The First Time in Private Equity:
A Closer Look on Management Teams

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Abstract

First time funds lack investment and performance history to reduce information asymmetry for their investors. As an alternative signal, I investigate the predictive power of the managers' profile for fund raising, strategy, and performance. Evaluating a comprehensive data set on 567 newly raised buyout funds, 6,229 investments, and 1,388 partners reveals team and investment characteristics of successful managers. Professional experience dominates education and team diversity in fund raising. However, subsequent performance is negatively related to size and primarily driven by the partners' strategic investment choices, which in turn reflect their previous attainments.

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1 Introduction

When investors commit capital to a private equity partnership they engage in a typical principal-agent relationship (Jensen and Meckling (1976)). Investors desire the scarce skills some of the agents possess but which they cannot identify upfront. As this allows the agents to maximize rents (Metrick and Yasuda (2010)), the principals have to carry out costly due diligence before investing. In the case of a seasoned investment firm, past performance information alleviates the uncertainty and guides reinvestment decisions for the principal (see, e.g., Kaplan and Schoar (2005), Lerner et al. (2007)). However, in the case of a newly formed team, the information asymmetry is more severe and establishing initial trust requires the identification of alternative signals. Under this conjecture, a first time fund essentially resembles a small entrepreneurial venture. Its main asset is its management team, which consists of (a small number of) experienced individuals. This paper investigates whether the profile of the management team can serve as an alternative signal for fundraising success and as a guidance on investment performance and strategy to reduce information asymmetry in the absence of past performance information.

The institutional setup of private equity makes this investigation particularly interesting.[1] First, it represents a sizable and growing asset class that attracts a continuous flow of new funds joining the industry every year.[2] A considerable number of these first time funds has managed to yield high returns and subsequently establish a series of follow-on funds in the market (e.g., Braun et al. (2016)). Second, prior research provides strong evidence that manager skill matters as findings from studies on performance persistence (e.g., Kaplan and Schoar (2005), Phalippou and Gottschalg (2009), and Chung (2012)) and outperformance versus public markets suggest (e.g., Harris et al. (2014a)). Yet, the scalability of the business model is limited (e.g., Humphery-Jenner (2012), Lopez-de

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[1]Private Equity often refers to buyout and venture capital funds alike. The paper focuses on the dynamics of (leveraged) buyout funds yet a number of previous studies have studied them jointly. Differences between the buyout model and other (sub-)classes are highlighted wherever important,

[2]Assets under management recently totaled to $2.5 trillion with more than half of the capital invested in buyout funds. In each of the last years around 200 first-time funds attracted roughly $20 billion. *Source*: Preqin Global Private Equity and Venture Capital Report, 2017.

Silanes et al. (2015)) and top-performing funds are known to restrict inflows (e.g., Li (2014), Hochberg et al. (2014), Marquez et al. (2015)). This requires new investors or the ones with an increased demand to look for alternatives besides the (re-)investment in tenured funds. This creates an opportunity for first time funds. As a result of their smaller size and available resources, which are not yet distracted by the management of a legacy portfolio, they can exploit niche strategies that are not served by larger funds. Third, there is a substantial dispersion in individual fund returns (Korteweg and Sorensen (2017)) that demonstrates the crucial need for manager selection and reflects in significant due diligence costs for investors (Da Rin and Phalippou (2016)). Lastly, private equity funds are restricted to sophisticated asset managers and tie them into long holding periods (typically 10–12 years) with limited intermediate exit options through secondary markets. This makes an educated investment decision both possible and profound.

The buyout model is particularly capital intensive and dependent on funding from equity and credit markets. A newly formed team, which usually comprises highly educated and experienced professionals, requires significant upfront commitments from investors. In comparison, a traditional start-up, which is often founded by (young) entrepreneurs that want to pursue a risky (unproven) idea, is subject to a regular assessment pertaining to sequential funding rounds by varying sets of investors. On the other hand, the buyout model materially differs from venture capital. The managers take majority positions in (private/public) businesses to (actively) create value through financial, governance, and operational engineering (Kaplan and Strömberg (2009)). They bring along specialized skills in financing and operational experience to be executed in restructurings, rather than to fuel innovation, provide coaching and mentoring and to open up networks to the entrepreneur. Furthermore, venture capital frequently follows a "1 in 10" strategy where an individual company is exited with a stellar return through an IPO while the remaining investments either bankrupt or remain with little value. Finally, deal sourcing requires different skills from buyout managers as proprietary and agent-based channels are more important than the use of syndication networks and co-investments.

The paper focuses on two research questions. First, I investigate whether the profile of the management team serves as an alternative signal for fundraising success in the absence of past performance. To do so, I explore the features of teams that successfully raise a fund for the first time as well as the amount of capital they are able to raise. This question is unique to first time funds where teams start from a similar starting position, while past returns predict size for follow-on funds (e.g., Kaplan and Schoar (2005) and Li (2014)). I argue that receiving more capital goes hand in hand with more trust from investors. The managers have strong financial incentives to increase size upfront as fixed-revenue components dominate their expected compensation (e.g., Metrick and Yasuda (2010), Chung et al. (2012)). In addition, they benefit from increased flexibility in terms of addressable market segments and reputation signals to investment and credit markets. However, this trust has to be earned hard as larger funds, which typically lead to bigger investment tickets, are not necessarily to the benefit of investors in terms of expected performance (e.g., Humphery-Jenner (2012), Li (2014)). In order to gain this trust, the partners need to signal expertise and experience to investors and can do so through previously acquired skills and the selected team composition.

Second, I evaluate how team composition and profile relate to subsequent investment performance and the strategic choices of first time funds. The literature on venture capital (e.g., Zarutskie (2010)) and entrepreneurship (e.g., Martin et al. (2013), Millán et al. (2014)) suggest that education and professional experience drive success and performance. In addition, studies on buyout firms confirm the relevance and path dependency of partner and team characteristics for their value creation potential (e.g., Acharya et al. (2013), Degeorge et al. (2016)). In general, a fund's success depends on its ability to source (proprietary) investment opportunities (Fenn et al. (1997), Teten and Farmer (2010), Gompers et al. (2016)), financial, governance, and operational engineering (Kaplan and Strömberg (2009), Achleitner et al. (2010, 2011)), and a successful timing of the market when exiting from the investment (Ljungqvist et al. (2009), Jenkinson and Sousa (2015)). All of these require skills and experience from the managers.

Empirical results are based on a novel data set of 567 first time buyout funds, 1,388 of their partners and 6,229 investments. Findings reveal that team characteristics act as a signal during fund raising but not for performance. Investors favor traditional profiles and specialized skills related to core activities of the buyout model as prior professional experience clearly dominates education and diversity measures. Subsequent performance shows a large dispersion among funds and is primarily driven by the partners' strategic investment choices, which in turn reflect again their previous attainments. Furthermore, first time performance is negatively related to both fund and investment size and associated to niche and value-adding strategies, such as add-on acquisitions.

The main contributions are summarized in the following. First, the evaluation of first time funds is a (forward) extension of the recent discussion on performance persistence to the case where no past performance is available to capital providers and alternative signals are essential. This adds another angle to mitigate the prevailing information asymmetry between investor and fund team. Second, the analysis provides a joint investigation on the relevance of team characteristics, including the educational and professional history of managers, to identify their influence simultaneously on fund raising, strategy, and performance. Third, it is the first conclusive analysis of first time funds in the buyout segment using a large data set of fund- and deal-level data with granular information on team and investment profile. Thus, it contributes to the growing literature specifically focusing on buyout funds (compared to venture capital) that aims to shed more light on an important yet still opaque industry. Little is known so far about the managers initiating new firms, their strategic preferences, and how successful their undertaking is. The findings confirm the notion that buyout funds follow their very own dynamics.

The remainder of the paper is organized as follows. Section 2 reviews the related literature. Section 3 outlines identification strategy and details the data set. Section 4 presents empirical evidence on the drivers of fund raising, while Section 5 focuses on investment performance and strategy. Section 6 concludes.

2 Related literature

The paper relates to several strands of the literature. First, it adds to the literature on fund raising and performance in private equity. The seminal study of Kaplan and Schoar (2005) shows that (i) past performance predicts both inflows into future funds and their performance and that (ii) there is substantial heterogeneity among the funds. Several authors have confirmed and extended the persistence results in an effort to better understand their value for investors in reducing uncertainty (e.g., Phalippou and Gottschalg (2009), Chung (2012), Harris et al. (2014b), Robinson and Sensoy (2016), Braun et al. (2016), Korteweg and Sorensen (2017)). On the flip side, research on capital providers (typically referred to as "Limited Partners", LPs) complements the persistence view in that it finds some LPs to have superior skill in selecting investment managers (referred to as "General Partners", GPs). They subsequently achieve higher returns than others (e.g., Lerner et al. (2007), Chung et al. (2012)). While this stream of literature suggests that there is repeatable investment skill and that some investors are able to capitalize on the signal for manager selection, it does not provide guidance on first time funds. Thus, this study provides a forward extension to the persistence discussion for the case where alternative signals are required to overcome information asymmetry.

First time funds prove to be less conclusive as the mixed results on their performance suggest. Kaplan and Schoar (2005) and Phalippou and Gottschalg (2009) report lower returns compared to seasoned funds, while Chung (2012) and Harris et al. (2014b) observe the opposite. The latter conclude that first time funds should not simply be avoided since investors who dare to engage early on receive additional rents from the ability to participate in future sequences. Da Rin and Phalippou (2016) find this to reflect in greater effort and cost for due diligence due to the high uncertainty compared to mature funds and re-investments. Sensoy et al. (2014) also note that the investor base for first time funds differs. Insurance companies and banks invest most often, whereas endowments are least likely to participate. They argue that this may simply reflect better access to proven

fund houses for the latter and a desire to go for the safest choice. Further, Ljungqvist et al. (2009) highlight that the investment behavior of first time funds is less sensitive to market conditions and that they invest in riskier buyouts in an effort to establish a track record. This may well complement the investor's portfolio in terms of diversification and return potential. However, the literature so far has only marginally commented on first time funds and the topic is largely missing in the persistence discussion due to its lack of a performance sequence.

Second, as this paper argues that team characteristics can serve as an alternative signal in the absence of past returns, performance must by influenced by manager skill in the first place. While the findings on persistence suggest that such skill exists, several authors directly investigate human capital factors. For example, Dimov and Shepherd (2005) find that general human capital, compared to specific human capital, is positively associated to the success of venture capitalists.[3] In addition, Dimov et al. (2007) draw attention to the influence executives with finance expertise have on investment selection and strategy. Similarly for a European data set, Patzelt et al. (2009) confirm that education, especially in management related fields, and previous work experience have measurable influence on portfolio choices and diversification, such as industry and geography concentration. Cai et al. (2013) add that entrepreneurs have a positive impact as venture capitalists on firm performance, especially in the case of smaller and younger firms. Further evidence on the influence of human capital comes from the literature on entrepreneurship (e.g., Martin et al. (2013), Millán et al. (2014)), mutual funds (e.g., Golec (1996), Gottesman and Morey (2006)), and hedge funds (e.g., Li et al. (2011)). For buyouts, Acharya et al. (2013) find operational and financial backgrounds to matter for the fund's value creation conditional on the acquisition type (organic/inorganic). Degeorge et al. (2016) extend the evidence to secondary buyouts and note the benefits of complementary skill sets, in terms of educational backgrounds and career paths, between the buyer and the seller.

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[3]According to the authors, general human capital includes, for example, science or humanities education and entrepreneurial experience, whereas specific human capital comprises, for instance, business education and prior roles as a banker or a consultant.

Closely related to this paper is also a study by Zarutskie (2010) on first time funds in venture capital. She documents that task- and industry-specific measures, compared to general human capital, are a strong predictor for fund performance. In particular, past experience as venture capitalists and as a start-up executive as well as experience in consulting and engineering drive greater fractions of portfolio company exits. In addition, she notes that education in business administration relates negatively to performance. The analysis provides valuable insights into the relationship between team characteristics and performance in venture capital and this paper extends it along several dimensions. First, it investigates the relevance of human capital measures in the larger segment of leveraged buyouts. Second, it looks likewise at the influence of team characteristics as signals for fund raising, performance, and strategy. Finally, the performance data is based on actual returns (opposed to portfolio exit rates) and the sample provides an updated view on the next generation of fund managers (the original sample ends in 1998).

Lastly, the study draws upon several findings related to the organizational structure and scalability of private equity firms. While the relationship between fund size and performance is generally found to be not significant (e.g., Kaplan and Schoar (2005), Ljungqvist et al. (2009), Robinson and Sensoy (2013), Harris et al. (2014a)), some authors provide evidence that it turns to a disadvantage when either fund partners increase their work load too much (e.g., Li (2014), Lopez-de Silanes et al. (2015)) or limit their competitive advantage as they try to target different market segment (e.g., Humphery-Jenner (2012)). On the other hand, partners have incentives to increase fund size, which usually goes hand in hand with larger investment tickets, as it influences their compensation. Metrick and Yasuda (2010) argue that the scale of the buyout model is not necessarily to the benefit of investors as partners receive most of their compensation from future fixed-revenue components (instead of performance-linked variable components). In a similar fashion, Chung et al. (2012) name indirect pay as a significant source of revenue from future funds that partners may well integrate in their current behavior. Thus, while the partners are highly motivated, they also have financial incentives to increase fund scale.

3 Data set and the profile of first time funds

3.1 Selection strategy and descriptive statistics

The sample is obtained from PitchBook, a U.S. database provider for global M&A, PE and VC transactions.[4] It includes buyout funds on a global basis spanning vintage years from 1978 to 2010.[5] For this period 3,837 funds from 1,723 General Partners are listed in the database, whereby 56% of funds reside in the U.S., followed by 27% from Europe, and another 9% from Asia. The information for each fund consists of a fund profile, its investment activity, and its management team. The latter is available for slightly more than half of the funds and comprises the name, a textual biography, and a list of educational achievements for each individual.[6] Investment activity identifies the companies the funds acquired and includes company specific information, e.g., geography, industry, company age, as well as deal related information, e.g., transaction type, investment time, co-investors. Performance information in terms of an internal rate of return (IRR) and/or money multiple (TVPI) is available as a latest reported figure for roughly one third of funds. To increase availability of performance figures (IRR, TVPI) and, to a lesser extent, fund size, the data is complemented with information from Preqin whenever an entry is missing or more recent data is available.

In a first step, I only include funds into the sample for which sufficient information for the analysis is available. This incorporates (i) the biography of at least one partner, (ii) at least three investments, (iii) the committed capital, and (iv) the series number.

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[4]Brown et al. (2015) include PitchBook in a comparison of commercial private equity data sets (besides Preqin, Cambridge Associates, and Burgiss). They conclude that for North American funds all provide similar signals on performance, while outside of North America coverage varies across the databases. Harris et al. (2016) confirm that the Burgiss and PitchBook performance data are qualitatively and quantitatively similar. According to PitchBook, the data is mainly obtained from filings, press releases, and websites, and collected, verified, and integrated with additional information by their data teams. The research team also surveys companies, advisers, investors, lawyers, accountants, and lenders to cross-validate collected data. See www.pitchbook.com for more information.

[5]A buyout is a transaction wherein a firm acquires all or a significant amount of equity in a business, whereas vintage indicates the year that a fund held its final close and/or began making investments.

[6]This information is sourced from regulatory filings, fundraising information, investor websites and surveys and complemented with the person's role and position within the firm, e.g., appearance as lead partner in transactions or as a board member for portfolio companies.

In combination, this leaves a set of 1,655 funds in the initial sample, out of which 1,016 have an IRR figure and 1,073 have a TVPI multiple attached.[7]

In a second step, the sample is restricted to first time funds. These represent either the very first fund initiated by the respective general partner or the start of a new series by an established general partner. The classification is based on the allocated sequence number in the database and the fund name. Investors typically number their funds sequentially (e.g., by roman numerals) and name them according to strategy (e.g., by industry focus or geographic scope). The new series funds are included as they usually go hand in hand with a new strategy compared to the continuation of a successful series (where persistence comes into play).[8] As the allocation of the investment professionals is directly available at the fund level, and not only at the investment firm level, it is possible to identify the partners responsible for the new series and to include them in the analysis. This approach results in a final sample of 567 first time funds (out of 1,655), with 434 funds (77%) from newly set up investment firms and 133 funds (23%) representing the start of a new series from an established general partner running at least one other series in parallel. Around two-thirds are U.S. based funds with the remaining share primarily representing Western European domiciled funds. Fund performance is available for a subset of 255 funds with an IRR and 278 funds with a TVPI multiple.

Tables 1 and 2 show descriptive statistics on the first time funds and a break-down of the sample by vintage year. The average newly raised buyout fund manages USD 329 million in capital (median: 160) and provides investors with an IRR of 16.7% (median: 13.6%) and a total value of 1.84 times the paid-in capital (TVPI, median: 1.64).[9]

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[7]Around 300 funds are complemented with performance information from Preqin. While the selection strategy does not require funds to be liquidated, a minimum period of 5 years between reported performance and vintage year is imposed (leading to the removal of 18 IRR and 39 TVPI figures). After 5 years the investment period has typically ended and the risk of non-survival as well as the magnitude of potential markdowns is greatly reduced (Barber and Yasuda (2017)).

[8]Braun et al. (2016) argue that these *"focused 'divisions' within one large GP organization may have different experience, networks, skills etc."* and treat them as distinct sequences subsequently.

[9]When comparing follow-on funds that match the same selection criteria in the database (average IRR of 13.4% and TVPI of 1.63), I find the first time funds to achieve better performance but with considerably higher dispersion. Chung (2012) and Harris et al. (2014b) make similar observations, whereas Kaplan and Schoar (2005) and Phalippou and Gottschalg (2009) report the opposite.

The distribution shows high dispersion with a standard deviation of 15.7% for IRRs (interquartile range: 16.3%) and 0.99 for TVPI multiples (interquartile range: 0.97). The average management team lists 2.4 individuals (median: 2.0) and makes 11.0 transactions over the fund's lifetime (median: 9.0).[10] Table 2 also shows a split between new GPs and established GPs with a new series, which appear to be relatively similar across the main characteristics.

Table 1 about here: Summary statistics of first time funds

Table 2 about here: First time fund sample by vintage year

3.2 Team profile and investment activity

The 567 first time funds are managed by 1,388 partners that make a total of 6,229 investments.[11] Table 3 details their team characteristics and investment activity.

Table 3 about here: Team and investment profile of first time funds

In a first step, I use the biography of the partners to detail their educational profile and previous professional experience. There is a remarkable concentration on a small number of universities where the top three schools alone make up almost a quarter of degrees (consisting of Harvard, University of Pennsylvania, and Stanford). In addition, these institutions represent close to half of all MBA degrees. One third of managers graduated from an Ivy League school (including MBA degrees). These findings resemble the observations for the buyout industry overall from a widespread survey presented in Gompers et al. (2016).[12] Yet, it also indicates that the buyout fund manager universe represents a relatively homogeneous and "elite" group of people. In the context of first time

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[10]Zarutskie (2010) reports an average top management team size of 2.2 for first-time VC funds.

[11]Only 3% of the partners are female working in a mere 7% of funds. Furthermore, 28 of the partners are involved in two new funds and are included in both instances.

[12]The authors collect information on 767 individuals who work for one of 79 buyout groups. They report a 57% share of MBA degrees, 7% law degrees, and a majority from business schools at Harvard, University of Chicago, Stanford, University of Pennsylvania, and Columbia.

funds, the strong representation of what is perceived as "top schools" may be one channel to signal quality to future investors where the missing reputation on the organizational level of the investment firm is substituted through the alma mater.

The partners are on average represented with more than one academic degree. Most of them receive extensive business education as half pursue their degree in a related field. This even excludes MBA degrees that are in addition obtained by around half of the management team.[13] Almost a fifth of partners received a degree in the engineering and science fields, while a tenth obtained a law/JD degree. In unreported statistics, I find that the average team characteristics of the new funds closely resemble the profiles of mature funds. This could indicate that investors intentionally choose characteristics that are already familiar to them from other successful funds.

Besides the educational profile of the management team, I also examine their work history with regards to a previous position with a professional service firm, a bank, as an executive, and with a reputable general partner. Specifically, I parse experience in management/strategy consulting, with a major accounting firm, and with an (investment) bank.[14] Around a third of the average team has a professional history in banking, mostly with a top-tier financial adviser, a tenth in consulting, and a fourteenth with a major accounting firm.[15] As the newly founded teams locate primarily in large financial centers, 17% of partners are based in New York, 9% in London, 5% in Chicago, and 4% in Paris, they show a preference for the location where they likely used to work and a majority of their network is based. In addition, to account for having served in an executive role, the partner must have held a position as a senior executive in another company.[16]

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[13]A similar finding is reported by Cohen et al. (2008) for mutual fund managers.

[14]Included for consulting are McKinsey & Co, BCG, Bain & Co, Oliver Wyman, Roland Berger, Booz/Strategy&, and L.E.K., as accounting firms PwC, Deloitte, KPMG, EY, and Arthur Anderson, and for banking a list of 50 global banks compiled by The Banker as well as major investment banks such as Lehman Brothers, Bear Stearns, Lazard, Rothschild (list not exhaustive).

[15]I use the list of top-tier financial advisers from Golubov et al. (2012) that includes Goldman Sachs, Merrill Lynch (now Bank of America), Morgan Stanley, JPMorgan, Citi/Salomon Smith Barney, Credit Suisse First Boston, Lehman Brothers (now Barclays Capital), and Lazard.

[16]These only include positions as Chief Executive Officer (CEO), Chief Financial Officer (CFO), and Chief Operating Officer (COO).

This criterion is matched by one in eight partners. Finally, reputable general partners are based on the most active acquirers presented in Morkoetter and Wetzer (2015a) and show that one in twenty left one of these firms to found another fund.[17]

Figure 1 shows that the average team experience and education is surprisingly stable over time. The partners have always shown a preference for multiple degrees and MBA degrees. In terms of professional experience, there is an increasing trend that indicates prior experience in a skill related field has become more important over time.

Figure 1 about here: Team profile of first time funds over time

In a second step, I investigate the investment activity of the new funds. After fund inception, the partners invest quickly with half the transactions already taking place within the first two years. The share climbs to a third after three years and results in an average time lag of 3.2 years for investments. This is consistent with the expectation that first time funds already present initial investment ideas and potential target companies during the roadshow to investors. This allows them to execute a first wave of investments quickly after commitments are secured. Furthermore and consistent with the buyout model, the partners acquire mostly mature firms with an average age of 25 years (at time of deal). While the funds spread their investments across various industry groups, they show a strong preference for their home country. Thus, I look at the spread of the geographic distance between headquarter of the acquired firms and the fund's (closest) investment office.[18] Around a quarter of transactions happen in the partners' close surroundings (below 100 km in distance), yet at the same time almost half of transactions require significant travel efforts (above 1,000 km in distance). In terms of industry exposure, the managers primarily focus on services related business models rather than capital intensive infrastructure investments, such as the energy sector.

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[17]The list is from the author's Table 2 and includes Carlyle Group, Kohlberg Kravis Roberts (KKR), TPG Capital (formerly Texas Pacific Group), Apollo Global Management, CVC Capital Partners, Blackstone Group, Bain Capital, Warburg Pincus, Apax Partners, and Ardian (formerly AXA Private Equity).

[18]Distance is calculated according to the Haversine method assuming a spherical earth and ignoring ellipsoidal effects (radius of the earth 6,378,137 meter).

Interestingly, almost a third of investments are in syndication with another buyout fund and the first time fund is in lead in two out of three cases. Joining a syndicate is typically motivated by the spread of fixed cost and risks among the general partners. In addition, first time funds can benefit from the other firm's reputation, for example, in signaling deal quality to debt providers. On the flip side, the funds are hardly involved in public to private transactions, which represent the original form of a (leveraged) buyout, and show only limited interest in taking over portfolio firms from other general partners (secondary buyouts). This deal category usually requires a significant size from the new investor and a different skill set from the initial buyer. The rather inexperienced first time funds may not (yet) be able to provide these. Instead, the funds concentrate on add-on transactions and platform building as well as management buyouts/-ins and corporate divestitures. Add-on deals often support a prior acquisition in a buy-and-build strategy and require considerable management resources. Thus, they are well suited for freshly formed teams as they are not yet distracted by the management of a legacy portfolio.

Table 4 shows the univariate correlation among the main team and investment characteristics. Panel A focuses on education and past experience, whereas Panel B relates to investment portfolio attributes. This reveals some initial insights into hiring preferences and career tracks on one hand, and into investment strategies on the other hand. For example, before starting their own fund, engineers and scientists are likely to have worked for a consulting company, whereas banks attract more business majors. Another observation is related to the funds that are joining syndicates with other funds. They seem to increase the partner's geographic range, which may open up opportunities that are not otherwise available to the fund. Unreported analysis also shows that they happen rather late in the investment period, indicating they may not be done voluntarily but rather due to a need to invest left-over capital. Add-on deals also extend the geographic reach and go hand in hand with a higher number of investments.

Table 4 about here: Correlation within the team and investment profile

4 The team's signaling role for fund raising

4.1 Variables and methodology

The first research question focuses on the role of team characteristics as an alternative signal for fund raising success in the absence of past performance. Since only the funds that successfully enter the market are observable, the analysis uses the amount of capital the managers are able to raise as a proxy for investor trust. Receiving sufficient funding is detrimental to buyout funds as it determines the market segments they are able to target as well as their flexibility in employing the capital. When a fund is closed for fund raising, the committed capital can be regarded as an upper limit to the investment volume. The partners make capital calls to their investors only at the time of the investment. Thus, the capital is consumed by both the number of investments and the ticket size. On the other hand, committing more capital to managers without a track record is risky for investors due to the nature of the investments and the long holding periods. Until the managers prove their actual abilities, investors need other signals for the skill level.

To assess this impact, a cross-sectional regression model is employed which writes

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\begin{aligned}
Fund\ Size_i \ = \ & \alpha + \beta * Team\ Characteristics_i + \\
& \gamma * Fund\ Attributes_i + \lambda * Vintage_i + \varepsilon_i \ ,
\end{aligned}
\tag{1}
$$

with each observation representing one first time buyout fund. The dependent variable is the (logarithmic) fund size and the explanatory variables are the team characteristics. The latter follow the literature that identifies various exposures as predictors of success and comprise the team's education, professional experience, and size.

Education includes specialized human capital, such as business and legal degrees, general human capital, such as science and engineering degrees, and Ivy League schools as a signal of quality. Science and engineering education provides managers with an understanding of technologies and proves valuable for venture capitalists who need to assess

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the potential of new technologies (e.g., Patzelt et al. (2009)). Instead, a business focused education (including MBA degrees) provides knowledge of markets and enterprises, and thus may be of more practical value to the operational restructuring efforts of buyout funds. Similarly, a law education helps to avoid costly pitfalls during transaction structuring, both at the entry and exit time, as well as for debt funding (e.g., Dimov and Shepherd (2005)). All these degree types and fields are reasonably represented in the profile of first time fund teams indicating their usefulness and relevance.

Past professional experience includes a prior role in banking, consulting, as an executive and with a major private equity firm. Banking experience is fundamental to the high leverage transactions through knowledge of capital and debt markets as well as modeling expertise. Siming (2014) shows that buyout funds with past relationships to financial advisers also receive benefits in terms of sourcing, pricing, and performance of their deals. On the other hand, consulting and executives are related to operational improvements of the acquired businesses as a second pillar of value creation (e.g., Acharya et al. (2007), Achleitner et al. (2010, 2011)). The model also accounts for partners that left another private equity firm to join a first time fund. Ivashina and Lerner (2016) recently highlight the role senior partners play on the ability to raise capital. Their departure from established firms is often driven by the underprovision of carried interest and ownership, which can encourage the successful partner to start an own firm. In addition, Ewens and Rhodes-Kropf (2015) show for venture capital firms that the partners' human capital incorporate most of the skill and is much more important than the firm's organizational capital. This is consistent with Chung (2012) who argues that managers provide not only skills but also various other kinds of resources such as (industry) networks.

Lastly, a measure of the team's diversity with regards to professional experiences is added. Lopez-de Silanes et al. (2015) outline that a more homogeneous background among the management team can lead to smaller diseconomies of scale (e.g., by lowering communication cost). Similar to the authors, I calculate a Herfindahl-Hirschman index (HHI) based on the partner's exposure to roles in buyout related fields before setting up

the fund. These cover consulting, accounting, banking, and executive positions. While each category is only counted once per partner, whenever an individual matches multiple profiles, they are equally weighted.[19] Hence, the partner's total weight in the fund team remains equal to everyone else. If the partner's biography contains none of the four roles, the experience is set to "other". The average team diversity is calculated with 0.72 on a scale from zero to one (median 0.625).

In addition to the team characteristics, the fund attributes vector represents control variables. They include two indicator variables that are set to one if the fund is based in the United States and if the fund is from an established general partner that already runs at least one other series in parallel. The latter helps to disentangle pure team effects from the ones related to an existing organizational structure. On the other hand, U.S. based funds make up more than half of the sample and represent the majority of employed capital in the private equity industry. This makes it worthwhile to have a separate look at the geographic separation. Lastly and following standard practice in the private equity literature, vintage year fixed effects are used to account for unobserved time effects and changes in systematic risk that affect all funds alike.[20]

4.2 Empirical results

Empirical results from estimating the model using ordinary least squares (OLS) are presented in Table 5.[21] Columns (1) and (2) present educational and professional experience individually, while columns (3) and (4) combine them alongside fund attributes into a specification with and without vintage year fixed effects. Columns (5) and (6) add the average investment ticket size as an explanatory variable. While the original model uses

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[19]Using unweighted experience does not alter the main results.

[20]For example, Kaplan and Schoar (2005) show that new funds are more likely raised during boom times but subsequently underperform and become less likely to receive follow-on funding. Korteweg and Sorensen (2017) argue that using vintage fixed effects allows risk exposures and factor premiums to vary over time, and thus account for trends in leverage and credit market conditions.

[21]In unreported quantile regressions, coefficient estimates mainly remain within confidence intervals, i.e. estimates do not significantly change along the distribution. The variables on consulting experience and MBA degrees exhibit a downward sloping trend, whereas executive experience is upward sloping.

only information that is available to the investor at the time of fund raising (i.e. the team profile), this variable is an ex-post proxy for the team's consistency with their promised strategy. If the managers pitch to acquire multi-billion dollar businesses, they are more likely to raise a larger fund than if they pitch for smaller, niche investments. As the number of investments tends not to vary a lot across funds due to the availability of target companies within the limited investment horizon and available team resources, the main link between fund size and the allocation of the capital is represented in the average ticket size. Thus, these additional specifications test for the stability of the main results conditional on the targeted market segment.

Table 5 about here: Role of the management team for fund raising

Main findings on fund raising can be summarized as follows. Overall, variables related to the work history of the partners dominate the educational background. With regards to professional experience, prior roles with a bank and with a consulting firm significantly increase the raised capital. Similarly, the addition of a partner with a history at a reputable general partner and a trained lawyer exhibit positive influence. On the other hand, neither executive roles nor team diversity seem to have a direct impact.

There is little evidence on the importance of the educational background. The coefficient on business studies is negative (and slightly significant), while the rarer profiles in engineering and science carry a positive sign. Furthermore, there is no support that MBA degrees matter, a characteristic where one could easily imagine the existence of networks valuable to fund raising (e.g., Baruch and Peiperl (2000)). However, as roughly half of the partners obtain an MBA, it may simply be no distinctive feature from one fund to the other. Interestingly, the indicator variable for a new series of an established general partner carries a negative coefficient and is significant before adding the ex-post proxy. This may be the case as other partners try to protect their own series, and thus limit internal competition for capital. Alternatively, this could express a learning effect

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that it is easier to start off small before growing the capital base. The U.S. based fund indicator variable on the other hand does not exhibit a clear sign across the estimations and comes with large standard errors. Lastly, the addition of an additional partner to the management team increases the committed capital by 40%.[22] However, this relationship seems to be concave as the negative squared term indicates.

Interestingly, the removal of vintage year fixed effects does not affect the results at all. This confirms the earlier notion from the descriptive statistics on relatively constant team profiles over time. One could have argued that through periods of limited capital certain characteristics, e.g., the ones related to networks, are more valuable than in times of plentiful funding. In addition, the estimations using the average ticket size as an ex-post proxy variable show that not only the R-squared increases dramatically and the variable is highly significant but also the influence of other drivers remains comparable. Thus, the results seem stable over the observation period and for the targeted market segments.

Table 6 presents empirical results from re-estimating the model for three sub-samples: A separation between small and large funds (based on below/above median first time fund size per vintage year), between the purely new general partners and the established firms that establish a new series, and between U.S. based funds, which make up around two-thirds of the sample, and international funds. The following additional insights are revealed. First, prior banking experience confirms as an essential team characteristic across all specifications. Second, law expertise seems to be most beneficial for larger, non-established, and U.S. based general partners. Third, while consulting proves more valuable for smaller and non-established firms, prior executives can add their operational experience better in larger buyout firms. Fourth, since the movers from other private equity firms raise larger funds as evidenced in the previous results, they are also concentrated in these larger funds leading to no significant effect in both sub-samples. Finally, large and established firms are also less sensitive to team size, which may reflect a stronger organizational backing.

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[22]Exponentiated regression coefficient: $\exp(.329) = 1.390$.

Table 6 about here: Driving factors for fund raising results

Combining the descriptive statistics – *which characteristics are frequent to observe* – and the empirical evidence – *which characteristics are correlated with larger funds* – provides initial insight into the success of fund raising. Yet the interpretation of these results remains not without ambiguities since the data is restricted to funds that actually receive capital. While the results remain mostly robust over different specifications, the amount of committed capital is certainly an imperfect proxy and cannot be extended to an overall assessment on the probability of succeeding in fund raising. Nevertheless, the analysis may give management teams, who are planning to raise a first time fund, and investors, who are interested in investing in the former, a first indication on the signaling value of certain team attributes.

5   The performance and strategy of first time funds

5.1   Variables and methodology

The second research question evolves around team characteristics as a signal for expected performance and the choice of investment strategy. On performance, I hypothesize that investors choose the right signals during fund raising, and thus these signals also predict future fund performance. A general relationship between team characteristics and performance is well documented in the investment literature (e.g., Gottesman and Morey (2006), Zarutskie (2010), Li et al. (2011), Martin et al. (2013), Millán et al. (2014)).

The model is identical to the previous one on fund raising except that it uses performance instead of size as the dependent variable. Hence, it writes

$$Fund\ Performance_i\ =\ \alpha + \beta * Team\ Characteristics_i + \qquad (2)$$
$$\gamma * Fund\ Attributes_i + \lambda * Vintage_i + \varepsilon_i\ .$$

Observations are once more first time buyout funds and the independent variables remain team characteristics and fund attributes alongside vintage year fixed effects. After the previous section concludes that some team characteristics drive the amount of capital raised, this specification allows to test their relevance for subsequent performance. The dependent variable in the model is performance, expressed as either the internal rate of return (IRR) or the money multiple (TVPI).

On investment strategy, I follow a two-step procedure. At first, I identify the most relevant strategies influencing first time fund performance.[23] Subsequently, I relate them to the respective team that makes these strategic choices. The resulting models write

$$
\begin{aligned}
Fund\ Performance_i \quad = \quad & \alpha + \delta * Investment\ Strategy_i + \qquad\qquad (3) \\
& \gamma * Fund\ Attributes_i + \lambda * Vintage_i + \varepsilon_i\ .
\end{aligned}
$$

and

$$
\begin{aligned}
Investment\ Strategy_i \quad = \quad & \alpha + \beta * Team\ Characteristics_i + \qquad\qquad (4) \\
& \gamma * Fund\ Attributes_i + \lambda * Vintage_i + \varepsilon_i\ .
\end{aligned}
$$

The literature identifies several strategic choices of buyout managers, which act in the first formula as explanatory variable and in the second formula as dependent variable. These comprise dimensions of capital allocation, diversification and risk, and team dependency. In terms of capital allocation, managers face a trade-off between the number of investments and the average capital commitment. While targeting smaller companies promises higher returns (e.g., Humphery-Jenner (2012)), it also requires more investments, which adds to the work load of the partners and can adversely affect their performance (e.g., Li (2014), Lopez-de Silanes et al. (2015)). In addition, different deal categories come with varying levels of required involvement of the management team. For example, following

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[23]Since the empirical investigation is limited to funds with available performance information, a Heckman selection model is used to address concerns about a potential selection bias in this part.

a buy-and-build strategy requires to make (several) add-on transactions and supporting the portfolio companies in integrating them with one another. Morkoetter and Wetzer (2015b) show that these acquisitions are of interest to buyout funds as they allow them to participate in operational synergies, which are usually only available to strategic buyers.

In terms of diversification and risk profile, exposure to different geographies and industries is of interest to investors. The expected effect is not entirely clear. On one hand, diversification of investments can reduce overall risk. On the other hand, the managers may spread out in an urge to find investment opportunities and have to leave their field of expertise. Humphery-Jenner (2012) find diversification across industry and geographic region to lead to better returns, while the evidence for first time venture capital funds from Zarutskie (2010) suggests performance to be unrelated to industry concentration. In addition, the age of the target company can signal maturity and stability of the business model, which likely reduces investment risk. Furthermore, older target firms have better chances to exit in a shorter fashion and through IPOs (e.g., Jenkinson and Sousa (2015)). Both can result in better returns for the fund.

In terms of team dependency, the managers may rely on limited opportunities withing their geographic location or on other investors to form syndicates, which is a common source of deals in the venture capital industry. Prior research shows that private equity firms suffer similar to other asset classes from a "home bias" (e.g., Sorensen and Stuart (2001, 2008), Cumming and Dai (2010)). Thus, geographic distance, which is calculated as the distance between the headquarter of a target firm and the closest investment office of the fund, serves as a measure on the tendency of the team to source locally. This may ultimately not only affect their current performance but amplify in follow-on funds. For buyout syndicate investments, Wu (2011) observes a clustering of performance in the middle of the return distribution.

Lastly, once it becomes apparent which strategies first time buyout funds prefer, it is important for investors to understand to which team attributes they relate and whether they value the right signals during fund raising. The literature shows that certain kinds

of managers pursue particular strategic choices. Two example from the buyout industries include the choice between organic and inorganic growth strategies and success drivers of secondary buyouts. With respect to the former, Acharya et al. (2007) report that ex–consultants or ex–industry managers are associated with internal value-creation programs, whereas ex-bankers or ex-accountants are better involved in mergers and acquisitions. With respect to the latter, Degeorge et al. (2016) highlight the benefits of complementary skill sets, in terms of educational backgrounds and career paths, between the buyer and the seller when exiting investments through secondary buyouts.

5.2 Empirical results

Table 7 shows the results on the relation between team attributes and fund performance. First, columns (1) and (2) confirm the earlier results on fund size for the sub-sample of first time funds with available performance data. Second, columns (3) and (4) depict findings for the fund's IRR and columns (5) and (6) for the TVPI multiple. Compared to the signals on fund raising, none of the team characteristics exert a direct influence on performance. Neither the educational profile, nor previous professional experience or team size seem to significantly drive returns into one or the other direction. Furthermore, fund attributes do not indicate a systematic difference between new general partners and the established ones, which already run another series, and between U.S. based and international funds. The results on team attributes stand in stark contrasts to the venture capital and entrepreneurship literature and raise a question on the validity of signals valued by capital providers during the fund raising process.

Table 7 about here: Team profile and performance of first time funds

Table 8 shows results from estimating the relationship between investment strategy and fund performance. Columns (1) and (2) represent the baseline model, columns (3) and (4) replace the average ticket size with fund size, and columns (5) and (6) present the

outcome equation of a Heckman selection model to account for a potential selection bias related to the non-availability of some performance values.[24] None of the main results changes when accounting for the reduced data sample.

The main findings are as follows. First, fund performance is negatively related to both fund size and average ticket size. This contrasts to the literature that report a mostly insignificant relationship between size and performance for the cross-section of private equity funds that also includes mature funds (Kaplan and Schoar (2005), Ljungqvist et al. (2009), Robinson and Sensoy (2013), Harris et al. (2014a), Lopez-de Silanes et al. (2015)). When disentangling size into the number of investments and an average ticket size, the effect is mainly driven by the latter. It seems the new managers suffer from having to invest too much capital at once, which they allocate primarily to larger ticket sizes. In these market segments they likely face more competition from seasoned funds that drives their returns down. Second, buy and build strategies that include add-on transactions create value for first time fund investors. These tend to be work heavy and the manager still have the time and patience to carry them out. Third, while there is no systematic relation to diversification across industry and geography, funds with better returns invest in more mature and stable target companies. These may be a safe bet for the managers as businesses tend to become more stable over time. Third, dependencies on syndicates and localism do not seem to be a systematic issue for the first time fund managers. At least on the aggregated fund level the managers do not suffer from home bias. This is also good news for investors in terms of follow-on funds of these managers as their is no evidence that the deal sourcing practices dependent on external parties or geographical boundaries.

Table 8 about here: The role of investment strategy for performance

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[24]The corresponding selection equation contains the educational, biographical, fund variables, and vintage year effects from earlier regressions (refer to Tables 5–7).

Finally, Table 9 shows results on the relationship between team attributes and investment strategies. Findings are depicted for the full sample of first time funds as well as the two sub-samples with available performance data. The analysis is restricted to the most relevant strategic factors identified in the preceding performance analysis. First, the average ticket size is driven by bankers, consultants, and movers from other private equity firms. The effect is smaller for established and U.S. based general partners but unrelated to team size. Second, add-on transactions primarily prevail for U.S. based funds and relate to a higher team effort (strong significance on team size). These transaction heavy structures seem to resonate less with operational profiles (e.g., executives) and more with finance related experience (e.g., banking carries a positive, though not significant, coefficient), which is consistent with the deal-level evidence from Acharya et al. (2013). Third, company age reveals only limited insights into team preferences except for some dislike of previous executives, who may lean towards more risk aversion.

Table 9 about here: Team profile and investment strategy

In summary, team characteristics while working as a signal during fund raising do not so as predictors for future fund performance. Instead team attributes influence the buyout manager's investment strategy, which in turn is driven by the team setup and experience. In particular, niche and value-adding strategies appear to work well for first time buyout funds. Yet, the funds also show a tendency to suffer from their fund raising success. This indirect relationship contrasts to other asset classes and in particular to the findings on first time venture capital funds. Zarutskie (2010) reports several direct links between team human capital and performance, though the analysis is based on portfolio exit rates instead of actual returns. The results confirm that buyout funds follow their very own dynamics and highlight once more the strong capital-orientation of their business model.

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6 Concluding remarks

A new fund can be regarded as a small venture. The main asset is its management team comprising seasoned professionals who initially need to raise capital from investors. The study investigates how far their educational and professional profile affects funding, strategy, and performance, and, thus, reduces uncertainty for investors. I find teams with professional experience that is directly related to the buyout model, such as banking experience and movers from other private equity firms, to raise larger funds. Contrary, none of the team characteristics influence returns in a direct manner. Yet, they affect the strategic choice of the managers that drives subsequent performance. The findings extend the literature on persistence as a signal for manager selection to the case where past returns are absent. In times of declining persistence such signals become more valuable, even in the case of seasoned managers. Further, the study brings a broad evaluation of past experience into the ongoing discussion on performance attribution.

The investigation is of practical relevance to capital providers and managers trying to raise new funds. Investors are interested to find opportunities in a competitive investment environment by identifying managers that not only have the potential to successfully run a single fund but from which they can benefit long-term. On the other hand, the partners receive generous upside potential from current and future rents in the case of success. While the analyses suggest that certain team profiles related to core activities of the buyout model are beneficial to raise additional capital, the result cannot be generalized into a broad prediction of fund raising success. For such an extension, one also needs to observe managers who never enter the market. Despite this caveat, the descriptive and empirical evidence serves as an initial guidance for investors and managers into what the other side seems to value. However, it can certainly not replace a proper evaluation and implementation of a promising investment strategy. Investors shall not be distracted by certain signals that are not of relevance for (superior) investment performance.

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7 Figures

Figure 1: Team profile of first time funds over time

The figures shows for each vintage year statistics on the professional experience and education of the management teams of first time funds. The sample includes only closed, fully invested, and liquidated funds and the ones for which committed capital, a sequence number, biographical information on at least one partner, and at least three of their investments are available. It is further restricted to funds that are the first one for the general partner or the first one in a new series for an established general partner. Averages are calculated among all the funds in the respective vintage year. Each category is expressed relative to each fund's team size and and individuals can be included in multiple categories (allowing the cumulative average to exceed 100%). *Previous experience* indicates the professional exposure a partner had prior to founding the fund. *Education* specifies the university degree type/field a fund partner obtained. Variable definitions are presented in the Appendix.
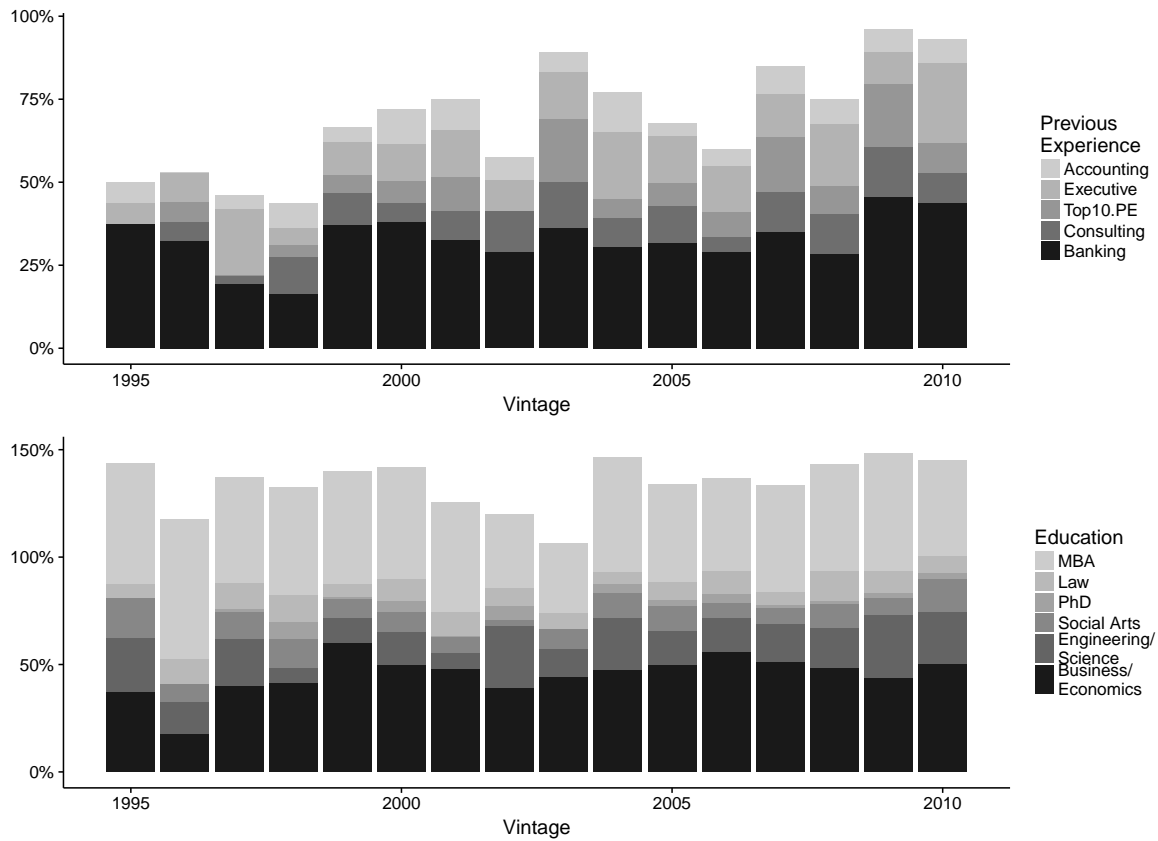
8 Tables

Table 1: Summary statistics of first time funds

The table shows descriptive statistics on first time buyout funds up to vintage year 2010 from the PitchBook database. The sample includes only closed, fully invested, and liquidated funds and the ones for which committed capital, a sequence number, biographical information on at least one partner, and at least three of their investments are available. It is further restricted to funds that are the first one for the general partner or the first one in a new series for an established general partner. Fund size, IRR and TVPI multiple are winsorized at the 1% level and complemented with information from Preqin in case missing or if Preqin provides a more recent time stamp on performance.

Variable	N	Mean	Standard Deviation	25th Percentile	Median	75th Percentile
Fund Size ($m)	567	328.5	488.2	70.0	160.0	350.0
Ticket Size ($m)	567	36.5	68.8	8.4	17.9	40.0
Investments	567	11.0	8.2	5	9	14
Team Size	567	2.4	1.6	1	2	3
U.S. based fund (d)	567	0.63	0.48	0	1	1
Established GP (d)	567	0.23	0.42	0	0	0
IRR (%)	255	16.7	15.7	7.7	13.6	24.0
TVPI (multiple)	278	1.84	0.99	1.26	1.64	2.23

Table 2: First time fund sample by vintage year

The table shows descriptive statistics by vintage year for a sample of first time buyout funds up to vintage year 2010 from the PitchBook database. The sample includes only closed, fully invested, and liquidated funds and the ones for which committed capital, a sequence number, biographical information on at least one partner, and at least three of their investments are available. It is further restricted to funds that are the first one for the general partner (shown as *New GP* at the bottom of the table) or the first one in a new series for an established general partner (shown as *Established* at the bottom of the table). Fund size, IRR and TVPI multiple are winsorized at the 1% level and complemented with information from Preqin in case missing or if Preqin provides a more recent time stamp on performance. *Fund count* reports the total number of funds as well as the number of funds for which an IRR and a TVPI multiple is available, respectively. *Fund profile* lists the average number of investments and fund partners tagged to the fund as well as the average and median committed capital. Fund partners refer to the management team of the fund. *Fund performance* depicts the average and median IRR and TVPI multiple for each vintage year.

Vintage Year	Fund Count			Fund Profile				Fund Performance			
	All Funds	w/ IRR	w/ TVPI	Avg Team	Avg Invest.	Avg Cap.	Med Cap.	Avg IRR	Med IRR	Avg TVPI	Med TVPI
	#	#	#	#	#	$m	$m	%	%	x	x
1987	2	2	2	1.5	17.5	91	91	19.0	19.0	2.15	2.15
1989	2	2	2	2.5	8.5	240	240	27.6	27.6	3.65	3.65
1990	5	4	4	1.4	13.2	532	182	22.1	18.8	2.74	2.41
1991	4	4	4	1.0	6.2	194	178	24.7	27.0	2.77	2.45
1992	2	2	2	1.5	8.5	62	62	20.8	20.8	2.50	2.50
1993	3	2	2	1.3	6.0	300	309	13.1	13.1	1.68	1.68
1994	7	4	4	2.0	12.4	305	148	25.6	23.8	2.69	2.66
1995	4	1	2	2.8	6.0	145	70	59.9	59.9	3.75	3.75
1996	17	7	9	1.4	10.5	277	208	11.1	10.4	1.43	1.30
1997	25	12	12	1.6	6.1	199	150	13.2	12.0	1.72	1.78
1998	26	14	11	2.2	10.5	291	155	13.0	12.3	1.62	1.77
1999	37	19	17	2.2	13.2	395	200	16.6	15.3	1.88	1.84
2000	44	24	26	2.5	14.2	371	182	15.3	11.8	1.93	1.58
2001	29	13	12	2.5	12.1	310	120	15.4	13.4	1.63	1.71
2002	37	14	16	2.5	11.5	510	145	20.7	17.1	1.82	1.66
2003	26	14	15	2.4	9.8	285	199	20.5	15.3	1.94	1.57
2004	36	16	15	2.6	10.2	272	195	24.5	24.1	2.53	1.99
2005	43	17	24	2.7	11.4	384	197	14.3	8.1	1.66	1.28
2006	53	22	25	2.7	10.8	378	135	12.7	11.7	1.66	1.56
2007	61	24	30	2.9	10.5	364	256	17.0	15.3	1.77	1.55
2008	48	14	20	2.6	11.3	213	112	14.8	12.0	1.41	1.40
2009	32	15	15	2.6	9.8	385	166	12.0	10.8	1.42	1.33
2010	22	7	7	3.0	11.5	176	166	7.7	9.7	1.36	1.41
Total	567	255	278	2.4	11.0	329	160	16.7	13.6	1.84	1.64
New GP	434	196	216	2.4	10.8	325	175	16.9	13.8	1.83	1.64
Established	133	59	62	2.6	11.8	342	136	15.8	13.1	1.84	1.66

Table 3: Team and investment statistics of first time funds

The table shows descriptive statistics on the management team and investment activity of first time buyout funds. The sample includes only closed, fully invested, and liquidated funds and the ones for which committed capital, a sequence number, biographical information on at least one partner, and at least three of their investments are available. It is further restricted to funds that are the first one for the general partner or the first one in a new series for an established general partner. Averages are reported except specified otherwise. For educational and professional experience measures a partner may be included multiple times. Variable definitions are presented in the Appendix.

Variable	Unit	Partner	Fund	Deal
Observations	#	1388	567	6229
Educational background				
Science	%	0.18	0.17	
Social/Arts	%	0.10	0.10	
Business	%	0.47	0.47	
MBA	%	0.49	0.49	
Law/JD	%	0.09	0.09	
PhD	%	0.03	0.03	
Ivy league	%	0.34	0.35	
Ivy league MBA	%	0.22	0.22	
Professional experience				
Accounting	%	0.08	0.07	
Banking	%	0.33	0.32	
Consulting	%	0.10	0.09	
Executive	%	0.12	0.13	
PE Top-10	%	0.05	0.05	
Diversity	HHI		0.72	
Investment profile				
Average time lag	yrs		3.21	
Investment within 2 yrs	%		0.47	
Investment within 3 yrs	%		0.62	
Share add-ons	%		0.25	
Foreign investments	%		0.21	
Share syndicates	%		0.29	
Lead syndicates	%		0.67	
Target diversity				
Firm age	yrs		25.24	
Country Headquarter	#		2.25	
	HHI		0.78	
Industry Group	#		5.11	
	HHI		0.33	
Distance ≤ 100 km	%		0.23	
Distance 100-500 km	%		0.19	
Distance 500-1000 km	%		0.14	
Distance ≥ 1000 km	%		0.42	

Continued on next page

Table 3 – *Continued from previous page*

Variable	Unit	Partner	Fund	Deal
Target geographic region				
North America	%		0.63	0.68
Western Europe	%		0.18	0.18
Rest of Europe	%		0.10	0.08
Asia	%		0.07	0.05
Other	%		0.02	0.02
Target industry sector				
B2B Services	%		0.35	0.34
B2C Services	%		0.26	0.25
Energy	%		0.04	0.04
Financial	%		0.07	0.07
Healthcare	%		0.10	0.11
IT	%		0.14	0.15
Materials	%		0.05	0.04
Transaction type				
PE Buyout/LBO	%		0.21	0.19
PE Platform/Addon	%		0.21	0.28
PE Growth/Expansion	%		0.19	0.17
PE Divestiture/Carve-out	%		0.07	0.08
PE MBO/MBI	%		0.08	0.07
PE Secondary	%		0.07	0.07
PE Public to Private	%		0.01	0.01
VC Early Stage	%		0.05	0.05
VC Later Stage	%		0.05	0.05
Other	%		0.05	0.05

Note: HHI normalized to zero to one.

Table 4: Univariate correlation within the team and investment profile

The table depicts correlation coefficients for the main team characteristics and investment strategies used throughout the empirical investigation. The sample includes only closed, fully invested, and liquidated funds and the ones for which committed capital, a sequence number, biographical information on at least one partner, and at least three of their investments are available. It is further restricted to funds that are the first one for the general partner or the first one in a new series for an established general partner. Variable definitions are presented in the Appendix.

Panel A: Team characteristics

		1	2	3	4	5	6	7	8	9	10
1	Banking (%)										
2	Accounting (%)	-0.06									
3	Consulting (%)	-0.07	-0.03								
4	Executive (%)	-0.08	-0.06	0.09*							
5	PE Top-10 (d)	0.07	-0.04	0.20***	-0.02						
6	Business (%)	0.17***	0.05	-0.01	0.03	0.00					
7	MBA (%)	0.11*	-0.19***	0.04	0.02	0.06	-0.03				
8	Science (%)	-0.11**	0.01	0.11**	-0.01	0.00	-0.28***	-0.04			
9	Law/JD (d)	0.02	-0.04	0.00	0.00	0.02	-0.06	-0.04	-0.13**		
10	Ivy league (%)	0.09*	-0.16***	0.10*	-0.01	0.12**	-0.04	0.32***	-0.09*	0.08	

Panel B: Investment strategies

		1	2	3	4	5	6	7	8	9	10
1	Ticket size (log)										
2	Investments (log)	-0.18***									
3	Add-ons (%)	-0.08	0.43***								
4	Firm age (yrs)	0.17***	-0.02	0.08							
5	Syndicates (%)	-0.04	0.07	-0.03	-0.21***						
6	Distance (log)	0.12**	0.15***	0.19***	-0.09*	0.23***					
7	Industry (HHI)	0.02	-0.39***	0.00	0.00	0.04	-0.06				
8	Country (HHI)	-0.22***	-0.10*	0.09*	-0.07	0.02	-0.32***	0.17***			
9	Established GP (d)	-0.06	0.01	-0.02	-0.08*	0.04	0.01	-0.05	-0.18***		
10	U.S. based fund (d)	-0.10*	0.13**	0.31***	-0.08	0.16***	0.33***	0.04	0.42***	-0.18***	

Note: *p<0.1; **p<0.05; ***p<0.01

Table 5: The role of the management team for fund raising

The table shows the results for cross-sectional regressions of fund size on team attributes for first time buyout funds. The dependent variable is the (logarithmic) fund size. *Business*, *MBA*, and *science* indicate the share of partners with a degree in the respective field. Similarly, *law/JD* refers to a legal education and *Ivy league* to degrees from these universities. *Banking* and *Consulting* refer to partners that have worked in such a role prior to founding the fund, while *executive* represents roles as a senior executive. *PE Top-10* indicates whether at least one partner moved from a reputable private equity firm. *Diversity* is the HHI over the professional experiences. *Established GP* and *U.S. based fund* indicate whether the general partner has a series with a different strategy in parallel and is based in the U.S., respectively, while *ticket size* and *nbr partners* refer to the average commitment and size of the management team. The use of vintage year fixed effects in each model is indicated at the bottom of the table. Models are estimated with Ordinary Least Squares (OLS) and depicted are coefficients and robust standard errors (in brackets).

	Dependent variable: Fund Size (log)					
	(1)	(2)	(3)	(4)	(5)	(6)
Business (%)	−0.233*		−0.302**	−0.299**	−0.022	−0.049
	(0.136)		(0.138)	(0.131)	(0.065)	(0.064)
MBA (%)	−0.156		−0.173	−0.204	0.021	0.012
	(0.136)		(0.134)	(0.132)	(0.062)	(0.064)
Science (%)	0.276		0.279	0.269	0.065	0.023
	(0.186)		(0.183)	(0.177)	(0.078)	(0.076)
Law/JD (d)	0.233*		0.271**	0.224*	0.129**	0.108*
	(0.125)		(0.124)	(0.124)	(0.055)	(0.057)
Ivy league (%)	0.277**		0.194	0.235*	−0.020	−0.011
	(0.135)		(0.141)	(0.137)	(0.066)	(0.066)
Banking (%)		0.500***	0.591***	0.587***	0.174**	0.174**
		(0.134)	(0.133)	(0.133)	(0.069)	(0.069)
Consulting (%)		0.594***	0.513***	0.503***	0.001	0.010
		(0.189)	(0.197)	(0.187)	(0.092)	(0.093)
Executive (%)		−0.130	−0.093	−0.167	−0.058	−0.122
		(0.189)	(0.193)	(0.186)	(0.104)	(0.101)
PE Top-10 (d)		0.566***	0.561***	0.500***	0.217***	0.177**
		(0.164)	(0.161)	(0.162)	(0.076)	(0.076)
Diversity (HHI)		0.103	0.089	0.153	0.0003	−0.020
		(0.238)	(0.241)	(0.227)	(0.123)	(0.120)
Established GP (d)			−0.238*	−0.234*	0.012	−0.018
			(0.124)	(0.121)	(0.057)	(0.058)
U.S. based fund (d)			−0.171	−0.146	0.076	0.100*
			(0.117)	(0.111)	(0.055)	(0.055)
Ticket size (log)					0.896***	0.889***
					(0.021)	(0.021)
Nbr partners (#)	0.336***	0.354***	0.329***	0.321***	0.346***	0.314***
	(0.084)	(0.096)	(0.094)	(0.085)	(0.045)	(0.042)
Nbr partners^2	−0.015*	−0.018*	−0.016*	−0.015*	−0.016***	−0.013***
	(0.009)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)
F.E. Vintage	Yes	Yes	Yes	No	Yes	No
Observations	567	567	567	567	567	567
Adjusted R^2	0.105	0.139	0.168	0.164	0.812	0.801

Note:	*p<0.1; **p<0.05; ***p<0.01

Table 6: Driving factors for fund raising results

The table shows the results for cross-sectional regressions of fund size on team attributes for several sub-samples. Size is split into small (below median) and large (above median) funds for every vintage year, whereas the other two sub-samples are split based on the value of the respective indicator variable. The dependent variable is the (logarithmic) fund size. *Business*, *MBA*, and *science* indicate the share of partners with a degree in the respective field. Similarly, *Law/JD* refers to a legal education and *Ivy league* to degrees from these universities. *Banking* and *consulting* refer to partners that have worked in such a role prior to founding the fund, while *executive* represents roles as a senior executive. *PE Top-10* indicates whether at least one partner moved from a reputable private equity firm. *Diversity* is the HHI over the professional experiences. *Established GP* and *U.S. based fund* indicate whether the general partner has a series with a different strategy in parallel and is based in the U.S., respectively, while *ticket size* and *nbr partners* refer to the average commitment and size of the management team. The use of vintage year fixed effects in each model is indicated at the bottom of the table. Models are estimated with Ordinary Least Squares (OLS) and depicted are coefficients and robust standard errors (in brackets).

	Dependent variable: Fund Size (log)					
	Size		Established GP		U.S. based	
	Small	Large	Yes	No	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)
Business (%)	−0.083	−0.350**	−0.594*	−0.220	−0.253	−0.166
	(0.118)	(0.136)	(0.351)	(0.145)	(0.180)	(0.219)
MBA (%)	−0.008	−0.246**	−0.423	−0.149	−0.334*	0.074
	(0.110)	(0.121)	(0.310)	(0.146)	(0.177)	(0.227)
Science (%)	0.331**	0.309*	0.135	0.308	0.380	0.115
	(0.155)	(0.170)	(0.476)	(0.203)	(0.265)	(0.252)
Law/JD (d)	0.028	0.248**	0.257	0.326**	0.320**	−0.044
	(0.106)	(0.112)	(0.349)	(0.135)	(0.146)	(0.230)
Ivy league (%)	−0.084	0.072	0.229	0.051	0.181	0.244
	(0.121)	(0.139)	(0.337)	(0.155)	(0.157)	(0.327)
Banking (%)	0.266**	0.257**	0.783**	0.556***	0.394**	0.882***
	(0.129)	(0.118)	(0.329)	(0.154)	(0.173)	(0.202)
Consulting (%)	0.516**	−0.106	0.538	0.489**	0.402	0.297
	(0.225)	(0.160)	(0.438)	(0.229)	(0.263)	(0.309)
Executive (%)	−0.113	0.459**	0.059	−0.247	−0.327	0.125
	(0.151)	(0.211)	(0.426)	(0.231)	(0.240)	(0.291)
PE Top-10 (d)	0.338	0.222	0.809*	0.488***	0.412**	0.848**
	(0.216)	(0.154)	(0.424)	(0.171)	(0.180)	(0.328)
Diversity (HHI)	−0.032	−0.150	0.277	−0.001	0.229	−0.122
	(0.223)	(0.236)	(0.541)	(0.288)	(0.322)	(0.346)
Nbr partners (#)	0.259**	0.032	0.324	0.293***	0.418***	0.252*
	(0.112)	(0.104)	(0.219)	(0.111)	(0.117)	(0.151)
Nbr partners^2	−0.022	0.003	−0.016	−0.012	−0.022**	−0.020
	(0.016)	(0.011)	(0.019)	(0.011)	(0.010)	(0.017)
F.E. Vintage	Yes	Yes	Yes	Yes	Yes	Yes
Observations	278	289	133	434	358	209
Adjusted R^2	0.116	0.181	0.150	0.153	0.205	0.171

Note: *p<0.1; **p<0.05; ***p<0.01

Table 7: Team profile and performance of first time funds

The table shows the results for cross-sectional regressions on team attributes for first time buyout funds with performance data. The dependent variable is the (logarithmic) fund size in columns (1) and (2), the IRR in (3) and (4), and the TVPI multiple in (5) and (6). *Business*, *MBA*, and *science* indicate the share of partners with a degree in the respective field. Similarly, *law/JD* refers to a legal education and *Ivy league* to degrees from these universities. *Banking* and *consulting* refer to partners that have worked in such a role prior to founding the fund, while *executive* represents roles as a senior executive. *PE Top-10* indicates whether at least one partner moved from a reputable private equity firm. *Diversity* is the HHI over the professional experiences. *Established GP* and *U.S. based fund* indicate whether the general partner has a series with a different strategy in parallel and is based in the U.S., respectively, while *ticket size* and *nbr partners* refer to the average commitment and size of the management team. The use of vintage year fixed effects in each model is indicated at the bottom of the table. Models are estimated with Ordinary Least Squares (OLS) and depicted are coefficients and robust standard errors (in brackets).

| | *Dependent variable:* | | | | | |
| | Fund Size (log) | | IRR | | TVPI | |
	(1)	(2)	(3)	(4)	(5)	(6)
Business (%)	−0.513**	−0.344	−0.005	−0.021	0.019	−0.090
	(0.234)	(0.216)	(0.034)	(0.032)	(0.178)	(0.174)
MBA (%)	−0.182	−0.019	0.016	0.020	−0.007	0.023
	(0.213)	(0.185)	(0.035)	(0.031)	(0.174)	(0.177)
Science (%)	0.434	0.451*	−0.049	−0.056	−0.237	−0.342
	(0.271)	(0.268)	(0.038)	(0.035)	(0.213)	(0.212)
Law/JD (d)	0.341*	0.408**	0.033	0.028	0.111	0.032
	(0.205)	(0.186)	(0.025)	(0.025)	(0.144)	(0.153)
Ivy league (%)	0.158	0.019	−0.022	−0.014	0.081	0.189
	(0.225)	(0.207)	(0.032)	(0.033)	(0.198)	(0.215)
Banking (%)	0.588***	0.531***	0.031	0.012	−0.009	−0.196
	(0.219)	(0.190)	(0.030)	(0.029)	(0.174)	(0.177)
Consulting (%)	0.896***	0.864***	0.036	0.044	0.258	0.261
	(0.333)	(0.322)	(0.047)	(0.050)	(0.297)	(0.336)
Executive (%)	−0.250	−0.304	−0.002	−0.029	0.064	−0.071
	(0.350)	(0.321)	(0.060)	(0.058)	(0.276)	(0.260)
PE Top-10 (d)	0.395*	0.395*	0.013	0.012	0.062	0.027
	(0.214)	(0.211)	(0.026)	(0.028)	(0.162)	(0.186)
Diversity (HHI)	0.480	0.627*	−0.022	−0.028	−0.136	−0.145
	(0.371)	(0.342)	(0.056)	(0.056)	(0.291)	(0.311)
Established GP (d)	−0.328*	−0.429**	−0.032	−0.018	0.008	0.037
	(0.192)	(0.183)	(0.022)	(0.024)	(0.141)	(0.156)
U.S. based fund (d)	−0.069	−0.141	−0.045*	−0.032	−0.051	−0.011
	(0.193)	(0.184)	(0.026)	(0.028)	(0.154)	(0.180)
Nbr partners (#)	0.422***	0.386***	−0.024	−0.019	−0.080	−0.065
	(0.147)	(0.136)	(0.020)	(0.017)	(0.104)	(0.097)
Nbr partners^2	−0.024*	−0.021	0.001	0.001	0.004	0.001
	(0.014)	(0.013)	(0.002)	(0.001)	(0.008)	(0.008)
F.E. Vintage	Yes	Yes	Yes	No	Yes	No
Observations	255	278	255	255	278	278
Adjusted R^2	0.232	0.217	0.032	−0.016	0.090	−0.020

Note: *p<0.1; **p<0.05; ***p<0.01

Table 8: The role of investment strategy for performance of first time funds

The table shows the results for cross-sectional regressions of performance on investment strategies for first time buyout funds. The dependent variable is the fund's IRR and TVPI multiple, respectively. *Fund size* refers to the (logarithmic) committed capital, while *ticket size* and *investments* refer to the average (logarithmic) commitment and (logarithmic) number of investments of the fund. *Add-on* refers to the share of transaction classified under this category, while *firm age* indicates the average target company age at time of entry. *Industry* and *country* is the HHI of the fund's exposure to different industry groups and countries. *Syndicates* is the share of investments with co-investors and *distance* represents the median geographic distance between the target companys' headquarters and the closest investment office of the fund. *Established GP* and *U.S. based fund* indicate whether the general partner has a series with a different strategy in parallel and is based in the U.S., respectively, while *nbr partners* refer to the size of the management team. Columns (1) to (4) depict coefficients estimated with Ordinary Least Squares (OLS) alongside cluster robust standard errors (in brackets). Columns (5) and (6) show the outcome equation of a Heckman selection model. The corresponding selection equation contains the educational, biographical, fund variables, and vintage year effects from earlier regressions (refer to Tables 5-7).

	Dependent variable:					
	IRR	TVPI	IRR	TVPI	IRR	TVPI
	OLS	*OLS*	*OLS*	*OLS*	*Heckman*	*Heckman*
	(1)	(2)	(3)	(4)	(5)	(6)
Fund Size (log)	−0.028***	−0.233***				
	(0.010)	(0.061)				
Ticket Size (log)			−0.029***	−0.247***	−0.029***	−0.247***
			(0.010)	(0.059)	(0.009)	(0.053)
Investments (log)			−0.027	−0.147	−0.028	−0.145
			(0.025)	(0.146)	(0.021)	(0.123)
Add-on (%)	0.144***	0.852***	0.142**	0.742**	0.142***	0.742**
	(0.052)	(0.302)	(0.058)	(0.343)	(0.052)	(0.298)
Firm Age (yrs)	0.002**	0.013***	0.002**	0.013***	0.002***	0.013***
	(0.001)	(0.004)	(0.001)	(0.004)	(0.001)	(0.003)
Industry (HHI)	−0.051	−0.515	−0.050	−0.439	−0.050	−0.442
	(0.061)	(0.351)	(0.064)	(0.373)	(0.058)	(0.329)
Country (HHI)	−0.004	−0.053	−0.005	−0.050	−0.004	−0.055
	(0.052)	(0.274)	(0.053)	(0.272)	(0.046)	(0.260)
Syndicates (%)	−0.012	−0.031	−0.012	−0.052	−0.012	−0.052
	(0.038)	(0.218)	(0.038)	(0.219)	(0.038)	(0.218)
Distance (log)	0.004	−0.005	0.004	−0.002	0.004	−0.002
	(0.007)	(0.036)	(0.007)	(0.036)	(0.007)	(0.038)
Established investor (d)	−0.034	−0.025	−0.034	−0.032	−0.034	−0.034
	(0.023)	(0.140)	(0.023)	(0.144)	(0.023)	(0.134)
U.S. based fund (d)	−0.048	−0.023	−0.048	−0.024	−0.049*	−0.017
	(0.030)	(0.137)	(0.030)	(0.136)	(0.028)	(0.153)
Nbr partners (#)	−0.006	−0.019	−0.006	−0.031	−0.007	−0.026
	(0.005)	(0.028)	(0.006)	(0.032)	(0.009)	(0.048)
F.E. Vintage	Yes	Yes	Yes	Yes	Yes	Yes
Observations	255	278	255	278	567	567
Adjusted R²	0.116	0.211	0.113	0.211	0.109	0.207
Inverse Mills Ratio					−0.009	0.050

Note: *p<0.1; **p<0.05; ***p<0.01

Table 9: Team profile and investment strategy

The table shows the results for cross-sectional regressions on team attributes for first time buyout funds. The dependent variables are the average (logarithmic) ticket size, share of add-on transactions, and average target company age at time of entry, respectively. For each strategy, the estimation is shown for all funds, for funds with available IRR, and for funds with available TVPI multiple. *Business*, *MBA*, and *science* indicate the share of partners with a degree in the respective field. Similarly, *law/JD* refers to a legal education and *Ivy league* to degrees from these universities. *Banking* and *consulting* refer to partners that have worked in such a role prior to founding the fund, while *executive* represents roles as a senior executive. *PE Top-10* indicates whether at least one partner moved from a reputable private equity firm. *Diversity* is the HHI index over the professional experiences. *Established GP* and *U.S. based fund* indicate whether the general partner has a series with a different strategy in parallel and is based in the U.S., respectively, while *ticket size* and *nbr partners* refer to the average commitment and size of the management team. The use of vintage year fixed effects in each model is indicated at the bottom of the table. Models are estimated with Ordinary Least Squares (OLS) and depicted are coefficients and robust standard errors (in brackets).

| | *Dependent variable:* | | | | | | | | |
| | Ticket Size (log) | | | Addon (%) | | | Firm Age (yrs) | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business (%)	−0.312**	−0.421*	−0.337*	0.023	0.024	0.048	0.924	2.986	2.968
	(0.135)	(0.213)	(0.199)	(0.025)	(0.039)	(0.040)	(1.995)	(3.508)	(3.293)
MBA (%)	−0.216*	−0.223	−0.060	0.026	0.021	0.025	0.006	1.066	0.246
	(0.131)	(0.197)	(0.175)	(0.025)	(0.043)	(0.040)	(1.912)	(3.138)	(2.806)
Science (%)	0.239	0.553**	0.549**	−0.074**	−0.083*	−0.103**	−6.150**	−3.087	−5.690
	(0.192)	(0.244)	(0.247)	(0.031)	(0.045)	(0.044)	(2.617)	(3.976)	(3.866)
Law (%)	0.158	0.243	0.303	−0.0002	0.001	0.009	−0.030	0.195	0.268
	(0.123)	(0.202)	(0.185)	(0.024)	(0.034)	(0.033)	(1.687)	(2.788)	(2.610)
Ivy League (%)	0.240*	0.299	0.168	0.011	−0.007	−0.010	−0.161	1.830	2.695
	(0.140)	(0.225)	(0.210)	(0.026)	(0.044)	(0.042)	(1.915)	(3.677)	(3.392)
Consulting (%)	0.572***	0.775**	0.794***	0.032	0.014	0.009	1.130	−1.349	−1.381
	(0.194)	(0.302)	(0.302)	(0.035)	(0.068)	(0.065)	(3.043)	(4.743)	(4.525)
Banking (%)	0.466***	0.424**	0.435**	0.020	0.029	0.049	−0.584	−2.655	−2.295
	(0.132)	(0.207)	(0.183)	(0.025)	(0.039)	(0.037)	(2.174)	(2.967)	(2.748)
Executive (%)	−0.037	−0.246	−0.222	−0.071**	−0.066	−0.082	−6.733***	−4.349	−3.479
	(0.188)	(0.337)	(0.308)	(0.035)	(0.056)	(0.053)	(2.422)	(3.980)	(3.830)
PE Top-10 (d)	0.384**	0.270	0.293	0.006	0.027	0.024	2.026	5.185*	4.585*
	(0.178)	(0.231)	(0.219)	(0.033)	(0.044)	(0.043)	(2.370)	(2.701)	(2.666)
Diversity (HHI)	0.104	0.347	0.572*	−0.031	0.029	0.051	−4.362	−1.449	−0.936
	(0.214)	(0.334)	(0.318)	(0.043)	(0.064)	(0.060)	(3.095)	(5.415)	(5.100)
Established GP (d)	−0.278**	−0.411**	−0.505***	0.017	−0.010	−0.017	−3.769**	−3.353	−5.487**
	(0.123)	(0.173)	(0.172)	(0.023)	(0.035)	(0.034)	(1.514)	(2.260)	(2.194)
U.S. based fund (d)	−0.275**	−0.107	−0.228	0.137***	0.096***	0.106***	−2.797*	−4.894*	−6.102**
	(0.112)	(0.173)	(0.169)	(0.021)	(0.034)	(0.032)	(1.582)	(2.687)	(2.551)
Nbr partners	−0.014	0.014	0.003	0.023***	0.025***	0.026***	0.145	0.218	0.276
	(0.035)	(0.049)	(0.044)	(0.007)	(0.009)	(0.008)	(0.421)	(0.559)	(0.541)
F.E. Vintage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	All	IRR	TVPI	All	IRR	TVPI	All	IRR	TVPI
Observations	567	255	278	567	255	278	567	255	278
Adjusted R^2	0.080	0.093	0.089	0.163	0.151	0.187	0.032	0.061	0.074

Note: *p<0.1; **p<0.05; ***p<0.01

Appendix

Table A.1: Variable Definitions

The table lists definitions for the various variables used throughout the study.

Variable	Description
(a) Fund attributes	
IRR	Internal Rate of Return. Primary source of variable is the PitchBook database, complemented with information from the Preqin database whenever it is missing in the former or more recent data is available in the latter. Database providers typically source figures from limited partner reports, who predominantly report their IRR net of fee. Further, the variable is winsorized at the 1% level based on the whole sample of buyout funds in the database.
TVPI	Total Value to Paid-in Capital, often also denoted as money multiple. See IRR for sourcing procedure and transformations.
Investments	Count of investments a particular fund has made including all types of investments as well as add-on transactions as reported in the PitchBook database.
Fund Size	Fund size represents the fund's committed capital. Similar to performance information, it is winsorized at the 1% level.
Ticket Size	Average committed capital per investment the fund employs. Calculated by dividing fund size by the number of investments.
Fund Partner	A fund partner is part of the management team of the fund. The data point is available on the individual fund level, which allows to separate between fund and firm management in the case of established general partners. The information is sourced by PitchBook from regulatory fillings, fundraising information, investor websites and surveys and complemented with the person's role and position within the firm.
Established GP	Indicator variable that equals to one if the general partner already runs other (unrelated) series of funds and zero otherwise.
U.S. Fund	Indicator variable that equals to one if the fund is based in the U.S. and zero otherwise.
(b) Professional experience	
Banking	Fund partners with prior work experience in the respective industry. Based on a list of 50 global banks compiled by The Banker as well as major investment banks such as Lehman Brothers, Bear Stearns, Lazard, Rothschild (list not exhaustive).
Accounting	Fund partners with prior work experience in the respective industry. Covers PricewaterhouseCoopers (PwC), Deloitte, KPMG, Ernst & Young (EY), and Arthur Anderson.
Consulting	Fund partners with prior work experience in the respective industry. Included are McKinsey & Co, BCG, Bain & Co, Oliver Wyman, Roland Berger, Booz/Strategy&, and L.E.K.
Executive	Fund partners with a previous position as Chief Executive Officer (CEO), Chief Finance Officer (CFO), or Chief Operating Officer (COO) prior to joining the fund.
PE Top-10	Fund partners that have prior work experience with a reputable private equity investor group. The list is based on the most active acquirers from Morkoetter and Wetzer (2015a) and includes The Carlyle Group, Kohlberg Kravis Roberts (KKR), TPG Capital (formerly Texas Pacific Group), Apollo Global Management, CVC Capital Partners, The Blackstone Group, Bain Capital, Warburg Pincus, Apax Partners, and Ardian (formerly AXA Private Equity).

Continued on next page

Table A.1 – *Continued from previous page*

| Diversity HHI | Herfindahl-Hirschman Index based on the frequency of the following professional experiences in a particular fund team: Banking, Accounting, Consulting, Executive, and Other. The latter has only been assigned if none of the other categories matched a partner's biography. If multiple experiences are available for an individual person, each experience is weighted in an equal way so that the person's total weight does not exceed anyone else. |

(c) Educational background

Business	The share of fund partners who hold a business or economics degree (excl. MBA).
MBA	The share of fund partners who hold a Master of Business Administration degree.
Science	The share of fund partners who hold an engineering or science degree.
Social/Arts	The share of fund partners who hold a social or arts degree.
Law/JD	The share of fund partners who hold a law or JD degree.
PhD	The share of fund partners who hold a PhD degree irrespective of its field.
Ivy League (MBA)	The share of fund partners who hold a (MBA) degree from an Ivy League school.

(d) Investment profile

Time Lag	Difference between the year in which a transaction takes place and the vintage year of the fund. On the fund level, the average time lag is reported.
Add-on Transaction	Investment into a company that typically supports a prior acquisition of the fund, often in a buy-and-build strategy. On the fund level, the share within the investment portfolio is reported.
Foreign Investment	Indicator variable that equals to one if the fund country is not the same as the country where the target company's headquarter is based. On the fund level, the share within the investment portfolio is reported.
Share Syndicates	Transaction where at least one other buyout fund invests in the same target company at the same time. On the fund level, the share within the investment portfolio that matches the criterion is reported.
Lead Syndicates	Indicator variable that equals to one if the fund in scope is marked as lead investor in a syndicate deal. On the fund level, the share relative to all syndicate transactions within the investment portfolio is reported.

(e) Target firm attributes

Firm Age	Difference between the founding year of the target company and the year the transaction takes place (entry).
Country	Country where the headquarter of a target company is based.
Geographic Region	Based on the headquarter of a target company.
Industry Sector	Assigned in the PitchBook database to each company covering seven unique sectors: Business Products and Services (B2B), Consumer Products and Services (B2C), Energy, Financial Services, Healthcare, Information Technology, Materials and Resources.
Industry Group	Assigned in the PitchBook database to each company: further specifies each of the seven industry sectors. The total classification covers 41 groups ranging from four to nine depending on the respective industry sector.
Distance	Geographic distance in kilometers between the headquarter of the target company and the closest investment office, where a fund partner is based. Distance is calculated according to the Haversine method assuming a spherical earth and ignoring ellipsoidal effects (radius of the earth 6,378,137 meter). A logarithmic transformation is used to better account for the tail of the distribution.
Transaction Type	Assigned in the PitchBook database to each transaction.