Understanding Private Equity Funds: A Guide to Private Equity Research in Accounting

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Abstract

Private equity (PE) funds are increasingly important to the economy and now dominate capital markets (e.g., capital formation). However, a lack of understanding of PE funds among accounting academics limits accounting research in this area. In this paper, we first describe the PE fund setting and explain how fundamental differences between PE and previously studied settings make it difficult to infer PE fund behavior from research performed using other settings. We then discuss how PE funds provide researchers with the ability to explore fundamental questions related to agency costs, governance, compensation, disclosure, and fair value accounting. Finally, we provide guidance on PE data sources available for use in future research. Because of the volume of economic activity currently funneled through PE and the unique aspects of the PE setting, it is important for researchers to explore when, why, and how accounting matters for PE funds.
I. INTRODUCTION

Over the past several decades, private markets – especially private equity (PE) funds – have experienced tremendous growth.¹ In 2020, total assets under management (AUM) in PE funds reached an all-time high of $4.4 trillion, increasing by over 170% since 2010 (Joyce 2020; McKinsey 2020). The PE market is expected to more than double in size by 2025, exceeding $9 trillion (Joyce 2020). Further, as of 2018, at least 2,900 U.S. PE fund advisers manage over 17,000 PE funds (Gaver, Mason, and Utke 2023), a significant number compared to the roughly 5,000 institutional investors (13F filers) in the Thomson database. PE funds are also now responsible for more than one-fifth of global merger and acquisition activity (Davis, Baigorri, and Balezou 2021a).

While PE has grown significantly, the number of publicly traded companies in the U.S. has decreased by approximately 40% since the early 2000s (Doidge, Kahle, Karolyi, and Stulz 2018). In fact, PE funds have overtaken public markets as the primary vehicle for raising new capital (Witte and Brown 2019), raising about $550 billion globally and $350 billion in North America in 2019 (McKinsey 2020). Moreover, the number of IPOs is in decline as businesses choose to stay private longer, sometimes foregoing public markets and pursuing alternative sources of capital such as PE. For example, “unicorns” (private firms valued at over $1 billion) are no longer rare; there are now over 1,200 unicorns globally (CB Insights 2023). Of the firms that do IPO, about 50% are PE-backed (e.g., Ewens and Farre-Mensa 2020). Despite these trends, publicly listed companies remain at the center of accounting research with little attention given to PE, which is left to finance and economics researchers who rarely address accounting questions.² A major

¹ We follow the convention in the finance literature of using ‘PE’ to encompass both buyout (BO) and venture capital (VC) funds. Note that many practitioners and non-academics use PE to refer to BO funds, and refer to VC funds separately. Thus, researchers should use care when holding discussions with practitioners and reviewing industry reports.
² Finance and economics PE literature reviews that may be of use to accounting researchers include: Gompers and Lerner 2001; Kaplan and Strömberg 2009; Phalippou 2009; Metrick and Yasuda 2011; Lerner and Nanda 2020; Dai 2022; Cumming, Kumar, Lim, and Pandey 2022; Gornall and Strebulaev 2022; Korteweg and Westerfield 2022.
impediment to PE research in accounting is a lack of understanding of PE funds and private markets. Our paper addresses this issue, allowing accounting researchers to answer fundamental questions and to fill important accounting-specific gaps in existing PE research.

First, Section 2 describes key institutional attributes of the PE industry that make PE distinct from public firms and other financial intermediaries (e.g., hedge funds, banks, and mutual funds). For example, PE fund governance and regulation fundamentally differ from other entities. We explain the implications of these differences for PE research and discuss why understanding these differences is important in order to draw meaningful inferences. We also highlight how these fundamental differences between PE and other settings make it difficult to infer PE fund behavior using findings from research in other settings. Notably, we caution against interpreting the findings of PE studies as “obvious” (if results are similar to other entities), or “impossible” (if results differ from other entities), because PE funds fundamentally differ from other entities.

Second, Section 3 discusses how PE funds allow researchers to explore both fundamental and new questions related to agency costs, governance, compensation, disclosure, and fair value accounting. Notably, PE funds are lightly regulated and opaque, which allows them to make choices on certain items that are mandatory for other entities. Exploring these choices provides fruitful research opportunities, especially given the important differences between PE and other settings discussed in Section 2. For example, given the lack of regulation, PE is a relevant setting to study whether accounting choices/quality facilitate capital formation. Other important questions include: Do investors affect PE fund accounting choices/quality? What drives PE fund audit quality? Absent research, we lack insight into the answers to these fundamental questions.

Further, PE fund managers encounter opportunities to manipulate reported investment performance, representing an unexplored setting for earnings management research. Specifically,
discretion afforded to PE fund managers under fair value accounting often leads to disputes over the valuation of investment portfolios, as well as concerns over potential biases in performance reporting and the adequacy of financial statement disclosures. These issues raise regulatory concern, with the Securities and Exchange Commission (SEC) designating PE valuations as a main area of interest (Bowden 2014). Accounting researchers have the opportunity to understand whether and when reporting biases exist, and to explore mechanisms that may reduce any biases. Altogether, we discuss how the PE fund setting provides opportunities to produce innovative, relevant research that is of interest to regulators, auditors, PE fund managers, and investors.

Lastly, Section 4 provides guidance on various PE data sources available to researchers. Because PE funds are private, data limitations often hinder PE research. However, data is becoming increasingly available for use in future research. We discuss specific data sources and highlight advantages, disadvantages, and potential solutions for overcoming certain data limitations. Collectively, our paper increases researchers’ exposure to, and understanding of, the PE industry by discussing institutional details, unique characteristics, data sources, and future research opportunities to aid and encourage important work in the PE space.

**II. SETTING AND PE FUND STRUCTURE**

PE represents a class of alternative assets that is not publicly traded or listed on an exchange. PE funds function as financial intermediaries, raising capital from external investors to be deployed in various investments. PE funds typically invest in firms, known as portfolio companies. Whereas public markets previously drove capital formation, PE now dominates capital raising (Ewens and Farre-Mensa [2020] discuss drivers of this shift). This shift towards PE is notable given the rise of PE-funded high-growth start-up firms, which are major drivers of economic activity (e.g., Gornall and Strebulaev 2021; Greenwood, Han, Inokuma, and Sánchez
Therefore, as we discuss later, a fundamentally important question involves understanding the attributes that influence PE funds’ ability to raise capital (i.e., fundraise). In this section, we discuss the institutional details surrounding PE funds’ formation, organizational structure, managers’ compensation, and relation to their underlying investments.

2.1 Structure of Private Equity Funds

2.1.1 Simplified PE Fund Structure – Relevant for Many or Most PE Studies

PE funds are typically organized as limited partnerships and have complex organizational structures for legal and tax purposes. Limited partnerships consist of at least one general partner (with unlimited liability) and at least one limited partner (with limited liability, similar to investors in a corporation). Funds are formed when a PE fund adviser, representing the fund’s general partner (GP), raises capital from external investors, representing the fund’s limited partners (LPs) (e.g., Kaplan and Strömberg 2009; Metrick and Yasuda 2011). For the remainder of the paper, we refer to the PE fund’s general partner as the ‘GP’ and the fund’s external investors as ‘LPs.’ We use ‘LP’ rather than ‘investor’ to make clear that LPs fundamentally differ from investors in firms.

PE funds (i.e., BO and VC funds in our study, though much of this discussion applies to similar funds beyond our scope) are organized as partnerships for three reasons. First, this structure allows the fund to distribute cash to LPs while avoiding the double taxation of corporate dividends. Second, it allows managers to allocate a portion of the profits to themselves in a tax-

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3 A separate research stream involves understanding how PE funds select which portfolio companies to invest their capital in. While important and the subject of research (e.g., Lyonnet and Stern 2022), this funding cannot occur without the PE fund first raising capital, leaving the PE fund-level as the correct level to study capital formation.
4 The general partner’s unlimited liability can easily be avoided by structuring the general partner itself as a limited liability entity (e.g., a limited liability company [LLC]). The general partner controls the partnership.
5 We refer to the PE fund manager as the fund ‘adviser’ rather than ‘firm’ to make clear that advisers fundamentally differ from firms. In contrast, finance research often refers to the adviser as a PE firm. We also note that the adviser controls the GP, but they are not necessarily the same thing. Advisers often create separate GPs for each fund.
6 Allen, Allen, Raghavan, and Solomon (2022) note that many portfolio companies are organized as corporations, which enables the portfolio company to go public. We focus on the fund-level entities above the portfolio company.
advantaged way (e.g., carried interests, discussed below). Third, it allows the GP to control the fund with only a small equity investment and provides LPs little oversight ability (e.g., little or no voting control, regardless of ownership percentage).

To fundraise, PE fund advisers (or GPs) go on “road shows.” LPs make “capital commitments,” representing the maximum amount that an LP agrees to invest in a fund. Funds typically require each LP to commit more than some minimum investment. After the fundraising period ends, PE funds are ‘closed,’ with LPs’ capital being tied up for the life of the fund (i.e., limited ability to exit). While funds typically have stated lives of 10 years, two two-year extensions are often available to allow a fund to exit remaining portfolio companies. Some funds operate beyond this 14-year period as well, requiring LPs to keep capital tied up for that entire period.7

The LPs consist of large, sophisticated investors meeting the SEC’s “accredited investor” definition, which imposes wealth and income requirements. Because the thresholds are not indexed for inflation, more LPs qualify as accredited investors over time. In addition, the SEC recently deemed individuals with certain professional qualifications to qualify (SEC Release Nos. 33-10824; 34-89669). New products such as a Vanguard mutual fund investing in PE and Blackstone PE funds targeting smaller LPs (Lim 2022), which are still open only to accredited investors, suggest further expansion of PE to various LPs that broadens PE markets overall. Beyond these direct LPs, and because many pension plans and endowments invest in PE, many other individuals (e.g., beneficiaries of pension plans and educational institutions [e.g., Kong, Zhang, and Zhang 2022]; state taxpayers responsible for funding shortfalls [e.g., Rao 2022]; etc.) are affected by PE funds, highlighting the importance and broad reach of PE funds.

7 There is a growing trend toward longer-lived funds in the form of “continuation funds,” where advisers essentially recapitalize their old fund by transferring existing assets to a new fund (Shi 2022). Because the old fund ends and a new fund begins, this transaction allows existing LPs to exit or continue, while providing additional time for the adviser to monetize the assets. Drivers and consequences of this emerging trend may be fruitful for future research.
GPs ‘call’ committed capital from the LPs, and invest that capital, over time rather than all at once (e.g., Magro 2019; Brown et al. 2021a; Gourier, Phalippou, and Westerfield 2022; Maurin, Robinson, and Strömberg 2022).\(^8\) Funds often deploy the called capital by purchasing interests in portfolio companies.\(^9\) BO funds typically buy controlling interests in portfolio companies while VC funds purchase smaller stakes. Both fund types (which comprise the PE funds we discuss) make their investments with the goal of adjusting the portfolio firms’ operations, financing, financial reporting, and other attributes in order to increase the firm’s value (e.g., Kaplan 1989; Jensen 1989; Zimmerman 2016; Cohn, Hotchkiss, and Towery 2022).\(^10\) Overall, LPs typically do not participate in the investment process, cannot readily liquidate their investment stakes, cannot replace an underperforming manager, and have limited or no voting rights.\(^11\) This structure creates various managerial incentives, including incentives to deliver strong performance to a) earn performance fees from current funds, and b) enable future fundraising for new funds. Importantly, without new funds, the GP would go out of business due to each fund’s limited term (e.g., Chung, Sensoy, Stern, and Weisbach 2012; Barber and Yasuda 2017; Brown, Gredil, and Kaplan 2019; Pham, Turner, and Zein 2021). We discuss these incentives in more detail later.

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\(^8\) Occasionally, LPs fail to fund calls. Some funds impose penalties on these LPs and can pursue legal action. There is also likely reputational damage to the LP. Further investigation of these situations (e.g., determinants and consequences of failure to fund calls for both the LP and the PE fund) is likely a fruitful area for future research. Relatedly, PE’s capital commitments, illiquidity, and uncertain cash flows may have spillover effects in an LP’s portfolio, either in general or when an LP is financially constrained (e.g., Braun and Jansen 2020; Meyer 2020).

\(^9\) Our discussion of fund-level attributes (e.g., fundraising, etc.) largely applies to private credit funds and, at the fund-level, is relevant for those funds. Like PE funds, private credit funds are growing rapidly. However, private credit funds make different investments – as lenders rather than shareholders – so their interactions with portfolio companies differ from PE funds. Private credit funds also fall under the larger “shadow banking” area. For details on private credit funds, see: Chernenko, Erel, and Prilmeier 2022; Sztejnberg, Canfield, Roberts, Kramer, and Whitaker 2022; Block, Jang, Kaplan, and Schulze 2023; Buchner, Espenlaub, Khurshed, and Mohamed 2023.

\(^10\) PE funds primarily invest in private entities or take formerly public entities private in public-to-private transactions. However, funds also invest in public companies through private investments in public equity (“PIPE” financings; e.g., Dai 2009; Chen, Dai, and Schatzberg 2010) or to obtain toe-holds for future acquisition attempts or activist interventions. For simplicity, we focus our discussion on PE investments in private entities.

\(^11\) LPs have limited ability to exit PE funds (e.g., Sahlman 1990). In order to sell their PE fund interest, an LP must find a buyer and the sale often requires approval by the GP. As a result, the secondary market for PE fund interests is fairly illiquid (Nadauld, Sensoy, Vorkink, and Weisbach 2019; Boyer, Nadauld, Vorkink, and Weisbach 2023; Mason and Utke 2023a).
In the most basic sense, and as considered in most existing PE research, a PE fund is viewed as a single pool of capital (i.e., the fund) which is funded by LPs and a small capital commitment (typically 1 to 2%) from the GP (see Figure 1).\footnote{Form ADV data (discussed later) suggests GPs’ direct ownership in PE funds is 1% at the median.} However, the GP effectively has full control of the fund. The GP receives a management fee that is typically 1.5% to 2.5% of committed capital, regardless of the current amount of assets under management (Chung et al. 2012). As the fund exits its investments in portfolio companies, it distributes capital back to the LPs and the GP. The GP is generally entitled to an incentive or performance fee, known as “carried interest” or “carry.” Carried interest is managers’ fee charged on the fund’s gains – generally 20% of the profit – above a predetermined benchmark rate of return to the LPs (Kaplan and Strömberg 2009).\footnote{Carry can be calculated on a per-portfolio company level or for the fund overall. There may be clawback provisions to account for cases where one portfolio company exit has a high profit, but another does not. The Appendix presents an example of a typical PE fund “waterfall” calculation for these incentives, which are unique to PE. While the specifics of both management fee and carry provisions vary by fund, the general incentives they provide are similar. Unless a research question specifically focuses on fund manager compensation, we see no reason to account for these minor differences in compensation structures.} Because the fund is a partnership, this fee can be allocated to managers as a tax-preferred capital gain. This complex structure differs substantially from managers of public firms who typically receive base salaries and incentives in the form of bonus pay and stock compensation, with most or all of this compensation taxed at ordinary rates. It is important to understand that this basic view of PE funds (Figure 1) is adequate for many or most research questions. For completeness, and in the interest of encouraging additional research questions, we discuss a more complete PE fund structure next.

### 2.1.2 More Complete PE Fund Structure – Necessary Only for Some Research Questions

Figure 2 presents a more complete, but still simplified, PE fund structure. The basics discussed above remain accurate in this structure. The more complete structure consists of a set of “adviser-level,” “fund-level,” and “portfolio company-level” entities. We highlight that the existence of this structure does not affect many or most research questions; thus, researchers (and
reviewers) should carefully consider whether or not this structure needs to be accounted for. In our discussion of research possibilities in Section 3, we point out when these details warrant consideration.\textsuperscript{14} At the least, however, this structure calls for precision in the use of language with respect to the terms ‘PE adviser’ and ‘PE fund’ and, relatedly, the PE “level” that a study examines.

At the adviser-level, the adviser (which also controls the fund’s GP) manages the fund-level entities. For a given fund, the adviser-level typically consists of two legal entities: the PE fund’s GP and the PE fund’s management company. The GP receives capital from insiders of the adviser.\textsuperscript{15} The GP invests in the fund-level entities and accrues gains or losses on their investment like the LPs. The GP also receives any carried interest (e.g., 20% of the fund’s profits). The management company receives a management fee (e.g., 2% of committed capital) for overseeing the fund-level entities. The management company actively manages the fund’s portfolio (e.g., making buy and sell decisions related to portfolio companies) and, like the GP, is often owned by insiders of the adviser.\textsuperscript{16} The management company may also charge a management fee directly to portfolio companies for management, oversight, or transaction advisory services. Both the GP and the management company may manage/control one fund or multiple funds. As an example, Silver Lake Management, LLC (Silver Lake) is an investment adviser that, through related entities, serves as an adviser to PE funds including ‘Silver Lake Alpine II, LP.’\textsuperscript{17} Silver Lake created a GP,

\textsuperscript{14} Lerner, Mao, Schoar, and Zhang (2022) provide descriptive evidence on a subset of complicated PE fund structures. Mason and Utke (2023a, c) also highlight cases when these structures matter.

\textsuperscript{15} The insiders investing in the GP include the adviser itself (or its affiliates, which are separate legal entities controlled by the adviser) as well as the fund managers (or fund partners) who generally also own the adviser.

\textsuperscript{16} The management company is set up as a separate company for three reasons. First, the managers of the PE fund may differ from the partners in the GP. Having a separate structure allows for differing ownership. Second, by keeping the management activity at a separate entity, the adviser’s owners can clearly differentiate between income from active management of funds (which is subject to self-employment tax) and income from capital investment through the GP, including carried interest (which is not subject to self-employment tax). Third, the management company could be set up as an S-corporation, which may also provide benefits in avoiding self-employment tax. Other PE fund entities cannot be set up as S-corporations because, among other reasons, S-corporations do not permit the allocation of carried interest relevant to fund managers’ compensation (discussed in more detail later).

\textsuperscript{17} Silver Lake’s structure is from its March 2020 Form ADV. We discuss Form ADV in Section 4. Silver Lake itself is not listed on the ADV. Rather, ‘Silver Lake Technology Management, LLC’ files an umbrella registration for all
‘Silver Lake Alpine Associates II, LP,’ and management company, ‘Silver Lake Alpine Management Company II, LLC,’ for Silver Lake Alpine II, LP.18

The fund-level entities, which are the focus of our paper, often include a “main” fund and a “parallel” fund.19 LPs invest in the main and parallel funds, which also have ownership from the GP (typically 1% to 2%, as noted earlier). Technically, each of these fund-level entities (main and parallel) is a separate fund. However, as shown in Figure 2, because they generally own the same portfolio companies, the two entities are commonly viewed as one fund. Lerner et al. (2022) note that there are numerous ways that these alternative PE fund vehicles can be structured. For example, Figure 3 presents a structure with a co-investor, which is often another large institution (e.g., CalPERS; GE) that the PE fund joins with to invest in a portfolio company. We focus on the Figure 2 structure, but the numerous other possible structures may warrant consideration when studying some (but not all) research questions, or may generate their own research questions (e.g., do co-investors receive different financial reporting information than other LPs?).

Main and parallel funds exist within the same fund structure for several reasons, such as allowing slightly different contract terms to various LPs or differentiating between the “quality” of LPs (Lerner et al. 2022). Another reason is to allow LPs with different tax situations to access the same investment strategy.20 In certain cases, tax-exempt LPs (e.g., university endowments)
and foreign LPs are tax-disfavored when owning the main fund. Specifically, tax-exempt LPs avoid “unrelated business taxable income” (UBTI) when possible (e.g., Utke 2019; Love 2021). UBTI is income earned by a tax-exempt entity from a purpose unrelated to its tax-exempt activity and entails additional tax and compliance costs. While investment income such as interest, capital gains, and dividends is generally not considered UBTI (unless debt-financed, a complication beyond our scope), PE funds are set up as partnerships where business income from underlying portfolio companies, if also set up as partnerships, flows through to LPs as taxable business income rather than investment income, even for otherwise tax-exempt LPs (Mason and Utke 2023c). To prevent taxable income from flowing to tax-exempt LPs, PE funds often use a parallel fund with a “blocker” corporation, which pays corporate tax but prevents business income from flowing through to tax-exempt LPs (see Figure 2). Similarly, without a blocker, some foreign LPs could be allocated “effectively connected income” (ECI) which they often wish to avoid because ECI entails U.S. tax and compliance costs that do not arise from investment income. As a result, having a “parallel fund with blocker” structure can benefit tax-exempt and foreign LPs, whereas taxable LPs prefer investing in the main fund because taxable LPs face double taxation if investing in the parallel fund: unlike tax-exempt LPs, taxable LPs pay tax on dividends paid by the blocker.

At the portfolio company-level, PE fund structures often have the blocker corporation discussed above, the operating company, and an entity known as the “allocation partnership.” There are two primary reasons PE fund structures include the allocation partnership. First, it allows for the allocation of the carried interest and allows the carry to retain favorable capital gains tax treatment and avoid corporate tax at the blocker. As a matter of law, carried interest represents a special allocation of income (i.e., an allocation incongruent with ownership share), which must be done through a partnership; income from corporations can only be allocated, in the form of
dividends, according to share ownership. Second, PE funds use allocation partnerships because of funds’ “buy-to-sell” investment strategy (Barber and Goold 2007). PE funds invest in underlying portfolio companies with the expectation of selling the entity in the future. As a result, PE funds use an organizational structure that enables the future sale of the underlying portfolio company (i.e., sold out from under the structure itself). The allocation partnership enables the allocation of the gains among LPs and carried interest owners (i.e., the GP) for direct sales of the portfolio company. This simplifies the accounting and tax reporting upon a sale of the portfolio company.  

2.2 Private Equity Fund Portfolio Companies

While we focus on the PE fund-level (e.g., where fundraising occurs), we briefly discuss PE funds’ portfolio, or operating, companies and some key interactions between these entities and the fund. Portfolio companies are generally non-financial operating companies, which can be small start-up firms (e.g., Uber or Facebook prior to their growth) or large, well-known firms (e.g., Dell or Burger King). The example in Figure 2 shows only one portfolio company owned by the PE fund, but a PE fund (or set of related funds) usually owns and manages several portfolio companies. For instance, “Silver Lake Partners III, LP” (an affiliate/fund of Silver Lake) owned portions of both Dell and Avaya. “Silver Lake Partners IV, LP” (another affiliate/fund of Silver Lake) also owned a portion of Avaya. Thus, a given fund often owns several separate portfolio companies. Each fund’s separate investment in a portfolio company generally has its own portfolio company-

21 Funds can sell from “above” the blocker structure as well. For example, in a sale to another fund, the buying fund may buy the existing ‘blocker with allocation partnership and portfolio company’ structure rather than setting up its own structure. This does not affect our main discussion. If many portfolio companies are corporations (Allen et al. 2022), the blocker is not needed. To the extent that more portfolio companies are being sold to other PE funds rather than taken public (which is one reason to structure the portfolio company as a corporation), the use of blocker structures and sales “above” the blocker (so that the buying PE fund simply absorbs the prior PE fund’s structure) are likely to increase. Understanding these dynamics is a fruitful area for future research.  
22 We obtain this information from the definitive proxy statements related to the acquisition of a public company in a public-to-private transaction, allowing us to determine the specific acquirer information. This data is not available for all acquisitions of private portfolio companies, preventing the determination of the full set of the portfolio holdings of each PE fund. Section 4 discusses available data.
level structure as presented in the “Portfolio Company Level” portion of Figure 2. That is, each separate investment typically yields a duplicate of the portfolio company-level structure presented in Figure 2, resulting in a large and complex structure.

PE funds exert significant influence over the operating, financing, and financial reporting of their portfolio companies. This influence often arises through garnering seats on the board of the portfolio companies (e.g., Lerner 1995; Zimmerman 2016). Because the board directs major decisions of an entity (e.g., dividend policy, auditor selection), the fund affects portfolio company choices through the board. Our discussions with PE fund managers, portfolio companies, auditors, and consultants corroborate funds’ influence on portfolio companies: PE funds have substantial to complete control over portfolio companies’ operating, financing, and financial reporting choices.

The finance literature thoroughly documents the effects of PE funds on portfolio companies’ operating and financing decisions. However, funds’ control over portfolio firms’ financial reporting has received less attention (for one exception, see Katz 2009). As with more common parent-subsidiary relationships, PE funds’ control over their portfolio companies’ accounting and reporting choices stems from funds’ inherent interest in the financial reporting of their portfolio companies. Empirical research (e.g., Ferreira, Kräussl, Landsman, Borysoff, and Pope 2019) and discussions with auditors confirm that portfolio companies’ financial statements a) are important inputs into PE funds’ financial statements, b) affect funds’ compensation-based incentives, and c) affect funds’ tax distributions or carried interest clawbacks.

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24 Beuselinck, Cascino, Deloof, and Vanstraelen (2019) show multinational corporations manage earnings through subsidiary corporations. In a similar way, PE funds are likely to have the interest and control to influence the financial reporting of portfolio companies they own (e.g., Morsfield and Tan 2006; Goktan and Muslu 2018).
One implication of PE funds' influence on portfolio company reporting and operations is that studying portfolio companies (by design or if they fall into a broader sample) without considering PE fund influence may lead to inappropriate inferences (see also Glover and Wood 2014; Bonacchi, Marra, and Zarowin 2019; Mukherjee and Pana 2019; Beaver, Cascino, Correia, and McNichols 2019; André and Kalogirou 2020). For example, PE-owned firms likely behave differently than other firms and have different access to capital (e.g., Wilson, Wright, Siegel, and Scholes 2012; Bernstein, Lerner, and Mezzanotti 2019). Further, firms owned by the same PE fund are not independent in their reporting choices; lack of independence warrants consideration (Mason and Utke 2023b), especially given that a substantial number of private entities are owned by funds (Hammoud, Brigl, Öberg, Bronstein, and Carter 2017). Overall, funds’ influence on portfolio company reporting choices, including how (e.g., through a shared services center run by the fund; appointment of certain employees; requirements to use certain service providers), when (e.g., early life cycle firm; mature fund prior to exit; funds owning related portfolio companies), and why (e.g., financing needs; manager changes), is a fruitful area for future research. That said, the bulk of our paper focuses on the impact of PE funds’ financial reporting (and related attributes) on funds’ current or future LPs, fundraising, and other fund behaviors or attributes.

2.3 Private Equity Fund Types

The umbrella term ‘private equity’ includes many funds with different investment strategies. ‘Private equity’ includes BO, VC, real estate, liquidity, infrastructure, and securitized asset funds (Metrick and Yasuda 2011; Gaver et al. 2023). A larger umbrella term, ‘private

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25 To be clear, we do not suggest that financial reporting choices are identical at all of a fund’s portfolio companies (or, correspondingly, at all of an adviser’s funds). For example, a fund may obtain an audit at one portfolio company but not at another. Rather, we point out that the choice generally belongs to the fund, not the portfolio company.

26 Metrick and Yasuda (2011) group ‘private equity’ fund types into four categories: BO, VC, mezzanine, and distressed. As in our study, those authors also focus on BO and VC funds in their discussion.
funds,’ encompasses private equity funds plus other funds such as hedge funds. In this paper, following finance research, we define PE as BO and VC funds. We focus our discussion on these funds because they are the largest, most significant types of private equity funds. Also, BO and VC funds own similar assets (e.g., private firms rather than real or financial assets) and have similar structures, as discussed above. That said, different studies may include different funds within their definition of private equity. There is no single or correct definition of private equity, but each study should clearly indicate which funds it considers to be private equity and why, as we do in this paragraph. To quantify the magnitude of BO and VC funds – the PE funds in our study – we examine Form ADV data filed annually with the SEC. We find that BO and VC funds makeup roughly 35.4% and 17.2%, respectively, of the total number of private funds as of 2018. Thus, PE funds, as defined in our paper, make up 52.6% of all private funds, with BO (VC) funds comprising 67.3% (32.7%) of these PE funds as of 2018. Hedge funds and other private equity funds falling outside of our PE definition (e.g., real estate) make up 26.5% and 20.9% of all private funds (i.e., the other 47.4% of private funds).

BO and VC funds are “closed-end” funds with long investment horizons, sharing similar basic organizational and compensation structures, discussed earlier. However, key differences exist. First, BO and VC funds have distinct investment strategies. BO funds typically purchase controlling stakes in mature firms in leveraged buyouts (LBOs, as public-to-private deals) or private-to-private purchases (e.g., Barber and Goold 2007; Strömberg 2007; Kaplan and Strömberg 2009; Bharath and Dittmar 2010; Metrick and Yasuda 2011). VC funds typically purchase smaller stakes (e.g., as part of a consortium) in younger, early-stage firms (Gompers and Lerner 2001; Kaplan and Strömberg 2009). The different investment strategies lead to differences.

27 Hedge funds fundamentally differ from PE funds in many ways. Two of the largest differences are that hedge funds largely trade public stocks, requiring them to file SEC Form 13F, and generally allow investors to exit at will.
in risk and agency costs between BO and VC funds. Second, and relatedly, VC funds typically have more volatile returns than BO funds (e.g., Chung et al. 2012). Because of these differences, most PE studies examine a) BO and VC funds separately, or b) only BO or only VC funds. Thus, even though BO and VC funds have similar organizational and compensation structures, studies must understand and account for their different investment strategies, risk, and agency costs.

2.4 Some Legal Technicalities

Like public firms, PE funds face securities regulations at the state-level. Also, like public firms, federal securities regulations pre-empt state regulations. That is, a PE fund adviser required to register with the SEC under the Dodd-Frank Act (‘Dodd-Frank’, discussed more later) does not face separate securities regulation by states and is, in fact, prohibited from registering with a state.28 Similarly, public firms registered with the SEC under the 1933 and 1934 Acts generally do not face separate state-level regulation (though unregistered securities can face state regulation).

III. IMPLICATIONS OF FUND STRUCTURE FOR ACCOUNTING RESEARCH

Based on the PE fund setting laid out earlier, we discuss future research opportunities related to PE funds. Like other financial intermediaries, PE funds face agency conflicts due to the asymmetric information between LPs and managers (e.g., Leland and Pyle 1977; Diamond 1984; Phalippou 2009; Metrick and Yasuda 2010, 2011; Crain 2018; Gaver et al. 2023). Agency costs underlie many of the future research opportunities in the PE space. Accounting, finance, and economics researchers have long been interested in entities’ mitigation of these costs through governance, compensation contracting, and financial reporting. We discuss these and other areas where the PE fund setting can provide new insight on fundamental or new research questions. We acknowledge, however, that we cannot anticipate all important research questions that will arise

in the PE setting. It is likely that some research questions may only develop after researchers document important descriptive facts about PE and gain a better understanding of the PE space.

3.1 General Financial Reporting Choices and Disclosures

Accounting literature focuses on the role of financial information in reducing agency costs resulting from information asymmetry between owners and managers. To reduce the agency costs arising from asymmetric information between LPs and GPs, LPs seek financial information from PE funds. For example, LPs are interested in funds’ performance (i.e., value) as well as funds’ incentive fees (i.e., carried interest) (e.g., Kaplan and Strömberg 2009; Metrick and Yasuda 2010, 2011). Further, LPs looking to provide capital for new funds are interested in a fund adviser’s performance history (e.g., Barber and Yasuda 2017). To meet LPs’ demand for information, PE funds provide financial information to current and potential capital providers (Gaver et al. 2023).

PE funds provide fund-level financial reports (e.g., Metrick and Yasuda 2011; Johan and Zhang 2016) with LPs receiving little to no financial information from the underlying portfolio companies. Portfolio companies are generally valued using Level 3 fair value accounting under U.S. GAAP, which we discuss in Section 3.2.

To illustrate how portfolio companies’ information is reflected on PE funds’ reports to LPs, consider a relatable example: investors’ investment in mutual funds (which are not PE funds). While mutual funds generally invest in publicly traded securities, mutual fund investments in private entities are growing (e.g., Cederburg and Stoughton 2018; Kwon, Lowry, and Qian 2020; Agarwal, Barber, Cheng, Hameed, and Yasuda 2022). The mutual fund reports the fair values of its underlying investments, including any investments in private entities, but never provides detailed financial statements for the mutual fund’s underlying portfolio companies. This mirrors...
PE fund financial reporting: LPs generally only receive fund-level financial information.\textsuperscript{29}

Research opportunities in the PE fund reporting area center on the information provided by PE funds to LPs, as well as the different attributes of this information (e.g., accuracy, information content), especially given the limited oversight (vote or exit) available to LPs. Broadly, PE provides an opportunity to study how, when, and why accounting matters under conditions of potentially high information asymmetry and low mandatory disclosure requirements. First, given the lack of regulation for PE funds, it is important that researchers document funds’ reporting choices to establish a baseline for future researchers to expand upon. For example, studies must first document basic facts such as whether funds use GAAP, obtain audits, use Big 4 auditors, and whether some auditors are more specialized in the PE space than others. Gaver et al. (2023), one of the first studies in the PE fund-level reporting area and the first to use Form ADV data for PE funds (discussed later), document some of these facts, as do Mason, Utke, and Weber (2023) and Mason and Utke (2020).

Given the unique attributes of PE funds, an understanding of funds’ basic financial reporting then leads to the development of additional research questions. Because PE funds are opaque and lightly regulated as compared to public entities, financial reporting may play a more important role in reducing agency costs in the PE setting. Further, PE funds face limited governance from LPs (i.e., lack of vote and exit) and from creditors and markets (e.g., short sellers; Miller 1977), suggesting financial reporting could play a significant role in PE funds. We discuss governance further in Section 3.4. Alternatively, reporting may be less important for funds because

\textsuperscript{29} Major differences arise between PE funds and mutual funds because PE funds generally control their (private) portfolio companies while mutual funds do not. Further, mutual funds are heavily regulated, while PE funds are not. Note that, like mutual funds, hedge funds publicly report many of their holdings to the SEC. Also, like mutual funds, to the extent hedge funds invest in publicly traded securities, valuations are straightforward using market prices, unlike in PE funds where valuations are left to managerial discretion under fair value accounting.
LPs are sophisticated – required to meet the SEC’s accredited investor definition – and have direct access to GPs. Notably, Reg FD does not apply to PE funds.

These differences leave open important questions regarding the accuracy, relevance, timeliness, and information content of disclosure to LPs. For example, while investor attributes (e.g., horizon, sophistication) affect reporting for public firms, it is unclear, ex ante, what effect (if any) LP attributes have on different dimensions of funds’ financial reporting quality, given the limited LP oversight in PE funds. Further, if sophisticated LPs can reduce information asymmetry on their own (as argued by the SEC as the reason for limited disclosure requirements), what attributes enable them to do so? For example, do LPs with larger AUM command better financial disclosures or do they not need them because of a higher level of sophistication relative to smaller LPs? Alternatively, do GPs with larger teams of managers report differently than other GPs (cf. Cai 2022)? Further, LP or GP background or experience may be another important attribute. For example, do LPs (GPs) with prior experience as GPs (LPs) provide better reports or have more credibility, reducing the need for reporting? Gompers and Mukharlyamov (2022) and Brophy, Miller, and Yimfor (2022) explore aspects of LP and GP backgrounds, but not in the financial reporting context. Similarly, manager turnover at the GPs (e.g., Lerner and Noble 2021; Woodman 2022) may have unique accounting consequences given the wide reporting discretion afforded to GPs. PE’s unregulated nature also allows investigation of the benefits of internal controls audits. Given that most commentators suggest that mandatory internal controls audits only bear costs, it is interesting that PE funds voluntarily obtain these audits. Mason et al. (2023) provide new insights into why businesses choose these audits, an important open question in the literature.

Perhaps among the most important question is how accounting and disclosure affects capital formation. PE allows researchers to explore how accounting choice affects funds’ new fund
formation or fundraising. Researchers can also explore how accounting affects current LPs’ decisions to either continue investing in an adviser’s future funds or devote resources to searching for funds from a new adviser.30 Finance research explores questions related to LPs’ selection of GPs but does little with financial reporting (e.g., Brown, Gredil, and Kantak 2022; Sefiloglu 2022), aside from fair value reporting discussed in Section 3.2. Gaver et al. (2023) and Jiang et al. (2022) take important first steps in these areas. Notably, Gaver et al. (2023) find little evidence that financial reporting affects new fund formation. This finding raises interesting, and perhaps problematic, questions for accounting researchers broadly: what if accounting does not matter in the primary market for capital formation (i.e., PE)? Is the problem that accounting standards do not reflect relevant information? Numerous other important questions arise. For example, do funds with better financial reporting or internal controls make better investment decisions?31

Further, the role of third-party monitors in PE reporting remains largely unexplored. At least two types of external entities may affect PE financial statements: audit firms and external valuation consultants. The former audit the financial statements, while the latter assist in the asset valuation process that forms the basis for those financial statements (i.e., reported performance). However, it is unclear whether different auditors and/or valuation consultants provide services that generate detectable differences in funds’ financial reports. While much audit research explores the claim that certain service providers are experts or “specialists,” or examines quality differences in services provided by “Big” versus non-Big services providers, these questions remain open in the PE setting. Importantly, attributes that drive audit quality in other settings (e.g., litigation risk,

30 Notably, the unique “repeated game” nature of the PE setting may be fruitful for new theoretical models exploring disclosure decisions in these settings. Some theoretical PE models exist in finance (e.g., Chung et al. 2012). Discussion of potential avenues for these models is beyond the scope of our study.

31 In the ultra-competitive PE markets, it seems unlikely that improving reporting quality leads to improvements in performance; otherwise, all funds would maximize reporting quality. That said, we still view these as relevant research questions, with results that likely differ from those for public firms. Further, while reporting may not affect overall performance, certain other fund attributes (e.g., efficiency; time to close deals; etc.) may be affected.
reputation risk, specialization) may be less relevant for PE funds. For example, complex fair value estimations may make auditing and valuation more difficult for PE funds. Similarly, service providers focusing on large and notable public clients may mean that “Big” providers are less adept at servicing more opaque and private PE funds. Examining these questions is particularly relevant given new SEC proposals for increased audit regulation (Utke and Mason 2022). Mason and Utke (2020) and Easton, Larocque, Mason, and Utke (2022), discussed in Section 3.2, provide initial insight into some of these questions.

Briefly turning to disclosure beyond financial reporting, Form ADV (discussed below) is in some ways the PE adviser’s version of Form 10-K. The information disclosed on Form ADV is mandated by the SEC but differs substantially from Form 10-K. As with Form 10-K, PE fund advisers make choices in how to disclose information in Form ADV. These choices, along with their determinants and consequences, can be explored. We note that, like other SEC filings such as Form 13F, only a subset of PE advisers are subject to Form ADV requirements. That said, like Forms 10-K and 13F, public data availability allows for in-depth analyses of fund choices in Form ADV disclosures and represents a fruitful area for future research.

3.2 Fair Value Reporting

In addition to financial reporting choices, accounting researchers have begun to explore PE funds’ net asset value (NAV) reporting (e.g., Ferreira et al. 2019; Easton, Larocque, and Stevens 2021; Jenkinson, Landsman, Rountree, and Soonawalla 2020; Borysoff and Borysov 2022; Easton et al. 2022). PE funds using GAAP must use Level 3 fair value accounting for nearly all assets, providing an advantageous setting to explore fair value accounting and the discretion that it affords. Discretion arises because Level 3 fair value accounting requires the fund to develop valuation models for unique assets with no observable markets (Easton et al. 2022). PE fund NAVs
reflect the fair value of the fund’s share of ownership in its portfolio companies. NAVs represent one of funds’ most important pieces of financial information because LPs use NAVs to understand and evaluate funds’ investment performance, which influences LPs’ investment decisions (Barber and Yasuda 2017). Some LPs also use funds’ NAVs for their own financial reporting purposes.

Prior to fund liquidation, it is difficult for LPs, and potentially fund managers, to determine the true value of a fund. As a result, understanding how managers determine fair values in PE funds is fundamental to understanding this important setting. Existing studies of fund-level NAVs provide initial evidence documenting inaccuracy and bias in NAVs (e.g., Jenkinson et al. 2020; Easton et al. 2021). Given these findings, Easton et al. (2022) examine fund-level characteristics (e.g., fund attributes, ownership characteristics, and usage of third-party service providers) that could affect NAV bias and accuracy. In contrast to research on public firms, Easton et al. (2022) find limited and mixed evidence that LPs, valuation specialists, and auditors improve reporting quality. This highlights important differences between PE funds and other entities, and further emphasizes that we currently understand little about PE fund behavior, reporting, and oversight.

Another notable difference between the PE setting and other settings is that GAAP is not required for PE funds. Funds’ choice not to use GAAP may reflect concerns over GAAP fair value reporting. Gaver et al. (2023) find that about 35% funds do not use GAAP. While they find some fund-level attributes are associated with this choice (e.g., higher foreign ownership), it is important to accounting standard setters and other firms using fair value accounting to understand if this choice relates to concerns about GAAP fair value accounting. Future research could explore what other accounting approaches funds use and how alternative approaches affect reporting quality.

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32 See the Financial Accounting Standards Board’s (FASB) ASC 946 for accounting rules governing the financial services industry, specifically investment companies. Importantly, however, not all PE funds use GAAP.
33 Many funds are owned, in part, by other funds (known as fund-of-funds) which also report NAVs at fair value. Thus, fund-of-funds rely on NAV estimates from funds they invest in (Easton et al. 2021).
The PE fund fair value setting is unique for a few other reasons. First, PE fund investments are often held over multiple years, so that a fund reports valuation information for the same underlying investment(s) repeatedly to investors. Correspondingly, PE funds report cash inflows for the purposes of purchasing investments and cash outflows from the sale of investments. Thus, researchers can evaluate reported fair values versus actual cash flows, which cannot be done in other settings (e.g., Jenkinson et al. 2020; Easton et al. 2021, 2022). Second, because PE funds generally control their investments, funds can directly adjust their investments’ operations and take marketing steps in attempts to increase exit value (e.g., Bernstein, Giroud, and Townsend 2016). In contrast, public firms rarely control the operations of firms whose securities they account for under fair value accounting. As such, PE funds may have better information on the value – or can work to increase the value – of investments reported at fair value. Thus, fair value information communicated to LPs is unique in the PE setting versus other settings.

Future research could consider the incentives surrounding performance reporting unique to PE funds. Notably, PE funds do not have analysts that make forecasts, so managers do not need to manage results to those targets. Instead, prior finance research focuses on fundraising incentives and NAV overstatements related to currently held (i.e., unrealized) investments. Borysoff, Brown, and Kaplan (2022) also suggest reporting manipulations occur for realized investments to avoid reporting losses upon exit. However, the mechanism underlying these possible manipulations is unclear. Notably, “real” earnings management in funds differs substantially from that in public firms. For funds, “real” earnings management likely involves taking real actions to realize higher returns on certain investments, which may benefit the fund unless it leads to a short-term focus that distracts the fund from pursuing other more profitable opportunities.

The unique attributes of the PE setting lead to many additional unanswered questions
related to NAV reporting and earnings management. For example, do funds involved in earnings management suffer reputational losses? To the extent managers take real actions to improve outcomes, reputation costs may be low. Further, do manipulation mechanisms differ among funds that subsequently raise or fail to raise a new fund? That is, while prior research finds that funds manipulate NAVs before fundraising, it is not clear whether funds that fail to fundraise also attempt to manipulate NAVs but do not succeed. Does the degree of LP sophistication matter when LPs evaluate entering a new fund where the manager may have previously manipulated NAVs? Finally, what are the economic consequences of manipulating reporting – is there evidence of capital, effort, or time misallocation? Perhaps more importantly, accounting researchers can explore mechanisms that can reduce NAV misreporting (Easton et al. 2022) or identify the benefits that stem from more accurate NAV reporting. For instance, future work could examine whether advisers whose funds have more accurate NAVs make better investments overall or make better investments in their future funds.

In addition to NAVs, two other performance measures related to fair value are important for PE funds. The first is the internal rate of return, or IRR. This is a common performance measure reported to LPs and reflects the return to LPs on their capital invested in the fund. For interim periods, IRRs are calculated as if the current NAV is the fund’s terminal value. Thus, NAV reporting, as well as the timing of cash flows (capital calls and distributions), affect reported IRRs (e.g., Brown et al. 2021a; Larocque, Shive, and Stevens 2022). The second measure is total value to paid-in capital (TVPI). This metric is a multiple representing the value an LP receives versus what is invested. As with IRR, NAVs will affect the multiple reported to LPs in interim periods.

3.3 Compensation Contracting

In addition to financial reporting, PE funds mitigate agency costs between managers and
LPs through fund managers’ compensation contracts. As discussed in Section 2, a fund manager’s compensation consists of two parts: 1) a management fee, based on a percentage of the capital committed to the fund, and 2) a performance fee, known as carried interest (e.g., Metrick and Yasuda 2010). Based on this compensation structure, managers have incentives to exert effort and present strong performance in the current fund to increase their performance-based compensation. Managers may also make real decisions (e.g., exiting investments to realize gains) to lock in carried interest (e.g., Gredil 2022). In addition, managers have incentives to present favorable current performance to increase their ability to raise capital for future funds. Raising new funds is important because it provides managers with fixed management fee income in the future, which allows the adviser to continue operating when current funds reach the end of their term.

These PE compensation structures produce incentives that differ from those of public firms, where managers generally focus on the single entity they are employed at. For example, PE advisers have incentives surrounding the raising of future funds. These unique incentives provide researchers with several new questions to explore. Notably, related to both compensation incentives and fair value reporting or real earnings management, there is the potential for either “cross-subsidization” or informational effects across PE funds. For example, multiple funds owning the same portfolio firm may report different valuations (cf. Agarwal et al. 2022) or advisers may engage in transactions across funds to boost valuations (cf. Gaspar, Massa, and Matos 2006; Kräussl, Rinne, and Sun 2021). PE funds’ affiliation with other financial institutions may affect compensation incentives or performance (cf. Zheng and Yan 2021). Finally, while compensation structures are generally similar across funds and do not need separate consideration (discussed

34 For additional studies discussing the incentives arising from performance fees, see Kritzman (1987) and Grinblatt and Titman (1989). Dai, Merton, and Rizova (2021) provide a recent discussion of related research.
earlier), research specifically focused on compensation could explore variations in PE compensation structures and examine if those variations affect a range of fund outcomes.

3.4 Private Equity Fund Governance

While financial information provided to LPs is clearly important to LPs who must prepare financial statements under fair value accounting (e.g., fund-of-funds), it also plays a role in the ability of LPs to monitor fund managers, reducing agency costs (e.g., Jensen and Meckling 1976). However, LPs’ and third parties’ ability to influence PE funds appears to be lower than in public markets. For instance, a GP has full control of its fund, with little or no LP voting. Additionally, LPs cannot easily exit a fund because of the closed-end fund structure and limited opportunities to sell investment stakes in the secondary market. As a result, LP influence over the fund through voting or exit is limited and fundamentally different from other settings. Notably, the PE fund setting provides an avenue to explore other governance mechanisms, including reputation (e.g., Gompers 1996). Further, while LPs generally cannot exit current funds, they can forgo investing in future funds, which may serve as a disciplining mechanism. Notably, Jiang et al. (2022) find that advisers that disclose that their employees or affiliates have records of misconduct are less likely to raise future funds. The new funds are less likely to attract both existing and new LPs, suggesting that disclosure of misconduct plays a role in governance over PE funds.

We highlight that PE funds sometimes have LP Advisory Committees (LPACs), which consist of a small number of LPs (see Müller 2008). However, it is unclear whether LPACs serve a governance role. Müller (2008) suggests that the primary function of these boards is waiving GP conflicts of interest (i.e., GP’s Fund 1 sells assets to GP’s Fund 2). LPs appear to view LPACs as informational, rather than governance, tools or as investor relations instruments. While related to existing director research, the absence of mandates and lack of clarity of the roles and power of
LPACs leave many open questions (see also Burkart, Miglietta, and Ostergaard 2022). Initial empirical research could document the prevalence, composition, and varying types of LPACs with additional, more robust research projects exploring the consequences of LPACs.

In addition to LP oversight, third parties (e.g., auditors) may monitor fund managers, as discussed earlier. Several important differences versus other markets exist, including the possibility of external auditors facing lower litigation risk in private markets and external audits only being required recently, following the passage of Dodd-Frank, and only for a subset of PE funds (see Section 4). As a result, it is unclear how third parties provide oversight in PE funds. Unlike most public firms, data is available on funds’ third-party service providers, including third-party valuation specialists, in addition to auditors. Despite innovative work that begins to explore these aspects (e.g., Mason and Utke 2020; Borysoff and Borysov 2022; Easton et al. 2022; Gaver et al. 2023), whether, why, and how LPs and third parties influence or govern PE funds is unknown, especially considering PE’s unique attributes discussed above. Given the volume and significance of governance-related research for public firms, we view this as a large research opportunity.

It is also important to note that PE funds generally do not carry debt. While PE funds use debt at their portfolio companies, PE funds are primarily equity financed. As such, most PE funds lack creditor oversight. Creditors generally have no rights to directly monitor PE funds, and any debt covenants and contracts are with the portfolio companies. Of course, PE funds can bail-out portfolio companies, and creditors are aware of this (e.g., Belyakov 2020; Shive and Forster 2022). Regardless, this does not represent creditor monitoring of funds in a traditional governance sense.

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35 Recall that another unique aspect of PE funds is that they are not covered by financial analysts, who serve an important governance role as third-party monitors for public equities (Chen, Harford, and Lin 2015).
36 Recent work highlights a trend of PE funds increasingly using fund-level debt (e.g., Brown, Harris, and Munday 2021b). This presents several research opportunities. On one hand, funds with and without debt may face different governance mechanisms. In contrast, fund-level debt may be secured (e.g., by LP commitments), reducing creditor monitoring. Separately, fund-level debt likely generates debt-financed UBTI under IRC § 514, meaning that funds with fund-level debt would require additional structuring to prevent tax-exempt LPs from receiving UBTI.
37 Of course, PE funds can bail-out portfolio companies, and creditors are aware of this (e.g., Belyakov 2020; Shive and Forster 2022). Regardless, this does not represent creditor monitoring of funds in a traditional governance sense.
considering, however, that PE funds fundamentally differ from other entities.

3.5 Organizational Structure

Despite legal organizational structure being a fundamental attribute of all business entities beyond just PE, virtually no research explores how entities are legally organized. Organizational structure refers to the relations among legal entities within a business (i.e., as would appear on an entity’s organizational chart). To our knowledge, the only work directly exploring organizational structure is Agarwal et al. (2018; 2021).38 Research in this area is difficult because of data limitations. However, PE funds are highly dependent on the nuances of complex organizational structures, and LPs care about these structures (e.g., due to UBTI, which does not apply to most publicly traded firms; Mason and Utke 2023a, c). As such, data are available for PE funds that are not available for other entities, permitting investigation of this fundamental business decision.

Organizational structure is important – to both PE funds and all business entities – for at least two reasons. First, legal liability is often based on specific legal entities in the organizational structure. Second, and relatedly, creditors often deal with single legal entities, which may or may not include guarantees by other entities (e.g., Beyhaghi 2022). Beyond these, organizational structure is particularly important in the PE fund setting. Notably, IRC § 168(h), in conjunction with IRC § 168(g) and 168(k), limit depreciation deductions if a fund has too many tax-exempt LPs in certain portions of its structure (Cannon 2018). As such, funds may (or may not) engage in complicated structuring to avoid these limitations. Exploring the determinants and consequences of these structuring decisions is a fruitful area for future research. Further, understanding how investment incentives (e.g., bonus depreciation) affect investment decisions is a fundamentally

38 In contrast to the limited work on organizational structure, numerous studies examine organizational form, which is an entity’s choice to be a corporation or partnership (e.g., Guenther 1992; Terando and Omer 1993; Gentry 1994; Gordon and MacKie-Mason 1994; Ayers, Cloyd, and Robinson 1996; MacKie-Mason and Gordon 1997; Henry, Plesko, and Utke 2018; Utke 2019; Allen et al. 2022; Mason and Utke 2023c).
important research question (e.g., House and Shapiro 2008; Edgerton 2010; Zwick and Mahon 2017; Ohrn 2019; Tuzel and Zhang 2021). Thus, PE funds, in conjunction with IRC § 168(h), may provide a new setting to explore the consequences of investment incentives or cases where those incentives are limited. These research questions represent one case where a detailed understanding of the funds’ organizational structure (e.g., Figure 2 or 3, not Figure 1) comes into play. PE funds likely present a laboratory where researchers can explore how taxes, LPs, investment incentives, and other attributes affect fundamental investment and organizational structure decisions.

3.6 Additional Future Research Areas Beyond the Scope of This Study

Our study focuses on research opportunities involving PE funds at the fund-level. A multitude of other opportunities exist in the PE space yet are beyond the scope of our study (e.g., not at the fund-level). We highlight three such opportunities. First, as noted earlier, once funds raise capital (a question within the scope of our study), questions arise regarding how funds allocate capital to portfolio companies (i.e., fund-level to portfolio company-level questions). These interesting questions have received much attention, though not in accounting. Thus, accounting researchers investigating these questions should carefully review the broader finance and entrepreneurial literature (e.g., Koenig and Tennert 2022; see Cumming et al. [2022] for a review) to avoid overlap with existing studies. Related questions arise regarding how portfolio companies use PE capital (i.e., portfolio-company-level questions).

Second, while accounting, finance, and economics research has examined the effect of PE fund ownership on portfolio companies (e.g., Katz 2009), one unique and new accounting-specific question involves PE fund ownership of accounting firms (e.g., Drew 2021; Brewer and Drew 2022). Not surprisingly, as suggested in Section 3.5, PE ownership of accounting firms involves complicated organizational structuring, perhaps providing additional research opportunities. The
potential influence of PE on accounting firms highlights the significant economic impact of PE.\(^{39}\)

Third, corporate venture capital (CVC), university venture capital (UVC), and sovereign wealth funds (SWF) present important research opportunities. These entities have some overlap with PE. For example, they can be LPs. That said, CVC and UVC often invest directly in portfolio companies either alone (i.e., like a fund) or as co-investors alongside a PE fund (like some LPs). However, CVC and UVC differ substantially from PE funds in their structure and operations. First, CVC and UVC generally do not have LPs, do not fundraise, do not call or distribute capital, do not charge management or incentive fees, and do not have limited lives. CVC and UVC may also focus on different objectives than traditional PE, such as strategic objectives associated with technology of the corporation or university. Despite the importance of these entities, they do not resemble PE at the fund-level, which is our focus. Most CVC, UVC, and SWF research focuses on the consequences of these investors investing in certain firms (i.e., fund to portfolio company), which is not our focus, or in their role as LPs, which we include in our overall discussion of LPs.\(^{40}\)

### 3.7 Additional Considerations and Distinctions for PE Funds versus Prior Research

As discussed throughout the study, PE funds differ from previously studied entities in ways that could generate different results in the PE fund setting versus other settings. These differences imply that PE fund findings that are similar to (different from) prior results are not obvious (impossible). This subsection clarifies this point related to some prior settings that may appear similar to PE and discusses some additional considerations for PE fund research.

First, we briefly discuss Special Purpose Acquisition Companies (SPACs), which share

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\(^{39}\) While it is well known that PE funds influence portfolio companies, the economic outcomes – both in aggregate and by industry – are empirical questions (e.g., Davis et al. 2021b and Ewens, Gupta, and Howell 2022).

\(^{40}\) For examples of CVC, UVC, and SWF research, see: Ivanov and Xie 2010a, b; Bernstein, Lerner, and Schoar 2013; Chemmanur, Loutskina, and Tian 2014; Calluzzo, Dong, and Godsell 2017; Ivanov 2017; Zheng 2017; Hamm, Jung, and Park 2021; Cunmin and Monteiro 2022; Godsell 2022; Johan and Li 2022; Kremer, Ackleitner, and Braun 2022; Binfarè, Brown, Harris, and Lundblad 2023; Magomendova, Villaescusa, and Manresa 2023.
some attributes with PE funds. SPACs, often formed by PE fund advisers, mirror PE funds in that they raise capital with the goal of acquiring a private firm. Thus, SPACs share some similarities with PE fundraising, which has been heavily studied (e.g., Kaplan and Schoar 2005; Chung et al. 2012; Hochberg, Ljungqvist, and Vissing-Jørgensen 2014; Arcot, Fluck, Gaspar, and Hege 2015; Barber and Yasuda 2017; Chakraborty and Ewens 2018; Brown et al. 2019; Pham et al. 2021; Jiang et al. 2022). Rodrigues and Stegemoller (2013) and Gryglewicz, Hartman-Glaser, and Mayer (2021) describe the link between SPACs and PE funds. That said, SPACs are public firms that have disclosure requirements that PE funds do not. As such, SPACs can be used to conduct research and address questions related to PE that are difficult to examine directly in PE funds due to data limitations. However, SPACs and PE funds are distinct entities facing different environments, so we highlight that findings in the SPAC setting do not necessarily apply to PE.

Second, crowdfunding also bears some loose similarity to PE funds. The main similarity is the low level of regulation, though crowdfunding faces much more regulation than PE. However, crowdfunding research (e.g., Donovan 2021; Bogdani, Causholli, and Knechel 2022; Gong, Krishnan, and Liang 2022) provides little insight on PE funds for at least two reasons. First, crowdfunding raises trivial amounts of capital compared to PE. Consistent with the relatively small amounts raised in crowdfunding, crowdfunding firms generally feature low quality entrepreneurs and do not successfully progress forward (e.g., Blaseg, Cumming, and Koetter 2021; Dolatabadi, Fracassi, and Yang 2021). Thus, crowdfunding provides limited insights into PE funds, which raise significant sums of money and finance economically significant firms.

41 See Gahng, Ritter, and Zhang (2021) for an overview of SPACs.
42 Six major PE fund advisers are publicly traded: Apollo, Ares, Blackstone, Carlyle, KKR, and TPG. The public entities are structured to collect management fees and incentive fees from underlying funds, as well as engage in businesses other than PE (Farrell 2022). Importantly, the advisers’ funds are not public. That said, these advisers’ ‘public-firm’ SEC filings (particularly the S-1 registration statements) are also useful to understanding the PE space. Aside from these six major advisers, a number of smaller entities or entities that manage PE in conjunction with numerous other activities (e.g., Hamilton Lane) are publicly traded and may provide additional insights about PE.
Finally, we discuss endogeneity in the PE setting. While endogeneity concerns pervade empirical research, researchers must understand *setting specific* endogeneity concerns. Rather than viewing endogeneity as a uniform problem, authors and, importantly, reviewers must 1) articulate their endogeneity concern and how it is relevant in the setting being studied, and 2) consider how the concern is or is not addressed. Hinson and Utke (2021) point out that there are three sources of endogeneity: omitted variables bias (including self-selection), measurement error, and simultaneity.

The most common endogeneity concerns in the PE setting likely stem from omitted variables bias. For endogeneity to be an issue, it must present a valid alternative explanation for results. We highlight two important issues in PE. First, endogeneity concerns for PE funds may arise related to performance. One notable concern is that, as discussed below, PE faces few mandatory disclosure requirements. As such, certain information is disclosed voluntarily and only better performing funds may voluntarily disclose information, making it important to understand that some results are limited to disclosing funds. As another example, a concern could be that fund performance drives fund choices (e.g., selecting Big 4 auditors). However, while research using data up to 2001 finds that fund performance is persistent (e.g., Kaplan and Schoar 2005), studies using more recent data find weak or mixed evidence of fund performance persistence and evidence suggesting that fund performance is mean reverting (e.g., Rossi 2019; Harris, Jenkinson, Kaplan, and Stucke 2020). Thus, for many PE fund research questions in accounting using recent data, fund performance may only present endogeneity issues in limited circumstances.

Second, we emphasize that it is vital to gain a basic understanding of the PE setting before conducting more detailed research. Given the current lack of information about PE fund behavior, it is difficult to identify sources of endogeneity (other than performance) that need to be addressed.
in the PE setting in general, though certain settings or questions may present more obvious sources of endogeneity. Until researchers understand PE funds’ basic descriptive statistics and associations, searching for settings with perfect “identification” is unproductive (see Gow, Larcker, and Reiss 2016). Researchers and reviewers must consider this while the important PE research stream develops. Once this research develops further, opportunities to use regulatory or other “shocks” become more viable, although we caution that it is important to validate such shocks (e.g., Atanasov and Black 2021; Donelson, Kettell, McInnis, and Toynbee 2022).

IV. DATA SOURCES

PE research faces the challenge of the lack of widely available, high-quality datasets. Precise and comprehensive fund-level data is hard to obtain and is generally only provided to LPs. Moreover, GPs currently face no requirement to make data about them or their funds available (except limited information in Form ADV, discussed below). The limited partnership agreements (LPAs) between LPs and GPs usually allow for substantial managerial discretion regarding financial statement disclosures so that even data provided to LPs may not be consistent across funds. Since no single data set covers the entire PE fund universe, researchers must use samples from different data providers, each of which may differ in their business models, data collection methods, approaches to dealing with confidentiality issues, and other characteristics.

In this section, we discuss various sources of PE fund data, their possible uses, and limitations associated with each data source. We categorize data providers by their focus on fund-level data or portfolio company-level data, moving from a focus entirely on fund-level (Form ADV) to a focus almost entirely on portfolio company-level (VentureXpert), with a range of providers in between. Except for Form ADV, the data we discuss are commercially available; data

43 Kaplan and Lerner (2017) also discuss some data sources. Our discussion includes more recent information and additional datasets not discussed in their article.
providers can conduct demonstrations for interested researchers. We then discuss possible combinations of specific data sources that could give rise to a more robust set of data to be used in future research projects. Overall, however, we again caution that it is vital that researchers fully understand the PE setting before working with these data sources.

4.1 Securities and Exchange Commission Filings: Form ADV

PE funds – more specifically, their advisers – are governed by the Investment Advisers Act of 1940. Historically, under Section 203(b)(3) of the Investment Advisers Act, private fund advisers were generally exempt from registration with the SEC if the fund adviser did not claim to be a public investment adviser and managed fewer than 15 funds (Budlong and Carney 2012). Under these rules, PE fund advisers disclosed very little information to the SEC, with virtually no information disclosed regarding the adviser’s individual funds. However, Dodd-Frank changed the regulatory and reporting environment for PE funds and their advisers (see Gaver et al. 2023 for details). Importantly, Dodd-Frank requires advisers managing more than $100 million in assets to register with the SEC and substantially alters the annual reporting for each fund adviser and the individual PE funds they manage. Adviser-level information is disclosed to the SEC annually on Form ADV, with Schedule D of Form ADV containing information for each PE fund managed by the adviser. Depending on the research question, researchers should pay careful attention to the information that is disclosed at the adviser-level (Form ADV overall) versus the information disclosed for each PE fund managed by the adviser (Schedule D of Form ADV).

Between 2012, the first year requiring PE fund disclosures under Dodd-Frank, and 2018, there were 92,385 BO and VC fund-years managed by 2,904 advisers with over $100 million in assets.

44 Dodd-Frank also requires most PE funds to obtain an external audit (non-exempt advisers). Advisers that manage only VC funds or manage less than $150 million in assets are exempt from this rule (exempt advisers). Dodd-Frank also applies to hedge funds. Thus, the reporting requirements cover all private funds. Because we focus on PE funds, we refer only to PE funds. Some advisers manage both PE and hedge funds.
AUM (Gaver et al. 2023) for an average of 4.5 funds per adviser (92,385 funds / 7 years / 2,904 advisers). With respect to adviser-level data, Dodd-Frank requires advisers to disclose information in the same manner as other Registered Investment Advisers (RIAs). This data includes information on adviser organization (e.g., state of formation, location, etc.), AUM, clients, compensation structure, employees, and other services provided (e.g., advisory activities). In addition, Dodd-Frank requires disclosure of information related to civil, regulatory, or criminal misconduct of the adviser or its affiliates in Item 11 of Part 1A of Form ADV. Misconduct is reported on a Disclosure Reporting Page (DRP). Jiang et al. (2022) use the newly disclosed misconduct information to analyze adviser fundraising for an adviser’s subsequent funds.

With respect to fund-level data, Dodd-Frank requires each adviser to annually disclose specific information about each PE fund it manages on Schedule D of Form ADV. Fund-level disclosures include fund type (e.g., BO, VC, real estate, etc.), reported fund size, ownership characteristics, and information pertaining to third-party service providers. The ownership characteristics of each PE fund include the number of owners, the proportion of inside owners (i.e., direct ownership by the fund adviser, GP, and affiliates), the proportion of foreign owners, and the proportion of the fund owned by fund-of-funds. The adviser must also report information related to the financial reporting choices of each fund. This information includes whether the PE fund obtains an audit, uses GAAP reporting, and whether the fund obtains an audit of its internal controls (see Gaver et al. 2023 and Mason et al. 2023). Funds obtaining an audit must disclose the auditor’s identity. Further, advisers must report whether the PE fund uses third-party service providers such as a third-party administrative service provider, marketer, broker, custodian, or valuation specialist (e.g., who helps determine the interim NAV of the PE fund, see Easton et al.

45 Fund-of-funds invest in other PE funds rather than companies and may fundamentally differ from other PE funds. As such, studies may wish to separately analyze, or exclude, fund-of-funds, depending on the research question.
2022), along with the identity of the provider. Altogether, Schedule D of Form ADV provides a wealth of information about individual PE funds that has historically been unavailable to researchers. Form ADV has been used in PE research such as: Mason and Utke 2020, 2023c; Jiang et al. 2022; Lerner et al. 2022; Gaver et al. 2023; Mason et al. 2023.

While Form ADV was historically only available through a Freedom of Information Act (FOIA) request, the SEC now makes it available online. Though machine-readable, these datasets require careful manual combinations before use. Researchers should pay attention to the advisers covered in each file (exempt or non-exempt) as well as the time periods covered in each file; failure to consider this will result in incomplete, and potentially biased and misleading, datasets. Notably, the SEC separates portions of Form ADV data into separate files. Thus, researchers attempting to merge multiple Form ADV files should carefully identify the appropriate adviser using the unique SEC identifier in Item 1 of Form ADV and the exact filing of Form ADV (e.g., the correct year and version – Form ADV has had slight revisions over time) using the data field ‘Filing ID.’ Regarding fund-level information from Schedule D of Form ADV, each fund is assigned a Fund ID, which can be used to link Schedule D information in separate SEC files for each fund and across time. Importantly, because Form ADV data is an annually required filing, it does not suffer from the voluntary nature of disclosure that commercial data sources (discussed below) face. However, Form ADV lacks information to compute fund performance metrics, is annual not quarterly, and only captures advisers currently managing over $100 million in assets. Therefore, analysis using Form ADV data may be limited depending on the research question.

4.2 Preqin

46 The full Form ADV is available at: https://www.sec.gov/about/forms/formadv.pdf. Data is available at https://www.sec.gov/foia/docs/form-adv-archive-data.htm#part2. See Gaver et al. (2023) and Jiang et al. (2022) for excerpts of Form ADV for data relevant to those studies. The overall data in Form ADV is too large to list here.
Preqin, another provider of PE fund-level data, continues to grow in prominence with practitioners and academics. Preqin covers over 50 years of data and contains information for all types of PE funds, primarily focusing on BO and VC funds. Most researchers do not use fund vintage years before 1993, which is when data becomes more complete (Barber and Yasuda 2017). Researchers can access some Preqin data through Wharton’s Research Data Services (WRDS), or directly from Preqin’s website (https://classic.preqin.com/signin/homepage). Based on our experience, WRDS provides a more organized dataset, but direct website access provides more comprehensive data. Most web-based data is easily downloadable into Excel.

Preqin’s data comes from multiple sources including FOIA requests filed with public pensions that are LPs, as well as from LP and GP data voluntarily disclosed to Preqin. Preqin aggregates the information and provides both fund-level and, to a lesser extent, portfolio company-level data. This data includes over 78,000 covered portfolio companies, owned by over 42,000 funds with over 11,000 identified LPs, which are managed by over 22,000 fund advisers. Therefore, Preqin has good coverage and is comparable to other commercial PE data providers.

In terms of specific data, Preqin contains information on interim NAVs, cash flows to/from LPs, as well as performance measures (e.g., multiples, IRRs) for each PE fund. Preqin also contains information on fundraising and operating activities including fund formation (e.g., vintage year), fund size or commitment, liquidations, and deal exits. Preqin also provides information on the fund type, regions of investment focus, and fund location. The data includes information on third-party service providers such as the fund’s legal advisers, prime brokers, custodians, and accountants.

48 The fund’s vintage year refers to the year the fund was formed or, more precisely, closed. A fund with a given vintage year will operate for a number of years (typically between 10 and 14 years) before liquidating.
Prequin provides some data on LPs investing in each PE fund, including (for some LPs) the LP’s capital commitment to a fund. Aggregation of Prequin data by adviser allows for adviser-level analysis as well. It is important to note, however, that data for each specific attribute is not available for each fund, adviser, or LP.\(^{50}\) That said, in our view, Prequin is a premier source of fund-level performance and fundraising data, as well as LP data (see Harris, Jenkinson, and Kaplan 2014).

Finally, Prequin includes portfolio companies owned by funds, as well as some details on deals (acquisition or exit). However, many portfolio company details (e.g., financial information) are limited or non-existent. Collectively, Prequin provides substantial fund-level data but more limited portfolio-company-level data. However, as noted earlier, because the data is voluntary in nature or limited to funds with public pension ownership, data may be incomplete or limited.

### 4.3 Burgiss

The Burgiss Group (Burgiss) provides software and information solutions to LPs, fund advisers, and fund-of-funds in the PE market. Specifically, LPs contract with Burgiss to provide administrative services related to the LPs investments. Thus, the LP directs the funds it invests in to send performance/NAV information directly to Burgiss. A benefit of this service to the LPs is that, because numerous LPs with various PE fund investments contract with Burgiss, Burgiss has performance data for a multitude of funds, which it shares with LPs at an aggregate level (e.g., by industry, location, etc.) but not by fund. Burgiss’s “Burgiss Manager Universe” (BMU) covers over 11,600 private funds dating back to 1978, representing over $9 trillion in committed capital across the full spectrum of private capital strategies (i.e., beyond only PE funds). PE fund data includes performance metrics (e.g., IRR, multiple, and various customizable measures that LPs view as an advantage of Burgiss), industry and geographic focus, fund type (e.g., VC, BO),

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\(^{50}\) Prequin also computes environmental, social, and governance (ESG) rankings, based on an internal methodology, for advisers, LPs, and portfolio companies.
vintage, and other fund characteristics (e.g., fund size). Importantly, Burgiss (like Preqin) provides fund cash flows and valuations that are generally necessary for NAV and fundraising studies. In addition to fund-level data, BMU includes data for more than 178,000 underlying portfolio company holdings (see Brown et al. 2020). Overall, Burgiss data allows researchers to measure and compare PE funds along a number of dimensions and provides the ability to create specific performance benchmarks for PE funds with varying attributes (e.g., by fund size, location, or more sophisticated user-defined characteristics).

One notable advantage of the Burgiss data is that it originates exclusively from the LPs and includes a complete transactional history between the LPs and their fund investments. This feature of Burgiss allows for a particularly reliable analysis of fund-level performance, subject to certain confidentiality requirements. Unlike voluntary GP-supplied or FOIA-based data in some other datasets, Burgiss’s LP-sourced data helps eliminate at least some of the concern about selection and survivorship bias that arises if a fund manager stops voluntarily reporting or is able to avoid future FOIA requests. Additionally, fund cash flow and valuation data are extremely accurate because LPs use Burgiss services for their own record keeping and investment monitoring. As with Preqin, we view Burgiss as a premier source of fund-level performance data (Harris et al. 2014).

While Burgiss is advantageous for the many reasons above, there are limitations. The most notable limitation of the dataset relates to anonymity of the data, which is similar to requirements imposed by some government agencies that allow research access (e.g., IRS, U.S. Census). Specifically, Burgiss limits researchers’ use of GP- and fund-level identifiers in most circumstances, which generally restricts analyses to aggregate fund-level patterns rather than information about individual funds. Free academic access to Burgiss’s PE fund data is provided through the Private Equity Research Consortium (PERC). For more information on the application
process, visit the Institute for Private Capital at https://uncipc.org/.\footnote{Two other potential data providers operate business models similar to Burgiss: Cambridge Associates (CA) and StepStone Group. To our knowledge, these data providers are less frequently used (or less willing to provide data to academics). We do not discuss them in detail, but they may be viable data sources in the future. An additional data source, the Private Capital Research Institute, strives to make data available to academics by combining several datasets. A limitation of this data is that, as with Burgiss, information is anonymized. See Jeng and Lerner (2016) and http://www.privatecapitalresearchinstitute.org/apply.php for additional details.}

4.4 PitchBook

PitchBook (owned by Morningstar) is a web-based PE data provider similar to Preqin, with some advantages and disadvantages. Compared to Preqin, PitchBook views itself as more “deal-focused” – focusing on individual investments in portfolio companies and attributes of these companies – than fund-focused, but claims to be competitive with Preqin regarding fund-level data. PitchBook (Preqin) has a more global (US) focus. PitchBook obtains data using FOIA requests, web scraping, and direct inquiries of GPs and LPs, typically quarterly, who voluntarily disclose information. PitchBook also obtains data from PE fund service providers (e.g., banks involved in acquisitions of portfolio companies). PitchBook has a sizable research team tasked with obtaining and reviewing this information. PitchBook offers datasets with detailed information on companies, deals, LPs, funds, financials, valuations, executives, and more. PitchBook covers over 80,000 funds, 60,000 advisers, 36,000 LPs, and nearly 200,000 portfolio companies, along with over 3 million private firms, including former portfolio companies, based on data from Dun and Bradstreet among other sources.\footnote{https://pitchbook.com/platform-data/funds; https://pitchbook.com/platform-data/limited-partners; https://pitchbook.com/platform-data/investors; https://pitchbook.com/platform-data/companies} Data is most complete after 2000.

The resulting data set has several features. First, PitchBook contains fund, adviser, and reporting LP name. In addition to fund-level performance, performance measures exist related to an individual LP’s holdings in a specific fund (e.g., IRRs, investment multiples), which may enhance and broaden potential research questions. Second, PitchBook collects robust data on
third-party service providers, executives, and industry professionals. This includes information on both fund partners (i.e., individual managers) and portfolio company executives, as well as the portfolio company board seats allocated to PE funds. This data may allow researchers to extend areas of research beyond performance and valuation-related questions; for example, this could enable exploration of network effects in PE markets. Finally, PitchBook has detailed portfolio company data including information on funding rounds (e.g., dollar amounts, valuations, and investors) and industry, as well as some portfolio company financial and patent information. PitchBook also has data on portfolio company exits. We view the executive and manager data, as well as the portfolio company data, as advantages of PitchBook (Preqin includes some of this data, but we believe PitchBook is more complete). However, PitchBook appears to have relatively less fund-level information, such as fundraising, than Preqin.

We note two important cautions about PitchBook. First, as with all PE datasets, the data provided to PitchBook is not standardized and therefore will not be complete for each entity in the dataset. Second, PitchBook is very restrictive in allowing use of its data. Its academic licenses only permit downloads of 25 rows of data per month. For an additional fee, this can be increased to 2,000 rows of data per month. This severely limits academic research, which relies on large, complete datasets. However, our discussions with PitchBook indicate that they are open to providing bespoke academic licenses that allow additional downloads, but at additional cost. Further, PitchBook now provides access to some of its data through WRDS.

4.5 Refinitiv (formerly Thomson Reuters’s Venture Economics and VentureXpert)

Another provider of PE fund data is Refinitiv, formerly known as Thomson Reuters, which
provides information through Venture Economics (TVE), also known as VentureXpert. For consistency with prior work, we refer to Refinitiv as TVE. TVE data is accessible through a few methods; we use Workspace, which is available as a web-based or desktop application, each having identical features and interfaces. Existing finance research uses TVE to measure performance of PE funds at the fund- and GP/adviser-level (e.g., Kaplan and Schoar 2005; Phalippou and Gottschalg 2009; Ewens, Jones, and Rhodes-Kropf 2013). It is important to point out that TVE has evolved over time, and to our knowledge, no longer includes fund-level performance data. If the fund-level performance data does exist, we strongly advise against using it. Stucke (2011) highlights issues with TVE by identifying duplication in certain fund’s NAVs late in the fund’s life. Harris et al. (2014) compare Burgiss, Preqin, and TVE. They also find that TVE reports biased performance data, whereas Preqin and Burgiss are equivalent to one another.

That said, TVE appears to provide high quality portfolio company-level data. TVE obtains data from GPs, LPs, firms, and public sources related to deals and other transactions. TVE is more deal-focused, examining acquisitions and exits of portfolio companies as well as fund- and adviser-level fundraising deals dating back to the mid-1980s. Importantly, TVE links advisers to funds and their portfolio companies, including details on funds’ current and former portfolio companies (and, vice versa, portfolio companies’ current and former PE fund investors). TVE also includes information on the deal value for each fund investment in a portfolio company. Note that the company-level “PermID” variable allows links between TVE’s various company-level datasets. At the fund-level, TVE includes data on committed capital, fundraising history, fund employees, and funds’ industry allocations across portfolio companies. Further, TVE has PE performance benchmarking data (at the aggregate level) through an add-on subscription, sourced from CA data. TVE covers 22,000 fund advisers and 51,000 funds. TVE includes over 194,000 Americas-based
investments by these funds. For over 133,000 global portfolio companies, TVE includes historical information including fund investors and officers/directors.\textsuperscript{55} TVE also has revenue and employee data for 3.5 million global private companies and financial statements for 1.3 million global private companies, though these may or may not be portfolio companies. As with all PE datasets, TVE does not have all information for every entity included in its dataset. Note that TVE does not have data on LPs or on fund NAVs or cash flows. Data can be exported to Excel. While there is no hard limit on data exports, exporting no more than 100,000 rows at a time maximizes functionality. We view TVE as sharing some of PitchBook’s advantages for portfolio company-level data.

4.6 Proprietary Data Sources

As with many settings, proprietary data sources are bound to become more and more common in PE research. Notable recent PE papers using proprietary PE fund data include Nadauld et al. (2019), which uses secondary market transaction data from a large intermediary covering sales of LP stakes in PE funds, and Lerner et al. (2022), which uses State Street custodial data that tracks cash flows between funds and LPs. Lerner et al. (2022) includes co-authors from State Street. Whenever possible, we encourage authors using proprietary data to link the data to the publicly available Form ADV data as one possible way to support its validity.

Unfortunately, use of proprietary data often leads to the possibility of misreporting and misuse. For example, some recent studies (e.g., in the private firm setting) claim to obtain proprietary consolidated parent-level tax return data from the IRS (see Hur 2020, 2022). However, tax returns are not filed at the consolidated parent-level (e.g., Hanlon 2003). Further, certain entities included in some of these studies (i.e., partnerships and S-corporations) are legally prohibited from filing any type of consolidated tax return. See Mason and Utke (2023b) for

additional details related to other settings. Thus, we urge extreme caution when using proprietary datasets for PE fund research. We encourage researchers who wish to use such data to fully understand the PE setting, and their proprietary data, before using proprietary data. Further, the use of proprietary PE fund data should involve substantial conversations with PE fund practitioners (e.g., employees, accountants, and attorneys) to ensure its viability. Finally, while it is arguably more difficult to detect misreporting of proprietary data, researchers should be aware that egregious misuse is likely easily detected. See Zeff (2016) for a broader discussion of the importance of factual accuracy in research.

4.7 Combinations of Data Sources

The datasets we discuss provide helpful yet limited information on PE advisers and funds (and, to a lesser extent, LPs and portfolio companies). To overcome limitations associated with using any one dataset, researchers may combine datasets. One possibility involves combining commercial datasets, such as Preqin, with Form ADV. To combine these datasets, researchers employ name-matching, using individual fund names because there is no unique fund identifier across datasets. In some cases, the name is easily matched using a standard name-matching program in the software of choice (e.g., Stata). However, in many cases, the names do not match exactly. These cases require hand-matching of individual PE fund names. The mismatch between the two datasets is at times due to small but identifiable punctuation differences (e.g., ‘.406 Ventures’ versus ‘Point 406 Ventures’ or ‘L.P.’ vs ‘LP’), but some differences cannot be resolved and funds will not match. The differences arise because Form ADV tends to use legal names

56 Burgiss has confidentiality requirements that make combining their data with other data sources challenging. Additionally, Burgiss does not allow direct data access – requiring the use of Burgiss’s in-house intermediary to execute code and ensure compliance with confidentiality. Thus, it is easier to use Burgiss on its own or for robustness check purposes to confirm the results based on other data sources.

57 Our discussion is based on our experience matching Preqin and Form ADV, but should apply to matching other commercial datasets to Form ADV, or commercial datasets between one another. For example, both Preqin and PitchBook may have partial lists of LPs for a fund; combining these datasets could be fruitful - but costly.

Electronic copy available at: https://ssrn.com/abstract=4029787
whereas data providers may use informal names (e.g., ‘Partners Fund I L.P.’ vs ‘Partners Fund I’).

While hand matching Form ADV can add observations to a dataset, there are limitations. For example, Form ADV requires the disclosure of each PE fund managed by an adviser, which often includes both parallel and main funds as discussed in Section 2 (e.g., ‘Buyout Fund I’ – the main fund – and ‘Buyout Fund I Parallel’ – the parallel fund). Alternatively, commercial datasets may only list one fund (e.g., ‘Buyout Fund I’). Lerner et al. (2022) point out that both Burgiss and Preqin primarily focus on reporting data for the main fund rather than the parallel fund. As a result, researchers should use care when matching funds in Form ADV to commercial datasets to ensure appropriate matches between the datasets. Further, Form ADV is only filed by advisers with over $100 million AUM, so smaller advisers that exist in other datasets will not match to Form ADV.

When matching, the researcher should ensure that they are able to match at least one other fund of the adviser. In other words, we suggest exploiting information at both the fund- and adviser-levels to ensure accurate matches. Thus, for each adviser, the researcher should ensure that at least two adviser-fund pairs match between Form ADV and the commercial dataset. This helps to ensure the matched funds are in fact the same funds managed by the same adviser, rather than two similarly named funds that are actually different funds managed by two separate advisers. Easton et al. (2022) and Jiang et al. (2022) employ the approaches discussed here to combine Preqin performance and LP data with Form ADV ownership and fund or adviser characteristics. Research in this space could take a similar approach to answer additional research questions using combined data. We caution, however, that each dataset can be exceptionally costly. Thus, aside from combining any one dataset with freely available Form ADV data, readers and reviewers must be cognizant of the practical limitations of these combinations.

58 Some advisers (e.g., Silver Lake) aggregate their parallel funds with their main funds on their Form ADV and disclose this choice. Investigating this disclosure choice may be a fruitful area for future research.
V. CONCLUSION

PE is an economically significant area that enables researchers to provide new insight on fundamental research questions. In this paper, we first explain the unique PE fund setting, which requires thorough understanding before conducting and interpreting PE research. Second, we highlight the unique characteristics that make PE different from previously studied settings. This requires researchers to revisit basic facts about the setting before exploring deeper research questions in this new and increasingly important area. Third, we discuss future research opportunities related to financial reporting, disclosure, governance, organizational structure, and more. Finally, we discuss several PE fund data sources and the advantages and disadvantages of each source. In sum, we provide accounting researchers with tools that encourage meaningful PE fund accounting research relevant to regulators, auditors, fund managers, and LPs (see Reiter and Williams 2002; Mills 2019; Rajgopal 2021). Note, however, that PE markets are evolving so future developments may supplement or alter some of the items we discuss.
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This figure presents a common view of PE funds as a single entity with a set of investors and portfolio companies. Investors provide capital to the fund, which acquires portfolio companies. This does not represent actual PE fund structures.
Figure 2 – More Complete PE Fund Structure with Single Portfolio Company

This figure presents a very basic private equity fund structure, with only one portfolio company. Consistent with commonly used tax-technical notation, squares represent corporations, triangles represent partnerships, and dashed line entities represent disregarded entities. Depending on the research question, the appropriate "level" for analysis may be 1) the adviser/management company (which makes decisions for the group), 2) the fund level, where LPs invest, or 3) the portfolio company level. However, portfolio company analyses should account for any group structure because these firms/resources/structures.decision-makers will differ from stand-alone firms.
This figure presents a common private equity fund structure, still simplified to include only one portfolio company. Consistent with commonly used tax-technical notation, squares represent corporations, triangles represent partnerships, and dashed line entities represent disregarded entities. In this case, we assume the structure involves a separate external investor (e.g., another private equity fund in a joint acquisition).
APPENDIX
“Waterfall” Calculation of GP Performance Incentives

A PE fund incentive calculation (i.e., the 20% carry) typically consists of four tiers, though funds have discretion over the exact set up of the calculation. The available funds “flow” through the tiers, potentially spilling over to the next tier, which is why this is referred to as a waterfall. The first tier is the return of capital to LPs. The second tier is the preferred return, set at a hurdle rate (e.g., 8%). Consider the following example:

LP Investment = $1,000,000; Preferred Return = 8% per year; 2-year investment in a firm
Total Proceeds Available for Distribution upon Exit of Investment = $5,000,000

Tier 1: $1,000,000 return of capital to LPs; remaining available = $4,000,000
Tier 2: $166,400 preferred return to LPs (1,000,000*(1.08)^2 – 1,000,000); remaining available = $3,833,600

The third tier (which may not exist in all funds) involves a “catch-up” to the GP so that the GP earns its specified percentage of either the profits or the distribution (e.g., 20%). If we assume that the PE fund is structured so that the GP receives 20% of the distribution:

Tier 3: 1,166,400/(1-20%) – 1,166,400 = $291,600 “catch up” to GP; remaining available = $3,542,000

At this point, the GP has received 20% of the total distributions: 291,600 / 1,458,000 (1,166,400 + 291,600 = 1,458,000). Again, this catch up could be set up based on the profit (166,400) rather than total distribution.

The fourth step is the carry, where the remaining distribution is split based on the carry percentage (20% in this example).

Tier 4: 708,400 carry to GP (3,542,000 * 20%), remainder of $2,833,600 to LPs.

Thus, in this example, the GP receives 20% of the total distribution ($291,600 + $708,400 = $1,000,000 / $5,000,000 = 20%). If the “catch up” in tier 3 was computed on the profit rather than the distribution, the total percentage distributed to the GP would be lower.

Note that, to the extent any of these buckets is not “filled” (e.g., the second tier), the “flow” would stop there. In some cases, a GP will permit a clawback provision (i.e., a fifth tier), where previously earned carry can be returned to the LPs if performance at future points in time is below a threshold. Also, carry can be computed at the fund-level on all investments in total (known as a European Waterfall) or at the deal-level on a deal-by-deal basis (known as an American Waterfall). The American Waterfall is viewed as more favorable to the GP because the GP only has to pay back the LP investment and preferred return for each deal (i.e., less than the total capital and preferred return in the entire fund) to earn carry.

59 An example Excel template is available at: https://www.asimplemodel.com/insights/distribution-waterfall.