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

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Abstract

First time funds lack the performance history that is typically used by interested investors during their due diligence. As an alternative signal, I investigate the predictive power of the managers' biography for capital raising, investment strategy, and performance. Evaluating a comprehensive data set on 567 newly raised buyout funds, 6,229 investments, and 1,388 individuals reveals the team and investment characteristics of successful managers. Professional experience dominates education and diversity measures in fund raising. However, subsequent performance is then primarily driven by the partners' strategic investment choices which in turn are driven by their previous attainments.

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1 Introduction

The first time a new investor sets up a fund is of interest from both a theoretical perspective, e.g., on the relevance of human capital for firm success, and from a practical point of view of capital providers and investment teams. The former are interested whether the team in front of them can serve as a proxy for future success in the absence of past performance information. The latter want to understand which criteria their potential investors evaluate and value most when deciding to commit capital to a new investment vehicle. A new fund essentially resembles a new venture that needs to enter a competitive market for capital and prove itself. However, it consists of not much more than what the involved individuals can put on the table in terms of their skill sets and ideas, spurred by their marketing activities and facilitated by existing networks to potential clients.

In this paper, I take a closer look at the individuals raising new funds. The analysis sheds light on the structure and composition of the management team, the kind of investments they subsequently seek, and how they ultimately perform. To do so, I use the example of the buyout model. Typically organized as a limited partnership with a finite lifetime of 10-12 years, it locks investors ("Limited Partners") in for a considerable period of time during which the investment firm ("General Partner") acquires majority stakes in mature companies. Furthermore, the need for skilled decision making and the potential for value-add spans across the whole private equity value chain. It starts with generating (proprietary) investment opportunities (Fenn et al. (1997), Teten and Farmer (2010), Gompers et al. (2016a)), continues with the use of financial, governance, and operational engineering to increase firm value (Kaplan and Strömberg (2009), Achleitner et al. (2010)), and ends with successful timing of the market when exiting from the investment (Ljungqvist et al. (2009), Jenkinson and Sousa (2015)). The management teams are relatively small and consist of experienced professionals requiring investors to put a lot of trust into the managers' skill set. Thus, they enjoy great flexibility in the investment choice and significant financial upside whenever successful.

At the very beginning and before any investment can take place, the partners needs to attract capital from outside investors. These include pensions funds, endowments, insurance firms, banks, and other sophisticated asset managers. In the case of a follow-on raise the investor's evaluation is frequently achieved by simply examining historical performance. Thus, over the last decade, a major part of the discussion on manager selection in general, and in private equity in particular, is dominated by research on performance persistence (e.g., Kaplan and Schoar (2005), Phalippou and Gottschalg (2009), and Braun et al. (2015)). However, with first time funds on hand, there are no prior performance signals available. This increases information asymmetry between the two parties and basically leaves the team and the presented strategy as the residual evaluation criteria for capital providers to assess potential. This may be one reason why many investors actually shy away from first time raises. Mixed evidence about their performance represent another dimension (Kaplan and Schoar (2005), Phalippou and Gottschalg (2009), Harris et al. (2014b)). Given higher due diligence efforts, one would also expect return premia over more seasoned funds for investors who dare to invest (Da Rin and Phalippou (2016)). Yet, with persistence declining over the last buyout waves alongside a growing industry, first time funds represent an interesting opportunity for risk-taking investors.

My data set comprises 567 newly raised buyout funds including their management teams and investment activity. The former includes the educational and professional background of around 1,400 individuals and the latter covers more than 6,000 transactions. The partners that successfully raise new funds represent a relatively elite group. They are highly educated as they typically graduated from a small set of renown universities, including a third from Ivy League schools, and obtained multiple academic degrees. These are primarily business-related (47% of non-MBA degrees) and often complemented with an MBA degree (49% of partners). Prior professional experience is most frequently obtained with a bank (33%), especially, with a top tier financial adviser (24%), followed by an executive or consulting role (12% and 10%, respectively). Every twentieth fund has a partner joining from one of the well known private equity firms.

When the partners enter the market for capital, the experience and expertise from their previous attainments can signal trust to new investors. Thus, I examine which team characteristics allow the managers to raise larger funds. In doing so, I find a positive correlation with a higher share of previous roles in banking and consulting. In addition, a larger team in general, and a departure from a reputable private equity firm and a trained lawyer in particular benefit the capital raise. While this points in the direction of specialized skill sets and potentially pre-existing networks, there is no evidence on team diversity and the influence of Ivy League or MBA schools. These findings complement the descriptive evidence to give initial insight into the parameters and preferences capital providers seem to value most and opens up the chance to learn from successful fund raises. A caveat is that only funds which actually started investing, compared to teams who failed altogether to raise capital, are observable. However, when comparing the team characteristics of the new funds with a much broader set of funds including all kind of sequences, the average profile is relatively similar between the two groups. Thus, it may well be the case that investors, in the absence of performance signals, mainly select based on other parameters known to them, in this case the signals from the team biographies.

After fund inception, the partners tend to invest quickly with half the transactions already taking place within the first two years. This is consistent with the expectation that they often already present their first investment ideas during the roadshow to investors. They also co-invest with other funds in almost a third of deals and, interestingly, tend to lead the syndicate in many cases. Despite a wide range in geographic distance, the new funds primarily focus on investments in their home country. Furthermore, some groups of managers reveal certain investment preferences based on their previous experience. For example, partners educated in the engineering and science fields reveal a tendency towards higher distance investments and a broader industry spread, while shying away from more mature targets and add-on strategies. Graduates from Ivy League schools are less susceptible to geographic and organizational boundaries as they invest in more distant targets and are more open to both foreign markets and joining or leading a syndicate.

Finally, managers joining from another reputable private equity firm can leverage this experience to make a higher number of investments with larger ticket sizes.

In a last step, I evaluate drivers for the investment performance of first time funds. While team characteristics seem not to drive returns in a direct manner, they influence the implemented investment strategy. This result is in contrast to evidence from venture capital for which Zarutskie (2010) finds both educational and work history variables correlated with the firm's exit rates. Instead, it supports an argumentation that the buyout model is more capital than labor intensive (Chung (2012)). In the case of first time buyout funds, the following patterns seem to apply. First, managers who prefer more mature companies and follow add-on strategies achieve better performance. The latter indicates that the managers can still afford to spend the time given they do not have to care about a legacy portfolio from earlier sequences. Second, while the general literature reports a mostly non-significant relationship between size and return for private equity funds in general (Lopez-de Silanes et al. (2015)), larger first time funds tend to generate lower returns. The conclusion is robust for both the total fund size and the average ticket size. Lastly, I do not find any evidence that funds with either a larger or a more diversified investment portfolio perform any better or worse.

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 needed. Second, the analysis develops a comprehensive set of team characteristics, including the educational and professional history of managers, and deal attributes to identify their influence simultaneously on capital raising, strategy, and returns. Third, I contribute to the growing literature focusing on buyout funds (compared to venture capital) which aims to shed more light on an important yet still opaque industry. Little is known so far about the managers initiating new investment firms, where they invests in terms of industries and geographies, and how successful this undertaking is. My results confirm that buyout funds follow their very own dynamics.

The remainder of the paper is organized as follows. Section 2 reviews the related literature. Sections 3 and 4 discuss sample selection and detail the data set. Section 5 presents empirical evidence on the drivers of capital raises, while Section 6 focuses on investment strategy and performance. Section 7 concludes.

2 Related literature

First time funds are an interesting field to study for several reasons. These include difficulties related to investment evaluation in the absence of past performance information and an assessment why some investors dare to commit to new partnerships. The former also lead to a need for the identification of alternative signals which typically incorporate various dimensions of human capital measurement. This section reviews the literature related to these dimensions. The focus is on buyout funds which contribute the majority of capital to private equity as an asset class.[1] Historically, venture capital, the second largest subclass, has received much attention due to the interest into the relationship between entrepreneurial success and characteristics of the founder. More recently, a number of authors focus on the particularities of the buyout model recognizing the different investment scope, approach, and skills of these investors (Gompers et al. (2016a)).

2.1 The need for manager selection

The need for asset evaluation is inherent to investment theory. Compared to frequently studied public markets, private markets feature different characteristics such as a lack of high-quality data, distinct governance structures, and lengthy lock-in periods. These parameters should not only trigger return premia for investors but likewise require particular skill sets from managers. Hence, even large asset managers often access these markets through specialized investment firms. One topic related to manager selection has received broad attention irrespective of the asset class: the existence of performance

[1] According to Metrick and Yasuda (2011) two-thirds of the USD 2 trillion in committed capital.

persistence. If past returns can predict the future, uncertainty about the managers reduces drastically. Private equity has received special interest in this discussion as several studies have been able to document statistically significant performance persistence over the last decade (e.g, Kaplan and Schoar (2005), Chung (2012), Robinson and Sensoy (2015)). While more recent studies conclude that persistence has mostly disappeared after 2000 (Harris et al. (2014b), Braun et al. (2015)) or at least has declined since then (Korteweg and Sorensen (2015)), it has also been named the unique explanatory variable for performance predication (Phalippou and Gottschalg (2009)) and the main driver for growth in fund size (e.g., Li (2014)). However, the latter is found to erode performance and persistence in Chung (2012). While he remarks that the buyout model is more capital than labor intensive in comparison to venture capital, Korteweg and Sorensen (2015) report more dispersion in the overall skill level for buyout firms. In summary, the persistence literature seems to tell us that there is a systematic diversity among managers in terms of skill and returns (e.g., Kaplan and Schoar (2005), Braun et al. (2015)), and thus, the definite need for manager selection in private equity.

As first time funds lack a performance track record, their evaluation proves to be more difficult and alternative means to signal trust and competence are needed. Balboa and Martí (2007) note that typically reputation mitigates the information asymmetry between the investor and the managers. However, in the case of a newly founded investment firm, capital providers are more or less left with the team's composition and skill profile, i.e. the human capital, and their proposed strategy as predictor of success and performance. One could argue that they use the former to substitute for the missing organizational reputation, weighting each acquired skill according to its relevance for the investment task. However, a systematic and comprehensive investigation of team characteristics as well as of funds without a track record is still missing in the buyout literature. Thus, the following section reviews studies that focus on skill sets, team attributes, and the organizational setup of investors in various contexts and, in addition, borrows from findings in related asset classes (e.g., venture capital).

2.2 The role of skill for performance

The academic investigation of performance drivers in private equity covers several areas. These range from the fund's ability to source (proprietary) investment opportunities (Fenn et al. (1997), Teten and Farmer (2010), Gompers et al. (2016a), to certain deal and firm characteristics preferred by investors (e.g., Lehn and Poulsen (1989), Opler and Titman (1993), and Weir et al. (2005)), the use of financial, governance, and operational engineering to increase firm value (Kaplan and Strömberg (2009), Achleitner et al. (2010)), and a successful timing of the market when exiting from the investment (Ljungqvist et al. (2009), Jenkinson and Sousa (2015)).[2] Among all these, the role of the manager's skill level for superior performance has received continuous attention.

With regards to human capital, Dimov and Shepherd (2005) differentiate between two distinct types. They conclude that general human capital, compared to specific human capital, is positively associated with a manager's IPO rate of venture firms.[3] In addition, Dimov et al. (2007) draw attention to the influence of executives with finance expertise on investment strategy and selection. Patzelt et al. (2009) confirm for a European data set that education, especially in management related fields, and previous work experience have measurable influence on portfolio strategy choices such as diversity among industries and geographies. For buyout firms, Acharya et al. (2013) find operational and financial backgrounds to matter for the fund's value creation conditional on the type of the acquistion (organic/inorganic). Degeorge et al. (2015) 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 in the transaction.

With regards to the organizational structure, Li (2014) reports a positive relationship between the number of partners and performance, while a higher capital per partner

[2]For comprehensive literature surveys on private equity and its various determinants refer to Phalippou (2007), Metrick and Yasuda (2011), and Sensoy and Kaplan (2015).

[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.

ratio indicates the reverse. This is noteworthy as funds typically grow from sequence to sequence and experienced buyout firms raise successively larger funds (Metrick and Yasuda (2010)). The large funds then tend to perform worse than smaller ones, which Humphery-Jenner (2012) explain with the competitive advantage to be limited to big-scale investments despite better networks, the ability to diversity, and improved financing terms. However, Lopez-de Silanes et al. (2015) outline that a more homogeneous background among the management team can lead to smaller diseconomies of scale. In addition, Ewens and Rhodes-Kropf (2015) mention that the partners' human capital is much more important than the firm's organizational capital. Moreover, Chung (2012) argues that managers provide not only skills but also various other kinds of resources such as (industry) networks. Siming (2014), for example, show that funds with past relationships to financial advisers still receive benefits from them. Fuchs et al. (2016) mention that access to more educational networks benefits the deal sourcing activities of buyout funds. Stanfield (2016) emphasizes the importance of skill in the syndicate decision for leveraged buyouts. For venture capital, Gompers et al. (2016b) stress that overlaps in ethnic, educational, or career background influences investment behavior in terms of likelihood to syndicate with one another. On a more general note, MBA degrees, which are frequently observed among the partners in the investment industry, typically open up valuable networks to organizations and individuals (Baruch and Peiperl (2000)).

Finally, with regards to first time funds, Kaplan and Schoar (2005) and Phalippou and Gottschalg (2009) show that their performance is lower compared to more seasoned funds, whereas Harris et al. (2014b) find lately that managers are able to generate above median performance. They conclude that new fund raises should not simply be avoided by investors. Further, Ljungqvist et al. (2009) highlight that the investment behavior of first time funds is less sensitive to market conditions and that younger funds invest in riskier buyouts, in an effort to establish a track record. In a related study to this one, Zarutskie (2010) evaluates venture exits and emphasizes the importance of prior experience as a venture capitalist or start-up executive for success. Cai et al. (2013)

add that this impact is stronger for smaller and younger investors. However, to the best of my knowledge, a comprehensive evaluation on the teams founding new funds, their investment activity and subsequent returns is still missing in the literature.

2.3 The opportunity new funds provide

In case of success, a first time fund raise provides significant opportunities for both its managers and investors. Investors daring to participate early on do not only participate in the performance of the current fund but receive additional rents from the ability to participate in future raises from the same managers. Earlier research stresses that some classes of investors achieve higher returns from private equity than others (Lerner et al. (2007), Chung et al. (2012)), potentially due to their superior skills in selecting or assessing these investments. Identifying successful first time funds can subsequently be of interest to investors to prove (superior) investment selection skill. Korteweg and Sorensen (2015) hypothesize that the ability of investors to do so is the reason why persistence is not totally competed away. For first time funds, Sensoy et al. (2014) observe that insurance companies and banks invest most often, whereas endowments are least likely to participate. However, 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. In addition, Da Rin and Phalippou (2016) reference a greater effort of due diligence for new fund raises due to high uncertainty. Yet, they mention that more experienced investors spend less time. First raises should also be less crowded as many investors are not willing to participate, and thus, the investor has a chance to negotiate more competitive terms.

Apparently, not only the investor receives benefits from the start of a successful sequence of funds. While the managers have to make a capital commitment themselves upfront, they tend to enjoy great financial upside. Metrick and Yasuda (2010) describe 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 ones). Chung et al. (2012) reference that each additional point in return a first time buyout fund generates for their investors directly translates into additional incremental revenue from future funds. Thus, the partners should be highly motivated to prove themselves. Lastly, Ivashina and Lerner (2016) highlight the role senior partners from (reputable) firms play on the ability to raise (additional) capital. The departure is often driven by the underprovision of carried interest and ownership from their previous firm which can encourage the successful partner to start an own firm.

3 Sample selection

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] Performance information in terms of an internal rate of return (IRR) and/or money multiple (TVPI) is available as a latest reported figure on roughly one third of funds. To increase availability of fund performance (IRR, TVPI) and, to a lesser extent, fund size, the data is complemented with information

[4]Brown et al. (2015) include PitchBook in a comparison of commercial private equity data sets (besides Preqin, Cambridge Associates, and Burgiss) and conclude that for North American funds all provide similar signals on performance while outside of North America, coverage varies substantially across the databases. Harris et al. (2015) confirm that the Burgiss performance data are qualitatively and quantitatively similar to those in Pitchbook. 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.

from the Preqin database whenever it was missing or more recent data was 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. In combination, this leaves a set of 1,655 funds in the initial sample, out of which 1,034 have an IRR measure and 1,112 have a TVPI multiple attached.[7]

In a second step, the sample is split between first time and follow-on funds. First time funds represent either the very first one initiated by the respective general partner or the start of a new series by an established firm. 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 may come 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, 434 from new investors and 133 representing the start of a new series from an established investor.

A break-down of information on the first time funds by vintage year is depicted in Table 1. The average newly raised fund manages USD 329 million in capital (median: 160) and provides investors with an IRR of 16.6% (median: 13.5%) and a total value of 1.8 times the paid-in capital (TVPI, median: 1.6).[9] Its management team lists 2.4 individuals (median: 2.0) that make 11.0 transactions over the fund's lifetime (median:

[7]Around 300 funds are complemented with information from Preqin.

[8]Braun et al. (2015) 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 the performance of follow-on funds matching the same selection criteria in the database (average IRR of 13.4% and TVPI of 1.6), I find the first time funds achieve higher performance. A similar observation is found by Harris et al. (2014b), whereas Kaplan and Schoar (2005) and Phalippou and Gottschalg (2009) report the opposite.

9.0).[10] The table also shows a split between the new firms and new series funds which appear to be relatively similar across the main characteristics.

Table 1 about here: First time fund sample by vintage year

A closer look on the performance distribution of the new funds is presented in Table 2. The sample is divided by size quintile which shows that the smaller funds achieve higher returns but also suffer from a greater dispersion. This is not surprising, given that the average large scale fund is about 30 times bigger than the average fund in the smallest bucket, and thus, the funds address very different market segments. The interquartile range is also monotonously falling as the funds become larger which indicates a more consistent return generation for larger funds and potentially less risk to investors. Lastly, the table indicates that larger funds are more likely to have performance information available. I will address a potential selection bias in the performance regressions.

Table 2 about here: Performance distribution of first time funds

4 A look on team and investment profiles

This section examines who the individuals are that found new buyout funds and how their subsequent investment approach looks like. Team characteristics and investment activity are detailed in Table 3. There is biographical information for a total of 1,388 partners who tend to be represented with more than one academic degree.[11] The managers received extensive business education as half of them graduated with a degree in finance/accounting/economics or another business-related field. This excludes MBA degrees which in addition are obtained by around half the management team.[12] Almost a fifth of partners received a degree in the engineering and science fields, while a tenth

[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.
[12] A similar findings is reported by Cohen et al. (2008) who focus on mutual funds.

obtained a law degree. One third of managers graduated from an Ivy League school (including MBA degrees). In unreported statistics, I find that the average team characteristics of the new funds more or less resemble the profiles of a much broader set of funds including more seasoned ones. This could indicate that investor intentionally choose such characteristics in the absence of performance signals given the similarity to other funds they have invested in the hope of a correlation to future success.

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

Besides the educational profile of the management team, I also examine their work history with regard 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.[13] Around a third of the average team has a professional history in banking, mostly with an investment bank, a tenth in consulting, and a fourteenth with a major accounting firm.[14] To account for having served in an executive role, the partner must have held a position as either Chief Executive Officer (CEO), Chief Financial Officer (CFO), or Chief Operating Officer (COO). This criterion is matched by one in eight partners. Reputable general partners are based on the most active acquirers presented in Morkoetter and Wetzer (2015a) and shows one in twenty left one of the firms to found another fund.[15]

The funds are involved in 6,229 transactions, acquiring mostly mature firms with an average age of 25 years (at time of deal). The data shows further that half of them happen within the first two years after inception, climbing to around a third after three years

[13]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).

[14]The subset of top tier banks is based on Golubov et al. (2012) and includes Goldman Sachs, Merrill Lynch (now Bank of America Merrill Lynch), Morgan Stanley, JPMorgan, Citi/Salomon Smith Barney, Credit Suisse First Boston, Lehman Brothers (now Barclays Capital), and Lazard.

[15]The list is drawn from the author's Table 2 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).

time, with an average time lag of 3.2 years. 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. Around a quarter of transactions is classified as add-on acquisitions which typically support a prior acquisition in a buy-and-build strategy. While the funds appear to spread their investments across various industry groups, they show a strong preference for their home country. 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).

Univariate correlation between the main team and investment characteristics are shown in Table 4, in Panel A for education and past experience and in Panel B for investment portfolio attributes. This reveals some initial insights into hiring preferences and career tracks on one hand, and on 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. It indicates that this may not be done voluntarily but rather due to a need to do so as it happens rather late in their investment period. Co-investments also seem to increase the partner's geographic range which may open up opportunities that are not otherwise available to the fund. As expected, add-on deals take a longer time as the initial investment needs to take place first. They are also more likely to happen in the investor's home country.

Table 4 about here: Univariate correlations of team and investment

Lastly, I examine the schools from which the partners graduated (Table 5). The top three universities, Harvard, University of Pennsylvania, and Stanford, make up almost a quarter of overall degrees and represent almost half of MBA degrees. This concentration on a relatively few number of schools is remarkable and indicates that the buyout fund manager universe represents a relatively homogeneous group.

Table 5 about here: Degree institutions of first time fund partners

5 The team's signaling role for fund raising

This section presents empirical evidence on team characteristics and fund attributes as a driver for the amount of capital the managers are able to raise from their investors. To assess this impact, a cross-sectional regression model is employed which writes

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

where each observation represents one first time fund. The dependent variable is the logarithm of the fund's raised capital. Main variables of interest in this setting are included in the team characteristics vector, whereas the fund attributes vector represents control variables. The former comprise the number of fund partners pertaining to the management team as well as their educational profiles (degree type and field) and past work histories (consulting, banking, executive role, history with major private equity firm). The variables measure the fraction of individuals exhibiting the particular characteristic within the group of fund partners. The exception are traits with low frequencies and, thus, limited variation, where instead a binary indicator is used (e.g., law degrees and movers). Fund attributes separate between a U.S. based fund, which make up more than half of the sample, and whether the fund is from a new or an established general partner. Lastly, vintage year fixed effects are added to account for unobserved time effects.

In addition to individual characteristics, a measure of the team's diversity with regard to professional experiences is included. Similar to Lopez-de Silanes et al. (2015), I calculate a Herfindahl-Hirschman index (HHI) based on the partner's exposure to roles in 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 a partner matches multiple profiles, they are equally weighted.[16] Hence, the partner's total weight in the fund team remains equal to everyone else. If the partner's biogra-

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

phy contains none of the four roles, the experience is set to "Other". The average fund experience diversity is calculated with 0.72, on a scale from zero to one (median 0.625).

Results from estimating the model using Ordinary Least Squares (OLS) are presented in Table 6.[17] Educational and experiences variables are regressed individually (Specifications 1 & 2) as well as jointly with the fund attributes (Specifications 3 & 4). Interestingly, the removal of vintage year fixed effects does not affect the results at all. 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 a second step, I include the average investment ticket size as an additional explanatory variable (Specifications 5 & 6). While the original model uses only information available to the investor at the time of fund raising, the new proxy measures the team's consistency with their promised strategy ex-post. For example, if the partners pitch to acquire multi-billion dollar businesses they are much more likely to be able to raise a large fund. As the number of investments tends not to vary a lot across funds due to availability of target companies in a limited investment horizon and the partners resources, there should be a high correlation between overall size and average ticket. Estimation results show that not only the R-squared increases dramatically and the variable is highly significant but also the influence of other drivers remains comparable.

Table 6 about here: Role of the management team for fund raising

The main findings regarding fund raising can be summarized as follows. Overall, variables related to the work history of the partners dominate the educational background. With regard to professional experience, prior roles with a bank and with a consulting firm raise the capital significantly. One explanation for this could be existing networks from the past role (see Siming (2014) for relationships with financial advisers). Similar, the addition of a partner having a history with a reputable private equity firm (cp. Ivashina and Lerner (2016)) or a trained lawyer exhibits a positive influence. On the other hand,

[17] In unreported quantile regressions, I observe the coefficient estimates to remain mainly within the confidence intervals, i.e. estimates do not change along the distribution.

neither executive roles nor the diversity of prior experience within the team seem to have an impact. There is also little evidence on the importance of the educational background. The coefficient on business studies is negative, while the rarer profiles in engineering and science carry a positive sign. I do not find support that MBA degrees matter, another characteristic where one would expect the existence and value of networks (Baruch and Peiperl (2000)). Maybe this is the case as roughly half of the partners received an MBA, i.e. it is no distinctive feature to other funds. Interestingly, the indicator variable for a new series of an established general partner has a negative coefficient and is significant before adding the strategy proxy. This may be the case as other partners try to protect their own series and, subsequently, limit internal competition for capital. Alternatively, this could express a learning effect 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 carry a clear sign across the estimations and comes with high standard errors. Lastly, the addition of an additional partner to the management team increases the committed capital by 20%.[18] This relates to the notion from other studies that buyout funds are more capital rather than labor intensive (Metrick and Yasuda (2010), Chung (2012)).

In combination, the descriptive statistics – *which characteristics are frequent to observe* – and the empirical evidence – *which characteristics are correlated with larger funds* – provide initial insight into the success of fund raising. This gives the 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 value of certain attributes. Yet, it cannot assess the overall probability of success as the presented analysis is restricted to funds that actually raised capital. While the results remain mostly robust over the models, the amount of committed capital is certainly an imperfect proxy as it is not possible to include the managers who have not been able to source capital at all from investors. The comparison of characteristics between teams who are able to raise capital and the ones who miss out completely remains subject to further research.

[18]Exponentiated regression coefficient: exp(.189) = 1.208.

6 The performance of first time funds

After the previous section concluded that some team characteristics drive the amount of capital raised by the partners, the following discussion focuses on their relevance for the performance subsequently achieved. However, this time the educational and experience variables do not seem to exert a direct influence on performance (see first two columns in Table 7). This contrasts to venture capital, where Zarutskie (2010) finds that prior venture investing, consulting, or start-up experience drive the share of exits, whereas more MBAs reduce them. In light of these different dynamics for the buyout class, I decide to follow a different approach. In a first step, I run a set of regressions on the fund's investment strategies to identify its drivers. The cross-sectional model writes

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

where once more each observation represents one first time fund. Results from OLS estimation are depicted in Table 7. Team characteristics and fund attributes are defined as before. The dependent variables comprise major dimensions of the fund's investment activities, in particular, the investment profile (geography and industry exposure), target company characteristics (distance, company age), deal type preferences (add-ons, syndicates), and portfolio characteristics (number of investments, average ticket size). Geographic distance is included as the literature has shown that private equity investors, similar to other asset classes, have a certain tendency to source locally (often also denoted "home bias").[19] The analysis reveals that some groups of managers prefer certain investment characteristics over others based on their previous experience. For example,

[19] For example, Wu (2011) and Siming (2014) show a negative effect on co-investment and financial adviser selection (see Sorensen and Stuart (2001, 2008) and Cumming and Dai (2010) for venture capital evidence). The measure is calculated based on the headquarter of the target company and the nearest investment office, where at least one of the fund partners 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.

partners educated in the engineering and science fields apparently are more open to higher distance investments and a broader industry spread. One explanation would be that they have the technical industry knowledge for identifying the firm's potential irrespective of a particular geographic region. On the other hand, they seem to avoid fairly mature targets and add-on strategies. Another example are graduates from Ivy League schools that appear less susceptible to geographic and organizational boundaries as they invest in more distant targets and are more open to both foreign markets and joining or leading a syndicate. During their studies they may have learned to overcome such boundaries or to use networks based on such affiliations. Finally, experienced managers joining from another reputable private equity firm leverage this expertise to make a higher number of investments with larger ticket sizes. This comes not as a surprise given the extensive evidence on performance persistence in the literature which seems even to stick with movers who leave to found their own investment firm (see Ewens and Rhodes-Kropf (2015) for similar evidence from venture firms). Variables that show relatively little influence in the strategic positioning include the diversity of professional experiences, ex-bankers and consultants, and business/MBA graduates.

Table 7 about here: Team characteristics as drivers of performance and strategy

In a second step, I run performance regressions on these strategy variables. The empirical investigation is limited to funds for which performance information is available. However, a Heckman selection model is used to address concerns about selection bias. As dependent variable two performance measures are employed, namely the internal rate of return (IRR) and the money multiple (TVPI). The main variables of interest are now the investment strategies. The resulting model writes

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

Results from estimating the performance model are depicted in Table 8. Specifications 1 & 2 represent the baseline model, specifications 3 & 4 replaces the average ticket with the logarithmic fund size, while specifications 5 & 6 present the outcome equation of a Heckman selection model to account for a potential selection bias related to the missing performance values. The corresponding selection equation use the educational, biographical, and fund variables as well as the fund size.

Table 8 about here: Investment strategy as driver of performance

The main findings regarding performance are as follows. First, the larger funds seem to achieve significantly worse performance. This is contrary to the mainstream literature perception that finds mostly a non-significant relationship between fund size and return (Kaplan and Schoar (2005), Ljungqvist et al. (2009), Robinson and Sensoy (2013), Harris et al. (2014a), Lopez-de Silanes et al. (2015)). However, Humphery-Jenner (2012) finds a similar negative significant relation for a mixed sample of buyout and venture that invest in the U.S., whereas Li (2014) specifies that the negative relationship is much stronger for buyout than for venture funds. In addition, she reports that the relationship between performance and the number of partners is positive and significant. However, for first time funds, team size does not seem to matter much after controlling for size. The findings remain robust for both the absolute fund size and the average ticket size as well as controlling for selection using the Heckman model. In addition, while the indicator variable for a new series of an established investor carries a negative influence on performance, its interaction with the size measure mitigates this effect (primarily in the IRR model). This result may indicate that the partners benefit from the experience within the existing organization in terms of assessing the right size for the new fund more correctly. They are likely aiming for a more consistent result in line with other offerings compared to a more aggressive strategy for managers where everything depends on the outcome of the very first raise and its associated gain in reputation.

Second, deal attributes reveal that managers who prefer more mature companies and follow add-on strategies achieve better performance. Geographic or industry diversity does not influence performance in either direction for the new funds. In contrast, Ljungqvist et al. (2009) report that diversification across industry matters for buyout funds overall, whereas Humphery-Jenner (2012) mention industry and geographic region as a driver of IRRs and multiples. However, the evidence for first time venture capital funds from Zarutskie (2010) also finds industry choice unrelated to performance. The importance of add-on investments is consistent with recent findings presented in Morkoetter and Wetzer (2015b). They state that these acquisitions, which typically support a prior acquisition often in a buy-and-build strategy, are of interest to the fund as they allow them to participate in operational synergies. This is something which is usually only available to strategic buyers yet the authors also note that this makes any pricing discount disappear. Lastly, while the distance coefficient carries a negative sign, the impact seems limited indicating that at least on the aggregated fund level the managers do not suffer from any systematic home bias. Similarly, the number of investments and the share of syndicate investments does not exert any influence. This comes surprising given the earlier observation that syndicates are formed rather late in the investment period.

For a deeper value attribution analysis, detailed data on the financial performance of the target companies is needed. Such an evaluation would be of interest to better understand the relationship between the partner profile and deal type. For example, 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. This suggest heterogeneous skills at the individual partner level. Further, Gompers et al. (2016a) find that firms where founders have a financial background tend to focus on financial engineering, compared to a previous background in private equity and operations who tend to focus more on operational engineering. Both could provide follow-up investigations into the relationship of team characteristics and performance and their relevance in the context of first time funds.

7 Concluding remarks

A new fund can be regarded as a small venture with a pre-set timeline. The main asset is its own management team comprising seasoned professionals who initially need to raise capital from outside investors. Subsequently, they employ the capital by trading in other companies. The study investigates how far the educational and professional profile of the partners affect funding, investment strategy, and performance. I find consulting and banking experience as well as movers from other reputable private equity firms to raise larger funds, however, none of the team characteristics seems to influence returns in a direct manner. Yet, they influence the strategy the managers choose which is again related to subsequent performance. The findings extend the existing literature focusing on persistence as a criteria for manager selection to the case where past return information is 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 education and experience into the ongoing investigation of performance attribution.

This investigation is of practical relevance to both capital providers and managers trying to raise new funds. Investors are interested in finding new opportunities in a competitive investment environment by identifying managers which not only have the potential to run one fund successfully but from which they can benefit long-term through subsequent raises. On the other hand, the partners receive generous upside potential from current and future rents in the case of success. While the analyses show that certain team profiles are beneficial to raise additional capital, the result cannot be generalized into a prediction of success probability. For such an extension, one would need to also observe managers who never entered the market at all. Nevertheless, the descriptive and empirical evidence can serve 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 which are not of relevance for (superior) investment performance.

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8 Tables

Table 1: Breakdown of first time buyout fund sample by vintage year

The table shows buyout funds up to vintage year 2010 available in the PitchBook database. Only closed, fully invested, and liquidated funds are included and a minimum of three funds per vintage year is imposed. The variables on fund size, fund IRR and fund TVPI are complemented with information from the Preqin database in case it is missing in PitchBook or in case Preqin provides a more recent time stamp for the performance field. The sample only includes funds for which committed capital and sequence number are available, funds for which biography information of at least one partner is available, and funds for which information on at least three of their deals is available in the database. It is further restricted to cover only funds which are the first for the General Partner (shown as *new firm* at the bottom of the table) or the first one in a new series for a previously active investor (depicted as *new series* at the bottom of the table). The *fund count* reports the total number of funds as well as the number of funds for which an IRR, a TVPI multiple, and at least one fund partner is available, respectively. The *fund profile* lists the average number of investments and fund partners tagged to the fund as well as the average and median committed capital. The number of fund partners does not include investment professionals with titles such as "Analyst" or "Associate". The *fund performance* depicts the average and median IRR and TVPI multiple for each vintage year. The performance and capital variables are winsorized at the 1% level.

	Fund Count			Fund Profile				Fund Performance			
Vintage Year	First Series	w/ IRR	w/ TVPI	Avg. Partner	Avg. Invest.	Avg. Cap.	Med. Cap.	Avg. IRR	Med. IRR	Avg. TVPI	Med. TVPI
	#	#	#	#	#	*$m*	*$m*	%	%	*x*	*x*
1984	2	2	2	1.0	3.5	48	48	47.6	47.6	3.9	3.9
1987	2	2	2	1.5	17.5	91	91	19.0	19.0	2.1	2.1
1989	2	2	2	2.5	8.5	240	240	27.6	27.6	3.6	3.6
1990	5	4	4	1.4	13.2	532	182	22.1	18.8	2.7	2.4
1991	4	4	4	1.0	6.2	194	178	24.7	27.0	2.8	2.4
1992	2	2	2	1.5	8.5	62	62	20.8	20.8	2.5	2.5
1993	3	2	2	1.3	6.0	300	309	13.1	13.1	1.7	1.7
1994	7	4	4	2.0	12.4	305	148	25.6	23.8	2.7	2.7
1995	4	1	2	2.8	6.0	145	70	59.9	59.9	3.8	3.8
1996	17	7	9	1.4	10.5	277	208	11.1	10.4	1.4	1.3
1997	25	12	12	1.6	6.1	199	150	13.2	12.0	1.7	1.8
1998	26	14	11	2.2	10.5	291	155	13.0	12.3	1.6	1.8
1999	37	19	17	2.2	13.2	395	200	16.6	15.3	1.9	1.8
2000	44	25	27	2.5	14.2	371	182	15.9	11.8	1.9	1.6
2001	29	13	12	2.5	12.1	310	120	15.4	13.4	1.6	1.7
2002	37	14	16	2.5	11.5	510	145	20.7	17.1	1.8	1.7
2003	26	14	15	2.4	9.8	285	199	20.5	15.3	1.9	1.6
2004	36	16	15	2.6	10.2	272	195	24.5	24.1	2.5	2.0
2005	43	17	24	2.7	11.4	384	197	14.3	8.1	1.7	1.3
2006	53	22	25	2.7	10.8	378	135	12.7	11.7	1.7	1.6
2007	61	24	31	2.9	10.5	364	256	17.0	15.3	1.7	1.5
2008	48	14	20	2.6	11.3	213	112	14.8	12.0	1.4	1.4
2009	32	15	18	2.6	9.8	385	166	12.0	10.8	1.4	1.3
2010	22	9	12	3.0	11.5	176	166	7.6	9.1	1.3	1.3
Total	567	258	288	2.4	11.0	329	160	16.6	13.5	1.8	1.6
new firm	434	198	225	2.4	10.8	325	175	17.0	13.8	1.8	1.6
new series	133	60	63	2.6	11.8	342	136	15.6	13.1	1.8	1.7

Table 2: Performance distribution of first time buyout fund sample

The table shows the distribution of performance variables with regards to the IRR and the TVPI multiple, respectively. The sample includes buyout funds up to vintage year 2010 which are either the first fund of the investor or a new series of funds. For more details on how the sample is derived refer to the caption of Table 1 as well as Section 3. The variables are measured at the fund level and at each size quantile. *Panel A* reports figures on IRR, whereas *Panel B* concentrates on the TVPI multiple. *Avg* indicates average, *Med* the median, *StD* the standard deviation, *Q25* and *Q75* the 25% and 75% percentiles, respectively, and *IQR* the interquartile range.

Portfolio	All	Obs	Avg	Med	StD	Q25	Q75	IQR
Panel A: IRR (%)								
1 (small)	114	36	23.3	15.4	23.8	7.5	39.7	32.2
2	113	35	19.7	20.7	17.6	8.7	30.2	21.5
3	113	49	15.2	15.1	12.9	8.8	22.0	13.2
4	113	62	15.0	12.9	13.1	5.3	21.9	16.5
5 (large)	114	76	14.3	12.6	12.7	7.2	19.1	11.9
Sample	567	258	16.6	13.5	15.7	7.6	24.0	16.4
Panel B: TVPI (x)								
1 (small)	114	36	2.36	1.94	0.24	1.37	3.32	1.95
2	113	41	1.99	1.72	0.18	1.26	2.49	1.23
3	113	56	1.81	1.71	0.13	1.27	2.22	0.95
4	113	74	1.71	1.57	0.13	1.16	2.07	0.91
5 (large)	114	81	1.59	1.55	0.13	1.20	1.83	0.63
Sample	567	288	1.82	1.63	0.16	1.23	2.21	0.98

Note: Performance and size measures winsorized at the 1% level

Table 3: Team and investment statistics of first time buyout fund sample

The table reports summary statistics on first time buyout funds. The sample includes only funds up to vintage year 2010 which are either the first fund of the investor or part of a new investment series of an established investor. Each row shows the average of the respective variable based on either the sample of fund partners, buyout funds, or fund investments. For educational and professional measures a partner may be included in multiple variables based on the particular biography. For more details on how the sample is derived refer to the caption of Table 1 as well as Section 3. Variable definitions are presented in the Appendix.

Variable	Unit	Partner	Fund	Deal
Observations	#	1388	567	6229
Educational background				
Engineering/Science	%	0.18	0.17	
Social/Arts	%	0.10	0.10	
Business/Economics	%	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				
Consulting	%	0.10	0.09	
Accounting	%	0.08	0.07	
Banking	%	0.33	0.32	
Banking (top-tier)	%	0.24	0.24	
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 $\leq$ 100 km	%		0.23	
Distance 100-500 km	%		0.19	
Distance 500-1000 km	%		0.14	
Distance $\geq$ 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 Go Privates	%		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 correlations of team and investment variables

The table depicts Pearson correlation coefficients (bottom triangle) and Spearman correlation coefficients (top triangle). The sample includes buyout funds up to vintage year 2010 which are either the first fund of the investor or a new series of funds. The variables are measured at the fund level and represent the fraction of observations satisfying the respective criterion. For more details on how the sample is derived refer to the caption of Table 1 as well as Section 3. Variable definitions are presented in the Appendix.

Panel A: Education and past experience

		1	2	3	4	5	6	7	8	9	10
1	Consulting (%)		0.00	-0.01	0.07	0.24***	0.13**	0.00	0.05	0.03	0.13**
2	Accounting (%)	-0.03		-0.04	-0.04	-0.02	0.06	0.06	-0.14***	-0.02	-0.15***
3	Banking (%)	-0.07	-0.06		-0.09*	0.08	-0.08*	0.17***	0.11**	0.03	0.09*
4	Executive (%)	0.09*	-0.06	-0.08		-0.01	0.03	0.03	0.03	0.06	-0.01
5	PE Top-10 (%)	0.23***	-0.04	0.03	0.00		0.02	0.00	0.06	0.01	0.13**
6	Engineering/Science (%)	0.11**	0.01	-0.11**	-0.01	0.02		-0.26***	-0.04	-0.09*	-0.07
7	Business/Economics (%)	-0.01	0.05	0.17***	0.03	0.01	-0.28***		-0.02	-0.06	-0.04
8	MBA (%)	0.04	-0.19***	0.11*	0.02	0.04	-0.04	-0.03		-0.03	0.33***
9	Law/JD (%)	-0.01	-0.02	0.00	0.00	0.02	-0.14***	-0.06	-0.01		0.10*
10	Ivy league (%)	0.10*	-0.16***	0.09*	-0.01	0.12**	-0.09*	-0.04	0.32***	0.13**	

Panel B: Investment portfolio characteristics

		1	2	3	4	5	6	7	8	9	10
1	Average time lag (yrs)		-0.68***	0.16***	0.00	-0.07	0.03	0.20***	0.12**	-0.08	0.18***
2	Investment w/ 2yrs (%)	-0.67***		-0.12**	0.01	0.01	0.04	-0.17***	-0.07	0.07	-0.13**
3	Share syndicates (%)	0.18***	-0.12**		-0.21***	-0.01	0.01	0.01	0.24***	-0.14**	0.22***
4	Firm age (yrs)	-0.06	0.05	-0.21***		-0.06	0.08	0.15***	-0.11**	-0.08	-0.01
5	Industry Group (HHI)	0.00	0.02	0.04	0.00		-0.14***	-0.05	-0.04	-0.07	-0.23***
6	Foreign Investment (%)	0.01	0.04	0.00	0.06	-0.06		-0.07	0.33***	-0.08	0.13**
7	Share addons (%)	0.13**	-0.18***	-0.03	0.08	0.00	-0.17***		0.17***	-0.17***	0.42***
8	Average distance (log)	0.12**	-0.07	0.23***	-0.09*	-0.06	0.24***	0.19***		-0.50***	0.72***
9	Distance $\leq$ 100 km	-0.09*	0.07	-0.13**	-0.08*	-0.03	-0.12**	-0.22***	-0.64***		-0.45***
10	Distance $\geq$ 1000 km	0.13**	-0.16***	0.12**	-0.06	-0.18***	0.01	0.43***	0.49***	-0.38***	

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

Table 5: Degree institutions of first time fund partners

The table presents the most frequent academic institutions from which the fund partners receive their academic degrees. Individuals can be represented with multiple degrees. MBA degrees are also shown individually. Fund partners are working for a first time buyout fund up to vintage year 2010. The table is sorted in a descending order by the number of degrees. All institutions represented with at least 15 degrees are shown.

	School	N	%	MBA	%
1	Harvard University	275	11.68	176	26.19
2	University of Pennsylvania	156	6.62	68	10.12
3	Stanford University	109	4.63	47	6.99
4	Northwestern University	65	2.76	43	6.40
5	University of Chicago	51	2.17	44	6.55
6	Columbia University	50	2.12	30	4.46
7	New York University (NYU)	40	1.70	21	3.12
8	Dartmouth College	37	1.57	15	2.23
9	Yale University	36	1.53	6	0.89
10	Princeton University	32	1.36	1	0.15
11	University of Virginia	32	1.36	10	1.49
12	University of Texas	28	1.19	8	1.19
13	Cambridge University	27	1.15	1	0.15
14	University of California, Los Angeles (UCLA)	26	1.10	14	2.08
15	University of Michigan	26	1.10	7	1.04
16	ParisTech (Telecom, ENST, HEC)	25	1.06	2	0.30
17	Duke University	24	1.02	7	1.04
18	INSEAD	24	1.02	21	3.12
19	Cornell University	23	0.98	5	0.74
20	Georgetown University	23	0.98	2	0.30
21	University of California, Berkeley	22	0.93	5	0.74
22	University of Oxford	21	0.89	0	0.00
23	University of Illinois	20	0.85	1	0.15
24	Massachusetts Institute of Technology (MIT)	16	0.68	2	0.30
25	Bocconi University	15	0.64	5	0.74
	Other	1152	48.92	131	19.49
	Total	2355	100	672	100

Table 6: The role of the management team for fund raising

The table shows the results for cross-sectional regressions of fund size on team attributes. The sample includes buyout funds up to vintage year 2010 which are either the first fund of the investor or a new series of funds. For more details on how the sample is derived refer to the caption of Table 1 and Section 3. The dependent variable is the logarithm of the capital committed to the fund. *Edu* refers to the educational background of the partners, whereas *Exp* to their professional background prior to joining the fund. Variable definitions are presented in the Appendix. Each model includes vintage year fixed effects. The table depicts coefficients estimated with Ordinary Least Squares (OLS) and cluster robust standard errors (in brackets).

	Dependent variable: Fund size (log)					
	(1)	(2)	(3)	(4)	(5)	(6)
Edu: Engineering/Science (%)	0.268		0.277	0.271	0.063	0.025
	(0.186)		(0.182)	(0.177)	(0.078)	(0.076)
Edu: Business/Economics (%)	−0.241*		−0.310**	−0.305**	−0.030	−0.054
	(0.136)		(0.137)	(0.131)	(0.065)	(0.064)
Edu: MBA (%)	−0.145		−0.163	−0.197	0.030	0.018
	(0.136)		(0.134)	(0.132)	(0.062)	(0.064)
Edu: Law/JD (d)	0.248**		0.283**	0.236*	0.142**	0.118**
	(0.126)		(0.124)	(0.124)	(0.056)	(0.058)
Edu: Ivy league (%)	0.255*		0.178	0.217	−0.036	−0.027
	(0.135)		(0.141)	(0.137)	(0.066)	(0.066)
Exp: Consulting (%)		0.548***	0.476**	0.472**	−0.037	−0.018
		(0.186)	(0.195)	(0.184)	(0.091)	(0.092)
Exp: Banking (%)		0.483***	0.577***	0.577***	0.160**	0.164**
		(0.135)	(0.132)	(0.133)	(0.070)	(0.070)
Exp: Executive (%)		−0.179	−0.137	−0.203	−0.103	−0.155
		(0.186)	(0.189)	(0.184)	(0.105)	(0.102)
Exp: PE Top-10 (d)		0.564***	0.561***	0.502***	0.218***	0.179**
		(0.168)	(0.164)	(0.164)	(0.080)	(0.079)
Exp: Diversity (HHI)		−0.055	−0.049	0.031	−0.142	−0.133
		(0.224)	(0.226)	(0.218)	(0.118)	(0.115)
Established GP (d)			−0.245**	−0.241**	0.005	−0.024
			(0.124)	(0.121)	(0.056)	(0.058)
U.S. based fund (d)			−0.171	−0.147	0.075	0.099*
			(0.117)	(0.111)	(0.055)	(0.055)
Avg. ticket size (log)					0.896***	0.889***
					(0.021)	(0.022)
Nbr partners (#)	0.211***	0.197***	0.189***	0.193***	0.201***	0.196***
	(0.035)	(0.041)	(0.040)	(0.038)	(0.021)	(0.018)
F.E. Vintage	Yes	Yes	Yes	No	Yes	No
Observations	567	567	567	567	567	567
Adjusted R^2	0.103	0.136	0.166	0.162	0.808	0.798

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

Table 7: The role of the management team for investment performance and strategy

The table shows the results for cross-sectional regressions of fund size on team attributes. The sample includes buyout funds up to vintage year 2010 which are either the first fund of the investor or a new series of funds. For more details on how the sample is derived refer to the caption of Table 1 and Section 3. The dependent variable are different characteristics derived from the investment portfolio of the respective fund. *Edu* refers to the educational background of the partners, whereas *Exp* to their professional background prior to joining the fund. Variable definitions are presented in the Appendix. Fund controls include indicator variables on established investors and U.S. based funds as well as the number of fund partners. The table depicts coefficients estimated with Ordinary Least Squares (OLS) and cluster robust standard errors (in brackets).

Dependent variable:	IRR	TVPI	Distance	Foreign	Industry	Firm age	Addon	Syndicate	Investment	Ticket size
	Pct	*x.x*	*Log*	*Pct*	*HHI*	*Yrs*	*Pct*	*Pct*	*Log*	*Log*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Edu: Eng/Science (%)	−0.044	−0.206	0.455**	−0.011	−0.053**	−6.150**	−0.074**	0.112**	0.034	0.239
	(0.037)	(0.201)	(0.187)	(0.042)	(0.026)	(2.617)	(0.031)	(0.050)	(0.082)	(0.192)
Edu: Biz/Econ (%)	−0.002	0.038	0.115	0.008	−0.017	0.924	0.023	0.017	0.010	−0.312**
	(0.034)	(0.171)	(0.142)	(0.030)	(0.022)	(1.995)	(0.025)	(0.033)	(0.066)	(0.135)
Edu: MBA (%)	0.016	−0.007	−0.051	−0.024	−0.026	0.006	0.026	−0.018	0.049	−0.216*
	(0.035)	(0.168)	(0.147)	(0.031)	(0.023)	(1.912)	(0.025)	(0.033)	(0.063)	(0.131)
Edu: Law/JD (d)	0.029	0.096	0.214*	0.013	−0.008	−0.030	−0.0002	0.060**	0.119**	0.158
	(0.025)	(0.136)	(0.113)	(0.028)	(0.020)	(1.687)	(0.024)	(0.029)	(0.057)	(0.123)
Edu: Ivy league (%)	−0.021	0.101	0.390***	0.072**	0.002	−0.161	0.011	0.072**	−0.061	0.240*
	(0.031)	(0.189)	(0.144)	(0.030)	(0.023)	(1.915)	(0.026)	(0.035)	(0.068)	(0.140)
Exp: Consulting (%)	0.041	0.183	−0.353	0.033	0.044	1.130	0.032	−0.038	−0.101	0.572***
	(0.045)	(0.257)	(0.328)	(0.058)	(0.039)	(3.043)	(0.035)	(0.049)	(0.092)	(0.194)
Exp: Banking (%)	0.031	−0.049	0.170	0.004	−0.032	−0.584	0.020	0.040	0.106	0.466***
	(0.029)	(0.167)	(0.141)	(0.031)	(0.022)	(2.174)	(0.025)	(0.032)	(0.071)	(0.132)
Exp: Executive (%)	0.002	0.083	−0.110	0.047	0.040	−6.733***	−0.071**	0.048	−0.098	−0.037
	(0.056)	(0.260)	(0.201)	(0.042)	(0.032)	(2.422)	(0.035)	(0.050)	(0.109)	(0.188)
Exp: PE Top-10 (d)	0.011	0.083	0.340*	0.066	−0.045**	2.026	0.006	−0.002	0.172**	0.384**
	(0.025)	(0.159)	(0.199)	(0.044)	(0.021)	(2.370)	(0.033)	(0.031)	(0.085)	(0.178)
Exp: Diversity (HHI)	−0.011	−0.118	0.087	0.015	0.080**	−4.362	−0.031	0.087*	−0.156	0.104
	(0.052)	(0.263)	(0.235)	(0.055)	(0.035)	(3.095)	(0.043)	(0.053)	(0.119)	(0.214)
Fund controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F.E. Vintage	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	258	288	567	567	567	567	567	567	567	567
Adjusted R^2	0.036	0.105	0.123	0.258	0.075	0.032	0.163	0.059	0.354	0.080

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 fund performance on investment characteristics. The sample includes buyout funds up to vintage year 2010 which are either the first fund of the investor or a new series of funds. For more details on how the sample is derived refer to the caption of Table 1 as well as Section 3. The dependent variable is the IRR and the TVPI multiple of the fund, respectively. Variable definitions are presented in the Appendix. Performance and capital variables are winsorized at the 1% level. Each model includes vintage year fixed effects. Specifications (1) to (4) depict coefficients estimated with Ordinary Least Squares (OLS) alongside cluster robust standard errors (in brackets). Specifications (5) and (6) show the outcome equation of a Heckman selection model. The corresponding selection equation contains the educational, biographical, and fund variables from earlier regressions (refer to Tables 6 and 7), and, in addition, the fund size.

Dependent variable:	IRR	TVPI	IRR	TVPI	IRR	TVPI
	OLS	*OLS*	*OLS*	*OLS*	*Heckman*	*Heckman*
	(1)	(2)	(3)	(4)	(5)	(6)
Distance (log)	−0.001	−0.006	−0.0001	−0.005	−0.0003	−0.006
	(0.010)	(0.042)	(0.010)	(0.043)	(0.011)	(0.053)
Share foreign (%)	−0.040	−0.123	−0.038	−0.095	−0.036	−0.089
	(0.055)	(0.249)	(0.054)	(0.248)	(0.047)	(0.238)
Industry (HHI)	−0.055	−0.323	−0.056	−0.334	−0.058	−0.344
	(0.062)	(0.346)	(0.061)	(0.342)	(0.056)	(0.313)
Firm Age (yrs)	0.002***	0.012***	0.002***	0.012***	0.002***	0.012***
	(0.001)	(0.004)	(0.001)	(0.004)	(0.001)	(0.003)
Share addons (%)	0.148***	0.644**	0.147***	0.657**	0.147***	0.656**
	(0.057)	(0.324)	(0.057)	(0.327)	(0.051)	(0.286)
Share syndicates (%)	−0.022	−0.056	−0.020	−0.043	−0.022	−0.050
	(0.038)	(0.214)	(0.038)	(0.215)	(0.038)	(0.215)
Investments (log)	−0.031	−0.159	−0.004	0.076	−0.002	0.091
	(0.025)	(0.144)	(0.024)	(0.130)	(0.021)	(0.121)
Ticket Size (log)	−0.037***	−0.270***				
	(0.012)	(0.066)				
Fund Size (log)			−0.037***	−0.258***	−0.032**	−0.211**
			(0.012)	(0.066)	(0.014)	(0.084)
Established investor (d)	−0.170**	−0.544	−0.251**	−0.668	−0.246***	−0.661
	(0.068)	(0.366)	(0.105)	(0.724)	(0.090)	(0.513)
× *Size variable*	0.048**	0.181*	0.042**	0.122	0.041**	0.119
	(0.020)	(0.104)	(0.018)	(0.121)	(0.016)	(0.093)
U.S. based fund (d)	−0.051	−0.055	−0.054*	−0.056	−0.050	−0.017
	(0.032)	(0.136)	(0.032)	(0.137)	(0.031)	(0.164)
Nbr partners (#)	−0.004	−0.020	−0.004	−0.023	−0.002	−0.009
	(0.006)	(0.032)	(0.006)	(0.032)	(0.008)	(0.041)
F.E. Vintage	Yes	Yes	Yes	Yes	Yes	Yes
Observations	258	288	258	288	567	567
Adjusted R^2	0.130	0.217	0.132	0.214	0.128	0.212
Inverse Mills Ratio					0.028	0.251

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

Appendix

Table 9: 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 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 investors. 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. It does not include investment professionals with titles such as "Analyst" or "Associate".
Established GP	Indicator variable which equals to one if the general partner already runs other (unrelated) series of funds and zero otherwise.
U.S. Fund	Indicator variable which equals to one if the fund is based in the U.S. and zero otherwise.
(b) Professional experience	
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.
Accounting	Fund partners with prior work experience in the respective industry. Covers PricewaterhouseCoopers (PwC), Deloitte, KPMG, Ernst & Young (EY), and Arthur Anderson.
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).
Banking, top-tier	Based on the study of Golubov et al. (2012) listing top-tier financial advisers. Includes Goldman Sachs, Merrill Lynch (now Bank of America Merrill Lynch), Morgan Stanley, JPMorgan, Citi/Salomon Smith Barney, Credit Suisse First Boston, Lehman Brothers (now Barclays Capital), and Lazard.
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).

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Table 9 – *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	
Engineering/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.
Business/Economics	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.
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 took 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 among the investment portfolio is reported.
Foreign Investment	Indicator variable equals 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 among the investment portfolio is reported.
Share Syndicates	Transaction where at least one other buyout fund invested. On the fund level, the share among the investment portfolio that matches the criterion is reported.
Lead Syndicates	Indicator variable which equals to one if the fund in scope is marked as lead investor in a syndicate deal.
(e) Target firm attributes	
Firm Age	Difference between the founding year of the target company and the year the transaction took place.
Country Headquarter	Country name 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 and further specifies each of the seven industry sectors. The total classification covers 41 groups ranging from four to nine depending on the sector.
Distance	Geographic distance in kilometers between the headquarter of the target company and the nearest 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.