	0.01*** (0.00)
	VINTAGE	0.04*** (0.00)	0.03*** (0.00)
	Strategy	YES	YES
	Asset class	YES	YES
	Industry	YES	YES
	Year	YES	YES
Market characteristics control	T-Bill	-0.03*** (0.00)	-0.03*** (0.00)
	SP500	-0.00 (0.61)	0.00 (0.99)
Number of observations		2,465	2,456
Adj. R ²		0.33	0.23

Note(s): (1) p -values in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$

(2) Standard errors are robust and clustered at the GP region level

Source(s): Table by authors

Table 11.
GP's and LP's ESG and
fundraising (PSM)

and the GP ESG disclosure level. The results, not reported here for brevity, show no statistically significant findings.

5. Conclusion

As the economic significance of the private market grows, debates over whether more regulation is needed in the industry have intensifying (Borysoff *et al.*, 2024). Despite the importance of understanding the impact of disclosures on fundraising in private equity, this topic has been largely neglected. In particular, for investors to make informed decisions with sustainability in mind, access to ESG information from investment targets is essential. However, despite the growing interest in ESG among investors in the rapidly expanding private market, ESG-related disclosures by private equity funds remain very limited due to the lack of mandatory disclosure requirements. Regarding the lack of ESG information in the private equity market, BlackRock CEO Larry Fink criticized the situation during the 26th United Nations Climate Change Conference of the Parties (COP26) in November 2021, stating that “it essentially provides a type of underworld where pollutive assets can hide.” The need for ESG information disclosure by private equity funds has been a topic of active discussion not only in academia but also in policy circles recently (Krueger *et al.*, 2020; Christensen *et al.*, 2021; Serafeim and Yoon, 2022).

The analysis results provide evidence that the ESG disclosure levels of GPs significantly influence fundraising performance. This suggests that in the private market, where ESG disclosure is not mandatory, signaling active management of ESG factors by GPs helps to mitigate information asymmetry and positively impacts capital raising. Conversely, the ESG disclosure levels of LPs do not significantly affect the relationship between GP ESG disclosure and fundraising. This may indicate that some LPs engage in greenwashing, claiming to consider ESG factors in their investments without substantial evidence. However, caution is required in interpreting these results as the analysis period covers only three years and the sample is limited to funds that have completed fundraising.

Examining the ESG landscape in the global private market, there is a growing number of investors actively incorporating ESG into their investment decisions through ESG due diligence. Notably, there have been reports of the first case [9] of ESG due diligence in the domestic private equity industry. Therefore, additional research using detailed indicators of ESG transparency from Preqin, such as whether GPs conduct ESG due diligence, the establishment of ESG-integrated investment processes, and the presence of ESG specialists, is expected to be highly valuable.

Notes

1. In this study, the terminology will be standardized as follows: Investors who contribute capital to private equity funds (PEFs) are referred to as Limited Partners (LPs), and private equity firms that bear responsibility beyond their invested capital and manage the actual operation of PEFs are referred to as General Partners (GPs).
2. In private equity investments, particularly buyouts, the most common exit strategies are IPOs or company sales (Barber and Yasuda, 2017).
3. Since the PRI was announced in 2006, the number of asset owners signing the PRI has steadily increased, whereas asset managers have joined at a much slower pace. This indicates that asset owners have been at the forefront of responsible investment, and as their demand to allocate assets to ESG investments has grown, asset managers' interest in ESG has also increased. Additionally, asset owners face relatively less burden in implementing responsible investment compared to asset managers, as they can pass on the responsibility of ESG implementation to the managers (Noh, 2022).
4. Preqin measures the fundraising level in the private equity industry by the time taken to close (Average time spent in time) and the ratio of the actual amount raised to the target amount (Average proportion of target size achieved). In this study, we measure the fundraising level using the ratio of

the actual amount raised to the target amount rather than the time taken, based on the comment from an anonymous reviewer that GPs with higher ESG disclosures may require LPs to spend more time processing information. Additionally, the number of funds with data on the actual amount raised is more than three times the number of funds with data on the time taken, allowing for a larger sample size.

5. Examining the distribution of ESG disclosure levels in the global private equity industry analyzed in this study reveals that the average ESG disclosure level is low, while top institutions exhibit significantly higher ESG disclosure levels, resulting in a right-skewed distribution. Therefore, in this study, LPs are categorized into three groups based on their ESG transparency. Those in the top group are considered to have high ESG disclosure levels.
6. <https://www.preqin.com/insights/research/research-notes/the-concentration-of-private-capital>
7. The performance of private equity funds is directly influenced by market conditions. A fund may invest in an undervalued environment in a given year and subsequently reap high returns during an economic recovery. Alternatively, it may invest just before a market crash, which could result in significant losses (Noh *et al.*, 2023). Consequently, investors take vintage into account when making investment decisions and managing portfolio risk.
8. www.preqin.com
9. IMM PE Enhances ESG Investment Management and Conducts ESG Due Diligence for Portfolio Companies (in Korean). Edaily 2021.05.03.

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