

Your Former Employees Matter: Private Equity Firms and Their Financial Advisors

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Abstract

I study the impact of previous employment networks on private equity firms' choice of financial advisors. In a unique micro-level data set I observe 1,326 individuals who have been involved in 1,285 transactions and their changes of occupation from financial advisors to private equity professionals. I find that the social networks arising from these labor market movements affect private equity firms' choice of financial advisors as well as the sourcing of deals from sell-side advisors to private equity firms. On average the unconditional probability to be mandated as a financial advisor increases by 2.8 percentage points from 3.6% to 6.4% if a former employee of the financial advisor is among those private equity professionals who constitute the private equity deal team for that particular transaction. Private equity firms have a 19.0 percentage points higher probability to be included in a bidding process and a 13.5 percentage points higher probability of winning an auction when the auction is conducted by their former employers. Moreover, I find that firms pay relatively less in transactions in which they are advised by their former employers compared to other deals.

Keywords: Social networks, private equity, acquisitions

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I. Introduction

Do previous employment relations influence how private equity (PE) firms choose their financial advisors? Anecdotal evidence suggest that previous employees may become important future clients as manifested through the following statement by Stephen Patton, senior litigation partner at law firm Kirkland & Ellis LLP:¹ “Our alums² are friends and cohorts, but they’re also our current or future clients.” Similarly, when a corporate financier leaves employment it is the hope of the former employer that the departing employee’s new job is with a client, for example a PE firm.³ The wish is that the former employee will be benevolent to the previous employer when appointing advisors in future deals. As noted by McPherson et al. (2001) the explanations for why inclusion in a network can benefit their members centers around the notion of homophily; the tendency of individuals to have a special affinity for similar others.

By using a unique and detailed micro-level data set I study how social networks formed by such former employment relations affect PE firms’ choice of financial advisors and attempt to evaluate the mechanisms through which these social networks may be beneficial. Financial advisors act as gatekeepers of information to capital markets including PE, which to its nature is characterized by a large degree of opaque information. The study of personal network ties between individuals working for PE firms and financial advisory firms may thus offer considerable insight into the workings of the PE industry.

¹ Quote from “Former employees stay connected” by Barbara Rose, Chicago Tribune, January 2, 2006.

² Although the terms alumnus, alums, alumna and alumni originally refer to former students, the term is nowadays also used by corporations to denote former employees.

³ See “Don’t Burn Employee Bridges: Exit Interviews and Alumni Networks” by Hans H. Chen, Vault.com 2007, where the use of exit interview is described as one way of finding out the departing employee’s new employment.

My main goal is to test the hypothesis that both PE firms and financial advisors gain increased levels of business through social networks based on previous employment relations. From the viewpoint of the financial advisor it may be very valuable to have previous employees working for potential client firms. A network can lower the cost of gathering information in that it takes fewer meetings or calls to receive information for those inside a network. For example, it may be the case that PE professionals are inclined to offer easy access to their previous employers to discuss investment opportunities and potential advisory roles. It may also be that a former corporate financier can tell his old employer how best to make a pitch for a certain advisory mandate. Also the PE house can benefit directly from cooperation with former employees. Important information can flow through the network to the PE firm from the former employer. Efficiency in cooperation between PE professionals and advisors may be increased since the PE professionals have personal inside knowledge on the particular financial advisor's modus operandi including bidding strategy and sensitive negotiation issues such as fees.

I gather a unique data set that covers the period January 1998 to May 2007. 1,285 transactions consisting of 968 buy-side deals and 317 sell-side deals which have involved a total of 153 PE firms and 355 financial advisors are analyzed. I hand collect the CV:s of the 1,326 PE professionals who have been involved in these transactions which enables me to construct a data set of the professional work history of each of these individuals. The probability that a certain financial advisor is awarded a deal mandate is estimated based on an extension of the matching-probability model developed by Ljungqvist et al. (2006).

This paper's central finding is that the awarding of advisor mandates is significantly related to the social network that arises from corporate financiers' change of occupation to PE

firms; i.e. former employees become important future clients. These results hold for several subcategories of the data. On average the unconditional probability to be mandated as a financial advisor increases by 2.8 percentage points (pp.) from 3.6% to 6.4% if a former employee of the financial advisor is among those PE professionals who constitute the PE deal team for that particular transaction. The economic impact of the 2.8 pp. increase is large as it corresponds to 75% of the unconditional base level probability. All regressions include an extensive set of other independent variables which have previously been found to be of importance in the advisor-matching literature. To examine if these empirical relationships are driven by endogeneity effects I consider alternative econometric specifications. Through the use of an instrumental variable approach I find that accounting for potential endogeneity bias does not explain away the causal effect of previous employment relations on advisor selection. I subject the results to robustness checks and consistently find that they continue to hold.

Whereas these results show that the previous employment networks are of great benefit for former employers, I also find that PE firms reap tangible benefits from the networks. I consider in particular two potential features benefiting PE firms; deal sourcing and pricing. To explore deal sourcing, I study whether PE firms as bidders are being beneficially treated by sell-side financial advisors from their previous employment network. For 203 deals data is known on which firms participated in the bidding process. I find that there is a 19.0 pp. higher probability to be included in the bidding process and a 13.5 pp. higher probability of winning the auction for firms inside the network. Results are statistically significant and accounting for potential endogeneity does not explain away these results. This is evidence of that the social networks are used also for deal sourcing. However, due to

limitations of the data available I cannot directly measure the efficiency of the deal sourcing and will thus not be able to directly address issues such as the winner's curse.

If deals where a PE firm is being advised by a financial advisor with whom they have a previous employer relationship are pursued at better prices than other deals, this would offer an additional explanation for the observed principal-agent matching from a pure profit maximization viewpoint. I find some support that transaction prices are more attractive when former employers are used as advisors. EV/Revenue is -23.5% for transactions that were advised within the previous employment network compared to deals outside the network. For Tobin's Q the coefficient of a former employer as advisor is -37.2%. EV/EBITDA multiples also indicate that deals within the network take place at relatively lower prices, but the results are not generally statistically significant at conventional levels.

The contribution of this paper is twofold. In particular it sheds new light on the general workings of PE firms. Though studies of the economics of the PE industry are plentiful [see for example Axelson et al. (2007), Axelson et al. (2008), Fenn et al. (1997), Gottschalg and Phalippou (2009), Ivashina and Kovner (2008), Ljungqvist and Richardson (2003), Metrick and Yasuda (2009), Kaplan (1991), Kaplan and Schoar (2004), Kaplan and Stein (1993)], this paper bring forth novel evidence of how deals are sourced to different PE firms through financial advisors. It is also the first paper that details how PE firms choose those financial advisors. The sheer magnitude of the advisory fees generated by PE driven acquisitions makes the choice of advisors an interesting case to analyze in itself. PE firms spend gigantic amounts on acquiring companies. In 2006, companies worth a total of \$770 billion were acquired by PE firms. The financial advisors hired by PE firms for these

transactions received a total of \$11 billion in fees for their services, which correspond to 16% of all advisory fees in that year.⁴

Secondly, this is the first paper to examine the importance of having former employees as clients and the benefits arising from such social networks. The existence and importance of social networks in financial markets has been established in a range of recent papers. Cohen et al. (2008 and 2009) establish the importance of shared education networks in gaining valuable information within securities markets. Within the venture capital industry Hochberg et al. (2007) find that social networks have a positive impact on investment performance. Kuhnen (2008) finds evidence that network connections among agents in the fund management industry foster favoritism in appointments of advisors and directors. Several papers study the social networks of directors. Kramarz and Thesmar (2006), Barnea and Guedj (2007) and Hwang and Kim (2008) show that director's social networks affect CEO compensation and corporate governance. Stuart and Yim (2008) find that public companies are more likely to receive a PE buyout offer if they have a director with previous experience from LBO transactions. In terms of networks' impact on labor market transitions, Bramoullé and Saint-Paul (2006) find that a higher connectivity among unemployed individuals reduces duration dependence. Much related, Cingano and Rosolia (2008) find that job search outcomes for displaced workers is related to the employment rates of people in their social networks. Clarke et al. (2007) uses a sample of all-star analysts who switch employment between investment banks. Though analysts do not change their optimism or recommendation levels when moving to a new firm, the amount of equity related transaction

⁴ See "Private equity groups pay Dollars 11bn" by Jeff Wagner, Financial Times, January 5, 2007. Wagner quotes figures from Freeman & Co. and Thomson Financial.

deal flow is related to the new analyst's reputation. Bradley et al. (2008) examine the impact of investment banker job changes on the M&A and equity market shares of investment banks. They find that the bank losing the banker experiences a decrease in their industry-level market share which is partly due to that a significant number of clients follow the banker from the old bank to the gaining bank. The latter two articles both bring strong evidence that human capital is a critical component of investment banking deal flow.

II. Data

A. General Overview

Transaction data are collected from the Mergermarket database, which contains information on the world's 300 largest PE firms and data on the 6,908 deals undertaken by these firms starting January 1998 for European deals, January 2001 for North American deals and January 2003 for Asia-Pacific and ending in May 2007. For each deal, information is given on the target, bidders, sellers, financial advisors, legal advisors, accountants, brokers, consultants and PR firms of all parties involved. The financial advisors can be investment banks, corporate finance practices linked to accountancy firms or separate advisory boutiques. The great value of using the Mergermarket database is that for several deals the names of the people at the PE firm who worked with a particular transaction are listed. Those individuals that are on the transaction team of a PE firm are denoted PE professionals. Besides the identity of the PE professionals their level of seniority is detailed. The names are relatively seldom disclosed for deals outside of Europe, which leads to that my data set to 94% consists of European transactions. For the purposes of this paper I consider only deals which have included an external financial advisor and where also the identities of the PE

professionals that participated in the deal are disclosed. An advisor is deemed to be external if it does not belong to the same corporate group as the PE firm.⁵ There are a total of 1,285 transactions which fulfill these restrictions and these deals constitute my transactions data set.

1,408 PE professionals have been involved in these transactions. I gather data on their career history from a number of sources. Foremost, I obtain CV:s from the web pages of the PE firms for which they work. These are often quite detailed as it is in the PE firms' self-interest to describe their employees' experience and thereby signal their high competence. Unfortunately, exact dates of employment and length of tenure is not generally detailed. For example, out of the 883 people who have previously worked as financial advisors tenure data are available only for 188 individuals. For those individuals who have changed jobs or are deceased, I use the web archive service⁶ to go to the web pages as they looked when the individual was employed at the specific PE firm. For those individuals whose CV:s cannot be retrieved from any PE firm webpage, I search a variety of online databases such as LinkedIn⁷, ZoomInfo⁸ and the Financial Services Authority Register⁹. From these combined sources I obtain employment history for 1,326 individuals which represent 94.2% of the total sample of individuals. I merge the information of the PE professionals' working history to my sample of Mergermarket transaction data. As the Mergermarket database does not contain transaction values for all deals in my sample I merge information from the Zephyr database. However, the overlap of missing information is large between the databases. The average disclosed deal size of the 3,448 European deals over the sample period is EUR200 million which is to be

⁵ For example, if the PE firm Goldman Sachs Private Equity Group uses Goldman Sachs Investment Banking Division as financial advisor, this deal is excluded from the dataset.

⁶ <http://web.archive.org/collections/web.html>

⁷ <http://www.linkedin.com>

⁸ <http://www.zoominfo.com/>

⁹ <http://www.fsa.gov.uk/register/home.do>

compared with the average of my sample of EUR219 million. The deals in my sample are concentrated in time to the years 2005 (23%) and 2006 (23%). The corresponding numbers for the full sample for those years are 21% and 24% respectively. Thus, in terms of size and timing the deals that constitute my data set resembles the average deals in the database.

B. Candidate Set

In order to estimate the probability of being selected to advise a particular deal, data for both the mandated advisor as well as the competitors who did not get mandated is required. For every given transaction I create a panel of candidate advisors conditioning information for both mandate-winning and non-winning advisors. In the data, a total of 355 financial advisors have been awarded mandates. To be included as a candidate advisor for a given deal with a certain PE firm several restrictions are imposed. First, I filter the advisors based on attrition and exclude those financial advisor firms that were not in existence for a specific deal. Further, an advisor must be able to carry out advisory work from an office within the transaction region. The transaction regions used are Europe, North America and Rest of world. Similar to Ljungqvist et al. (2006) a candidate advisor must also have provided advisory business for the PE firm at some point in time within the sample period. Through this limiting approach I rule out those of the 355 financial advisors that most likely would never be considered as advisors by a specific PE firm. In my model, on average 27.8 candidate advisors compete for each deal which means that the unconditional mean for any advisor to receive a mandate is 3.6%. As comparison, Ljungqvist et al. (2006) have on average 24.3 competing advisors for any given underwriting mandate. To ensure that the inclusion restrictions are not driving unreasonable results, I run the regressions with no

restrictions as a robustness test on a subset of the data. Only deals which have been performed by a top 50 ranked advisor are included for which all 50 advisors are used as candidates. This approach follows Asker and Ljungqvist (2008) as well as Kale et al. (2003) who use 50 banks in their candidate sets. All results will be discussed in detail in section V, where I will also control for endogeneity through an instrumental variable model.

III. Mandate Probability Model

A. Variables

The empirical probability model follows the methodology developed by Ljungqvist et al. (2006). The probability $Pr(Q_{j,k,n})$ that a financial advisor j is mandated by a PE firm k for a particular deal n is estimated by a probit model formulated as:

$$Pr(Q_{j,k,n}) = f(Z_{i,j,n}, D_{j,k}, R_{j,k}, G_j, H_{j,n}, K_{j,k}, S_k, T_k, V_j) \quad (1)$$

The dependent variable takes a value of one if the financial advisor won the mandate, and zero otherwise. Z is an indicator variable of whether one of the PE professionals i on the deal team for that particular transaction have previously been employed as corporate financier with any of the candidate financial advisors for the specific mandate. The Z variable is the key variable in this study as it indicates the existence of a social network.

Variable D quantifies the strength of lending interaction between a financial advisor and PE firm. D is measured as a percentage of previous deals with the same debt provider over a five year period. This measure is very similar to that used by Ivashina and Kovner (2008) who find that PE firms' repeated borrowing with banks in their networks is commensurate with favorable loan conditions. The provision of funds may be either through direct lending or through underwriting of debt securities. The nature of PE business relies on

the ability to finance acquisitions partly with debt and the importance of being able to provide debt financing to win mandates is often stressed by investment banks themselves. For example, investment bank Petrie Parkman & Co. state (SEC File 333-137297): “In particular, the ability to provide debt financing has become an important advantage for some of our larger competitors, and because we do not provide such financing, we may be unable to compete as effectively for clients in a significant part of the investment banking market.”¹⁰ As described by Povel and Singh (2009) it is not only in buy-side deals where the ability of providing debt financing might play a role. In sell-side deals, the financial advisor acting for the selling PE firm often provides ‘stapled financing’ which essentially is a statement that sums up the debt capacity of the business being sold and outlines the amount buyers can borrow and how much they will have to provide in equity. R is a measure of the strength of previous interaction between the PE firm and a financial advisor in terms of M&A advising. Various measures of previous relationships have been found to be of importance in several advisor-matching studies.¹¹ Similar to the D variable, R is measured as a percentage of previous deals advised by the same financial advisor the last five years. G is the explanatory variable for reputation, which is measured as the overall ranking in the year preceding a deal. There are a total of 1,893 advisor firms in Mergermarket’s league table. The top ranked firm is given the value 1,893 whereas the lowest ranked firm is given the value one.¹² H is an

¹⁰ Similarly, the investment bank Cowen Group Inc. state (SEC File 000-52048): “In particular, the ability to provide debt financing has become an important advantage for some of our larger competitors. We do not provide debt financing and are just beginning to develop debt arrangement capabilities, and therefore we may be unable to compete as effectively for clients in a significant part of the investment banking market.”

¹¹ See for example Ljungqvist et al. (2006), Yasuda (2005), Ellis et al. (2006), Hayward (2003), Francis et al. (2006).

¹² Carter and Manaster (1990) use underwriters’ relative placements in ‘tombstone’ announcements. Kale et al. (2003) use the relative market share of the underwriters as a proxy for their reputation. Servaes and Zenner (1996) divide advisors in two tiers while Rau (2000) and Ellis et al. (2006) use three tiers.

indicator variable denoting expertise by a candidate financial advisor in the industry of the firm subject to the transaction. I base expertise on the transaction value of the top ten advisors within the industry.¹³ Several control variables are used. K is a measure of geographic proximity in kilometers between a financial advisor and the PE firm.¹⁴ To account for that certain PE firms and/or financial advisors are so large that matching between the PE professional and the former employer could be driven purely by size effects, I implement controls for the size of each PE firm investment fund S , the number of deals performed by each PE firm T and the number of deals performed by each financial advisor V over the sample period. Variables D , R , G , K , S , T and V are logged by the natural logarithm. For those variables which can take the value zero (D , R , K), I use the natural log of $(variable+1)$. Year and country dummies are included throughout the analysis and I also adjust the matching between the PE professionals' previous employers and the financial advisors for mergers among the financial advisors. Starting with the approval date of a merger and going forward, the new company inherits all previous employments as well as previous relations from the merged companies within a five years time span. Since my data consist of multiple investments made by various PE firms, I cluster the standard errors by PE firms. This allows for the error term to be correlated within the deals made by a PE firm, which imposes a conservative standard for accepting statistically significant results.¹⁵

¹³ Asker and Ljungqvist (2008) establish the importance of industry expertise for underwriters using as proxy for expertise the combined product market share of an investment bank's previous clients within an industry sector.

¹⁴ For example, Kedia et al. (2008) and Grote and Ueber (2006) find that proximity is an important factor in M&A. I use the proximity measure data from Sarkissian and Schill (2004) which is available on Sergei Sarkissian's homepage <http://web.management.mcgill.ca/Sergei.Sarkissian/>.

¹⁵ It has been suggested that PE firm fixed effects should be included into the probit regressions. In linear regression models such an approach could mitigate bias due to that results are driven by, say, some reputable firms advising very desirable deals. However, when trying to estimate a probit fixed effect model I encounter the incidental parameters problem, which was first studied by Neyman and Scott (1948). In essence the problem is that the maximum likelihood estimator in nonlinear panel data models with fixed effects is biased and

B. Descriptive Statistics

The basic properties of the data set are outlined in Table I. There are a total of 1,285 deals involving external advisors and where information on the participating PE individuals is available. Of these deals, 968 (75.3%) are buy-side deals and 317 (24.7%) are sell-side deals. Of the buy-side deals, 30 (3.1%) are public-to-private transactions with the remaining 938 (96.9%) deals being private-to-private deals. Of the sell-side deals, 180 (56.8%) are secondary buy-out sales to other PE firms, and 137 (43.2%) are trade sales, i.e. deals where an industrial company buys the business. Deals are undertaken by a total of 153 PE firms which have used 355 different financial advisors. Most deals take place in a European country (94.3%) which is an effect of that data available on deals outside Europe generally lack information on the identities of the PE professionals. The most common deal value range is EUR100m-500m (31.3%) followed by deals below EUR100m (30.7%).

[Table I about here]

The financial advisors are together awarded a total of 1,721 mandates. The number of mandates is higher than the number of deals because PE firms have used multiple advisors in 353 (27.5%) deals. A financial advisor may be an investment bank, corporate finance practice at an accountancy firm or a corporate finance boutique. Boutiques differ from traditional investment banks in that they normally only offer advisory services and not traditional banking services such as securities trading or debt and equity offerings. Investment banks account for 758 (44.0%) of the mandates, followed by accounting firms with 542 mandates (31.5%). Corporate finance boutiques were awarded 421 (24.5%) of the mandates. Top 10

inconsistent when T , the length of the panel, is small and fixed. Heckman (1981) finds that the bias of the probit slope estimator in a fixed effects model is towards zero and on the order of 10% when $T = 8$ and $N = 100$. On average, I have a T of 9 which is too small a number to enable the inclusion of PE firm fixed effects. I do however include time and industry fixed effects as the T for these categories are sufficient large.

ranked advisors account for about the same number as mandates as those ranked in positions 11-25 (28.5% vs. 29.5%).

In Table II the characteristics of the PE professionals are detailed. A total of 2,672 PE professionals are listed for the 1,285 deals, yielding an average sized PE transaction team of 2.1 individuals per deal. Several of the names listed refer to the same individuals participating in different deals. The number of unique individuals participating as PE deal team members is 1,408. The professionals' respective seniority is labeled in the database as 'Level' from 1 to 4 with 1 being the most senior person on the deal team and 4 being the most junior.¹⁶ 2,203 (82.5%) names are listed as level 1; 343 (12.8%) names as level 2; 96 (3.6%) names as level 3 and 30 (1.1%) names as level 4. A deal team can consist of several professionals with the same level designation.

[Table II about here]

In terms of their background, the majority (58.7%) has previously worked as financial advisors. 17.0% have a background as operational professionals from industrial firms followed by 12.3% with consultancy experience. 5.9% started their careers directly at a PE firm whereas 6.2% have a background from other areas such as law, government, military or academia. For those individuals who have previously upheld a position with one or several financial advisory firms, the total number of financial advisory workplaces is detailed according to league table rankings and type. Top 10 ranked advisors account for 33.2% of the previous held positions. Mid-ranked advisors (rank 11-25) make up 23.7% of previous advisor occupations. The remaining 43.1% subsequently refer to advisors ranked lower than

¹⁶ The levels are assigned by the database. Titles corresponding to a certain level vary greatly between different PE firms. For example, level 1 may refer to a principal, partner or managing partner, level 2 includes directors, investment directors and associate directors, level 3 refers to vice presidents, investment managers and senior associates while level 4 is the group for investment professionals, associates and analysts.

top 25. The most common type of financial advisor for which PE professionals have previously worked for is investment banks (63.6%), which is not surprising as they are the largest actors within financial advising and employ the bulk of corporate financiers. Accounting firms constitute 29.4% of previous employers, whereas corporate finance boutiques only make up for 7.0%.

The correlation matrix of all independent variables is displayed in Table III. Some strong relationships can be noted. There is economically significant correlation between the PE firm size and number of deals (0.599), which is expected. There is also significant positive correlation (0.370) between a financial advisor with specific industry expertise and the strength of previous debt relationships. This may be an effect of that larger financial advisors which have financing capabilities are also experts in one or several industries. Overall the extent of correlation among most pairs of variables raises little concern for multicollinearity in the forthcoming regression analysis.

[Table III about here]

Table IV shows univariate comparisons between mandated and non-mandated advisors for the constructed previous employment variable. A greater fraction of mandated advisors (7.3%) has a former employee among the PE professionals compared to the non-mandated advisors (2.2%). The difference is statistically significant at the 1% level suggesting that a PE professional's prior employment exert significant influence over the advisor a PE firm chooses for a deal.

[Table IV about here]

IV. Results of the Mandate Probability Model

To evaluate (1) I run several probit joint-test regressions with test and control variables for different subsamples of the data set. Marginal effects are displayed in panels A-C of Table V. Panel A displays results for all deals while Panels B and C display results for buy- and sell-side deals respectively. Panel C also includes Wald F -statistics of the differences across the coefficients in Panels B and C which overall indicate that the differences between buy- and sell-side deals are significant.

[Table V about here]

A. Previous Employment of PE Professionals

Having a previous employee among the PE deal team members increases the probability of receiving a mandate by 2.8 pp. as is shown in column 2. The coefficient is statistically significant at the 1% level. Thus the existence of a previous employee increases the unconditional mean probability of being mandated from 3.6% to 6.4%. The results are similar when considering buy- and sell-side deals separately; the marginal effect for buy-side deals is 3.1 pp. whereas the effect for sell-side deals is 1.9 pp. The slightly lower economic and statistical significance for sell-side deals suggests that PE professionals' previous employment is relatively more important for a financial advisor when acting as buy-side advisor. To understand the difference we need to skip ahead in the results table to the coefficients for industry expertise. For sell-side deals the expertise coefficient is as high as 1.1 pp. with significance on the 5% level. Though the previous employment link is still important, PE firms appear to focus relatively more on the industry expertise of the advisor compared to in buy-side deals where the effect is an insignificant 0.6 pp. The difference can

be explained by that industry expert can act as a certifier of the quality of the asset offered for sale in a sell-side deal. As I will show in section VI of this paper, sell-side advisors also appear to have important network links with counterparty acquiring firms.

Since it is possible that the senior members of a team single-handedly decides who should be mandated as advisor I run the regressions including only those PE professionals with the highest level rank in each team. We see in column 3 that the coefficients are virtually unchanged from the original model specification. The effect of PE professionals' previous employment at a financial advisor firm is 2.7 pp. for all deals. When only considering buy-side deals the effect falls from 3.1 to 2.9 pp. whereas it increases for sell-side deals to 2.2 pp. These results indicate that the mandate probability results are not to a major extent driven by the level of the PE professionals. The similarity in results with the base specification is consistent with the small average team size of 2.1 individuals and the fact that about 83% of the individuals in the data set are listed as level 1 professional.

It is conceivable that the effect of having a previous employee among one's potential clients is more important for lower ranked financial advisors than for higher ranked advisors. To explore this I divide the sample and candidate groups in two parts with the top 25 overall ranked advisors analyzed separately from the 330 lower ranked advisors. Results are displayed in columns 4 and 5. The difference between high- and low-ranked advisors is however small and the effect of having a previous employee on the PE deal team does not to a large extent seem to be affected by whether the advisors are high or low ranked.

As was described above, 27.5% of the deals are done jointly by more than one financial advisor. If previous employers mostly are hired as joint advisors rather than sole advisors this could indicate that they are brought on as a favor from their former employers.

Columns 6 and 7 show that for all deals taken together there is little economic differences between the coefficients of a previous employee of to a joint advisor to one of a sole advisor although the statistical significance is stronger for sole advisors deals. For buy-side deals the impact of being a previous employee is economically stronger for sole advisors than for joint advisors whereas the relation is the opposite for sell-side deals. However, the statistical significance is weak for sell-side deals.

A previous employee network could be more important when the PE firm is small or obscure as such firms could potentially receive less wooing from the general advisor community. In columns 8 and 9 the sample is divided based on the size of the PE firm. Whereas the effect is 3.0 pp. for the largest 25 PE firms, smaller firms yield an average effect of 5.3 pp. Both coefficients are strongly significant. The results do confirm that previous employment networks seem to lead to stronger matching with former employees that work for middle market and smaller PE firms. Possibly because such relatively obscure firms are exposed to less interaction with potential advisors.

Columns 10 and 11 separate the sample into periods 1998-2003 and 2004-2007. As is described in Kaplan and Strömberg (2009), the former period observed modest growth in PE investments compared to the later high-growth period. The importance of previous employment is slightly larger in the earlier period but the difference is not material.

Table V also shows (column 1) how all variables change when previous employment is included. Only very small changes of the coefficients are observed and we can note that the coefficient for previous employment of PE professionals is the economically strongest of all the explanatory variables. All in all, the results of Table V support the anecdotal evidence that previous employees become important clients.

B. Debt Provision

A financial advisor's likelihood to be mandated for a deal increases with the strength of the previous financing relationship with the PE firm. The overall marginal effect is 1.4 pp. When only considering buy-side deals the effect is quite large (2.1 pp.), whereas for sell-side deals the effect is zero. That financing relationships are more important in buy-side deals is intuitively convincing as a selling firm does not need to obtain financing although they could arrange stapled financing. The positive coefficient for buy-side deals is consistent with Ivashina and Kovner (2008) who find that bank relationships formed through repeated transactions reduce inefficiencies from the information asymmetry between the lender and the leveraged buyout firm resulting in favorable financing terms.

C. Previous Deal Relationships

The strength of previous advisory relationships between a PE firm and a financial advisor increases the probability of receiving a mandate with 1.5 pp. The results are both economically and statistically stronger for buy-side than for sell-side deals. The positive sign is aligned with most of the findings of previous studies where a relationship history generally increases the probability of receiving mandates such as Ljungqvist et al. (2006) and Ellis et al. (2006) who find that prior underwriting relationships increase the likelihood of winning follow-on capital markets business. Also Hayward (2003) finds that clients are induced to hire the same investment banks repeatedly.

D. Reputation and Industry Expertise

Each step higher in the ranking league table reduces, on average, the probability of winning a mandate by 0.6 pp. whereas to be among the top 10 ranked financial advisors in the industry

sector of the target company has a positive marginal effect of 0.7 pp. on the dependent variable. These results suggest that a financial advisor's particular expert knowledge is more important than the overall general amount of deals exposure. As was discussed above it is interesting to note that for sell-side deals the expertise coefficient is as high as 1.1 pp., which is an indication that PE firms hire industry experts that can act as credible certifiers of the quality of the asset offered for sale. These results differ from those in Kale et al. (2003) who find that the likelihood of an investment bank winning an M&A mandate is related to reputation. However, Bao and Edmans (2008) offer a potential explanation to the negative sign of reputation. They show that reputation measured on market shares of advisory services is problematic, because investment banks have an incentive to push deals through to boost their rankings. The return of the acquirer is a better predictor of the quality or reputation of the advisor. The negative sign of my reputation coefficient could be picking up the effect documented in Bao and Edmans (2008), although I cannot directly test this with my data.

E. Control Variables

Throughout the analysis, the overall impact of the control variables is small. Thus, matching of advisors and PE firms are not driven by the sheer size of the participating actors. The coefficient for geographic distance has the expected negative sign; the greater the distance between PE firm and candidate advisor, the lower the probability of being mandated. Similar results are documented in Kedia et al. (2008) who find that information advantages associated by geographic proximity is an important determinant in acquirer's returns and Grote and Ueber (2006) who find that acquirers have a strong and consistent preference for geographically proximate target companies.

V. Instrumental Variable Approach and Robustness Checks

To ensure that the presented estimations are valid, the issue of potential endogeneity must be accounted for. In order to confirm that my results are robust to omitted variables and reverse causality issues, I employ an instrumental variable (IV) methodology. I also consider as a robustness test an alternative specification of the candidate set.

A. Instrumental Variable

There is an obvious endogeneity problem to worry about since some firm and advisor characteristics that I have not controlled for may explain why a PE firm matches with certain advisors. For example, the PE firm and a financial advisor may share some common expertise about the particular target firm but which is not observable. There could also be other social networks than the one specified by employment relations that affect the matching between PE firms and advisors. This could lead to cases where a PE professional who has worked at a specific financial advisor firm chooses to mandate this advisor but this would not necessarily reflect a causal consequence of the previous employment. Furthermore, if financial advisor employees depart to PE firms with whom their employer already has a strong advising relationship, my analysis could suffer from reverse causality.¹⁷

To address these potential endogeneity biases, I need an IV which is independent of the mandate decision equation (1) but which is related to the previous employment relation between advisors and PE firms. A common choice of IV is to use a measure of the local availability of the selected characteristic. My approach follows mainly the methodology of

¹⁷ If I knew the exact starting dates for each individual and also the PE firms' previous relationships with advisors prior to that starting date this issue could be addressed directly. As is mentioned in section II, the exact dates of employment and length of tenure are only available for 188 former corporate financiers whereof only 108 individuals joined the PE firm after the start of my sample period. Hence, the nature of my data renders such an analysis unfeasible.

Berger et al. (2005) who instrument an individual bank's size with the median size of banks in the local market, Bottazzi et al. (2008) who instrument a venture capitalist's business experience with the average business experience in the local market, and Hellmann et al. (2008) who uses various measures of the availability of different financial intermediaries in a geographical area as instruments for matching between venture capital investors and firms. A PE firm's actual choice of financial advisor may be endogenous, but the local availability of financial advisors in a country is exogenous. Clearly, the number of financial advisors is related to the previous employment variable since this variable by construction measures whether a PE professional has in fact worked as corporate financier with one of the candidate advisors. Once a financial advisor is matched with a PE firm, the local availability of advisors should not directly affect the choice of advisor. I estimate an IV regression where the main regression is the same as in (1), except for that previous employment is now instrumented by the log of the median size of financial advisor employees in each country where a deal takes place. An argument against the validity of this instrument may be raised if the country has a low level of financial sophistication. For such countries it could be that the local PE firms would be less likely to hire local financial advisors due to their low quality; an inferior-country bias. This would be independent of the fact that less developed financial services also lead to a lower chance that the PE firms employs a former worker from the local financial advisors. The implication is that there would be a correlation through other channels outside the relation of PE firms employing former employees of a financial advisor and the proposed instrument would not be appropriate. However, as was shown in Table I, 98.8% of the deals take place in Europe or North America where financial markets are inarguably well developed which should offer some comfort that the instrument indeed does not suffer from

an inferior-country bias. Data are obtained from the Orbis database. Results are displayed in Table VI, columns 1 through 6. In the first stage equations we see that the instrument itself is strongly significant which indicates that it is a valid instrument. The corresponding F -statistics of the instrument is always above the often-used threshold of 10.¹⁸ Second step equations reveal that the instrumented previous employment coefficient is strongly significant and economically strong; 5.8% for all deals, 6.1% for buy-side deals and 4.6% for -side deals. Thus, the IV estimations do indicate that there is a causal relationship on advisory mandating based on previous employment networks. The IV estimates are higher than those in the probit model which could indicate that the probit estimates are biased downwards. Such a downward bias could be due to measurement errors in the biographic data collected which causes the observed number of potential matches between former employees and mandated firms to appear too low.

[Table VI about here]

B. Alternative Analysis

I further investigate a subset of transactions which include only those PE professionals that are present in more than one deal. Do the PE professionals who have a background as corporate financiers use their old employers more often than other advisors? Conditional on being mandated for at least more than one transaction with the same PE professional, what is the total share of transactions this financial advisor is included in with the given individual? As is presented in Table VII, I find that the share is higher for those advisors where the PE professional is a previous employee (70.9%) than those who are not (53.6%). The results are

¹⁸ See for example Stock et al. (2002).

statistically significant at the 10% level. I do not want to overemphasize these results due to the small sample size of 31, but the results do point in the same direction as the previous findings; that previous employment matter in the selection of financial advisors.

[Table VII about here]

C. Alternative Candidate Set

In a robustness test I vary the candidate set to equal the methodology used in Asker and Ljungqvist (2008) and Kale et al. (2003). The data set now consists of only the top 50 ranked financial advisors, which reduces my set of transactions to 941 divided into 701 buy- and 240 sell-side deals. Turning to the results in Table VIII we see that the coefficient for having a previous employee among the PE deal team increases the probability of being mandated by 1.6 pp. The coefficient is statistically significant at the 1% level. Even though the candidate set is now very narrowly defined, the previous employment of PE professionals does have an important impact with coefficients of 1.6 pp., 1.3 pp. and 1.9 pp. for all, buy and sell-side deals. There may be conflicting views on the best composition of a candidate set but the robustness test offers a lowest bound on the magnitude of my results and as such serves as supportive proof of that my results are not an effect of any unreasonable construction of the candidate set.

[Table VIII about here]

D. Demotions

It is conceivable that an employee who is demoted or fired may be biased against hiring a former employer as advisor. Thus, for financial advisors facing a PE professional who is a former demoted employee, the probability of winning a mandate could be greatly reduced. To

explore whether such cases are prevalent in the data I proxy a potential demotion as when a PE professional at a bottom-25 firm (in terms of funds under management) has previously worked at a top-25 ranked financial advisor. An individual's move from a top firm to a small obscure PE firm could be the result of an employer's discontent with an employee or indeed also the reverse. As there are only 15 such cases in the data this suggest that my results are robust to adverse effects of demotions.

E. Alternative Interpretation

If the PE firm assigns a professional who is a former financial advisor employee *after* they have decided to hire this professional's former employer as advisor the analysis would suffer from a reversed team construction bias. For example, the professional may be brought on to the team in a liaison role to facilitate communication between the PE firm and the old employer. This would indicate that the PE firm does not choose the financial advisors because they have a former employee in the team. While it is not possible to know the exact time of when a team is put together, the results from Table V can be used to address whether this alternative interpretation is consistent with the data. Let us revisit column 3 where the key independent variable is one if the senior deal team professional is a former employee of the candidate financial advisor. As has already been noted the results are unchanged to the base case specification of the professional being just any of the team members, which suggests that results are not driven by a senior professional effect. The results on senior professionals enable me to refute the reversed team construction since the senior team member is to be expected to be part of the team before the advisor is selected. However, if the alternative explanation that matching is driven by ex post assignment of professionals in

liaison roles is true we should observe insignificant results on the senior professional indicator, which we do not.

VI. Mutual Networking Benefits

The analysis so far clearly suggests that previous employment relations matter in the matching between PE professionals and advisors. Having a former employee at the PE firm deal team is beneficial for the financial advisors. Next I examine why PE firms hire their former employees as advisors. To assess the benefit of financial advisors to the companies they are advising, previous research has centered around two different measures. The first measure is the wealth gains to acquirers, which has been studied by for example Hunter and Walker (1990), Bowers and Miller (1990), McLaughlin (1992), Rau (2000) and Rau and Rodgers (2002). The second approach has looked at the speed of deal completion [see for example Rau (2000), Hunter and Jagtiani (2003)]. For my purposes the approaches used in the previous literature, which have dealt exclusively with public deals, are not feasible for my sample of transactions where 96.9% are private-to-private deals, which are not subject to the same bidding process as public deals. Whereas the announcement of a public takeover bid is to be followed by a period giving the shareholders time to decide whether to tender their shares or not, the private deals are commonly pre-packaged in the sense that the shareholders have already agreed to the bid thus making announcement date and completion date being the same. This makes it impossible to measure speed of completion. Furthermore, as only 6 of the 153 PE houses in my sample are publicly listed I do not have a sufficient number of transactions to measure the impact of former employee relations on stock returns of the acquirers. An alternative approach would be to use PE firm fund performance but data are not

available either because the fund is not yet closed or because such data are not publicly reported. As data may become available in the future, such an analysis could be the topic of follow-up research to this paper. Hence, I will proceed along a somewhat different route than previous studies and examine two other explanatory mechanisms using a subset of the data from the mandated probability model:

i) Deal sourcing; do PE firms as bidders benefit in actions held by their former employers (sell-side advisors)? Such benefits could be through inclusion into the bidding processes or an increased probability of winning.

ii) Pricing; are deals where a PE firm is being advised by a financial advisor with whom they have a previous employer relationship pursued at generally more attractive prices?

A. Deal Sourcing

Deal sourcing is analyzed in a probit framework where the probability of winning an auction is conditional on having participated as bidder.

$$Pr(\Gamma_{k,n})=f(W_{i,m,n}, R_{m,k}, A, B, K_{m,k}, S_k, T_k) \quad (2)$$

$$Pr(\Phi_{k,n}|\Gamma_{k,n}=1)=f(W_{i,m,n}, R_{m,k}, A, B, K_{m,k}, S_k, T_k) \quad (3)$$

Where $Pr(\Gamma_{k,n})$ is the probability that a PE firm k is participating in an auction for a particular deal n and $Pr(\Phi_{k,n})$ is the probability that the bidding PE firms wins the auction. The dependent variable in equation (2) [equation (3)] takes a value of one if the PE firm participates (wins) and zero otherwise. W is an indicator variable on whether a PE professional i who is employed at the PE firm at the time of the deal has previously been employed as corporate financier with the sell-side financial advisor m . In the mandate

probability model the variable measured professionals on the specific deal team. Now, I broaden the measure to include any of the professionals employed at the PE firm at the time of the deal. This captures the fact that whoever receives information on an upcoming sale may easily pass that information on within the firm without actually themselves taking part on the deal team. R measures the strength of relationships between the PE firm and a selling financial advisor over the last five years. A is the number of bidders in the auction; B is the number of financial advisors on the sell-side. K is the measure of geographic proximity in kilometers between the nearest offices of the selling financial advisor to the PE firm. S is the size of the PE firm funds and finally, T is the number of deals performed by the PE firm over the sample period. Variables R , K , S and T are measured by the natural logarithm. I cluster the standard errors by PE firms. To be able to estimate (2), data are needed for both those PE firms that participated in the auction as well as for those that reasonably could have participated in the auction. Again a candidate set must be created. For 203 of the deals in my data set I have information of all participating bidders and winners. For the creation of the candidate set needed to estimate the probability of being a bidder I partition the panel data to include all those PE firms that are mentioned as bidders in any of these deals, conditional on that each PE firm must have an office in the transaction region. This creates a total of 15,381 potential bidders for the 203 deals. For equation (3) the candidate set is already given since all bidders are named in the data yielding a total of 988 observations.

Column 1 of Table IX report marginal results for the probability of bidding inclusion. The previous relationship indicator indicates that the probability of participating in an auction is increased by 19.0 pp. if one of the selling advisors has been a previous employer of one of the PE professionals at the firm. Column 4 displays the results for winning an auction. Again

we see that the previous employment relation is important; the marginal increase in the probability of winning the auction is 13.5 pp. for those PE firms who have professionals that previously have been employed at one of the selling parties' financial advisors. To account for potential endogeneity I employ the previously used instrument; the log of the median size of financial advisor employees in each country where a deal takes place. The first stage equations in columns 2 and 5 indicate that the instrument is valid. The second step equations, reported in column 3 and 6, give an estimate of the previous employee coefficient of 10.9 pp and 7.3 pp respectively.

[Table IX about here]

B. Pricing

To explore the possibility that PE professionals choose to hire their former employers because of price effects I analyze transaction multiples and Tobin's Q.

B.1 Transaction Multiples

The role of a financial advisor is to advise their principals and negotiate as low a transaction price as possible for buy-side deals. Based on the choices between different financial advisors, I model that a PE firm k chooses the financial advisor j that minimize the transaction price multiple $M_{n,x}$ paid for the target company in deal n where x denotes which kind of multiple that is used. The relevant transaction multiples being reported in the Mergermarket and Zephyr databases are trailing revenue and EBITDA multiples.¹⁹ These multiples are based on the enterprise value (EV) of the underlying target company. EV is calculated as the price paid for the equity (deal value) plus the market value of net-debt,

¹⁹ Other ratios such as EBIT and earnings multiples are reported for too small a number of transactions to render statistical analysis possible.

minority interests and preferred shares. Using EV rather than deal value when calculating multiples allows for comparisons across companies with different capital structures. The various measures $M_{n,x}$ are thus defined as:

$$M_{n, revenue} \equiv (EV_n / revenue_n) \quad (4)$$

$$M_{n, EBITDA} \equiv (EV_n / EBITDA_n) \quad (5)$$

Average multiples $M_{c,x}$ for groups of comparable deals c are constructed in several steps and used as explanatory variables. Bargaron et al. (2008) document that PE bidders in general pay lower multiples and acquisition premiums than strategic buyers but they do not find that the lower prices are attributable to differences in target and deal characteristic. To account for that PE firms differ from strategic acquirers in this respect I base the set of comparable deals only on transactions done by PE firms. I further divide the group according to deal size, geographic region and industry sector. Deal size range from small (below EUR100m), medium-low (EUR100m-500m), medium-high (EUR500m-1,000m) and large (above EUR1,000m). Geographic regions are North America, Europe and Rest of world. A total of 28 industry sectors are specified. To allow for that multiples may vary over time and are subject to both contractions and expansions, comparison multiples are measured over three year windows ranging from, and including, the year before the deal to the year after the deal. I take the natural logarithm of all monetary amounts and apply control variables. The regression at hand is thus:

$$\ln(M_{n,x}) = \alpha + \beta Z_{i,j,n} + \ln(M_{c,x}) + A + \lambda K_{j,k} + \sigma S_k + \omega T_k + \nu V_j + \varepsilon \quad (6)$$

A is the credit spread between the yield on the bank prime loan rate and the 10-year treasury bonds in the month of the deal, which is used as a proxy for the cost of financing a PE deal. All other independent variables are as defined in section III. To ensure that results

are not driven by that some financial advisors always are better (worse) in obtaining relatively attractive (unattractive) prices or that some PE firms always pay relatively less (more) than other bidders I run the regression also with financial advisor and PE firm fixed effects. Before we turn to the results it should again be pointed out that the revenue and EBITDA multiples are only available for a subset of the data. Lack of availability is either due to that the transaction value is undisclosed or because the financials of the target companies are not public. The reasons for financials not being public are most often due to that the target company is divested from a larger legal entity and there are no separate public accounts for the part being sold. Whereas there are enough data points to conduct an analysis of buy-side deals, it is however not possible to do so for the sell-side deals. The following analysis is thus confined to 815 buy-side deals for the revenue multiple and 573 deals for the EBITDA multiple. Regression results for both multiple specifications are displayed in Table X. Coefficients for $M_{n,c, revenue}$ vary between -23.5% to -29.2%. When no fixed effects are used (column 1), using ones previous employer as advisor yields on average 23.5% lower prices compared to comparable transactions. The coefficient is statistically significant on the 5% level. The result is more negative for the cases where either PE firm or advisor firm fixed effects are included. The coefficients are -27.2% and -29.2% indicating that some PE firms and some advisors appear to consistently obtain relatively lower prices. With industry fixed effects the coefficient is -24.5%.

[Table X about here]

The regression results for $M_{n,c, EBITDA}$ are generally lower compared to those of $M_{n,c, revenue}$, both with and without fixed effects. The benefit of using ones previous employer as advisor yields on average -10.5% lower prices compared to comparable transactions, when

using the EBITDA measures. However, the results are not generally statistically significant at conventional levels. The coefficient is more negative when PE and advisor fixed effects are implemented. With PE firm fixed effect the coefficient of -22.2% is significant on the 5% level. Overall these results indicates that, on average, for those buy-side deals where the PE professionals mandate their old employers as advisors, the transaction price paid for the target company compared to the previous 12 months revenue is relatively lower than in comparable transactions.²⁰ However, due to the low statistical significance, no strong conclusions on the profitability multiple EV/EBITDA can be drawn.

B.2 Tobin's Q

An alternative method of examining a financial advisor's impact on prices is to analyze Tobin's Q, the ratio of the market value of a firm to the replacement cost of its assets. If Tobin's Q is consistently lower for those deals where a PE firm has been advised by their former employers this would support the pricing argument. In the data it is possible to calculate Tobin's Q for 549 buy-side transactions. Tobin's Q is calculated as the EV paid in the transaction over the total book value of assets of the target. Data on latest book values prior to the transaction are collected from Orbis. With the exception for the comparable multiples, the same independent variables as in (6) are used. OLS regression results are displayed in Table X, columns 9 to 12. The results are consistent with those of the transaction multiples analyses. Using a previous employer as advisor reduces Tobin's Q with -37.2%. The coefficient is significant on the 10% level. Coefficients are not significant when PE firm

²⁰ I run several robustness tests where I allow for different compositions of the comparison group. In the first alternative specification I allow only for deals performed in the same year and in the second specification I remove the constraint of only considering deals by PE firms. Results are similar to the base case specification and they are available upon request.

and advisor fixed effects are included: With industry fixed effects the previous employee coefficient is -47.5% and significant on the 10% level.

C. Endogeneity

To control for potential endogeneity concerns in the multiples and Tobin's Q regressions, I again instrument the PE professional indicator variable with the log of the median size of financial advisor employees in each country where a deal takes place. IV results, which are displayed in Table XI, are lower both in economic magnitude and statistical significance compared to results in Table X. Coefficients for EV/Revenue and Tobin's Q are -16.1% and -16.5% respectively and both significant on the 5% level. The coefficient for EV/EBITDA is however still not significant. First stage regressions and *F*-statistics indicate that the instrument is valid and strong for the EV/Revenue and Tobin's Q measures. Overall, after controlling for endogeneity bias, the prices paid in transactions within the previous employment network are statistically lower than for those deals outside the network.

[Table XI about here]

D. Discussion

The revenue multiple and Tobin's Q results indicate that when financial advisors are matched with their former employees, they negotiate deals with relatively lower prices. However, due to lack of company data I cannot control directly for whether some firms within an industry are inferior companies. Companies that are inferior relative to the control groups should be sold at lower prices to reflect their lower potential for earnings generation. Another concern is the low statistical significance of the profitability multiple EV/EBITDA. The results on deal sourcing are however statistically strong and robust indicating that PE firms hire their

former employers as advisors because of the beneficial treatment they receive from advisors in sell-side roles. It is conceivable that beneficial advisors disperse information to their old employees to induce bidding or present favorable opinions regarding the PE bidder to sellers. A potential concern for a winner of an auction is that of the winner's curse; that the highest and winning bidder in an auction paid too much. As I don't have return data of the acquired firms I cannot directly address the question of whether winner's curse is present in my transactions. However, it is of particular interest to discuss the findings of Boone and Mulherin (2008) as they study the private bidding processes prior to the announcement of the deal. Though a range of studies²¹ has discussed the winner's curse the empirical study conducted in Boone and Mulherin (2008) is the one that offers the closest comparison with the settings in this paper. For a sample of 308 major takeovers announced in the 1989 to 1999 period they find evidence against the winner's curse after controlling for endogeneity between bidder returns and takeover competition. Further, they also find that prestigious investment banks hired by the bidder do not promote the winner's curse. Nevertheless, truly addressing this issue remains an empirical question that can be addressed only as data becomes available for my sample.

VII. Conclusions

The PE industry is characterized by private information. This paper shows that personal networks between the individuals working as PE professionals and financial advisor firms, the gatekeepers of information, greatly affect the economics of the industry on a deal level.

²¹ See for example McAfee and McMillan (1987), Laffont (1997) and Klemperer (1999) for surveys on the topic.

As the first paper to explore the importance of having former employees as clients and the benefits arising from such social networks, the central finding is that the likelihood that a financial advisor is mandated to advise on either a buy-side or sell-side transaction for a PE firm is increased by 2.8 pp. from 3.6% to 6.4% if the PE professionals responsible on the deal team have previously worked for the financial advisor. Results are statistically significant and accounting for potential endogeneity bias does not explain away these results.

Also PE firms benefit from the networks. Analysis of transaction multiples and Tobin's Q indicates that PE firms pay less in transactions in which they are advised by their former employers compared to other deals. Enterprise values over revenue multiples are 23.5% lower in network deals. I also find strong support for that financial advisors source deals to their former employees who now work as PE professionals. PE firms both participate in auctions and win these auctions to a larger extent if the financial advisor of the selling party is the former employer of professionals at the PE firm. There is a 19.0 pp. higher probability to be included in the bidding process and a 13.5 pp. higher probability of winning the auction for firms inside the network.

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Table I. Summary of data

Overview of the 1,285 PE transactions obtained from the Mergermarket database over the period 1998 to 2007.

	All		Buy-side		Sell-side		
	#	Percentage	#	Percentage	#	Percentage	
Deals	1285	100	968	75.33	317	24.67	
Size (EURm)	< 100	394	30.66	326	33.68	68	21.45
	100 – 500	402	31.28	280	28.93	122	38.49
	500 – 1000	126	9.81	89	9.19	37	11.67
	1000 <	149	11.60	120	12.40	29	9.15
	Not disclosed	214	16.65	153	15.81	61	19.24
Region	Europe	1212	94.32	906	93.60	306	96.53
	North America	57	4.44	48	4.96	9	2.84
	Rest of world	16	1.25	14	1.45	2	0.63
Deal type	Public-to-private			30	3.10		
	Private-to-private			938	96.90		
	Trade sales					137	43.22
	Secondary buyout					180	56.78
Mandates	Total	1721	100	1351	78.50	370	21.50
	# PE house	153		147		79	
	# Advisor	355		229		78	
Multiple advisors	1 advisor	932	72.53	668	69.01	264	27.27
	2 advisors	269	20.93	221	22.83	48	4.96
	3 advisors	66	5.14	62	6.40	4	0.41
	4 advisors	18	1.40	17	1.76	1	0.10
Advisor type	Investment bank	758	44.04	536	39.67	222	60.00
	Corporate finance at accounting firm	542	31.49	480	35.53	62	16.76
	Corporate finance boutique	421	24.46	335	24.80	86	23.24
Advisor ranking	Top 10 ranked	490	28.47	335	24.80	155	41.89
	Rank 11-25	507	29.46	436	32.27	71	19.19
	26 and lower	724	42.07	580	42.93	144	38.92

Table II. PE professionals, descriptive data

Experience details the areas in which individuals have previously worked prior to their PE appointment. An individual can have experience from more than one sector and from several financial advisors with different ranking. Seniority is indicated through level designations with Level 1 being the most senior. For those individuals who have previously upheld a position with a financial advisory firm, the total number of financial advisory workplaces is detailed according to league table rankings and type. Advisor rankings are based on total transaction values over the period 1998 to 2007.

PE professionals' experience			PE professionals' seniority		
	#	Percentage		#	Percentage
Financial advisor	883	58.67	Level 1	2203	82.45
Operational	256	17.01	Level 2	343	12.84
Consultancy	185	12.29	Level 3	96	3.59
Directly to PE	88	5.85	Level 4	30	1.12
Other	93	6.18			
Total	1505	100.00	Total	2672	100.00
Financial advisor ranking			Financial advisor type		
	#	Percentage		#	Percentage
Top 10 ranked	365	33.21	Investment bank	699	63.60
Rank 11-25	260	23.66	Corporate finance at accounting firm	323	29.39
Rank 26 and lower	474	43.13	Corporate finance boutique	77	7.01
Total	1099	100.00	Total	1099	100.00

Table III. Correlation matrix

The estimation data set consists of 1,285 buy- and sell-side transactions over the period January 1998 to May 2007 of which a total of 355 financial advisors are deemed to compete to receive a mandate. For each deal, a financial advisor is considered as a candidate for receiving a mandate if it; 1) has at least once performed advisory business with the PE firm during the sample period, 2) is able to carry out advisory work within a deal's geographic region. There are a total of 36,832 such advisor-deal pairs. This matrix show the correlation between the main explanatory variables used. *Previous employee* is an indicator variable taking the value one if the PE deal team member has previously worked for the financial advisor. *Ln(Debt interaction)* measures the percentage ratio of the number of times a financial advisor has provided debt financing to the PE firm within the previous five years. *Ln(Previous interaction)* measures the percentage ratio of the number of times a financial advisor has advised on a deal with the PE firm within the previous five years. *Ln(Advisor rank)* is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* is an indicator for if the financial advisor is among the top ten in the transaction league table for the specific industry sector. *Ln(Geographic distance)* is the natural logarithm of the distance in km between the capital of the transaction country and the capital of the nearest country in which the financial advisor has an office. *Ln(PE firm size)* is the natural logarithm of the total investment funds at the PE firm over the sample period. *Ln(# PE firm deals)* and *Ln(# Advisor deals)* are the natural logarithms of the number of deals performed by the PE firms and financial advisors, respectively, over the sample period.

		Correlation matrix								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Previous employee	1.000								
(2)	Ln(Debt interaction)	0.029	1.000							
(3)	Ln(Previous interaction)	0.061	0.028	1.000						
(4)	Ln(Advisor rank)	0.056	0.218	0.077	1.000					
(5)	Expertise	0.107	0.370	0.072	0.167	1.000				
(6)	Ln(Geographic distance)	-0.060	-0.099	0.001	-0.126	-0.133	1.000			
(7)	Ln(PE firm size)	-0.061	0.101	0.010	-0.010	0.028	0.134	1.000		
(8)	Ln(# PE firm deals)	-0.099	-0.108	0.007	-0.121	-0.149	0.121	0.599	1.000	
(9)	Ln(# Advisor deals)	0.151	0.393	0.138	0.546	0.451	-0.276	-0.078	-0.250	1.000

Table IV. Previous employment indicator variable

The estimation data set consists of 1,285 buy- and sell-side transactions over the period January 1998 to May 2007 of which a total of 355 financial advisors are deemed to compete to receive a mandate. For each deal, a financial advisor is considered as a candidate for receiving a mandate if it; 1) has at least once performed advisory business with the PE firm during the sample period, 2) is able to carry out advisory work within a deal's geographic region. There are a total of 36,832 such advisor-deal pairs. The columns headed Mandated refer to the advisor-deal pairs with financial advisors that were awarded a mandate, while the column headed Non-mandated refers to advisors that were candidates for an advisor mandate but did not receive it. *Previous employee* is an indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor. The *t*-tests are of the differences in fractions comparing Mandated to Non-mandated advisors. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%.

	All			Buy-side			Sell-side		
	Mandated	Non-mandated	<i>t</i> -test	Mandated	Non-mandated	<i>t</i> -test	Mandated	Non-mandated	<i>t</i> -test
Observations	1721	35111		1351	25054		370	10057	
# Previous employee	125	777		102	599		23	178	
Percentage	7.26%	2.21%	7.82***	7.55%	2.39%	7.05***	6.22%	1.77%	3.49***

Table V. Mandate winning characteristic

Panels A, B and C report marginal results from probit regressions on a sample of 1,285 buy- and sell-side transactions over the period January 1998 to May 2007. For each deal, a financial advisor is considered as a candidate for receiving a mandate if it; 1) has at least once performed advisory business with the PE firm during the sample period, 2) is able to carry out advisory work within a deal's geographic region. For columns 4 (5) only top 25 (below top 25) advisors are included in the candidate set. The dependent variable equals one if a financial advisor is mandated for a deal. *Previous employee (Senior previous employee)* is an indicator variable taking the value one if a PE deal team member (the deal team member of the highest level) has previously worked for the financial advisor. *Ln(Debt interaction)* measures the percentage ratio of the number of times a financial advisor has provided debt financing to the PE firm within the previous five years. *Ln(Prev. interaction)* measures the percentage ratio of the number of times a financial advisor has advised on a deal with the PE firm within the previous five years. *Ln(Advisor rank)* is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* is an indicator for if the financial advisor is among the top ten in the transaction league table for the specific industry sector. *Ln(Geogr. distance)* is the natural logarithm of the distance in km between the capital of the transaction country and the capital of the nearest country in which the financial advisor has an office. *Ln(PE firm size)* is the natural logarithm of the total investment funds at the PE firm over the sample period. *Ln(# PE firm deals)* and *Ln(# Advisor deals)* are the natural logarithms of the number of deals performed by the PE firms and financial advisors, respectively, over the sample period. Coefficients for marginal effects are shown for each indicator and continuous variable. Wald *F*-statistic of the differences across the coefficients in Panels B and C are reported in Panel C. Robust standard errors, clustered on PE firm, are in parentheses. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%.

Table V (continued)

	Panel A – All deals											
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		All advisors			Top 25 advisors	Below 25 advisors	Sole advisor	Joint advisor	Top 25 PE firms	Below 25 PE firms	1998 – 2003	2004-2007
Previous employee		0.028***			0.044***	0.041***	0.027***	0.027*	0.030***	0.053***	0.034***	0.024***
S:r previous employee		(0.007)		0.027***	(0.012)	(0.014)	(0.008)	(0.017)	(0.010)	(0.015)	(0.011)	(0.009)
Ln(Debt interaction)	0.014***	0.014***	0.014***	0.024***	0.014***	0.012***	0.020***	0.005	0.030***	-0.020**	0.028***	
Ln(Prev. interaction)	(0.004)	(0.004)	(0.004)	(0.009)	(0.003)	(0.004)	(0.007)	(0.004)	(0.005)	(0.009)	(0.006)	
Ln(Advisor rank)	0.014**	0.015**	0.015**	-0.016	0.017**	0.009*	0.042***	0.004	0.055***	-0.009	-0.003	
	(0.006)	(0.006)	(0.006)	(0.015)	(0.007)	(0.004)	(0.015)	(0.006)	(0.016)	(0.006)	(0.002)	
Expertise	-0.006*	-0.006*	-0.006*			-0.003	-0.018**	-0.006	-0.003	0.009	0.007*	
	(0.003)	(0.003)	(0.003)			(0.002)	(0.008)	(0.004)	(0.007)	(0.007)	(0.004)	
Ln(Geogr. distance)	0.008**	0.007**	0.007**			0.000	0.027***	0.012*	-0.001	-0.002**	-0.003***	
	(0.004)	(0.004)	(0.004)			(0.003)	(0.008)	(0.007)	(0.006)	(0.001)	(0.001)	
Ln(PE firm size)	-0.003***	-0.003***	-0.003***	-0.005***	-0.004***	-0.002***	-0.006***	-0.002***	-0.006***	-0.003**	-0.004***	
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	
Ln(# PE firm deals)	-0.003***	-0.003***	-0.003***	0.003	-0.007***	-0.005***	-0.011***			-0.016***	-0.018***	
	(0.001)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.003)			(0.002)	(0.002)	
Ln(# Advisor deals)	-0.018***	-0.017***	-0.017***	-0.032***	-0.013***	-0.010***	-0.026***			0.009***	0.008***	
	(0.002)	(0.002)	(0.002)	(0.004)	(0.002)	(0.001)	(0.005)			(0.002)	(0.001)	
Year fixed effects	0.009***	0.009***	0.009***			0.007***	0.013***	0.009***	0.012***	0.034***	0.024***	
	(0.001)	(0.001)	(0.001)			(0.001)	(0.003)	(0.001)	(0.001)	(0.011)	(0.009)	
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PE firm cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	36832	36832	36832	11981	25577	27206	9626	19278	17554	10479	26353	

Table V. (continued)

	Panel B – Buy-side deals											
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		All advisors			Top 25 advisors	Below 25 advisors	Sole advisor	Joint advisor	Top 25 PE firms	Below 25 PE firms	1998 – 2003	2004-2007
Previous employee		0.031***			0.044***	0.047***	0.034***	0.024	0.025**	0.068***	0.032***	0.028***
		(0.009)			(0.015)	(0.016)	(0.009)	(0.019)	(0.012)	(0.016)	(0.011)	(0.011)
S:r previous employee			0.029***									
			(0.008)									
Ln(Debt interaction)	0.021***	0.021***	0.021***	0.040***	0.016***	0.019***	0.026***	0.008**	0.041***	-0.016*	0.038***	
	(0.004)	(0.004)	(0.004)	(0.009)	(0.004)	(0.004)	(0.007)	(0.004)	(0.006)	(0.009)	(0.008)	
Ln(Prev. interaction)	0.020***	0.021***	0.021***	-0.017	0.026***	0.012**	0.052***	0.009	0.064***	-0.011	-0.005	
	(0.007)	(0.007)	(0.007)	(0.017)	(0.009)	(0.005)	(0.017)	(0.009)	(0.019)	(0.007)	(0.003)	
Ln(Advisor rank)	-0.008*	-0.008*	-0.008*			-0.004	-0.022**	-0.005	-0.006	0.011	0.004	
	(0.005)	(0.005)	(0.005)			(0.003)	(0.011)	(0.008)	(0.009)	(0.007)	(0.006)	
Expertise	0.007	0.006	0.006			-0.004	0.027***	0.014	-0.006	-0.001	-0.004***	
	(0.005)	(0.005)	(0.005)			(0.004)	(0.010)	(0.008)	(0.007)	(0.001)	(0.001)	
Ln(Geogr. distance)	-0.003***	-0.003***	-0.003***	-0.003	-0.005***	-0.003***	-0.006***	-0.002***	-0.007***	-0.003*	-0.002	
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	
Ln(PE firm size)	-0.002	-0.002	-0.002	0.005	-0.006***	-0.003***	-0.011***			-0.017***	-0.022***	
	(0.002)	(0.001)	(0.001)	(0.004)	(0.002)	(0.001)	(0.003)			(0.003)	(0.002)	
Ln(# PE firm deals)	-0.021***	-0.021***	-0.021***	-0.033***	-0.016***	-0.013***	-0.029***			0.010***	0.008***	
	(0.002)	(0.002)	(0.002)	(0.005)	(0.002)	(0.002)	(0.006)			(0.002)	(0.002)	
Ln(# Advisor deals)	0.009***	0.009***	0.009***			0.007***	0.014***	0.010***	0.012***	0.032***	0.028***	
	(0.002)	(0.002)	(0.002)			(0.001)	(0.003)	(0.001)	(0.002)	(0.011)	(0.011)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PE firm cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	26405	26405	26405	8745	18173	18504	7901	13193	13212	8856	17549	

Table V. (continued)

	Panel C – Sell-side deals											
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		All advisors			Top 25 advisors	Below 25 advisors	Sole advisor	Joint advisor	Top 25 PE firms	Below 25 PE firms	1998 – 2003	2004-2007
Previous employee		0.019*			0.045**	0.027	0.014	0.030	0.043***	0.003	0.049	0.015
		(0.014)			(0.028)	(0.032)	(0.012)	(0.031)	(0.017)	(0.018)	(0.035)	(0.015)
S:r previous employee			0.022**									
			(0.015)									
Ln(Debt interaction)	0.000	-0.000	-0.000	-0.021	0.010**	0.001	-0.003	0.001	0.000	-0.034***	0.001	0.001
	(0.006)	(0.005)	(0.005)	(0.013)	(0.005)	(0.005)	(0.009)	(0.007)	(0.005)	(0.012)	(0.006)	(0.006)
Ln(Prev. interaction)	0.001	0.002	0.002	-0.011	0.001	0.002	0.004	-0.007	0.025*	-0.001	0.009	0.009
	(0.005)	(0.005)	(0.005)	(0.016)	(0.005)	(0.005)	(0.022)	(0.006)	(0.013)	(0.010)	(0.006)	(0.006)
Ln(Advisor rank)	-0.001	-0.001	-0.000			0.003	-0.011	-0.007	0.008	0.005	-0.001	-0.001
	(0.005)	(0.005)	(0.005)			(0.005)	(0.011)	(0.008)	(0.010)	(0.010)	(0.005)	(0.005)
Expertise	0.011**	0.011**	0.011**			0.007*	0.028*	0.010	0.012	-0.004**	0.012**	0.012**
	(0.005)	(0.005)	(0.005)			(0.004)	(0.015)	(0.007)	(0.009)	(0.002)	(0.005)	(0.005)
Ln(Geogr. distance)	-0.002***	-0.002***	-0.002***	-0.008***	-0.002**	-0.001	-0.008***	-0.002***	-0.002	-0.004**	-0.001**	-0.001**
	(0.001)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)	(0.000)	(0.002)	(0.002)	(0.001)	(0.001)
Ln(PE firm size)	-0.006***	-0.007***	-0.007***	-0.003	-0.008***	-0.007***	-0.008***	-0.008***		-0.008***	-0.007***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.004)	(0.001)	(0.001)	(0.003)			(0.002)	(0.001)	(0.001)
Ln(# PE firm deals)	-0.008***	-0.008***	-0.008***	-0.027***	-0.005***	-0.005***	-0.011***			0.004***	-0.007***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.001)	(0.003)			(0.001)	(0.002)	(0.002)
Ln(# Advisor deals)	0.008***	0.007***	0.007***			0.007***	0.011***	0.006***	0.012***	0.049	0.008***	0.008***
	(0.001)	(0.001)	(0.001)			(0.001)	(0.004)	(0.001)	(0.002)	(0.035)	(0.001)	(0.001)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PE firm cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10427	10427	10427	3236	7404	8702	1725	6085	4342	1623	8804	8804
F-statistic; panels B:C	2.942***	1.978***	4.342***	94.397***	2,637***	5.457***	16.361***	257.10***	5.21***	6.54***	12.69***	12.69***

Table VI. Mandate winning characteristic, instrumental variables

This table reports results from IV regressions performed on a sample of 1,285 buy- and sell-side transactions over the period January 1998 to May 2007. For each deal, a financial advisor is considered as a candidate for receiving a mandate if it; 1) has at least once performed advisory business with the PE firm during the sample period, 2) is able to carry out advisory work within a deal's geographic region. The dependent variable equals one if a financial advisor is mandated for a deal. *Previous employee* is an indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor. *Ln(Debt interaction)* measures the percentage ratio of the number of times a financial advisor has provided debt financing to the PE firm within the previous five years. *Ln(Previous interaction)* measures the percentage ratio of the number of times a financial advisor has advised on a deal with the PE firm within the previous five years. *Ln(Advisor rank)* is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* is an indicator for if the financial advisor is among the top ten in the transaction league table for the specific industry sector. *Ln(Geographic distance)* is the natural logarithm of the distance in km between the capital of the transaction country and the capital of the nearest country in which the financial advisor has an office. *Ln(PE firm size)* is the natural logarithm of the total investment funds at the PE firm over the sample period. *Ln(# PE firm deals)* and *Ln(# Advisor deals)* are the natural logarithms of the number of deals performed by the PE firms and financial advisors, respectively, over the sample period. Columns 1 to 6 display IV first and second stage regressions. The instrument is *Ln(Median # of employees)*, the log of the median number of corporate finance employees on a country level. Robust standard errors, clustered on PE firm, in parentheses. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%.

	All deals		Buy-side		Sell-side	
	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage
Previous employee		0.058*** (0.012)		0.061*** (0.013)		0.046** (0.023)
Ln(Debt interaction)	0.013*** (0.002)	0.020*** (0.002)	0.013*** (0.002)	0.027*** (0.003)	0.012*** (0.003)	-0.000 (0.004)
Ln(Previous interaction)	0.025*** (0.003)	0.023*** (0.004)	0.028*** (0.004)	0.031*** (0.006)	0.018*** (0.005)	0.004 (0.007)
Ln(Advisor rank)	-0.009*** (0.002)	-0.008*** (0.002)	-0.010*** (0.003)	-0.010*** (0.003)	-0.007** (0.003)	-0.004** (0.002)
Expertise	0.020*** (0.002)	0.015*** (0.004)	0.020*** (0.003)	0.010** (0.005)	0.018*** (0.004)	0.029*** (0.007)
Ln(Geographic distance)	-0.000 (0.000)	-0.003*** (0.000)	-0.000 (0.000)	-0.003*** (0.001)	-0.001 (0.001)	-0.002** (0.001)
Ln(PE firm size)	-0.002*** (0.001)	-0.006*** (0.002)	-0.002*** (0.001)	-0.005** (0.002)	-0.001 (0.002)	-0.012*** (0.004)
Ln(# PE firm deals)	0.008*** (0.001)	-0.020*** (0.001)	0.008*** (0.001)	-0.023*** (0.002)	0.008*** (0.002)	-0.009*** (0.003)
Ln(# Advisor deals)	0.010*** (0.001)	0.009*** (0.001)	0.011*** (0.001)	0.010*** (0.001)	0.009*** (0.001)	0.007*** (0.001)
Ln(Median # of employees)	0.203*** (0.000)		0.201*** (0.001)		0.211*** (0.008)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
PE firm cluster	Yes	Yes	Yes	Yes	Yes	Yes
Observations	36832	36832	26405	26405	10427	10427
First stage <i>F</i> -statistic	12.324***		14.123***		10.231***	

Table VII. PE Professionals and advisors in multiple deals

The table reports the total share of transactions a financial advisor is included in conditional on being mandated for at least more than one transaction with the same PE professional. Only cases where a PE professional has a background as corporate financier are included. Two-sample *t*-test with unequal variances reported. Standard errors in parenthesis. * denotes significance at 10%; **denotes significance at 5%; ***denotes significance at 1%

	Previous employee	Not a previous employee	<i>t</i>-test
Mean	0.709* (0.080)	0.536* (0.071)	-1.625*
Observations	19	12	

Table VIII. Mandate winning characteristic, robustness test

This table reports results from probit regressions performed on a sample of 941 buy- and sell-side transactions over the period January 1998 to May 2007 which have been advised by a top 50 ranked financial advisor. Marginal effects are reported. For each deal, a financial advisor is considered as a candidate for receiving a mandate if it; 1) is able to carry out advisory work within a deal's geographic region 2) is a top 50 ranked advisor. There are a total of 47,050 such advisor-deal pairs. The dependent variable equals one if a financial advisor is mandated for a deal. *Previous employee* is an indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor. *Ln(Debt interaction)* measures the percentage ratio of the number of times a financial advisor has provided debt financing to the PE firm within the previous five years. *Ln(Previous interaction)* measures the percentage ratio of the number of times a financial advisor has advised on a deal with the PE firm within the previous five years. *Ln(Advisor rank)* is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* is an indicator for if the financial advisor is among the top ten in the transaction league table for the specific industry sector. *Ln(Geographic distance)* is the natural logarithm of the distance in km between the capital of the transaction country and the capital of the nearest country in which the financial advisor has an office. *Ln(PE firm size)* is the natural logarithm of the total investment funds at the PE firm over the sample period. *Ln(# PE firm deals)* and *Ln(#Advisor deals)* are the natural logarithms of the number of deals performed by the PE firms and financial advisors, respectively, over the sample period. Coefficients for marginal effects are shown for each indicator and continuous variable. Robust standard errors, clustered on PE firm, are in parentheses. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%.

	(1) All	(2) Buy-side	(3) Sell-side
Previous employee	0.016*** (0.004)	0.013*** (0.004)	0.019** (0.010)
Ln(Debt interaction)	0.006*** (0.001)	0.006*** (0.002)	0.002 (0.002)
Ln(Previous interaction)	0.014*** (0.002)	0.016*** (0.003)	0.003 (0.003)
Ln(Advisor rank)	-0.005*** (0.001)	-0.005*** (0.001)	-0.006*** (0.002)
Expertise	0.001 (0.001)	-0.000 (0.001)	0.006** (0.003)
Ln(Geographic distance)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Ln(PE firm size)	0.001*** (0.000)	0.001*** (0.000)	0.001** (0.000)
Ln(# PE firm deals)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001*** (0.000)
Ln(# Advisor deals)	0.012*** (0.001)	0.011*** (0.001)	0.012*** (0.001)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
PE firm cluster	Yes	Yes	Yes
Observations	47050	35050	11950

Table IX. Deal sourcing

Regressions are performed on a sample of 203 auctions over the period January 1998 to May 2007. For Bidding Inclusion a PE firm is considered as a potential bidder if it is in the Mergermarket data as a bidder for any of the deals and has been active in the transaction region. For Winning a PE firm is considered as a bidder if listed as such for that deal. Dependent variable equals one if a PE firm is bidding in (winning) an auction. Columns 2 and 3 report first and second stage regressions using the instrument $\ln(\text{Median \# of employees})$ is the log of the median number of corporate finance employees on a country level. Previous employee is an indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor. $\ln(\text{Previous interaction})$ measures the percentage ratio of the number of times a financial advisor has advised on a deal with the PE firm within the previous five years. $\# \text{ Bidders}$ is the number of all bidders including both trade buyers and PE firms. $\# \text{ Sell-side advisors}$ is the number of sell-side financial advisors for each deal. $\ln(\text{Geographic distance})$ is the natural logarithm of the distance in km between the capital of the transaction country and the capital of the nearest country in which the PE firm has an office. $\ln(\text{PE firm size})$ is the natural logarithm of the total investment funds at the PE firm over the sample period. $\ln(\# \text{ PE firm deals})$ is the natural logarithm of the number of deals performed by the PE firms over the sample period. Robust standard errors, clustered on PE firm, are in parentheses. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%

	(1)	(2)	(3)	(4)	(5)	(6)
	Marginal effects	Bidding Inclusion IV: 1-stage	IV: 2-stage	Marginal effects	Winning IV: 1-stage	IV: 2-stage
Previous employee	0.190*** (0.026)		0.109* (0.042)	0.135*** (0.041)		0.073* (0.032)
$\ln(\text{Previous interaction})$	0.007* (0.004)	0.004 (0.004)	0.016 (0.009)	0.007 (0.019)	0.003 (0.003)	0.008 (0.004)
$\# \text{ Bidders}$	0.002*** (0.000)	0.002 (0.001)	0.004*** (0.000)	-0.012*** (0.002)	-0.003 (0.002)	-0.002* (0.001)
$\# \text{ Sell-side advisors}$	0.018*** (0.002)	0.025** (0.009)	0.042*** (0.004)	-0.044** (0.019)	-0.041*** (0.009)	-0.024* (0.008)
$\ln(\text{Geographic distance})$	0.016*** (0.004)	-0.000 (0.000)	0.033*** (0.009)	0.008 (0.016)	0.000 (0.000)	0.003 (0.009)
$\ln(\text{PE firm size})$	0.014*** (0.002)	0.021*** (0.001)	0.036*** (0.007)	0.009 (0.021)	0.011*** (0.001)	0.006 (0.017)
$\ln(\# \text{ PE firm deals})$	0.016*** (0.004)	0.029*** (0.007)	0.015*** (0.004)	0.007 (0.021)	0.024*** (0.007)	0.019 (0.023)
$\ln(\text{Median \# of employees})$		0.190** (0.082)			0.105** (0.032)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
PE firm cluster	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15381	15381	15381	988	988	988
First stage F -statistic		13.237***			10.342**	

Table X. Transaction-multiples regressions

Regressions are performed on a sample of 815, 573 and 549 transactions over the period January 1998 to May 2007 for EV/revenue multiples, EV/EBITDA multiples and Tobin's-Q. *Previous employee* is an indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor. $\ln(\text{Comp EV/revenue})$ and $\ln(\text{Comp EV/EBITDA})$ are transaction multiples for a comparison group calculated as the simple average of deals done by PE firms in the same industry, same geographic area and in the same size range over a three year period consisting of the year before, the present year and the year after each deal. *Spread* is the credit spread between the yield on the bank prime loan rate and the 10-year treasury bonds in the month of the deal. $\ln(\text{Advisor rank})$ is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* is an indicator for if the financial advisor is among the top ten in the transaction league table for the specific industry sector. $\ln(\text{Geographic distance})$ is the natural logarithm of the distance in km between the capital of the transaction country and the capital of the nearest country in which the financial advisor has an office. $\ln(\text{PE firm size})$ is the natural logarithm of the total investment funds at the PE firm over the sample period. $\ln(\# \text{ PE firm deals})$ and $\ln(\# \text{ Advisor deals})$ are the natural logarithms of the number of deals performed by the PE firms and financial advisors, respectively, over the sample period. Industry fixed effects comprise 28 different industries. Robust standard errors are in parentheses. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
		EV/Revenue				EV/EBITDA				Tobin's Q			
Previous employee	-0.235** (0.110)	-0.272** (0.112)	-0.292** (0.126)	-0.245** (0.108)	-0.105 (0.104)	-0.222** (0.113)	-0.120 (0.124)	-0.106 (0.099)	-0.373** (0.174)	-0.375 (0.292)	-0.308 (0.206)	-0.457** (0.209)	
Ln(Comp EV/revenue)	0.509*** (0.066)	0.455*** (0.076)	0.495*** (0.072)	0.311*** (0.087)									
Ln(Comp EV/EBITDA)					0.139* (0.076)	0.200*** (0.075)	0.095* (0.055)	0.100 (0.105)					
Spread	-0.035 (0.065)	-0.031 (0.069)	-0.017 (0.073)	-0.022 (0.065)	0.072 (0.066)	0.035 (0.082)	0.047 (0.087)	0.096 (0.073)	-0.170 (0.168)	-0.306 (0.197)	-0.177 (0.207)	-0.117 (0.185)	
Ln(Advisor rank)	0.235 (0.169)	0.121 (0.197)	10.158*** (2.514)	0.302* (0.162)	0.304* (0.173)	0.462* (0.238)	0.000 (0.000)	0.348** (0.162)	1.545** (0.761)	0.777 (0.667)	11.813* (6.737)	1.657* (0.905)	
Expertise	0.299*** (0.067)	0.233*** (0.071)	0.245** (0.117)	0.257*** (0.068)	0.076 (0.067)	0.064 (0.075)	0.072 (0.120)	0.044 (0.064)	0.571 (0.416)	0.274 (0.432)	-0.052 (0.279)	0.677 (0.484)	
Ln(Geographic distance)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	
Ln(PE firm size)	0.025 (0.034)	-0.362*** (0.137)	-0.017 (0.048)	0.033 (0.037)	0.021 (0.031)	-1.652*** (0.371)	0.014 (0.042)	0.030 (0.033)	-0.176 (0.185)	0.133 (0.365)	-0.212 (0.259)	-0.173 (0.181)	
Ln(# PE firm deals)	0.008 (0.039)	0.606*** (0.211)	0.024 (0.051)	-0.002 (0.042)	-0.034 (0.038)	3.809*** (1.112)	-0.016 (0.047)	-0.055 (0.037)	0.250** (0.106)	-1.842 (1.459)	0.362** (0.177)	0.192* (0.107)	
Ln(# Advisor deals)	-0.048** (0.022)	-0.050** (0.023)	0.056** (0.024)	-0.055*** (0.021)	0.002 (0.026)	-0.021 (0.030)	-0.005 (0.033)	0.004 (0.028)	-0.218 (0.133)	-0.131 (0.116)	0.094** (0.045)	-0.206 (0.136)	
Constant	-1.741 (1.254)	-0.103 (1.759)	-76.402** (18.804)	-2.267* (1.229)	-0.995 (1.290)	-2.943 (2.067)	1.917*** (0.522)	-0.906 (1.129)	-9.755** (4.587)	0.358 (5.617)	-89.448* (50.986)	-10.740** (5.327)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PE firm fixed effects	No	Yes	No	No	No	Yes	No	No	No	Yes	No	No	
Advisor fixed effects	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No	
Industry fixed effects	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes	
R-squared	0.26	0.22	0.25	0.17	0.15	0.17	0.15	0.14	0.09	0.10	0.10	0.09	
Observations	851	851	851	851	573	573	573	573	549	549	549	549	

Table XI. Transaction-multiples, instrumental variables

Regressions are performed on a sample of 815, 573 and 549 transactions over the period January 1998 to May 2007 for EV/revenue multiples, EV/EBITDA multiples and Tobin's-Q. IV first and second stage regressions are reported. The instrument $\ln(\text{Median \# of employees})$ is the log of the median number of corporate finance employees on a country level. *Previous employee* is an indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor. $\ln(\text{Comp EV/revenue})$ and $\ln(\text{Comp EV/EBITDA})$ are transaction multiples for a comparison group calculated as the simple average of deals done by PE firms in the same industry, same geographic area and in the same size range over a three year period consisting of the year before, the present year and the year after each deal. *Spread* is credit spread between the yield on the bank prime loan rate and the 10-year treasury bonds in the month of the deal. $\ln(\text{Advisor rank})$ is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* is an indicator for if the financial advisor is among the top ten in the transaction league table for the specific industry sector. $\ln(\text{Geographic distance})$ is the natural logarithm of the distance in km between the capital of the transaction country and the capital of the nearest country in which the financial advisor has an office. $\ln(\text{PE firm size})$ is the natural logarithm of the total investment funds at the PE firm over the sample period. $\ln(\text{\# PE firm deals})$ and $\ln(\text{\# Advisor deals})$ are the natural logarithms of the number of deals performed by the PE firms and financial advisors, respectively, over the sample period. Robust standard errors are in parentheses. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%.

	(1)		(2)		(5)		(6)		(9)		(10)	
	EV/Revenue		EV/EBITDA		EV/EBITDA		Tobin's Q		Tobin's Q		Tobin's Q	
	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage
Previous employee		-0.161*		-0.425		-0.425		-0.165*		-0.165*		-0.165*
		(0.093)		(0.428)		(0.428)		(0.094)		(0.094)		(0.094)
$\ln(\text{Comp EV/revenue})$	-0.025	0.478***										
	(0.016)	(0.079)										
$\ln(\text{Comp EV/EBITDA})$			0.000	0.139*		0.139*						
			(0.016)	(0.076)		(0.076)						
Spread	-0.014	-0.056	-0.001	0.073	-0.001	0.073	-0.017	-0.193	-0.017	-0.193	-0.017	-0.193
	(0.021)	(0.075)	(0.024)	(0.067)	(0.024)	(0.067)	(0.021)	(0.174)	(0.021)	(0.174)	(0.021)	(0.174)
$\ln(\text{Advisor rank})$	0.067	0.327*	0.051	0.322*	0.051	0.322*	0.0602	0.162**	0.0602	0.162**	0.0602	0.162**
	(0.068)	(0.187)	(0.083)	(0.174)	(0.083)	(0.174)	(0.0682)	(0.072)	(0.0682)	(0.072)	(0.0682)	(0.072)
Expertise	0.043*	0.355***	0.046	0.091	0.046	0.091	0.004*	0.620	0.004*	0.620	0.004*	0.620
	(0.024)	(0.094)	(0.028)	(0.066)	(0.028)	(0.066)	(0.0243)	(0.390)	(0.0243)	(0.390)	(0.0243)	(0.390)
$\ln(\text{Geographic distance})$	0.000*	0.000	0.000**	0.000	0.000**	0.000	0.000**	-0.000	0.000**	-0.000	0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$\ln(\text{PE firm size})$	-0.006	0.016	-0.002	0.019	-0.002	0.019	-0.007	-0.184	-0.007	-0.184	-0.007	-0.184
	(0.010)	(0.037)	(0.012)	(0.032)	(0.012)	(0.032)	(0.010)	(0.178)	(0.010)	(0.178)	(0.010)	(0.178)
$\ln(\text{\# PE firm deals})$	-0.024**	-0.027	-0.025*	-0.042	-0.025*	-0.042	-0.024**	0.218	-0.024**	0.218	-0.024**	0.218
	0.015	(0.055)	(0.014)	(0.038)	(0.014)	(0.038)	(0.012)	(0.140)	(0.012)	(0.140)	(0.012)	(0.140)
$\ln(\text{\# Advisor deals})$	0.015**	-0.026	0.0130	0.006	0.0130	0.006	0.015**	-0.198	0.015**	-0.198	0.015**	-0.198
	(0.007)	(0.033)	(0.008)	(0.027)	(0.008)	(0.027)	(0.007)	(0.153)	(0.007)	(0.153)	(0.007)	(0.153)
Constant	-0.146	-2.383*	-0.272	-0.642	-0.272	-0.642	-0.066	-0.778*	-0.066	-0.778*	-0.066	-0.778*
	(0.505)	(1.251)	(0.611)	(1.250)	(0.611)	(1.250)	(0.503)	(0.454)	(0.503)	(0.454)	(0.503)	(0.454)
$\ln(\text{Median \# of employees})$	0.053**		0.027*		0.027*		0.049**		0.049**		0.049**	
	(0.026)		(0.010)		(0.010)		(0.026)		(0.026)		(0.026)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.08	0.10	0.12	0.14	0.12	0.14	0.10	0.11	0.10	0.11	0.10	0.11
Observations	851	851	573	573	573	573	549	549	549	549	549	549
First stage F-statistics	11.293***		8.923*		8.923*		13.230***		13.230***		13.230***	