

Intermediation in Private Equity: The Role of Placement Agents

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Abstract

Intermediation in private equity involves illiquid investments, professional investors, and high information asymmetry. We use this unique setting to empirically evaluate theoretical predictions regarding intermediation. Placement agent usage has become nearly ubiquitous, but agents are associated with significantly lower abnormal returns in the cross-section, consistent with influencing activity through aggressive marketing. However, returns are higher for funds employing a top-tier agent, and for first-time funds employing an agent, consistent with a certification hypothesis. Our results provide support for both the certification and influence peddling roles of intermediaries discussed in theoretical literature, suggesting heterogeneous agent quality in the private equity industry.

“Just because you have bank fraud doesn’t mean all banks are crooked; it’s the same with placement agents.”

-- Ash Williams (Executive Director, Florida state pension fund)¹

I. Introduction

In 2010, Alan Hevesi, the state comptroller of New York responsible for the investment of the New York State pension fund, pled guilty to the crime of felony public corruption. Mr. Hevesi was sentenced to up to four years in prison for accepting over \$1 million in gifts and campaign contributions from a private equity placement agent. The goods and money were provided in exchange for Mr. Hevesi arranging to invest over \$250 million from New York pension funds in private equity funds.²

Unfortunately, Mr. Hevesi’s conviction was not a singular event. In recent years, pay-to-play scandals involving private equity placement agents and public pension funds have been uncovered in California, New York, and Kentucky. The outcry and publicity has led to federal regulation and the outright ban on the use of placement agents by public pension funds in some states like New York.³ Meanwhile, a number of private equity firms such as the Carlyle Group have agreed with regulators to stop the use of placement agents when dealing with public entities.⁴

These incidents cast placement agents in a negative light, suggesting to many observers that agents are doing little more than leveraging their influence to extract rents.

¹ Martin Z. Braun and Gillian Wee, *How Pension Placement Agents Exploited Political Ties*, Bloomberg, May 18, 2009.

² Mike McIntire, *Pension Inquiry Reveals a Power Broker’s Web*, The N.Y. Times, May 13, 2009.

³ Investors may still use investment consultants, and investors within states that ban placement agents may still invest in funds that utilize placement agents so long as they invest directly and not through the agents.

⁴ Craig Karmin and Peter Lattman, *Carlyle Reaches Pension-Fund Settlement*, The Wall Street Journal, May 15, 2009.

However, despite the bad publicity and enhanced regulation, placement agents are now more prevalent than at any time in history; they have become and remain common in private equity fund-raising. In 1991 virtually no funds used a placement agent, but by 2011 we document that about 75% of value-weighted funds rely on placement agents. This paper explores this seeming dichotomy, examining the determinants of placement agent usage, and implications for performance, using a dataset of 32,526 investments in 4,335 private equity funds.

Placement agents are financial intermediaries. They market private equity funds for general partners (“GPs”) to external investors, known as limited partners (“LPs”), such as pensions, endowments, and foundations. Conventional wisdom holds that when a service provider (GP) possesses more information than their client (LP), an optimal outcome can be achieved by hiring a third party such as a placement agent to certify quality. Both sides benefit from credible certification: search cost for LPs is reduced and GPs can reach a broader base of clients. However, as modeled in Stoughton, Wu, and Zechner (2011), if LPs cannot determine whether the agent is credible then the agent can engage in influencing activity through aggressive marketing activities. We test these theoretical predictions and provide empirical evidence of both roles occurring simultaneously within the private equity market. We believe this is at least in part due to the illiquid and long holding periods for private equity investments, thereby obscuring agent reputation for extended periods of time.

The certification hypothesis advanced by Booth and Smith’s (1986) theoretical work posits that underwriters use reputational capital to guarantee product quality. Within the market for private equity, placement agents can aggregate market knowledge acquired

through continuous LP interactions on behalf of various funds, and pass this valuable information on to general partners (“GPs”) to optimize fund size and structure. Additionally, placement agents can manage the due diligence process, allowing GPs to focus on deploying funds raised. Placement agents can create value for LPs if they are able to discern fund quality ex ante, thereby mitigating information asymmetries and reducing search costs for LPs by certifying high quality funds. These explanations for placement agent usage such as information production and certification are consistent with value creation through intermediation.

An alternative, more cynical, explanation for placement agent use holds that the agents are little more than influence peddlers, possessing no ability to credibly certify fund quality or aggregate market knowledge; they merely attract institutional investors through personal relationships, aggressive marketing, or worse, kickbacks or “pay to play” schemes illustrated by recent headlines. This explanation, where the intermediary is extracting rents through influence rather than certification, is most similar to prior studies of brokers in the mutual fund industry. Much like Bergstresser, Chalmers, and Tufano (2009) assess the costs and benefits of retail brokers, we test the economic effects of placement agents in the private equity industry.

In this paper we explore these theories of placement agent utilization by reporting statistics on the characteristics of funds, GPs, and LPs when placement agents are utilized, and examining their association with abnormal returns. We document that funds employing placement agents are more likely to obtain investments from funds-of-funds, less likely to obtain investments from public pensions or endowments, and more likely to obtain investments from limited partners in countries outside the general partner’s headquarters

country. We also find that placement agent use is positively correlated with aggregate capital flows to private equity, fund size, and diversity of the fund investor base, and is negatively correlated with general partner experience. Fund performance is increasing in the number of agent-general partner relationships, in overall agent experience, and for first-time fundraisings affiliated with agent use. These findings are consistent with an information production and certification role for placement agents.

Based on these findings, we test for value creation through a certification function, similar to intermediation of IPOs by underwriters (Chemmanur and Fulghieri, 1994). Fang, Ivashina, and Lerner (2013) note the complexity of private equity investment, the high level of information asymmetry and the costs associated with LP assessment of these investments. Placement agents can thus act as a certifier for private equity funds, justifying their fees and use to the fund. Consistent with value creation through certification, we find significantly higher returns for first time funds that use placement agents. Additionally, we find significantly higher returns associated with top tier agents, where top tier agents are defined by number of funds placed.

However, we find only limited evidence that suggests these potential benefits manifest in higher fund returns outside of first time funds and top tier agents, where the value of certification is most salient. Across a variety of specifications, we find that funds employing placement agents experience lower net internal rates of return (IRR), on average. We also find that LP investment performance is negatively related to the presence of placement agents within a fund, particularly for public pensions.

Within the top 20 most active LPs, funds that employ a placement agent are associated with equal weighted raw returns underperform by 350 basis points based on

equal weighted returns adjusted for type and vintage. In other words, for a \$50 million dollar investment, the economic cost is \$1.75 million annually. Importantly, while much of the theoretical work and empirical evidence on negative returns in intermediated investments rests on assumptions of naivety on the part of retail investors, we report similar evidence in a market with virtually 100% professional investors. This finding suggests that the inability to discern agent quality is driving the result rather than lack of sophistication or financial literacy.

Furthermore, consistent with influence peddling, a measure of the investor-agent relationship strength is negatively correlated with returns. In other words, the higher frequency with which an LP invests in funds affiliated with a given placement agent, the worse the returns are for that LP.

At the extreme, if an LP invests in 100% of the funds affiliated with a given agent, this is an indicator of the strongest possible relationship strength between the LP and agent and perhaps the most at risk of influence peddling. We find only three agents with overlap values of 100%: Arvco, Weatherly, and Diamond Edge. All three have been indicted on criminal charges.

Taken together, our results point to a nuanced relation between placement agents and value. The contrast between the positive association between agents and returns for segments of the private equity landscape where certification is most visible, and their negative relation with returns across most of the rest of the sample points to significant heterogeneity in placement agent type and quality.

The size of the private equity market in which placement agents operate is large – over \$3 trillion as of 2012 (Bain & Co., 2012). Placement agents play an increasingly

important role in intermediating the flow of funds within this asset class and our findings indicate that implemented and proposed regulatory bans on the entire placement agent industry could produce unintended consequences. For example, some LPs could miss out on superior investment opportunities available through certain placement agents. It is conceivable that the states that have now banned placement agents may in fact experience lower public pension investment returns going forward, in cases where the pensions relied upon the certification role provided by top-tier agents. On the other hand, our results suggest that on average public pensions often have the worst performance of all LP categories when investing in funds that use placement agents. The results imply that the placement agent industry is marked by heterogeneity in agent type and quality, suggesting that both regulators and investors use discernment when evaluating the role of placement agents in private equity.

II. Literature Review

Our study makes contributions to the literature on financial intermediation as well as the literature that examines the private equity asset class. Bergstresser, Chalmers, and Tufano (2009) report that broker sold mutual funds underperform on a risk adjusted basis, even before deducting distribution fees, but investors continue to purchase these funds. It may be the case that brokers are violating their fiduciary duty by acting in self-interest, but an alternative hypothesis is that brokers provide intangible benefits to retail investors. For example, they may help the investor increase savings rates, provide peace of mind, or attenuate various behavioral biases. However, Chalmers and Reuter (2014) find that more sophisticated investors are less likely to choose intermediation, and in private equity, the

fund flows are coming entirely from professional investors, so the intangible benefits that may accrue to retail investors are less likely to be present in our setting, allowing us to shed additional light on this topic.

Stoughton, Wu, and Zechner (2011) construct a model that predicts that investors' welfare can be improved through intermediation. However, this result holds only if kickbacks from the portfolio managers to the intermediaries are eliminated. The compensation mechanisms are different in private equity intermediation as compared to mutual funds. Although the agents are paid directly by the GPs, these fees are ultimately borne by the LPs, either through increased management fees or a direct pass-through. Our data allow us to test this theory empirically.

Fees are typically 1.5-2.5% (Barber (2012), DePonte (2012)), and are often paid out shortly after the fund closing. In this way, they are more like load fees in mutual funds rather than a revenue sharing arrangement. In other words, placement agents' compensation is often not directly exposed to the fund performance. Christoffersen et al. (2013) find that this type of fee structure is associated with underperformance. Additionally, Del Guercio and Reuter (2014) show that actively managed mutual funds sold through brokers face a weaker incentive to generate alpha. We investigate whether these factors that are associated with underperformance in the mutual fund literature have the same relation with private equity investment returns.

While mutual funds hold public securities that are relatively transparent, private equity is comparatively opaque, leading to greater information asymmetries. Therefore, we also draw on the line of literature that investigates financial intermediation in initial public equity offerings (IPOs) (Chemmanur and Fulghieri, 1994). IPO underwriters can

mitigate information asymmetries between the issuer and the investor by certifying issuer quality using reputational capital (Booth and Smith, 1986). Placement agents are engaged in a repeat game with investors, so reputational capital is valuable. However, if agents accumulate very high levels of reputation, moral hazard problems can ensue because the marginal reputation shift attributable to the performance of a single fund is diminished. Moreover, private equity fund returns are not fully realized for close to a decade. Thus, it is an empirical question whether high reputation agents are able to “certify” high quality funds that lack reputational capital.

The field is just beginning to explore the mechanisms by which LPs choose private equity investments (Hochberg and Rauh, 2013), and placement agents intermediate that choice in the majority of investments in recent years. The reasons for placement agent use have not been thoroughly examined and represent a gap in our understanding of the determinants of flow of funds in this market. A recent paper by Rikato and Berk (2014) uses data from two LPs and documents a positive correlation between fees paid to placement agents and fund performance. In contrast, our investigation expands the sample to the full Preqin universe of LPs and focuses on predictions for cross-sectional returns resulting from intermediation, rather than the relation between performance and fee structure.

Investment consultants are another intermediary utilized by institutional investors. Jenkinson, Jones, and Martinez (2014) examine the recommendations of investment consultants to pension plans, but these recommendations pertain exclusively to *public* equity fund investments. Similarly, Bengtsson and Dai (2014) study placement agents that help public corporations raise equity capital through private placements. We supplement

these findings by examining intermediation in private equity, where the investment characteristics are distinct from those traded on liquid public markets.

Prior studies have analyzed GP performance and reputation in fundraising (Kaplan and Schoar, 2005; Metrick and Yasuda, 2010; Sensoy, Wang and Weisbach, 2014). Lerner, Schoar, and Wongsunwai (2007) also highlight the LP performance puzzle by documenting superior investment returns of endowments, but Sensoy, Wang, and Weisbach (2013) show how this outperformance has disappeared in recent years. Public pension funds and funds-of-funds have historically underperformed in their private equity investments, particularly those with a local in-state investment bias (Hochberg and Rauh, 2013).

Our paper shows how LP investment decisions can go beyond these factors to be supplemented by the use of placement agents as secondary, financial intermediaries. Gennaioli, Shleifer and Vishny (2015) suggest that investment intermediaries often advertise on trust at least as much as performance. They state “trust describes confidence in the manager that is based on personal relationships, familiarity, persuasive advertising, connections to friends and colleagues, communication, and schmoozing.” Our study thus aims to extend the literature on intermediation by providing empirical evidence on the role of placement agents and relationship strength in influencing LP’s investment selections of illiquid assets, and evaluating predictions for performance.

III. Sample Description and Summary Statistics

Due to the dearth of large sample evidence on the prevalence of placement agent usage in the private equity asset class, we begin with several tables of descriptive data

about the sample. This section reports summary statistics on the sample, as well as proportions of placement agents sorted by GPs, LPs, and countries.

We obtain the sample and all variables from Preqin, a database covering private equity performance and details derived from Freedom of Information Act requests to public funds, regulatory filings, and voluntary disclosures by LPs and GPs. This dataset provides coverage of LP characteristics, their investments, GP characteristics, their funds, fund returns, and placement agents. The Preqin data indicates which placement agents are employed by given funds, but it does not indicate which LP investments a given agent secured for each fund. Coverage begins in 1969 and continues through 2012 in our sample, but sample coverage increases significantly during the 1990s. Similar to prior studies (e.g., Sensoy, Wang, and Weisbach, 2013), we only analyze fund performance data within the period 1991-2006 in order to alleviate return bias on unrealized fund investments in the latter sample years.⁵

Table 1 provides summary statistics on the sample. Our dataset includes 2,112 unique LPs who make an average of 15.4 private equity investments during the sample period, amounting to 32,526 total investment-level observations. We have data on 140 unique placement agents, who work with an average 7.1 funds across 5.3 different GPs during the sample time frame. We also have coverage of 1,533 unique GPs raising an average of 2.8 funds over the full sample period, for a total coverage of 4,335 different funds. Throughout the paper we convert fund size to millions of inflation-adjusted 2011 \$USD.

⁵ Preqin has been used in several prior studies of private equity including: Sensoy, Wang, and Weisbach (2013), Hochberg and Rauh (2013), Harris, Jenkinson, and Kaplan (2012), and Rikato and Berk (2012). Lerner, Schoar, and Wongsunwai (2007) also use the Preqin data in a precursor format and describe the underlying data on page 736 of their study.

At the bottom of Table 1 we calculate “LP-Agent Overlap %” in the following manner. First, for each placement agent we count the number of different funds employing this agent over the sample period. Next, for each limited partner we count the number of funds invested in by the LP which also employed the given placement agent. The LP-Agent Overlap % is the fraction: number of LP investments in funds employing a given agent divided by total number of funds employing that agent. We calculate this statistics for all possible LP-Agent combinations. Table 1 indicates that at the maximum, some LPs invest in 100% of the funds employing a given placement agent. For example, CalPERS invests in 100% of any funds employing the placement agents Wetherly Capital, Arvco Capital Research, or Diamond Edge Capital Partners. Yet, the mean (median) overlap is only 11.8% (7.4%). In later empirical analyses, we explore the impact of this agent-investor relationship strength on investment returns.

Figure 1 graphs aggregate private equity fundraising annually from 1991 through 2011, along with the number of funds closed each vintage year. Overlaid on the graph are the value-weighted average net internal rates of return (IRRs) for each vintage year. We only calculate IRRs through 2006 as later vintages have yet to produce meaningful statistics as of 2011. The numbers follow the boom-bust pattern of private equity investment and returns documented in prior literature (e.g., Kaplan and Schoar, 2005). Figure 1 also reports the value-weighted percentage of funds employing placement agents each year. The rate is increasing over time, but appears to spike in periods following significant declines in capital inflows into private equity. This is consistent with agents fulfilling a marketing role in periods characterized by challenging fundraising environments. For example, aggregate flows to private equity declined substantially from 2000 to 2001 and again from 2007 to

2009; this corresponds with large jumps in agent usage in 2002 and 2010-2011, respectively. However, agent usage does not appear to decline as aggregate flows recover, possibly due to contracting arrangements that stipulate that the agent must be used in subsequent funds within the same series. By the end of the sample period in 2011, approximately 75% of funds raised employ placement agents. It is important to note, however, that placement agents are not responsible for securing 75% of all capital commitments to funds. They may, for example, only secure one or two LP investments out of all LPs investing in any given fund.

Table 2 reports a ranking of GP countries of origin and GP fund types in Panel A. Both rankings are reported in descending order of the \$USD of total funds closed. Preqin coverage appears to provide a much more thorough sample of US-based GPs and funds. The use of placement agents varies significantly by country, with a high of 78.6% of funds in the Netherlands and a low of 11.5% of funds in Australia. The United States ranks near the low end with 18.0% of funds employing placement agents. Buyout funds are the most likely fund type to employ agents at 33.0%, with significantly less reliance on agents by funds of funds (8.4%), early stage funds (9.3%), and venture funds (10.0%).

Panel B of Table 2 reports the top 20 GPs based on aggregate fundraisings recorded by Preqin. Out of these 20 firms, 17 are headquartered in the United States and 3 are in the United Kingdom. A number of private equity firms never employ placement agents (e.g., TPG, HarbourVest, Bain, etc.) while others employ agents at a high rate, such as Apollo at 71.4% of funds. Overall the rates are lower than those reported in Panel A, implying that the more established firms in Panel B may utilize placement agents at a lower rate than

newer entrants to the private equity industry. We explore this possibility in later empirical analyses.

Table 3, Panel A reports limited partner rankings by country and LP-type based on total number of investments captured in Preqin. We do not have data on the size of capital invested in each fund so rankings are equal-weighted. Again, Preqin coverage is heavily skewed towards US-based LPs. The final column reports the affiliation of funds invested in by each limited partner with placement agents, though we do not have data on whether each given LP investment occurred through the placement agent affiliated with each fund. In other words, this relation is noisy. Despite this noise, reasonable variation persists in agent use, with LPs from Norway and Denmark investing in funds that employ placement agents more than 50% of the time. In contrast, LPs from the United States and Luxembourg invest in funds that use agents less than one quarter of the time. The bottom of Panel A reports statistics on LP types. “Other” includes banks, investment companies, asset managers, corporate investors, private equity firms, government agencies, superannuation schemes, family offices, investment banks, sovereign wealth funds, investment trusts, and wealth managers. Funds of funds invest in the highest proportion of agent-affiliated funds at 36.6%.

Panel B of Table 3 reports LP investor rankings based on total investments made in the sample. Most of these are public pensions, with a few funds of funds, endowments, and foundations. The Pennsylvania Public School Employees’ Retirement System invests in funds with the highest rate of placement agent use at 35.4%, while the State Universities Retirement System of Illinois invests in funds with the lowest use at 15.6%. Again, these statistics do not indicate whether or not the given LPs invested through the placement

agents, but instead the results show that these LPs invest in funds that secured at least some capital commitments through the use of agents.

Table 4, Panel A reports a ranking of placement agents by aggregate fundraisings with which they are affiliated over the sample period. A number of the most active agents are affiliated with investment banks or private equity firms, including Credit Suisse, Park Hill (Blackstone), UBS, Merrill Lynch, and Lazard. The placement agent industry appears to be much more fragmented than the investment banking profession. For example, the five most active investment banks account for about 70% of the bond lead-underwriting market share.⁶ We document that placement agents are used in approximately \$1.22 trillion of fundraisings over the sample period (in 2011 \$USD), implying that the top five agents in Table 4, Panel A represent only 46.4% of that market share.

Panel B of Table 4 ranks the placement agents by the average net internal rate of return (“IRR”) on funds affiliated with each agent. To be included in the calculation, an agent must be affiliated with at least three funds that report IRR data in Preqin from 1991-2006. Average IRRs are reasonably high for a few select agents, but quickly fall off going down the list. Only 12 placement agents produce a mean IRR that exceeds the sample average of 9.84% reported in the last row. This table provides little evidence of persistence in fund returns within placement agents, in contrast to GP performance persistence across funds as documented by Kaplan and Schoar (2005).

IV. Empirical Results

IV.A. Determinants of Placement Agent Use

⁶ See Fang (2005) on page 2737, Table 1.

Our empirical results begin by documenting characteristics of funds that employ placement agents in an attempt to identify the determinants that lead GPs to employ placement agents. We are particularly interested in whether agents are associated with more complex fundraisings (information production), and/or less established GPs (certification) consistent with our theory that placement agents would be utilized at a higher rate in these situations.

Table 5 reports univariate descriptive statistics of funds by the number of placement agents employed, which ranges from zero to three. In the sample, 3,450 funds do not rely on an agent, 788 funds employ one agent, 85 funds employ two agents, and 12 funds employ three agents. For each category of agent use, the table reports means and medians in [brackets] for fund size, number of investors, number of investor types and countries of origin, an indicator for first GP fundraising in the sample period, and the fund sequence number. Fund size, number of investors, number of investor types, and number of investor countries represented in each fund are all monotonically increasing in the number of agents employed at both the mean and median. This is consistent with the hypothesis that GPs hire agents to help manage more complex fundraisings, i.e., larger funds with more diverse investor bases, supporting an information production role for agents. The first GP fund indicator does not present a clear pattern, but the fund sequence is generally decreasing in the number of agents employed, implying that agents are hired to help manage and certify fundraisings by less established GPs.

Table 6 examines the LP characteristics and other factors that predict a fund's decision to engage with an agent. Though the probit models predict agent use by funds, the variables all occur simultaneously so the direction of causality cannot be inferred from

these tests. Vintage fixed effects are included in Columns (2), (4), and (6) and standard errors are clustered by fund since fund-level observations are duplicated for each LP investment in a given fund.

In all specifications, agents are associated with larger funds, significant at the 1% level. Regarding LP types, funds of funds are more likely to invest in funds employing placement agents, while public pensions and endowments are generally less likely to invest in agent-related funds. The higher usage rate among funds of funds is difficult to explain in terms of value creation, as this subjects the investor to at least three levels of intermediation between them and the final recipient: the placement agent, the fund of funds, and the private equity fund that deploys the capital to the portfolio company. Columns (5) and (6) show that placement agents are more likely to be affiliated with funds raised by GPs in countries that differ from those of the LP investors. This result and the fund size result are consistent with the hypothesis that on average, placement agents are affiliated with more complex fundraisings, consistent with an information production role.

Table 7 reports similar probit models on agent use, but at the fund level. Columns (2), (4), and (6) include vintage fixed effects, and standard errors in all models are clustered by fund vintage year. Agent use is more likely in periods of higher aggregate inflows to private equity, reflecting the positive time trend on average in both variables as seen in Fig. 1. Agent use is lower among GPs headquartered in the United States, consistent with the descriptive pattern in Table 2. Buyout funds are significantly more likely to employ placement agents than venture or real estate funds. Funds using placement agents have a greater diversity of LP country of origin, consistent with fundraising complexity and information production. Agents are more likely to show up for a GP's first fundraising

event and for earlier funds sequentially, consistent with the certification hypothesis. We find only a marginally significant negative relation between agent use and the return on a GP's prior fund. Overall, these results provide evidence that is consistent with an information production and certification role of placement agents.

IV.B. Evidence on Placement Agents and Cross-sectional Returns

While the tenor of the articles on placement agents that dominate the popular press is overwhelmingly negative, our analysis of the determinants of agent use suggests that GPs may be contracting with agents to produce information on complex financings and/or play a certification role in private equity fundraising. Whether agents are able to credibly certify fund quality ex ante is an empirical question. If agents choose to market only high quality funds, we expect to observe a positive relation with returns. Alternatively, if agents are little more than hired guns acting out of self-interest to market any fund willing to pay them, we expect to see either no relation or a negative relation with returns. A negative relation could result from two sources. First, if the fees charged by agents are passed on to the investors, similar to mutual fund brokers, then the net IRR should be lower than similar funds that do not incur these fees. Second, if only low quality funds require marketing assistance to close the funding round, then use of an agent could be a negative signal of fund quality resulting from adverse selection. Put another way, forgoing assistance from agents could be a positive signal of fund quality.

We begin the analysis of placement agents and returns by testing whether equal weighted returns for funds with agents versus those without agents are significantly different from each other. Table 8 reports average fund net IRRs based on agent use. IRRs

are reported for all 32,526 LP investments in 4,335 GP funds, as well as various sorts of the data based on fund type, investor type, and LP / GP location. P-values from t-tests on differences of means are given in parentheses in the final column. For virtually all sorts, returns are higher in funds without agents than in funds employing at least one placement agent. However one major caveat is the significant time trend in fund returns as documented in Figure 1: private equity returns were significantly higher in early sample years when placement agent use was rare. Table 8 does not control for vintage and other factors, thus these descriptive performance trends could be driven by time or other variables. Subsequent tables attempt to control for these factors.

In Table 9, we test for return differences at the investor level. We revisit the 20 most active private equity investors from Table 3 and report equal weighted returns sorted by the presence of placement agents. Strikingly, 19 of the 20 LPs report lower net IRRs for investments in funds that use placement agents, many of which are significantly lower. After controlling for fund vintage and type, we continue to find that the vast majority (18/20) of the most active investors report lower average IRRs in placement agent funds relative to funds that raise capital exclusively with in house resources. On average, when investing in funds that utilize placement agents, the 20 largest investors in our data report 6.7% lower net IRR and 3.5% lower net IRR adjusted for vintage and fund type. These figures are substantial in dollar terms. For example, for a commitment of \$500 million, the difference between an IRR of 12% and 5.3% over the course of a 10-year investment would yield a difference in liquidation value of over \$700 million.

Table 10 provides a multivariable test of the relation between agents and fund returns, focusing on fund type. This table reports OLS regressions of net internal rates of

return on funds as the dependent variable with independent variables indicating the presence of placement agents, and various controls for fund characteristics such as fund size (Humphry-Jenner, 2012). Because the purpose of these tests is to disentangle the relation between agents and fund types, we use raw net IRR figures combined with fund vintage fixed effects rather than adjusting the returns for type and vintage means.

In Column (1) of Table 10, the coefficient on the indicator for the presence of a placement agent with a fund is significantly negative, indicating that these funds produce about 1.02% lower net internal rates of return, on average, controlling for fund type and vintage effects. In Column (2) the returns decline to -1.13% after adding additional controls for fund characteristics. The takeaway point is that the significantly negative relation between agents and performance observed in the univariate tests in the prior two tables survives the addition of additional explanatory variables. This result is inconsistent with the presence of a certification effect in the cross section of all intermediated funds.

In columns (3) and (4), we add interactions of fund types with agent presence to determine whether the negative relation is driven by particular fund types. The agent level variable is positive but the magnitude is more than offset by the negative interaction on agent with venture funds and real estate funds. The presence of placement agents among these fund types appears to signal adverse selection, whereas buyout firms exhibit no such signal. Establishing *why* the performance of buyout funds differs so greatly from venture and real estate funds when agents are involved, even after controlling for fund size, is outside the scope of this study. We leave this question for future research.

Table 11 reports OLS regressions of LP investment returns. Returns in this table and all subsequent tables are adjusted for fund type and vintage means to allow for

interpretation as abnormal returns, and standard errors are clustered by investor. In column (1) of Table 11, we document that absent any controls, LPs have significantly lower returns on average in funds that use placement agents. This extends the univariate analysis for the top 20 LPs in Table 9 to the full sample of LPs. In column (2) we add indicators for LP type and find that the coefficient on public pensions is lower other LP types, consistent with prior literature (e.g., Hochberg and Rauh, 2013), although the coefficient is not quite statistically significant in our tests. Similar to Sensoy, Wang, and Weisbach (2013), endowment outperformance during the 1990s appears to have disappeared in the larger sample to date. Rather, foundations, insurance companies, and other types of private equity funds are associated with outperformance after controlling for the presence of an agent.

In column (3), we add variables to interact the LP categories with the presence of placement agents in the fund. The results suggest that after controlling for the presence of placement agents, foundations, insurance companies, and the “other” category exhibit positive abnormal returns in the cross section. Perhaps more notable, is that once the LP categories are interacted with the placement agents variable, we find that the negative association between agents and returns is driven primarily by one segment of the LP population: public pension funds. When agents are not present, the coefficient on LP:Private Pension is not significantly different from 0, however, when the fund uses an agent, the combined coefficient is -1.90, significantly lower than 0. Foundations significantly outperform when investing in funds that do not use agents, however, the presence of an agent drops the combined coefficient close to 0. In column (4) we add various controls for various fund and GP characteristics and the main results remain unchanged.

Tables 8 through 11 demonstrate a consistent theme: agents are not associated with positive signals in the cross section of returns. Rather, all the results to this point suggest the opposite. In Table 12, we attempt to tease out the certification role of agents using subsets of the data where certification is most likely to be detected. The certification hypothesis (Booth and Smith, 1986) is drawn from the IPO literature, and the closest analogy in private equity is a GP's first fund. With no history, the GP lacks reputational capital and may choose to contract with an agent that can certify the fund. Table 12 reports regressions of fund returns adjusted for vintage and type on agent and fund characteristics that attempt to capture these dynamics.

In Column (1) of Table 12 the coefficient on first time funds is negative, but not significantly different from zero. However, when the placement agent indicator is interacted with first-time GP fundraisings, the coefficient is strongly positive and significant. Thus, agents appear to provide at least some credible screening or certification of new entrants to the private equity industry. The same result holds in Column (2), which controls for additional fund characteristics.

The certification hypothesis holds that agents use their reputation to certify product quality. However, when an agent has a very strong reputation then moral hazard could be present in their choice to certify, since the marginal effect of negative shocks to their reputation are lower in a relative sense. In Columns 3-6, we condition on the presence of an agent to estimate the effect of agent reputation, measured in a variety of ways.

The first measure of agent reputation is their rank based on number of funds represented over the sample period. We create an indicator variable for the five most active agencies, specifically, Credit Suisse, UBS, Monument, Lazard, and Atlantic-Pacific. In

columns (3) and (4), we find that funds affiliated with these top-tier placement agents produce abnormal net internal rates of return which are significantly higher on average. This is consistent with a screening role provided by top-tier placement agents and suggests that the highest quality agents are associated with funds that outperform.

Since performance takes up to 10 years to be fully realized, it is not clear whether fund performance and an agent's reputation by our measure are endogenously related. However, to avoid the possibility of look-ahead bias, we repeat the estimation in column (5) using a variable that only reflects the number of funds the agent has represented as of the vintage of the fund in each observation. Using the agent experience variable as an alternative proxy for reputation yields the same result: returns are higher for funds affiliated with more active agents, similar to the top-tier ranking results. In Column (6), we measure reputation using the size of the agent's network. Consistent with prior results, we find that the number of agent-GP connections is significantly positively related to fund returns. In sum, while the average or typical placement agent is associated with lower fund returns, certain higher-quality agents appear to provide some benefits to GPs and/or LPs in terms of certification of fund quality and future returns.

The results thus far suggest a nuanced relationship between agents and returns. Some appear to be serving a useful certification and screening role, but the returns on average are negative. In our final set of tests, we focus on a specific situation where careful screening would be absent, specifically, where the LP is in some sense captive to the agent. This could be for nefarious reasons such as the pay-to-play kickback scandals, or simply because the LP prefers working with a particular agent for completely legal reasons, such as the quality of the agent's due diligence, or reasons related to trust (Gennaioli, Shleifer,

and Vishny, 2015). In either case, the hypothesis is that when the relationship is exceptionally strong, the moral hazard for the agent to screen less strenuously is most severe.

Table 13 extends the analysis of LP returns to include measures of relationship strength, conditional on investing in a fund that uses agents. The key variable of interest in these models is LP-Agent Overlap %. This is the fraction of funds invested in by a given LP for a given placement agent affiliated with the current fund investment. The coefficients on this variable are significantly negative in all three models of Table 13, panel A. Column (1) uses raw net IRR as the dependent variable, column (2) uses net IRR adjusted for vintage and type means, and column (3) adds fund and LP control variables. It thus appears that stronger ties to a given agent are detrimental to LP investors. This evidence largely supports an influence peddling role of placement agents: LPs do not appear to profit from strong relationships with placement agents.

As reported in Table 1, at the extreme right tail of the distribution are observations of an LP investing in 100% of the funds affiliated with a given agent, an indicator of the strongest possible relationship strength between the LP and agent. Upon closer inspection, there are only three agents with overlap values of 100%: Arvco, Weatherly, and Diamond Edge. All three have been indicted on criminal charges.

To examine whether the result in panel A is driven by a few bad actors or whether relationship strength has a more general relation with returns, we sort all funds that use a placement agent into quartiles based on relationship strength. Panel B reports the mean and median abnormal return for each quartile. As it turns out, relationship strength has a monotonic relation with returns, using either means or medians, across the full distribution.

The difference in mean abnormal return between the highest and lower quartiles of overlap is 4.52%, which is significant at the 1% level. In sum, it appears that strong relationships with LPs mitigate at least some of the certification benefits that agents could otherwise provide.

Rule 206(4)-5 under the Investment Advisers Act of 1940, as proposed in 2009, would have banned all placement agents nationally, but following significant pushback from commenters, the rule, as adopted in 2010, does not prohibit the use of placement agents but does prohibit the receipt of compensation following political donation activity by asset managers and placement agents.⁷ As a robustness check, we collect all political donations by individuals working at placement agencies. In unreported results, we find the size of the donations to be relatively small on average, and unlikely to have substantially altered investment decisions.

V. Conclusion

We evaluate the use of placement agents by GPs in fundraising for private equity funds. Their employment has increased dramatically from nearly nonexistent in 1991 to being engaged on about 75% of value-weighted fundraisings in 2011. Despite their rising ubiquity in the private equity industry, recent controversies and convictions for paying kickbacks and engaging in fraudulent activity, little empirical research has been conducted to date on placement agents. We evaluate whether their role is more consistent with influence peddling, selling their connections to GPs and adding no real value, or whether

⁷ See <http://www.sec.gov/rules/final/2010/ia-3043-secg.htm> for more information. The rule was approved June 30, 2010, became effective on September 13, 2010, and required compliance of investment advisors by various dates in 2011.

agents credibly screen and certify fund quality. Our results provide evidence supporting the presence of both roles.

By focusing on subsets of the data where certification is most likely to exist, we find evidence of a positive relation between agent reputation and returns. We also find that first time funds that use an agent outperform those that do not. These results point to a beneficial impact of reputable agents.

When examining the full sample we find that funds employing placement agents and LPs investing in these funds experience negative abnormal returns, on average. It is difficult to reconcile these results with the notion of broad value creation by placement agents through certification. However, it is equally difficult to pin down the determinants of the negative abnormal returns. We also find that LP investment performance is negatively related to the strength of relationship connections between investors and placement agents. This is exactly the type of scenario when the incentives for agents to rigorously screen and certify might break down. Thus, there appear to be significant downsides for LPs investing in funds based on agent influence or personal connections.

Ultimately, the results point to significant heterogeneity in placement agent type and quality. Proposals for outright bans on placement agents may thus produce unintended consequences, such as lower future returns among those investors that rely on the certification and screening roles provided by top-tier agents. In this way, we echo Inderst and Ottaviani's (2012) warning that policy intervention governing intermediaries may produce undesired results such as reducing their incentives to acquire information. Our research suggests that regulators should take a nuanced approach in the consideration of

placement agents and their role in private equity fundraising going forward, and that they should focus on strengthening incentives to certify rather than outright banishment.

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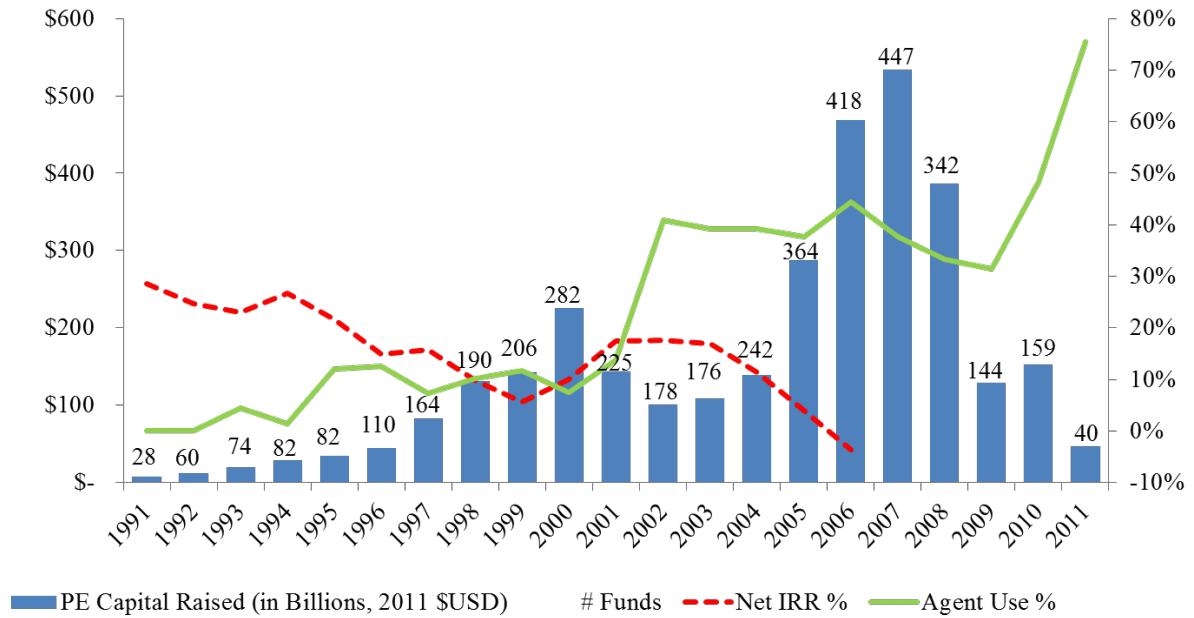


Figure 1. Aggregate Fundraising, Returns, and Placement Agent Use

This figure summarizes by vintage year: a) aggregate private equity capital fundraising, inflation-adjusted to billions of 2011 \$USD (left-hand-side scale); b) number of funds closed; c) value-weighted average net internal rate of return (IRR) for funds closed (right-hand-side scale); and d) the value-weighted percentage of placement agent use by funds (right-hand-side scale). Value-weightings are determined by fund size.

Table 1. Sample Description

Distribution of variables and descriptive statistics. Sample represents all private equity investments in the Preqin database from 1969 through 2012. Total LP Investments is the number of investments made during the sample period by each limited partner (i.e., “LP”) investor. Total Agent Funds is the number of funds affiliated with each placement agent. Total Agent GPs is the number of unique general partners (i.e., “GPs”) affiliated with each placement agent. Total # Funds is the number of funds closed by each GP during the sample period. Fund Size is the size of each fund in millions of inflation-adjusted 2011 \$USD. # LPs in Fund, # LP Types in Fund, and # LP Countries in Fund are the number of LPs invested in, the number of LP Types represented in, and the number of LP Countries represented in each fund, respectively. First GP Fund is an indicator for the first fundraising closed by a GP in Preqin coverage. GP Fund Sequence represents the numerical order of each fund closed by a given GP based on vintage. LP-Agent Overlap % is calculated as the number of funds employing a given placement agent that the limited partner invests in divided by the total number of funds employing that placement agent.

	<u>N</u>	<u>Min</u>	<u>Mean</u>	<u>SD</u>	<u>Median</u>	<u>Max</u>
<u>By Unique LP:</u>						
Total LP Investments	2,112	1.0	15.4	40.7	3.0	784
<u>By Unique Agent:</u>						
Total Agent Funds	140	1.0	7.1	12.6	2.5	105
Total Agent GPs	140	1.0	5.3	8.3	2.0	61
<u>By Unique GP:</u>						
Total # Funds	1,533	1.0	2.8	3.7	2.0	58.0
<u>By Unique Fund:</u>						
Fund Size (\$mm)	4,050	\$2.2	\$817.3	\$1,553.1	\$378.1	\$24,212.2
# LPs in Fund	4,335	1.0	7.5	10.3	4.0	121
# LP Types in Fund	4,335	1.0	2.5	1.5	2.0	7.0
# LP Countries in Fund	4,305	1.0	2.1	2.0	1.0	20.0
First GP Fund	4,335	0.0	0.353	0.478	0.0	1.0
GP Fund Sequence	4,335	1.0	4.3	6.1	2.0	58.0
<u>By LP-Fund (w/ Agents):</u>						
LP-Agent Overlap %	3,896	1.2%	11.8%	12.2%	7.4%	100.0%

Table 2, Panel A. General Partner and Fund Characteristics

Ranking of country of origin of the top 20 private equity firms (i.e., general partners, or “GPs”) and of the fund types by aggregate capital raised in millions of inflation-adjusted 2011 \$USD. The final column reports the equal-weighted percentage of funds employing a placement agent.

<u>Rank</u>	<u>Country</u>	<u># of GPs</u>	<u># Funds</u>	<u>Total Funds (\$mm)</u>	<u>% with Agents</u>
1	US	953	3,002	\$2,575,266	18.0%
2	UK	125	365	\$435,939	30.0%
3	France	29	74	\$41,967	26.0%
4	Sweden	19	37	\$35,227	56.8%
5	Canada	26	58	\$34,482	23.7%
6	Switzerland	20	83	\$33,626	15.9%
7	Hong Kong	18	30	\$21,056	53.3%
8	Australia	22	61	\$19,727	11.5%
9	Germany	18	32	\$12,695	34.4%
10	Italy	19	34	\$11,370	16.2%
11	Singapore	11	14	\$8,703	50.0%
12	China	12	15	\$8,058	11.8%
13	Israel	17	33	\$7,393	14.3%
14	Netherlands	6	13	\$6,164	78.6%
15	Norway	7	15	\$5,494	53.3%
16	Finland	6	32	\$5,273	15.6%
17	India	10	18	\$5,252	33.3%
18	Brazil	8	10	\$4,039	50.0%
19	Argentina	2	8	\$3,598	12.5%
20	Poland	3	11	\$3,587	18.2%

<u>Rank</u>	<u>Fund Type</u>	<u># of GPs</u>	<u># Funds</u>	<u>Total Funds (\$mm)</u>	<u>% with Agents</u>
1	Buyout	384	1,036	\$1,509,986	33.0%
2	Real Estate	260	811	\$593,320	24.2%
3	Fund of Funds	79	437	\$238,740	8.4%
4	Venture	267	662	\$205,964	10.0%
5	Early Stage	109	263	\$68,821	9.3%

Table 2, Panel B. General Partner Ranking by Aggregate Fundraising

League table ranking of the top 20 private equity firms (i.e., general partners), ranked by aggregate size of all fundraisings included in the Preqin database. Fund sizes are summed in millions of inflation-adjusted 2011 \$USD. The total number of closed funds is reported as well as the equal-weighted percentage of funds employing a placement agent in the final column.

Rank	General Partner	Location	Total Funds (\$mm)	# Funds	% with Agents
1	Blackstone Group	US	\$116,209	21	38.1%
2	Goldman Sachs Merchant Banking Division	US	\$87,985	20	5.0%
3	Kohlberg Kravis Roberts	US	\$81,820	16	12.5%
4	Carlyle Group	US	\$74,984	35	2.9%
5	TPG	US	\$61,416	12	0.0%
6	Oaktree Capital Management	US	\$53,736	30	17.6%
7	Warburg Pincus	US	\$52,259	9	11.1%
8	HarbourVest Partners	US	\$47,820	31	0.0%
9	CVC Capital Partners	UK	\$46,526	8	12.5%
10	Apollo Global Management	US	\$41,747	7	71.4%
11	Bain Capital	US	\$41,167	14	0.0%
12	Apax Partners	UK	\$40,647	22	8.7%
13	Lone Star Funds	US	\$37,274	10	20.0%
14	Morgan Stanley Real Estate Investing	US	\$29,830	10	0.0%
15	Hellman & Friedman	US	\$28,810	6	0.0%
16	Goldman Sachs Private Equity Group	US	\$28,073	16	0.0%
17	Permira	UK	\$27,761	12	0.0%
18	Credit Suisse Customized Fund Investment Group	US	\$27,052	21	17.4%
19	Providence Equity Partners	US	\$26,258	9	11.1%
20	Welsh, Carson, Anderson & Stowe	US	\$25,587	14	14.3%

Table 3, Panel A. Limited Partner Characteristics

Ranking of country of origin of the top 20 investors (i.e., limited partners, or “LPs”) and of the LP types by total number of fund investments made. The final column reports the equal-weighted percentage of funds invested in which employ a placement agent; this does not indicate whether the limited partners invested through a placement agent or directly with the fund for any given investment.

<u>Rank</u>	<u>Country</u>	<u># of LPs</u>	<u># Investments</u>	<u>% with Agents</u>
1	US	972	22,243	24.8%
2	UK	200	2,765	28.9%
3	Switzerland	76	1,023	35.7%
4	Canada	45	609	28.3%
5	Australia	70	563	25.7%
6	Germany	58	497	48.5%
7	Finland	25	435	37.3%
8	France	39	403	47.2%
9	Netherlands	35	379	44.3%
10	Guernsey	3	313	31.8%
11	Sweden	26	278	38.0%
12	Denmark	25	221	52.5%
13	Japan	27	154	37.0%
14	Norway	31	149	51.7%
15	Kuwait	10	96	39.6%
16	Luxembourg	5	94	24.2%
17	Italy	21	88	31.9%
18	Belgium	15	85	28.1%
19	Spain	23	69	46.4%
20	Singapore	9	67	37.3%

<u>Rank</u>	<u>LP Type</u>	<u># of LPs</u>	<u># Investments</u>	<u>% with Agents</u>
1	Public Pension	322	14,128	24.4%
2	Fund of Funds	237	5,979	36.6%
3	Other	533	3,167	32.0%
4	Foundation	224	2,945	20.4%
5	Endowment	189	2,170	21.3%
6	Insurance Co.	129	1,497	33.7%
7	Private Pension	216	1,118	32.2%
8	Unknown	221	637	36.1%

Table 3, Panel B. Limited Partner Ranking by Number of Investments

League table ranking of the top 20 investors in private equity (i.e., limited partners) ranked by number of investments in different funds. The final column reports the equal-weighted percentage of funds invested in which employ a placement agent; this does not indicate whether the given limited partner invested through a placement agent or directly with the fund for any given investment. All of the top 20 investors are located in the U.S.

Rank	Limited Partner	Type	# Investments	% with Agents
1	California Public Employees' Retirement System (CalPERS)	Public Pension	784	27.4%
2	Pennsylvania State Employees' Retirement System	Public Pension	404	21.7%
3	California State Teachers' Retirement System (CalSTRS)	Public Pension	377	26.4%
4	HarbourVest Partners	Fund of Funds	317	29.9%
5	State Universities Retirement System of Illinois	Public Pension	303	15.6%
6	Michigan Department of Treasury	Public Pension	301	19.0%
7	State of Wisconsin Investment Board	Public Pension	274	23.9%
8	Washington State Investment Board	Public Pension	273	18.1%
9	Oregon State Treasury	Public Pension	273	32.9%
10	Illinois Municipal Retirement Fund	Public Pension	272	22.7%
11	University of Michigan Endowment	Endowment	272	21.9%
12	Pennsylvania Public School Employees' Retirement System	Public Pension	269	35.4%
13	Virginia Retirement System	Public Pension	254	18.0%
14	Regents of the University of California	Public Pension	253	21.8%
15	Los Angeles Fire and Police Pension System	Public Pension	245	29.0%
16	San Francisco City & County Employees' Retirement System	Public Pension	237	22.2%
17	Los Angeles County Employees' Retirement Association	Public Pension	236	16.5%
18	University of Texas Investment Management Company	Endowment	231	24.3%
19	Conversus Asset Management	Fund of Funds	226	22.1%
20	John D. and Catherine T. MacArthur Foundation	Foundation	221	16.8%

Table 4, Panel A. Placement Agent Ranking by Aggregate Fundraising

League table ranking of the top 20 placement agents, ranked by aggregate size of funds affiliated with each agent. Fund sizes are summed in millions of inflation-adjusted 2011 \$USD. The total number of funds affiliated with each agent is reported in the final column.

<u>Rank</u>	<u>Placement Agent</u>	<u>Total Funds (\$mm)</u>	<u># Funds</u>
1	Credit Suisse Private Fund Group	\$179,123	105
2	Park Hill Group	\$120,008	37
3	UBS Investment Bank Private Funds Group	\$119,737	47
4	Merrill Lynch Private Equity Placements Group	\$76,625	29
5	Monument Group	\$70,091	47
6	Lazard Private Fund Advisory Group	\$55,215	39
7	MVision Private Equity Advisers	\$52,822	33
8	Citi Alternatives Distribution Group	\$49,028	20
9	Atlantic-Pacific Capital	\$33,258	39
10	Jefferies Fund Placement Group	\$29,709	22
11	Arvco Capital Research	\$29,248	4
12	Eaton Partners	\$28,777	35
13	Principle Advisory Services	\$23,187	8
14	Farrell Marsh & Co.	\$21,814	20
15	Evercore Partners Private Funds Group	\$18,548	13
16	Macquarie Real Estate Private Capital Markets	\$17,547	22
17	UBS Real Estate Group	\$15,002	5
18	Probitas Partners	\$13,329	25
19	M3 Capital Partners	\$11,400	10
20	Benedetto Gartland & Company	\$9,510	7

Table 4, Panel B. Placement Agent Ranking by Returns

League table ranking of the top 20 placement agents, ranked by the equal-weighted average net internal rate of return (IRR) on funds affiliated with each agent. IRRs are only included for funds closed between 1991 and 2006. Observations with fewer than three reported fund IRRs are excluded. The total number of funds included in the IRR average is reported in the final column.

<u>Rank</u>	<u>Placement Agent</u>	<u>Mean Net IRR %</u>	<u># Funds</u>
1	International Private Equity	20.76	5
2	Somerset Capital	17.48	4
3	MVision Private Equity Advisers	14.67	18
4	Pinnacle Trust Partners	13.87	3
5	Citi Alternatives Distribution Group	13.45	11
6	Alternative Investment Source	12.33	4
7	Cygnus Capital Partners Limited	11.80	4
8	Park Hill Group	11.60	4
9	UBS Investment Bank Private Funds Group	11.31	22
10	Beacon Hill Financial Corp.	10.84	5
11	Bentley Associates	10.77	3
12	Atlantic-Pacific Capital	10.39	26
13	Merrill Lynch Private Equity Placements Group	9.62	21
14	Credit Suisse Private Fund Group	8.99	55
15	Benedetto Gartland & Company	8.78	4
16	Monument Group	8.08	37
17	Forum Capital Partners	7.83	3
18	Thomas Capital Group	7.52	5
19	Jefferies Fund Placement Group	6.98	15
20	Campbell Lutyens	6.88	16
	<i>Benchmark: Average Fund IRR</i>	<i>9.84</i>	<i>2,525</i>

Table 5. Fund Characteristics by Number of Agents

Descriptive statistics on fund characteristics by number of placement agents employed in fundraising. Variable means are given with medians below in [] brackets. All variables are defined in preceding tables.

# of Agents per Fund	<u>N</u>	Fund Size (\$mm)	<u># LPs</u>	<u># LP Types</u>	<u># LP Countries</u>	First GP Fund	<u>Fund Sequence</u>
Zero	3,450	\$724.0 [\$327.1]	6.8 [4.0]	2.4 [2.0]	1.9 [1.0]	35.0%	4.6 [2.0]
One	788	\$1,085.3 [\$528.2]	9.9 [6.0]	3.0 [3.0]	2.8 [2.0]	37.6%	3.1 [2.0]
Two	85	\$1,506.0 [\$713.6]	10.7 [6.0]	3.0 [3.0]	3.0 [2.0]	29.4%	3.2 [2.0]
Three	12	\$2,988.1 [\$2,344.2]	28.2 [17.0]	4.6 [5.0]	5.8 [5.5]	25.0%	2.9 [2.5]

Table 6. Placement Agent Use and Limited Partner Characteristics, Multivariate

Probit models with the dependent variable equal to one for limited partner investments in funds that employ a placement agent and zero otherwise. LP Experience is the cumulative number of investments in funds made by a given LP prior to the current fund investment. Total LP Investments is the total number of investments in funds made by a given LP over the full sample period. LP=GP Country equals one if the LP and GP are located in the same country and zero if they are located in different countries. Robust standard errors are clustered by fund and p-values are reported in parentheses with ***, **, and * representing significance at the 1%, 5%, and 10% levels, respectively.

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>	<u>(5)</u>	<u>(6)</u>
Log(Fund Size)	0.170 *** (<0.001)	0.134 *** (<0.001)	0.184 *** (<0.001)	0.134 *** (<0.001)	0.171 *** (<0.001)	0.121 *** (<0.001)
Log(LP Experience)	0.074 *** (<0.001)	0.009 (0.457)				
Log(Total LP Investments)			-0.047 *** (0.000)	0.003 (0.812)	-0.030 ** (0.018)	0.013 (0.305)
LP: Fund of Funds	0.124 *** (<0.001)	0.222 *** (<0.001)	0.235 *** (<0.001)	0.227 *** (<0.001)	0.180 *** (<0.001)	0.177 *** (<0.001)
LP: Public Pension	-0.272 *** (<0.001)	-0.133 *** (<0.001)	-0.056 * (0.095)	-0.123 *** (<0.001)	0.004 (0.909)	-0.076 ** (0.023)
LP: Endowment	-0.299 *** (<0.001)	-0.206 *** (<0.001)	-0.224 *** (<0.001)	-0.202 *** (<0.001)	-0.141 *** (0.004)	-0.147 *** (0.007)
LP based in US					0.007 (0.868)	0.043 (0.278)
LP=GP Country					-0.333 *** (0.000)	-0.305 *** (0.000)
Vintage Fixed Effects	No	Yes	No	Yes	No	Yes
N	31,641	31,641	31,641	31,641	31,004	31,004
Pseudo R ²	3.87%	12.77%	3.56%	12.76%	4.52%	13.63%

Table 7. Placement Agent Use and GP Fund Characteristics, Multivariate

Probit models with the dependent variable equal to one for funds that employ a placement agent and zero otherwise. First GP Fund equals one for the first vintage fund reported in Preqin for each general partner (GP) and zero for all other funds raised by a given GP. GP Fund Sequence is a count by vintage for each fund raised by a given GP. GP Prior Fund Net IRR is the net internal rate of return (IRR) earned on the prior vintage fund for a given GP. Other variables are defined in preceding tables. Robust standard errors are clustered by vintage and p-values are reported in parentheses with ***, **, and * representing significance at the 1%, 5%, and 10% levels, respectively.

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>	<u>(5)</u>	<u>(6)</u>
Log(Annual PE Inflows)	0.333 *** (0.002)		0.346 *** (0.002)		0.300 ** (0.028)	
GP based in US	-0.205 *** (<0.001)	-0.165 *** (<0.001)	-0.176 *** (<0.001)	-0.121 *** (<0.001)	-0.249 *** (<0.001)	-0.219 * (0.067)
Fund: Buyout	0.421 *** (0.002)	0.500 *** (<0.001)	0.279 ** (0.011)	0.340 *** (0.005)	0.289 ** (0.015)	0.261 ** (0.037)
Fund: Venture	-0.095 (0.250)	0.019 (0.738)	-0.202 *** (0.002)	-0.101 ** (0.017)	-0.227 *** (0.001)	-0.163 *** (0.003)
Fund: Real Estate	0.325 (0.137)	0.263 (0.158)	0.238 (0.314)	0.156 (0.439)	0.181 (0.137)	0.099 (0.441)
Log(Fund Size)	0.143 *** (<0.001)	0.145 *** (<0.001)	0.186 *** (0.000)	0.191 *** (<0.001)	0.174 *** (0.002)	0.199 *** (<0.001)
Log(# LPs in Fund)	0.031 (0.534)	0.045 (0.251)	0.042 (0.359)	0.060 * (0.092)	-0.070 (0.487)	-0.026 (0.800)
Log(# LP Countries in Fund)	0.130 *** (0.002)	0.116 ** (0.018)	0.179 *** (0.000)	0.175 *** (<0.001)	0.176 *** (0.006)	0.197 ** (0.025)
# LP Types in Fund	0.013 (0.782)	0.017 (0.629)	-0.001 (0.978)	-0.000 (0.993)	0.018 (0.723)	0.000 (0.994)
First GP Fund	0.301 *** (<0.001)	0.359 *** (<0.001)				
GP Fund Sequence			-0.071 *** (<0.001)	-0.080 *** (<0.001)	-0.078 *** (<0.001)	-0.089 *** (<0.001)
GP Prior Fund Net IRR					-0.003 * (0.095)	-0.002 (0.539)
Vintage Fixed Effects	No	Yes	No	Yes	No	Yes
N	4,012	4,021	4,012	4,021	1,893	1,893
Pseudo R ²	12.32%	16.66%	15.04%	20.03%	11.94%	18.36%

Table 8. Investment Returns by Sample Characteristics and Agent Use

Mean net internal rates of return (IRRs) for samples of funds with vs. without placement agents. Subsamples are reported by: fund type, LP type, LP location, and GP location. P-values from t-tests on difference of sample mean IRRs are given in the final column. All variables are defined in preceding tables.

	<u>N</u>	<u>% with Agents</u>	<u>Net IRRs</u>		<u>P-Value</u>
			<u>Agent</u>	<u>No Agent</u>	
All LP Investments	32,526	27.7%	6.9%	10.5%	(<0.001)
All GP Funds	4,335	20.4%	6.4%	10.6%	(0.002)
<u>By GP Fund Type:</u>					
Buyout	1,036	33.0%	11.5%	13.7%	(0.170)
Venture	662	10.0%	-2.9%	11.5%	(0.003)
Real Estate	811	24.2%	-1.7%	6.2%	(0.001)
<u>By LP Type:</u>					
Fund of Funds	5,979	36.6%	8.4%	9.4%	(0.076)
Public Pension	14,128	24.4%	4.9%	10.4%	(<0.001)
Endowment	2,170	21.3%	8.4%	10.8%	(0.134)
<u>By Location:</u>					
LP: US	22,243	24.8%	5.9%	10.4%	(<0.001)
LP: Non-US	8,922	34.6%	9.3%	11.4%	(<0.001)
GP: US	3,002	18.0%	4.9%	9.9%	(0.002)
GP: Non-US	1,091	27.7%	10.2%	13.4%	(0.178)
LP=GP Country	22,072	22.8%	6.0%	10.4%	(<0.001)
LP≠GP Country	9,811	38.3%	8.6%	11.4%	(<0.001)

Table 9. Limited Partner Returns by Placement Agent usage

Rates of return for the top 20 investors in private equity (i.e., limited partners), as reported in Table 3, ranked by number of investments in different funds. Columns 1-3 report the equal-weighted net IRR figures, columns 4-6 report equal weighted IRR, adjusted for vintage and fund type mean returns. Differences denoted by ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively, in one-sided t-tests.

<u>Limited Partner</u>	<u>Type</u>	<u>Net IRR</u>			<u>Vintage & Type - adjusted Net IRR</u>		
		<u>PA</u>	<u>No PA</u>	<u>Dif</u>	<u>PA</u>	<u>No PA</u>	<u>Dif</u>
California Public Employees' Retirement System (CalPERS)	Pension-Public	3.0%	6.8%	-3.8% *	-3.2%	-1.7%	-1.4%
Pennsylvania State Employees' Retirement System	Pension-Public	8.1%	10.1%	-2.0%	-1.4%	-0.4%	-0.9%
California State Teachers' Retirement System (CalSTRS)	Pension-Public	1.3%	9.8%	-8.4% ***	-3.3%	-0.5%	-2.7%
HarbourVest Partners	Fund of Funds	5.0%	6.3%	-1.3%	-3.6%	-3.2%	-0.4%
State Universities Retirement System of Illinois	Pension-Public	9.4%	20.2%	-10.8% ***	-2.9%	6.4%	-9.2% ***
Michigan Department of Treasury	Pension-Public	5.6%	11.0%	-5.4% *	-3.8%	-1.5%	-2.3%
State of Wisconsin Investment Board	Pension-Public	4.0%	10.2%	-6.2% **	-3.7%	-1.1%	-2.7%
Washington State Investment Board	Pension-Public	5.7%	12.4%	-6.7% ***	-2.6%	-0.1%	-2.6%
Oregon State Treasury	Pension-Public	3.1%	10.8%	-7.7% ***	-4.2%	0.5%	-4.7% *
Illinois Municipal Retirement Fund	Pension-Public	7.9%	16.0%	-8.2% ***	-1.7%	2.0%	-3.7% *
University of Michigan Endowment	Endowment	8.6%	23.1%	-14.5% ***	-1.8%	11.9%	-13.7% ***
Pennsylvania Public School Employees' Retirement System	Pension-Public	9.0%	8.1%	0.9%	0.9%	-4.9%	5.8%
Virginia Retirement System	Pension-Public	4.5%	23.4%	-18.8% ***	-4.3%	8.4%	-12.7% ***
Regents of the University of California	Pension-Public	0.3%	11.1%	-10.8% **	-4.4%	2.1%	-6.6% *
Los Angeles Fire and Police Pension System	Pension-Public	0.0%	9.3%	-9.2% **	-5.0%	-0.7%	-4.4%
San Francisco City & County Employees' Retirement System	Pension-Public	4.2%	16.0%	-11.8% ***	-3.1%	1.4%	-4.5% **
Los Angeles County Employees' Retirement Association	Pension-Public	9.4%	13.4%	-4.0%	-0.5%	0.1%	-0.7%
University of Texas Investment Management Company	Endowment	8.5%	9.3%	-0.8%	-4.6%	-3.1%	-1.5%
Conversus Asset Management	Fund of Funds	6.8%	10.5%	-3.7% *	-1.8%	-1.9%	0.1%
John D. and Catherine T. MacArthur Foundation	Foundation	4.2%	9.7%	-5.4%	-4.4%	0.1%	-4.5%
Top 20 combined		5.3%	12.0%	-6.7% ***	-2.9%	0.6%	-3.5% ***

Table 10. Placement Agent Use and Fund Returns

OLS regressions with fund net internal rate of return (IRR) as the dependent variable. If a fund employs multiple placement agents, each agent-fund combination represents a separate observation. Vintage fixed effects are included in all models. Placement Agent = 1 indicates that a fund employs the given placement agent and equals zero if a fund does not employ any placement agents. Log(Total Agent Funds) is the log of the total number of unique funds affiliated with a given placement agent during the sample period. Log(Total Agent GPs) is the log of the total number of unique general partners (GPs) employing a given agent for various funds during the sample period. Other variables are defined in preceding tables. All models include a constant. Robust standard errors are clustered by fund and vintage and p-values are reported in parentheses with ***, **, and * representing significance at the 1%, 5%, and 10% levels, respectively.

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>
Placement Agent = 1	-1.02 ** (0.013)	-1.13 *** (0.009)	3.58 *** (<0.001)	3.65 *** (<0.001)
Fund: Buyout	2.07 *** (0.004)	2.05 ** (0.028)	1.55 * (0.073)	1.82 * (0.073)
Fund: Venture	-1.85 (0.705)	-2.77 (0.606)	-0.07 (0.981)	-0.95 (0.850)
Fund: Real Estate	-3.98 (0.300)	-3.36 (0.402)	-2.15 (0.474)	-1.26 (0.705)
Agent * Buyout Fund			-0.60 (0.698)	-0.72 (0.682)
Agent * Venture Fund			-13.92 *** (<0.001)	-13.12 *** (<0.001)
Agent * Real Estate Fund			-10.04 *** (<0.001)	-10.53 *** (<0.001)
GP based in US		-4.63 ** (0.019)		-4.62 ** (0.016)
Log(Fund Size)		-0.99 ** (0.040)		-1.06 ** (0.025)
Log(# LPs in Fund)		-0.20 (0.826)		-0.08 (0.927)
Log(# LP Countries in Fund)		-1.77 (0.525)		-1.95 (0.464)
# LP Types in Fund		1.54 ** (0.011)		1.41 ** (0.018)
GP Fund Sequence		0.08 (0.777)		0.13 (0.657)
Vintage Fixed Effects	Yes	Yes	Yes	Yes
N	2,572	2,440	2,572	2,440
R ²	6.89%	7.52%	7.61%	8.23%

Table 11. Placement Agent Use and LP Returns

OLS regressions with fund net internal rate of return (IRR) as the dependent variable. Vintage fixed effects are included in all models. Placement Agent = 1 indicates that a fund employs the given placement agent and equals zero if a fund does not employ any placement agents. The LP variables are indicator variables that take a value of 1 when that category of LP is reported to have invested in the fund and 0 otherwise. Other variables are defined in preceding tables. Robust standard errors are clustered by fund and vintage and p-values are reported in parentheses with ***, **, and * representing significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Placement Agent = 1	-1.761 *** (<0.001)	-1.787 *** (<0.001)	-0.747 (0.146)	-1.463 *** (0.008)
LP: Public Pension		-0.705 (0.159)	-0.221 (0.725)	0.141 (0.825)
LP: Private Pension		0.497 (0.444)	0.152 (0.847)	-0.333 (0.666)
LP: Endowment		1.123 (0.364)	1.514 (0.323)	1.791 (0.261)
LP: Foundation		1.799 ** (0.014)	2.442 ** (0.010)	2.771 *** (0.003)
LP: Insurance		1.624 ** (0.011)	2.137 *** (0.004)	1.840 *** (0.009)
LP: Other		1.653 *** (0.004)	1.771 ** (0.023)	1.323 (0.100)
Agent * Pubic Pension			-1.68 ** (0.020)	-1.531 ** (0.043)
Agent * Private Pension			1.318 (0.308)	1.109 (0.401)
Agent * Endowment			-1.283 (0.469)	-1.696 (0.344)
Agent * Foundation			-2.592 * (0.067)	-2.936 ** (0.039)
Agent * Insurance			-1.603 (0.172)	-1.866 (0.118)
Agent * Other			-0.261 (0.821)	-0.319 (0.787)
GP based in US				-3.123 *** (<0.001)
Fund: Buyout				-1.031 *** (0.006)
Fund: Venture				-0.326 (0.663)
Fund: Real Estate				-1.766 *** (<0.001)
Log(Fund Size)				0.944 *** (<0.001)
Log(# LPs in Fund)				-0.859 ** (0.022)
Log(# LP Countries in Fund)				-0.916 ** (0.023)
# LP Types in Fund				0.679 *** (<0.001)
GP Fund Sequence				-0.045 * (0.078)
N	21,295	21,295	21,295	20,821
R ²	0.15%	0.41%	0.46%	1.09%

Table 12. Placement Agent Certification and Fund Returns

OLS regressions with fund net internal rate of return (IRR) as the dependent variable. If a fund employs multiple placement agents, each agent-fund combination represents a separate observation. Vintage fixed effects are included in all models. Placement Agent = 1 indicates that a fund employs the given placement agent and equals zero if a fund does not employ any placement agents. Top 5 Agent indicates that a fund employs one of the top five placement agents from the Table 4, Panel A ranking based on agent activity levels. Log(Total Agent Funds) is the log of the total number of unique funds affiliated with a given placement agent during the sample period. Log(Total Agent GPs) is the log of the total number of unique general partners (GPs) employing a given agent for various funds during the sample period. Other variables are defined in preceding tables. All models include a constant. Robust standard errors are clustered by fund and vintage and p-values are reported in parentheses with ***, **, and * representing significance at the 1%, 5%, and 10% levels, respectively.

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>	<u>(5)</u>	<u>(6)</u>
Placement Agent = 1	-3.23 *** (0.005)	-4.22 *** (0.001)				
First GP Fund	-3.47 (0.263)	-2.94 (0.220)				
Agent * First GP Fund	7.31 ** (0.018)	7.26 *** (0.007)				
Top 5 Agent			2.47 ** (0.047)	3.86 *** (0.128)		
Log(Total Agent Funds)					0.65 *** (<0.001)	
Log(Total Agent GPs)						1.50 *** (<0.001)
GP based in US		-5.15 ** (0.015)		-1.59 *** (<0.001)	-1.16 * (0.083)	-1.78 ** (0.014)
Log(Fund Size)		0.68 (0.292)		0.33 (0.705)	0.62 (0.342)	0.63 (0.248)
Log(# LPs in Fund)		-0.82 (0.208)		-4.132 *** (<0.001)	-4.08 *** (<0.001)	-4.41 *** (<0.001)
Log(# LP Countries in Fund)		-1.66 (0.557)		-5.50 *** (<0.001)	5.35 *** (<0.001)	5.30 *** (<0.001)
# LP Types in Fund		1.32 * (0.083)		-0.28 *** (<0.001)	-0.19 *** (<0.001)	-0.06 (0.183)
GP Fund Sequence				-0.072 *** (<0.001)	-0.11 *** (0.004)	-0.10 ** (0.021)
N	2,572	2,440	503	503	503	475
R ²	0.6%	1.5%	0.5%	5.8%	4.0%	4.7%

Table 13, Panel A. Agent/LP Relationship Strength and Investment Performance

OLS regressions with limited partner – fund investment net internal rate of return (IRR) as the dependent variable. Vintage fixed effects are included in all models. Placement Agent = 1 indicates limited partner investments in funds employing one or more placement agents. LP-Agent Overlap % is calculated as the number of funds employing a given placement agent that the limited partner invests in divided by the total number of funds employing that placement agent. Other variables are defined in preceding tables. Robust standard errors are clustered by fund and vintage and p-values are reported in parentheses with ***, **, and * representing significance at the 1%, 5%, and 10% levels, respectively. All models include a constant.

<u>Dependent Variable</u>	<u>(1)</u> <u>Net IRR</u>	<u>(2)</u> <u>Net IRR adjusted for Vint & Type</u>	<u>(3)</u>
LP-Agent Overlap %	-13.53 ** (0.026)	-14.76 *** (<0.001)	-14.43 *** (<0.001)
Log(Fund Size)			0.26 (0.519)
LP Based in US			-1.50 *** (0.003)
Log(LP Experience)			-0.02 (0.939)
GP = LP Country			0.19 (0.505)
N	4,760	4,760	4,760
R ²	1.22%	2.05%	2.30%

Table 13, Panel B. Agent/LP Relationship Strength and Investment Performance

<u>Quartile</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>(1) – (4)</u>
Mean LP-Agent Overlap %	0.036	0.085	0.148	0.337	
Mean abnormal return	1.13	-1.00	-1.27	-3.39	4.52 ***
Median abnormal return	0.42	-1.84	-2.46	-3.79	4.21 ***