

Private Equity and Advisors in Mergers and Acquisitions



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Private Equity and Advisors in Mergers and Acquisitions

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EFI THE ECONOMIC RESEARCH INSTITUTE



Dissertation for the Degree of Doctor of Philosophy, Ph.D.
Stockholm School of Economics 2010.

Keywords: private equity, financial advisors, mergers and acquisitions, social networks, former employees, financial intermediation, corporate control, conflicts of interest, investment banking, quick flip

Private Equity and Advisors in Mergers and Acquisitions
© EFI and Linus Siming, 2010
ISBN 978-91-7258-819-6

Printed in Sweden by:
Intellecta Infolog, Göteborg 2010

Distributed by:
EFI, The Economic Research Institute
Stockholm School of Economics
Box 6501, SE-113 83 Stockholm, Sweden
www.hhs.se/efi

To my parents

Preface

This report is a result of a research project carried out at the Centre for Research in Finance at the Economic Research Institute at the Stockholm School of Economics.

This volume is submitted as a doctor's thesis at the Stockholm School of Economics. As usual at the Economic Research Institute, the author has been entirely free to conduct and present her research in her own ways as an expression of her own ideas.

The institute is grateful for the financial support that has made it possible to fulfill the project.

Filip Wijkström
Director
Economic Research Institute
Stockholm School of Economics

Clas Bergström
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Acknowledgements

I remain perpetually indebted and grateful to my faculty advisor Professor Mariassunta Giannetti for her continuous support, guidance and counsel throughout the process of writing this thesis.

My collective gratitude is extended to the finance faculty for all the helpful comments on my research. In particular, I have greatly benefited from the advice and suggestions of Professor Per Strömberg.

To my comrades-in-arms, the past and present finance PhD students, I direct my warm appreciation for the good camaraderie. Thanks also to the administrative staff that has always assisted me in the most kind and helpful way.

Part of this thesis was written when I was a visiting scholar at the Leonard N. Stern School of Business, New York University. I thank the Stern Finance Department and in particular my faculty sponsor Professor Viral Acharya for the kind hospitality shown to me. My visit at Stern was made possible thanks to the financial support of the Carl Silfvén and Staffan Burenstam Linder Foundations. Bankforskingsinstitutet, the Jan Wallander and Tom Hedelius Foundation, and the Stockholm School of Economics financed my doctoral student years in Stockholm. I extend my deepest appreciation to all the generous financial benefactors.

Finally, I wish to express my gratitude to my parents Per and Agneta for their support in all my various undertakings by dedicating this doctoral thesis to them.

Stockholm, April 2010

Contents

Introduction	13
∞ Paper One ∞	
Your Former Employees Matter: Private Equity Firms and Their Financial Advisors ...	17
1.1 Data	22
1.2 Mandate Probability Model.....	24
1.3 Results of the Mandate Probability Model.....	29
1.4 Instrumental Variable Approach and Robustness Checks.....	32
1.5 Mutual Networking Benefits.....	36
1.6 Conclusions	43
1.7 References	44
1.8 Tables	48
1.9 Appendix	65
∞ Paper Two ∞	
Dual Role Advisors and Conflicts of Interest	67
2.1 Hypothesis Development.....	70
2.2 Empirical Methodology.....	75
2.3 Empirical Results and Analysis.....	79
2.4 Conclusions	86
2.5 References	88
2.6 Tables	92
2.7 Appendix	107
∞ Paper Three ∞	
Private Equity Firms and Quick Flip Sales	109
3.1 Background and Testable Predictions.....	111
3.2 Empirical Methodology.....	114
3.3 Results	115
3.4 Conclusions	119
3.5 References	120
3.6 Tables	123
3.7 Appendix	127

Introduction

This doctoral thesis contains three empirical research papers in corporate finance. The papers were written between the spring of 2007 and the spring of 2010 when I was a PhD student at the Department of Finance at the Stockholm School of Economics. A substantial amount of thesis work was conducted during the academic year of 2008/2009 when I was a visiting scholar at the Finance Department at the Leonard N. Stern School of Business, New York University.

The papers are self-contained and each written with the purpose of eventually being published as separate articles in academic journals. In between them, the papers share two common themes, private equity and the role of advisors in mergers and acquisitions.

Private equity is equity capital in a firm that is not quoted on a public exchange. A private equity firm receives capital from investors (the limited partners) and the managers of the private equity firm (the general partners) use those funds to make investments directly into private companies or to conduct buyouts of publicly listed companies. For the management of the fund, the general partners deduct fees from the capital invested by the limited partners. Private equity investments often require long holding periods to allow for a turnaround of a distressed company or a liquidity event such as a public floating or sale to another company or investor.

Besides the private equity firm, the other main actor in this thesis is the mergers and acquisitions advisor. The selling and buying parties in a merger or acquisition typically seek advice from financial advisors on matters relating to the transaction. Generally, these advisors are large bulge bracket investment banking firms, specialized corporate advisory boutiques or transaction departments at accounting firms.

The first paper, *Your Former Employees Matter: Private Equity Firms and Their Financial Advisors*, merge the two main themes of the thesis. The paper is a study of how social networks that are formed by previous employment relations affect private equity firms' choice of financial advisors. The idea that inclusion in a network can benefit their members centers on the notion of homophily, the tendency of individuals to have a special affinity for similar others. Studies on networks have been successful in explaining a number of observed features on financial markets, but so far, network studies focusing on private equity are scarce.

In particular, I examine the effects of networks between private equity professionals who have previously worked for advisory firms and their former employers. The mechanisms through which the networks may be beneficial for both private equity firms and financial advisors are evaluated with the help of a hand collected data set. The data includes biographic information of 1,326 private equity professionals, which makes it possible to identify with which financial advisors a private equity professional has a previous employment relationship. The first finding is that the probability to be mandated to advise on a deal increases 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. This is an interesting finding as it is the first documented empirical evidence that former employees become important clients. I test if also private equity firms benefit from the shared networks and find that information and deals are sourced to private equity firms from sell-side financial advisors within the previous employment network. Private equity firms have a higher probability to be included in a bidding process and a higher probability of ultimately winning an auction when the advisor responsible for the sale is the former employer of the private equity firm's employees.

The role of financial advisors in mergers and acquisitions is further scrutinized in the second paper, *Dual Role Advisors and Conflicts of Interest*, in which I examine the potential conflicts of interest that may arise when an advisor to a firm targeted in a merger or acquisition is simultaneously involved in financing the bidder. Such an advisor who acts on both sides of a transaction is labeled a dual role advisor. I find that deals that involve a dual role advisor are, compared to deals with no dual role advisors, performed at lower bidding premium. I identify two possible explanations for this result. One is that the dual role advisor's advice to shareholders and board is polluted by a desire on the part of the advisor to obtain additional fees from financing the successful bidder. The other is that dual role advising could be a helpful feature in transactions that are difficult to finance for a bidder. I attempt to distinguish these explanations by looking at the probability of lawsuits, size of merger advisor fees and announcement returns for bidders. Overall, the results suggest that dual role advisors may not have fulfilled their obligation of obtaining the highest possible price on behalf of the seller and I find no evidence that dual role advising is a helpful feature in transactions where it might be difficult to otherwise obtain bidding financing. A resulting policy

implication is that investment banks should be forced to disclose any intentions of theirs to finance bidders to the firms they are representing as sell-side advisors.

The third paper, *Private Equity Firms and Quick Flip Sales*, revisits the field of private equity, which we encountered already in the first chapter. I earlier stated that private equity funds typically require long holding periods of the firms they invest in to allow for restructuring and operational improvement. However, in a quick flip, private equity firms dispose of their holdings within only 18 months after adding them to their portfolio of managed assets. This behaviour has contributed to a long-running debate on the real contributions of private equity firms. In this chapter I contrast established results from the academic literature on related themes to see if any of them can explain what drives quick flips. 1,322 private-to-private transactions of which 188 were quick flips are analyzed. The first hypothesis to be tested is that a quick flip is simply the result of a speedy restructuring process of the asset under management. Though no previous studies have looked at whether restructuring is driving quick flips, there is ample support that private equity ownership leads to operational improvements of firms. The second hypothesis is that quick flips are related to debt market conditions. If the private equity firm, for one or the other reason, faces a dire financial situation this may lead to asset fire sales. The third hypothesis is that quick flips are driven by conflicts of interest between the general and limited partners of the private equity firm. Contractual provisions may provide incentives for funds to exit investments early because it offers them a chance to reinvest funds and thus effectively increase the assets under management, which in turn leads to more fees. The results in this paper generally support the later hypothesis; quick flips do not follow upon operational improvements of the asset, private equity firms are not more likely to sell an asset in a quick flip due to liquidity constraints and do not earn relatively higher returns in these transactions compared to others.

The remainder of this thesis consists of the three papers introduced above, which each make out a separate chapter. Accompanying tables to the text follow the list of references for each chapter.

∞ Paper One ∞

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

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 directly 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 information and 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, on their part, 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 their former employers conduct the auction. Moreover, I find that firms pay lower revenue transaction multiples in acquisitions where their former employers advise them compared to other deals.

* I thank for their comments Viral Acharya, Carsten Bienz, Jonathan Clarke, Mariassunta Giannetti, Ulrich Hege, Magnus Johannesson, Björn Johnson, Samuel Lee, Bing Liang, Ludovic Phalippou, Per Strömberg, Daniel Sunesson, Björn Wallace, Betty Wu, David Yermack and seminar participants at the European Economic Association Congress in Barcelona, European Finance Association Doctoral Tutorial in Athens, Financial Intermediation Research Society Conference in Prague, Financial Management Association Conference in Prague, Nordic Finance Network Workshop in Bergen, Bocconi University, Copenhagen Business School, ESSEC Business School, HEC Paris, McGill University (Desautles Faculty of Management), New York University (Pollack Center Workshop in Corporate Governance), Norwegian School of Economics and Business Administration, SIFR/Stockholm School of Economics, University of Cambridge (Judge Business School), University of New South Wales, and University of Toronto (Rotman School of Management).

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 alums are friends and cohorts, but they’re also our current or future clients.”² 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, Smith-Lovin and Cook (2001) the explanations for why inclusion in a network can benefit their members centers on 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.

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 to best

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 interviews is described as one method of finding out the departing employee’s new employment.

pitch for a certain advisory mandate. In addition, 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. This information 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, Marston and Wilhelm (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; 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 deal team for that particular transaction. The economic impact of the 2.8 pp. increase is large as it corresponds to 78% of the unconditional base level probability. All regressions include an extensive set of other independent variables that have previously been found to be of importance in the advisor-matching literature. To examine if endogeneity effects drive these empirical relationships I consider alternative econometric specifications. With 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 features that may potentially

benefit PE firms, information/deal sourcing and pricing. To explore information/deal sourcing, I study if PE firms as bidders are being beneficially treated by sell-side financial advisors from their previous employment network. For 203 deals, it is known 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 (information sourcing) and a 13.5 pp. higher probability of winning the auction for firms inside the network (deal sourcing). Results are statistically significant and accounting for potential endogeneity does not explain away these results. This is evidence that the social networks are used for funneling information and deals. Being included in an auction process gives the bidder access to information memorandum and data rooms containing information that might be very difficult to obtain elsewhere. Thus, the mere inclusion in an auction process is valuable for a PE firm. However, due to limitations of the data available I cannot 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 were 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 relative 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 in general 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, Jenkinson, Strömberg, and Weisbach (2008), Axelson, Strömberg, and Weisbach (2009), Fenn, Liang and Prowse (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, PE firms acquired companies worth a total of \$770 billion. 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, Frazzini and Malloy (2008 and 2009) establish the importance of shared education networks in gaining valuable information within securities markets. Within the venture capital industry Hochberg, Ljungqvist and Lu (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, Khorana, Patel and Rau (2007) use 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 deal flow is related to the new analyst's reputation. Much related, Bradley, Choi and Clarke (2008) examine the impact of investment banker job changes on the mergers and acquisitions (M&A) market shares of investment banks. They find that the bank losing the banker experiences a decrease in their

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.

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. Both these articles bring strong evidence that human capital is a critical component of investment banking deal flow.

1.1 Data

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 deals 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 greatest contribution of the Mergermarket database is that the names of the people at the PE firm who worked with a particular transaction are listed for several deals. Those individuals that are on the transaction team of a PE firm are denoted PE professionals. Besides the identity of these PE professionals, their level of seniority is detailed. For the purposes of this paper, I consider only deals that have included an external financial advisor and where the identities of the PE professionals that participated in the deal are disclosed. An advisor is deemed external if it does not belong to the same corporate group as the PE firm.⁵ Unfortunately, the names of the PE professionals are relatively seldom disclosed for deals outside of Europe, which leads to that my data set to 94% consists of European transactions. In total, 1,285 transactions of the 6,908 deals reported fulfill my requirements and thus constitute my 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. However, exact dates of employment and length of tenure are not generally detailed. For example, out of the 883 people

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.

who have previously worked as financial advisors, tenure data are available only for 188 individuals. For those who have changed jobs or 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 web page, 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% 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 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.

1.1.1 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 were not mandated is required. For every given transaction, I create a panel of candidate advisors conditioning information for both mandate winning and non-mandate winning advisors. In the data, 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 when a specific deal took place. 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

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>

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 rerun the regressions in paragraph 1.4.3 with fewer restrictions as a robustness test on a subset of the data and find that the general results still hold. Only deals that 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, Kini and Ryan (2003) who use 50 banks in their candidate sets.

1.2 Mandate Probability Model

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:

$$Pr(Q_{j,k,n}) = f(Z_{i,j,n}, D_{j,k}, R_{j,k}, G_p, H_{j,n}, K_{j,k}, S_{k}, T_{k}, V_j) \quad (1)$$

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 at 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 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 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

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, Michaely and O’Hara (2006), Hayward (2003), Francis, Hassan and Sun (2006).

¹² Carter and Manaster (1990) use relative placements in ‘tombstone’ announcements. Kale, Kini and Ryan (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, Michaely and O’Hara (2006) use three tiers.

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.

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 G , K , S , T and V are logged by the natural logarithm. For variable K , which can take the value zero, I use the natural log of $(K+1)$. Year and country fixed effects are included throughout the analysis and I 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 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

1.2.1 Descriptive Statistics

The basic properties of the data set are outlined in Table I. 1,285 deals include an external advisor and disclosed information on the participating PE individuals. 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

¹⁴ For example, Kedia, Panchapagesan and Uysal (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 <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 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.

938 (96.9%) deals being private-to-private deals. Of the sell-side deals, 180 (56.8%) are secondary buyouts 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 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%).

The financial advisors are together awarded 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 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. 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 one to four with one being the most senior person on the deal team and four 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.

¹⁶ The levels are assigned by the database. As a side note it could be mentioned that titles corresponding to a certain level can vary substantially 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.

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 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 stand out. 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 IV shows univariate comparisons between IV 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 which advisor a PE firm chooses for a deal.

1.3 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.

1.3.1 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. 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 buy-side deals where the effect is an insignificant 0.6 pp. The difference can be explained by that industry experts can act as a certifier of the quality of the asset offered for sale in a sell-side deal. As will be shown in the second part of this paper, sell-side advisors also appear to have important network links with counterparty acquiring firms.

Since it is possible that the senior member of a team single-handedly decides who should be mandated as advisor I also run the regressions including only those PE professionals with the highest-level designation in each deal team. 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 professionals.

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. 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 are mostly hired as joint rather than as sole advisors, this could indicate that they are brought on as a favor from their former employers. However, for all deals taken together there is only a small economic difference between the coefficients of a previous employee of a joint advisor to one of a sole advisor. The statistical significance is stronger for sole advisor deals though. 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, but 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. I divide the sample based on the size of the PE firm separating out the top 25 PE firms. 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. The relative obscurity of these firms may make them less exposed to interaction with potential advisors.

The last two columns show results from the sub-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 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. Overall, the results of Table V support the anecdotal evidence that previous employees become important clients.

1.3.2 Debt Provision

A financial advisor's likelihood to receive a deal mandate 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. The finding 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.

1.3.3 Previous Deal Relationships

The strength of previous advisory relationships between a PE firm and a financial advisor increases the probability of securing a mandate with 1.5 pp. The results are both economically and statistically stronger for buy- 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. In addition, Hayward (2003) finds that clients are induced to hire the same investment banks repeatedly.

1.3.4 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 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.

1.3.5 Control Variables

Throughout the analysis, the overall impact of the control variables is small. In essence, matching of advisors and PE firms is not driven by the 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, Panchapagesan, and Uysal (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.

1.4 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.

1.4.1 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 because the PE firms believe it would be easier for them to mandate the former employers as advisors, my analysis could suffer from reverse causality.¹⁷

To address these potential endogeneity biases, I need an instrument that is independent of the mandate decision equation (1) but correlated with the previous employment relation between advisors and PE firms. A common choice of instrument is to use a measure of the local availability of the selected characteristic. My approach follows mainly the methodology of Berger, Miller, Petersen, Rajan and Stein (2005) who instrument an individual bank's size with the median size of banks in the local market, Bottazzi, Da Rin and Hellman (2008) who instrument a venture capitalist's business experience with the average business experience in the local market, and Hellmann, Lindsey and Puri (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 number of employees at the median sized financial advisor firm in each

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

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 employ 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. This should offer some comfort that the instrument does not suffer from an inferior-country bias. Data are obtained from the Orbis database. Results are displayed in Table VI. 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 sell-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 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.

1.4.2 Alternative Analysis

I further investigate a subset of transactions that 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? In Table VII, we see

¹⁸ See for example Stock, Wright and Yogo (2002).

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

1.4.3 Alternative Candidate Set

In the following 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 consisting of 701 buy- and 240 sell-side deals. Thus, the unconditional probability for an advisor to receive a mandate is now 2.0%. Turning to the results in Table VIII, we see that the coefficient for having a previous employee among the PE deal team increases this probability from 2.0% by 1.6 pp to 3.6%. The coefficient is statistically significant at the 1% level. Even though the candidate set is defined very broadly, 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 driven by an unreasonable construction of the candidate set.

1.4.4 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. Overall, such effects would bias my results downwards. 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 a downwards bias from demotions.

1.4.5 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 the results 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.

1.5 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 on the PE firm deal team is beneficial for the financial advisors. Next, I examine why PE firms hire their former employers 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

and thus 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, private deals are commonly pre-packaged in the sense that the shareholders have already agreed to the bid. For private bids, this means that announcement date and completion date are the same, which makes it impossible to measure speed of completion. Furthermore, as only six 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 mandate probability model:

- i. Information and deal sourcing. Do PE firms as bidders benefit in auctions held by their former employers as sell-side advisors? Such benefits could be through inclusion into the bidding processes whereby they get access to valuable non-public information (information sourcing) and an increased probability of winning the auction (deal sourcing).
- ii. Pricing. Are deals where a PE firm is advised by a financial advisor with whom they have a previous employer relationship pursued at generally more attractive prices?

1.5.1 Information and Deal Sourcing

I analyze information and deal sourcing 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 firm 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 and B is the number of financial advisors on the sell-side. K is the measure of geographic proximity in kilometers between the closest 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 firm. 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 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 988 observations.

Table IX reports 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. In addition, for the results of winning an auction, 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 indicate that the instrument is valid. The second step equations yield estimates of the previous employee coefficient of 10.9 pp and 7.3 pp respectively.

1.5.2 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.

1.5.2.1 Transaction Multiples

One 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, 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:

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

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

Average multiples $M_{i,x}$ for groups of comparable deals i are constructed in several steps and used as explanatory variables. Bargeron, Schlingemann, Stulz, and Zutter (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. 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

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

natural logarithm of all monetary amounts and apply control variables. The regression at hand is thus:

$$\ln(M_{n,c}) = a + \beta Z_{ij,n} + \gamma \ln(M_{c,\infty}) + \delta A + \zeta G_j + \eta H_{j,n} + \iota K_{j,k} + \lambda S_k + \varsigma T_k + \xi V_j + \varepsilon \quad (6)$$

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 1.2. 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, 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%.

The regression results for $M_{n,c, EBITDA}$ are generally of lower magnitude 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.

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

1.5.3 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.

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.

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.

1.5.4 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 information flow and 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. Information on PE markets is mostly private to its nature. Being included in an auction process gives a bidder access to information memorandum and data rooms containing information that might be very difficult to obtain elsewhere. Thus, the mere inclusion in an auction process is valuable for a PE firm. Once in the bidding process 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 do not 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 a public deal. Though a range of studies has discussed the winner's curse,²¹ 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 1990:s 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

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

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.

1.6 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.

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.

In addition, 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 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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1.8 Tables

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	
		#	%	#	%	#	%
Size (mEUR)	< 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	Deals	1285	100	968	75.33	317	24.67
	Total	1721	100	1351	78.50	370	21.50
	# PE house	153		147		79	
	# Advisor	355		229		78	
# 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 rankings. 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		Financial advisor ranking		Financial advisor type				
	#	%	#	%	#	%	#	%			
Financial advisor	883	58.67	Level 1	2203	82.45	Top 10 ranked	365	33.21			
Operational	256	17.01	Level 2	343	12.84	Rank 11-25	260	23.66	Investment bank	699	63.60
Consultancy	185	12.29	Level 3	96	3.59	Rank 26 and lower	474	43.13	Corporate finance at accounting firm	323	29.39
Directly to PE	88	5.85	Level 4	30	1.12				Corporate finance boutique	77	7.01
Other	93	6.18									
Total	1505	100.00	Total	2672	100.00	Total	1099	100.00	Total	1099	100.00

Table III. Correlation matrix

This matrix show the correlation between the main explanatory variables used. *Previous employee* is an indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor. *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. *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* indicates 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.

		Correlations								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Previous employee	1.000								
(2)	Debt interaction	0.029	1.000							
(3)	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 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 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 between Mandated and Non-mandated advisors. * denotes significance at 10%; ** denotes significance at 5%; *** denotes significance at 1%.

	All			Buy			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 has at least once performed advisory business with the PE firm during the sample period and is able to carry out advisory work within a deal's geographic region. For the fifth and sixth columns only top 25 and 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. *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. *Previous interaction* measures the percentage ratio of the number of times a financial

Panel A All deals	All advisors			Top 25 advisors	Below 25 advisors
Previous employee		0.028*** (0.007)		0.044*** (0.012)	0.041*** (0.014)
Senior previous employee			0.027*** (0.007)		
Debt interaction	0.014*** (0.004)	0.014*** (0.004)	0.014*** (0.004)	0.024*** (0.009)	0.014*** (0.003)
Previous interaction	0.014** (0.006)	0.015** (0.006)	0.015** (0.006)	-0.016 (0.015)	0.017** (0.007)
Ln(Advisor rank)	-0.006* (0.003)	-0.006* (0.003)	-0.006* (0.003)		
Expertise	0.008** (0.004)	0.007** (0.004)	0.007** (0.004)		
Ln(Geographic distance)	-0.003*** (0.000)	-0.003*** (0.000)	-0.003*** (0.000)	-0.005*** (0.001)	-0.004*** (0.001)
Ln(PE firm size)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	0.003 (0.003)	-0.007*** (0.001)
Ln(# PE firm deals)	-0.018*** (0.002)	-0.017*** (0.002)	-0.017*** (0.002)	-0.032*** (0.004)	-0.013*** (0.002)
Ln(# Advisor deals)	0.009*** (0.001)	0.009*** (0.001)	0.009*** (0.001)		
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
PE firm cluster	Yes	Yes	Yes	Yes	Yes
Observations	36832	36832	36832	11981	25577

advisor has advised on a deal with the PE firm within the previous five years. $\ln(\text{Advisor rank})$ is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* indicates 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. 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%.

Sole advisor	Joint advisor	Top 25 PE firms	Below 25 PE firms	1998 – 2003	2004-2007
0.027*** (0.008)	0.027* (0.017)	0.030*** (0.010)	0.053*** (0.015)	0.034*** (0.011)	0.024*** (0.009)
0.012*** (0.004)	0.020*** (0.007)	0.005 (0.004)	0.030*** (0.005)	-0.020** (0.009)	0.028*** (0.006)
0.009* (0.004)	0.042*** (0.015)	0.004 (0.006)	0.055*** (0.016)	-0.009 (0.006)	-0.003 (0.002)
-0.003 (0.002)	-0.018** (0.008)	-0.006 (0.004)	-0.003 (0.007)	0.009 (0.007)	0.007* (0.004)
0.000 (0.003)	0.027*** (0.008)	0.012* (0.007)	-0.001 (0.006)	-0.002** (0.001)	-0.003*** (0.001)
-0.002*** (0.000)	-0.006*** (0.001)	-0.002*** (0.000)	-0.006*** (0.001)	-0.003** (0.001)	-0.004*** (0.001)
-0.005*** (0.001)	-0.011*** (0.003)			-0.016*** (0.002)	-0.018*** (0.002)
-0.010*** (0.001)	-0.026*** (0.005)			0.009*** (0.002)	0.008*** (0.001)
0.007*** (0.001)	0.013*** (0.003)	0.009*** (0.001)	0.012*** (0.001)	0.034*** (0.011)	0.024*** (0.009)
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
27206	9626	19278	17554	10479	26353

Panel B	All advisors			Top 25 advisors	Below 25 advisors
Buy-side deals					
Previous employee		0.031*** (0.009)		0.044*** (0.015)	0.047*** (0.016)
Senior previous employee			0.029*** (0.008)		
Debt interaction	0.021*** (0.004)	0.021*** (0.004)	0.021*** (0.004)	0.040*** (0.009)	0.016*** (0.004)
Previous interaction	0.020*** (0.007)	0.021*** (0.007)	0.021*** (0.007)	-0.017 (0.017)	0.026*** (0.009)
Ln(Advisor rank)	-0.008* (0.005)	-0.008* (0.005)	-0.008* (0.005)		
Expertise	0.007 (0.005)	0.006 (0.005)	0.006 (0.005)		
Ln(Geographic distance)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003 (0.002)	-0.005*** (0.001)
Ln(PE firm size)	-0.002 (0.002)	-0.002 (0.001)	-0.002 (0.001)	0.005 (0.004)	-0.006*** (0.002)
Ln(# PE firm deals)	-0.021*** (0.002)	-0.021*** (0.002)	-0.021*** (0.002)	-0.033*** (0.005)	-0.016*** (0.002)
Ln(# Advisor deals)	0.009*** (0.002)	0.009*** (0.002)	0.009*** (0.002)		
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
PE firm cluster	Yes	Yes	Yes	Yes	Yes
Observations	26405	26405	26405	8745	18173

Sole advisor	Joint advisor	Top 25 PE firms	Below 25 PE firms	1998 – 2003	2004-2007
0.034*** (0.009)	0.024 (0.019)	0.025** (0.012)	0.068*** (0.016)	0.032*** (0.011)	0.028*** (0.011)
0.019*** (0.004)	0.026*** (0.007)	0.008** (0.004)	0.041*** (0.006)	-0.016* (0.009)	0.038*** (0.008)
0.012** (0.005)	0.052*** (0.017)	0.009 (0.009)	0.064*** (0.019)	-0.011 (0.007)	-0.005 (0.003)
-0.004 (0.003)	-0.022** (0.011)	-0.005 (0.008)	-0.006 (0.009)	0.011 (0.007)	0.004 (0.006)
-0.004 (0.004)	0.027*** (0.010)	0.014 (0.008)	-0.006 (0.007)	-0.001 (0.001)	-0.004*** (0.001)
-0.003*** (0.001)	-0.006*** (0.001)	-0.002*** (0.001)	-0.007*** (0.001)	-0.003* (0.002)	-0.002 (0.002)
-0.003*** (0.001)	-0.011*** (0.003)			-0.017*** (0.003)	-0.022*** (0.002)
-0.013*** (0.002)	-0.029*** (0.006)			0.010*** (0.002)	0.008*** (0.002)
0.007*** (0.001)	0.014*** (0.003)	0.010*** (0.001)	0.012*** (0.002)	0.032*** (0.011)	0.028*** (0.011)
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
18504	7901	13193	13212	8856	17549

Panel C	All advisors			Top 25 advisors	Below 25 advisors
Sell-side deals					
Previous employee		0.019*		0.045**	0.027
		(0.014)		(0.028)	(0.032)
Senior previous employee			0.022**		
			(0.015)		
Debt interaction	0.000	-0.000	-0.000	-0.021	0.010**
	(0.006)	(0.005)	(0.005)	(0.013)	(0.005)
Previous interaction	0.001	0.002	0.002	-0.011	0.001
	(0.005)	(0.005)	(0.005)	(0.016)	(0.005)
Ln(Advisor rank)	-0.001	-0.001	-0.000		
	(0.005)	(0.005)	(0.005)		
Expertise	0.011**	0.011**	0.011**		
	(0.005)	(0.005)	(0.005)		
Ln(Geographic distance)	-0.002***	-0.002***	-0.002***	-0.008***	-0.002**
	(0.001)	(0.001)	(0.001)	(0.003)	(0.001)
Ln(PE firm size)	-0.006***	-0.007***	-0.007***	-0.003	-0.008***
	(0.001)	(0.001)	(0.001)	(0.004)	(0.001)
Ln(# PE firm deals)	-0.008***	-0.008***	-0.008***	-0.027***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)
Ln(# Advisor deals)	0.008***	0.007***	0.007***		
	(0.001)	(0.001)	(0.001)		
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
PE firm cluster	Yes	Yes	Yes	Yes	Yes
Observations	10427	10427	10427	3236	7404
F-statistic; panels B:C	2.942***	1.978***	4.342***	94.397***	2,637***

Sole advisor	Joint advisor	Top 25 PE firms	Below 25 PE firms	1998 – 2003	2004-2007
0.014 (0.012)	0.030 (0.031)	0.043*** (0.017)	0.003 (0.018)	0.049 (0.035)	0.015 (0.015)
0.001 (0.005)	-0.003 (0.009)	0.001 (0.007)	0.000 (0.005)	-0.034*** (0.012)	0.001 (0.006)
0.002 (0.005)	0.004 (0.022)	-0.007 (0.006)	0.025* (0.013)	-0.001 (0.010)	0.009 (0.006)
0.003 (0.005)	-0.011 (0.011)	-0.007 (0.008)	0.008 (0.010)	0.005 (0.010)	-0.001 (0.005)
0.007* (0.004)	0.028* (0.015)	0.010 (0.007)	0.012 (0.009)	-0.004** (0.002)	0.012** (0.005)
-0.001 (0.001)	-0.008*** (0.002)	-0.002*** (0.000)	-0.002 (0.002)	-0.004** (0.002)	-0.001** (0.001)
-0.007*** (0.001)	-0.008*** (0.003)			-0.008*** (0.002)	-0.007*** (0.001)
-0.005*** (0.001)	-0.011*** (0.003)			0.004*** (0.001)	-0.007*** (0.002)
0.007*** (0.001)	0.011*** (0.004)	0.006*** (0.001)	0.012*** (0.002)	0.049 (0.035)	0.008*** (0.001)
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
8702	1725	6085	4342	1623	8804
5.457***	16.361***	257.10***	5.21***	6.54***	12.69***

Table VI. Mandate winning characteristic, instrumental variables

The 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. *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. *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. $\ln(\text{Advisor rank})$ is the natural logarithm of a financial advisor's ranking in the previous year.

	All deals	
	1 st stage	2 nd stage
Previous employee		0.058*** (0.012)
Debt interaction	0.013*** (0.002)	0.020*** (0.002)
Previous interaction	0.025*** (0.003)	0.023*** (0.004)
Ln(Advisor rank)	-0.009*** (0.002)	-0.008*** (0.002)
Expertise	0.020*** (0.002)	0.015*** (0.004)
Ln(Geographic distance)	-0.000 (0.000)	-0.003*** (0.000)
Ln(PE firm size)	-0.002*** (0.001)	-0.006*** (0.002)
Ln(# PE firm deals)	0.008*** (0.001)	-0.020*** (0.001)
Ln(# Advisor deals)	0.010*** (0.001)	0.009*** (0.001)
Ln(Median # of employees)	0.203*** (0.000)	
Year fixed effects	Yes	Yes
Country fixed effects	Yes	Yes
PE firm cluster	Yes	Yes
Observations	36832	36832
First stage F -statistic	12.324***	

Expertise indicates 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. First and second stage IV regressions are displayed. The instrument is $\ln(\text{Median } \# \text{ of employees})$, 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%.

Buy-side deals		Sell-side deals	
1st stage	2nd stage	1st stage	2nd stage
	0.061*** (0.013)		0.046** (0.023)
0.013*** (0.002)	0.027*** (0.003)	0.012*** (0.003)	-0.000 (0.004)
0.028*** (0.004)	0.031*** (0.006)	0.018*** (0.005)	0.004 (0.007)
-0.010*** (0.003)	-0.010*** (0.003)	-0.007** (0.003)	-0.004** (0.002)
0.020*** (0.003)	0.010** (0.005)	0.018*** (0.004)	0.029*** (0.007)
-0.00 (0.000)	-0.003*** (0.001)	-0.001 (0.001)	-0.002** (0.001)
-0.002*** (0.001)	-0.005** (0.002)	-0.001 (0.002)	-0.012*** (0.004)
0.008*** (0.001)	-0.023*** (0.002)	0.008*** (0.002)	-0.009*** (0.003)
0.011*** (0.001)	0.010*** (0.001)	0.009*** (0.001)	0.007*** (0.001)
0.201*** (0.001)		0.211*** (0.008)	
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
26405	26405	10427	10427
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 participating in, conditional on being mandated for at least more than one transaction with the same PE professional who is a former corporate financier. 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

Marginal results from probit regressions are presented. A financial advisor is considered as a candidate for receiving a deal mandate if it is able to carry out advisory work within a deal's geographic region and is a top 50 ranked advisor. Dependent variable equals one if a financial advisor is mandated for a deal. *Previous employee* indicates if a PE deal team member has previously worked for the financial advisor. *Debt interaction* (*Previous interaction*) measures the percentage ratio of the number of times a financial advisor has provided debt financing (advised on a deal) the previous five years. *Ln(Advisor rank)* is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* indicates 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)* measures the total investment funds at the PE firm over the sample period. *Ln(# PE firm deals)* and *Ln(# Advisor deals)* measures the number of deals performed by the PE firms and financial advisors, respectively, over the sample period. 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 deals	Sell-side deals
Previous employee	0.016*** (0.004)	0.013*** (0.004)	0.019** (0.010)
Debt interaction	0.006*** (0.001)	0.006*** (0.002)	0.002 (0.002)
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. IV columns report first and second stage regressions using as instrument $\ln(\text{Median \# of employees})$, which 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. *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. *# Bidders* is the number of all bidders including both trade buyers and PE firms. *# 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 logarithms 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%.

	Bidding inclusion			Winning		
	Marginal effects	IV: 1 st stage	IV: 2 nd stage	Marginal effects	IV: 1 st stage	IV: 2 nd stage
Previous employee	0.190*** (0.026)		0.109* (0.042)	0.135*** (0.041)		0.073* (0.032)
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)
# 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)
# 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

	EV/Revenue			
Previous employee	-0.235** (0.110)	-0.272** (0.112)	-0.292** (0.126)	-0.245** (0.108)
Ln(Comp EV/revenue)	0.509*** (0.066)	0.455*** (0.076)	0.495*** (0.072)	0.311*** (0.087)
Ln(Comp EV/EBITDA)				
Spread	-0.035 (0.065)	-0.031 (0.069)	-0.017 (0.073)	-0.022 (0.065)
Ln(Advisor rank)	0.235 (0.169)	0.121 (0.197)	10.158*** (2.514)	0.302* (0.162)
Expertise	0.299*** (0.067)	0.233*** (0.071)	0.245** (0.117)	0.257*** (0.068)
Ln(Geographic distance)	-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)
Ln(# PE firm deals)	0.008 (0.039)	0.606*** (0.211)	0.024 (0.051)	-0.002 (0.042)
Ln(# Advisor deals)	-0.048** (0.022)	-0.050** (0.023)	0.056** (0.024)	-0.055*** (0.021)
Constant	-1.741 (1.254)	-0.103 (1.759)	-76.402** (18.804)	-2.267* (1.229)
Year fixed effects	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
PE firm fixed effects	No	Yes	No	No
Advisor fixed effects	No	No	Yes	No
Industry fixed effects	No	No	No	Yes
R-squared	0.26	0.22	0.25	0.17
Observations	815	815	815	815

top advisor's ranking in the previous year. *Expertise* indicates 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%.

EV/EBITDA				Tobin's Q			
-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)
0.139* (0.076)	0.200*** (0.075)	0.095* (0.055)	0.100 (0.105)				
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)
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)
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)
-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)
0.021 (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)
-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)
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)
-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)
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No	Yes	No	No	No	Yes	No	No
No	No	Yes	No	No	No	Yes	No
No	No	No	Yes	No	No	No	Yes
0.15	0.17	0.15	0.14	0.09	0.10	0.10	0.09
573	573	573	573	549	549	549	549

Table XI. Transaction-multiples, instrumental variables

Dependent variables are EV/revenue multiples, EV/EBITDA multiples and Tobin's-Q. IV first and second stage regressions are reported. The instrument $\text{Ln}(\text{Median \# of employees})$ 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. $\text{Ln}(\text{Comp EV/revenue})$ and $\text{Ln}(\text{Comp EV/EBITDA})$ 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. $\text{Ln}(\text{Advisor rank})$ is the natural logarithm of a financial advisor's ranking in the previous year. *Expertise* indicates if the financial advisor is among the top ten in the transaction league table for the specific industry sector. $\text{Ln}(\text{Geographic distance})$ 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. $\text{Ln}(\text{PE firm size})$ is the natural logarithm of the total investment funds at the PE firm over the sample period. $\text{Ln}(\# \text{ PE firm deals})$ and $\text{Ln}(\# \text{ Advisor deals})$ 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%.

	EV/Revenue		EV/EBITDA		Tobin's Q	
	1 st stage	2 nd stage	1 st stage	2 nd stage	1 st stage	2 nd stage
Previous employee		-0.161* (0.093)		-0.425 (0.428)		-0.165* (0.094)
$\text{Ln}(\text{Comp EV/revenue})$	-0.025 (0.016)	0.478*** (0.079)				
$\text{Ln}(\text{Comp EV/EBITDA})$			0.000 (0.016)	0.139* (0.076)		
Spread	-0.014 (0.021)	-0.056 (0.075)	-0.001 (0.024)	0.073 (0.067)	-0.017 (0.021)	-0.193 (0.174)
$\text{Ln}(\text{Advisor rank})$	0.067 (0.068)	0.327* (0.187)	0.051 (0.083)	0.322* (0.174)	0.0602 (0.0682)	0.162** (0.072)
Expertise	0.043* (0.024)	0.355*** (0.094)	0.046 (0.028)	0.091 (0.066)	0.004* (0.0243)	0.620 (0.390)
$\text{Ln}(\text{Geographic distance})$	0.000* (0.000)	0.000 (0.000)	0.000** (0.000)	0.000 (0.000)	0.000** (0.000)	-0.000 (0.000)
$\text{Ln}(\text{PE firm size})$	-0.006 (0.010)	0.016 (0.037)	-0.002 (0.012)	0.019 (0.032)	-0.007 (0.010)	-0.184 (0.178)
$\text{Ln}(\# \text{ PE firm deals})$	-0.024** (0.015)	-0.027 (0.055)	-0.025* (0.014)	-0.042 (0.038)	-0.024** (0.012)	0.218 (0.140)
$\text{Ln}(\# \text{ Advisor deals})$	0.015** (0.007)	-0.026 (0.033)	0.0130 (0.008)	0.006 (0.027)	0.015** (0.007)	-0.198 (0.153)
Constant	-0.146 (0.505)	-2.383* (1.251)	-0.272 (0.611)	-0.642 (1.250)	-0.066 (0.503)	-0.778* (0.454)
$\text{Ln}(\text{Median \# of employees})$	0.053** (0.026)		0.027* (0.010)		0.049** (0.026)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.08	0.10	0.12	0.14	0.10	0.11
Observations	815	815	573	573	549	549
First stage F^2 -statistics	11.293***		8.923*		13.230***	

1.9 Appendix

Variable	Description
EV/EBITDA	Enterprise value over last twelve months reported EBITDA.
EV/Revenue	Enterprise value over last twelve months reported revenue.
Expertise	Indicates if a financial advisor is ranked top ten in the transaction league table for the specific industry sector.
Ln(# Advisor deals)	Natural logarithms of the number of deals performed by the financial advisor firm over the sample period.
Ln(# PE firm deals)	Natural logarithms of the number of deals performed by the PE firm over the sample period.
Ln(Advisor rank)	Natural logarithm of a financial advisor's ranking in the previous year.
Ln(Comp EV/EBITDA) & Ln(Comp EV/revenue)	Ratios of a PE control group matched with the sample transaction in terms of deal size, geographic region and industry sector.
Debt interaction	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(Geographic distance)	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(Median # of employees)	Number of employees at the median sized financial advisor firm in each country where a deal takes place.
Ln(PE firm size)	The natural logarithm of the total investment funds at the PE firm over the sample period.
Previous interaction	Percentage ratio of the number of times a financial advisor has advised on a deal with the PE firm within the previous five years.
Previous employee	Indicator variable taking the value one if a PE deal team member has previously worked for the financial advisor.
Senior previous employee	Indicator variable taking the value one if the senior PE deal team member has previously worked for the financial advisor.
Spread	Credit spread between the yield on the bank prime loan rate and the 10-year treasury bonds in the month of the deal.

∞ Paper Two ∞

Dual Role Advisors and Conflicts of Interest*

Abstract: An advisor to a firm targeted in a merger or acquisition that simultaneously is involved in financing the bidding part of the deal is referred to as a dual role advisor. Being a dual role advisor can create conflicts of interest through the possible perception that the investment bank's advice to the seller in the bidding process is tainted by a desire on the part of the advisor to obtain additional fees from financing the successful bidder. I find support for this fear in a study of 1,023 public US mergers and acquisitions over the period 1993 to 2008. Conflicts of interest are manifested through that deals which involve a dual role advisor are, compared to deals with no dual role advisors; (a) performed at lower premium, (b) are more likely to be subject to a lawsuit, (c) feature lower merger advisor fees and (d) are commensurate with higher announcement returns for bidders. Overall, the results suggest that investment banks may not have fulfilled their obligation of obtaining the highest possible price on behalf of the seller and I find no evidence that dual role advising is a helpful feature in transactions where it might be difficult to otherwise obtain bidding financing. Interestingly, target firms with sound corporate governance practices are less likely to encounter dual role situations.

* I thank Katrien Craninckx, Mariassunta Giannetti, Björn Johnson, Samuel Lee, Gino Loyola and seminar participants at the European Financial Management Association Conference in Milan and the Financial Management Association Conference in Turin for helpful comments.

In this paper, I study a potential source of conflicts of interest between a financial advisor to a firm who is a target in a merger or acquisition (M&A) and the shareholders of that firm: dual role advising. A financial advisor who is involved in both sell-side advising and buy-side financing of a transaction is denoted a dual role advisor. Being a dual role advisor could raise fears that the investment bank's advice to the seller throughout a bidding process is tainted by a desire on the part of the advisor to obtain additional fees from financing the successful bidder. Thus, dual role advising may create conflicts of interest with the selling shareholders to the extent that the advisor's concern about the profit it earns from lending to the bidding counterparty of the target shareholders distorts the advice they give.

The practice of dual role advising was recently put to public focus when the Toys "R" Us shareholder litigation was brought to court in 2005 (Cons. C.A. No. 1212-N). The lawsuit dealt with the takeover of the toys manufacturer Toys "R" Us by private equity firm Kohlberg Kravis Roberts & Co (KKR). The investment bank Credit Suisse First Boston (CSFB) acted as advisor to Toys "R" Us when KKR bought the company in an auction process. However, CSFB was also soliciting the role as financier to KKR. CSFB's dual roles led to litigation by shareholders against the board of Toys "R" Us and CSFB for tilting the playing field in favor of KKR in the bidding contest. Although the court ultimately found no evidence that the financial advisor's actions improperly influenced the board's decision-making process, the court did in its ruling question the practice of having the same bank provide financial services on both sides of a deal (Cons. C.A. No. 1212-N pp 53-54): "In general ... it is advisable that investment banks representing sellers not create the appearance that they desire buy-side work, especially when it might be that they are more likely to be selected by some buyers for that lucrative role than by others." Indeed, CSFB earned \$10 million in financing fees in addition to its \$7 million advisory fee¹

I find empirical evidence that justifies the court's skeptical stand on dual role advising. 1,023 US mergers over the period 1993 to 2008 are analyzed whereof

¹ The Toys "R" Us verdict to this day remains the only case where a court has made a ruling on dual role advising although a related litigation example is found in *Gerald Ortsman v. Dennis O. Green, et al.* (C.A. No. 2670-N). The later litigation concerns the takeover of vehicle auction company Adesa Inc by a private equity consortium led by Kelso & Co. The court found evidence that the dual role advisor UBS had steered a deal away from potential bidders not interested in a leveraged transaction towards Kelso & Co, but the litigation was settled outside of court with shareholders eventually agreeing on the merger.

97 (9.5%) deals involve a dual role advisor. Deals where a bank engages in dual role advising are associated with a range of conflicts of interest, which are manifested through value distorting features. Results suggest that investment banks may not have fulfilled their obligation of obtaining the highest possible price on behalf of the seller, and I find no evidence that dual role lending is a helpful feature of transactions where it might be difficult to otherwise obtain financing for a bidder.

Firstly, I find that that target firms with good corporate governance practices encounter slightly fewer dual role situations. The higher the score of corporate governance quality, as measured by the Brown and Caylor (2004, 2006) Gov-score index, the lower is the prevalence of dual role advising. The main question addressed in this paper is how shareholder gains are affected when the investment bank who is advising a client is also involved with financing the bidder, either as direct lender or as underwriter of securities. After controlling for a range of firm and transaction specific features, I find that the average deal premium – measured as the offer price over the share price one month prior to deal announcement – is 12.0 percentage points (pp.) lower for dual role deals compared to deals where there is no involvement of a dual role advisor. The results are significant at the 5% level and robust for premium measured over periods of one week and one day. Shifting to the other participant in a transaction I find that the bidding firm gains a cumulative abnormal return around the announcement day (CAR -1,+1) that is 1.9 pp. higher in deals with dual role advising compared to deals without. I further find that deals involving a dual role advisor are more often subject to lawsuits led by target shareholders than deals with no dual role advisors, which points to disproportionately deep shareholder discontent with deal terms in dual role deals. Moreover, the merger advising fees collected by dual role advisors are lower than for non-dual role advisors, which could be an effect of discontent shareholders paying their advisors relatively low fee percentages.

An alternative explanation for the occurrence of dual role advising is that it could be a helpful or even necessary service to the acquirer in transactions that are difficult to finance. However, I find that all main results hold after employing both propensity score matching and instrumental variable methods. Thus, firms that encounter dual role advising do not seem to differ materially in observable or unobservable characteristics from those firms whose advisors do not engage in dual role behavior. In particular, these findings point to that target firms in dual

role deals do not appear to be in an overall worse financial or operational shape than target firms in non-dual role deals, which we might have expected if the firms would be more difficult to finance. In addition, the results on the increased probability of lawsuits and the lower fees in dual role transactions are difficult to reconcile with the alternative hypothesis.

The overall results that dual role advisors give rise to conflicts of interest with the shareholders they are hired to represent are in line with several recent papers that study various forms of concurrent advisor and financing relationships. Povel and Singh (2009) study the related issue of stapled financing, which is a procedure mostly used by private equity firms when they divest of portfolio firms. They find that although stapled financing can under certain conditions be an optimal part of a sale process, it is also commensurate with conflicts of interests. M&A related misuse of information by advisors is documented by Ivashina, Nair, Saunders, Massoud and Stover (2009) who find that banks play an important role as informal dispersers of information that they may well spread in a way benefiting themselves. Evidence that banks offer loans to acquiring firms at below market prices to win buy-side merger advisory business is found in Allen and Peristiani (2007). Allen, Jagtiani, Peristiani, and Saunders (2004) find that banks that provide both buy-side advice and deal financing to acquiring firms do benefit their clients by serving a certification function but that this function is dominated by conflicts of interest with the client. Hogan (2006) as well as Hall (2006) analyze the above mentioned Toys “R” Us verdict from a legal perspective and both conclude that the future of dual role advising post the ruling remain an open question although the court did not find dual role advising illegal.

Besides being the first paper that addresses dual lending from the perspective of an investment bank financing the bidder while simultaneously acting as advisor to the target, this paper contributes to the growing literature on conflicts of interest in M&A, which is detailed in the following section.

2.1 Hypothesis Development

To understand the potential effects that dual role advising may have, it is useful to establish that investment banks may behave in a way that the client did not foresee both because of the conflicting incentives they face but also because of outright unlawful behavior. The literature is rich in giving examples of both kinds of

behavior. Furthermore, it is interesting to relate dual role advising to the concept of stapled financing, a practice commonly used by sellers in private acquisitions.

2.1.1 Self-centered Incentives

Kesner, Shapiro and Sharma (1994) study conflicts of interest arising from self-interested investment banking agents who do not properly perform their duties for clients. They find that advisors to acquirers generally receive larger compensation for acquisitions when their clients pay a higher premium, which could lead advisors to encourage overbidding. Lex and Sebenius (1986) go further and argue that misalignments of the goals of investment bankers and their clients are so omnipotent that bankers must choose between creating values for all parties or pursue opportunistic tactics that yield value primarily to themselves. On a less general level, Calomiris and Singer (2004) examine all hostile takeovers over a ten-year period and find that advisors to the acquirer have often previously represented the takeover target in some way. They argue that the existence of overlapping relationships provides incentives for clients and investment banks to limit flows of private information about clients but find no evidence that the acquisition premium are significantly different in acquisitions where there may be a potential conflict. Much related, Ivashina et al. (2009) document that bank lending intensity within client networks has a positive effect on borrowing firms becoming takeover targets. In particular, they show that banks play a very important role as informal dispersers of information. Focusing on banks that have previously had a lending relationship with both the bidder and target they explore whether a potential motive for the transfer of information is because banks seek to earn fees on financing takeovers, but do not find any evidence supporting this hypothesis. Allen and Peristiani (2007) investigate the primary and secondary syndicated bank loan market to analyze the effect on pricing when the financial institution commingles syndicated lending with merger advisory services. Focusing on the connection between the acquirer's choice of merger advisor and future financing commitments from that advisor, they find evidence of under-pricing of syndicated bank loans in both the primary and secondary market. All in all their findings point to that loans priced at below market terms are offered by the acquirer's relationship bank advisor in order to win merger advisory business. Allen et al. (2004) study the role of both commercial and investment banks in providing merger advisory services. They argue that banks who provide both advice and financing to acquiring firms

can be viewed as serving a certification function. This function may however be diminished by potential conflicts of interest. Whereas the certification effect dominates for target firms, conflicts of interest dominate the certification effect when banks are advisors to acquirers.

2.1.2 Unlawful Behavior

The Toys “R” Us ruling marked the start of a series of articles in practitioner oriented finance and law journals discussing the pros- and cons of having a dual role advisor.² Hogan (2006) suggests that one way of overcoming the potential conflicts of interest is to hire several advisors. One of these advisors would then have the specific task of providing a fairness opinion, a supposedly independent statement on whether a proposed offer price is to be considered fair or not. However, this proposed effect has little empirical support as Kisgen, Qian and Song (2009) find that fairness opinions do not affect deal outcomes when used by targets. Although dual role advising was not deemed unlawful, the Court did label it as improper behavior. Several studies have found evidence that investment banks do balance on a thin line between unlawful and improper behavior. Though most investment banks have implemented information barriers (Chinese walls) to prevent unauthorized disclosure of information from advisory teams to financing teams, crossing such a barrier may not constitute a breach of any law other than internal policies and may also well be agreed to by the selling firm as was the situation in the Toys “R” Us case. Another feature of this lawsuit was that the dual role advisor approached the bidder after the deal was announced, an effective way of outflanking a Chinese wall. As long as no private information is used in the marketing of financing packages, no laws are broken. Several studies find that

² In fact, Grant Murgatroyd and Richard Rivlin reported on the issue already before the Toys “R” Us litigation in the article “Packaged for Sale” printed in the 2005 February issue of *Corporate Financier* pp 10- 13. They highlight a very interesting caveat emptor viewpoint on the problems with stapled financing (p 12): “The possibility of conflict is so obvious that any vendor that accepted a package without testing the water elsewhere would pretty much deserve what they got.” Kevin Miller specifically addresses Toys “R” Us in “In Defense of Stapled Finance”, *The M&A Lawyer*, January 2006, Volume 10, No1 pp 1-3. He points out that the seller’s financial advisor generally has a duty to act in good faith in a manner it believes is not opposed to the interest of its client. But as a financier for a prospective buyer the advisor could insist on the ability to exercise rights in its own interest. In “Toys ”R” Us Case Provides Guidance on Corporate Sales Process”, *Pillsbury Winthrop Shaw Pittman Client Alert*, Vol 0801, No. 8012. July 21, 2005, David R. Lamarre points out that the Court should have a strong reluctance in second-guessing the tactical decisions made by the Board in a sell process.

Chinese walls are often crossed or misused [see e.g. Bodnaryk, Massa and Simonov (2009), Acharya and Johnson (2007), Ivashina and Sun (2007), Massa and Rehman (2005)].

2.1.3 Stapled Financing

Associated with the issue of dual role advising is the practice of stapled financing. Though closely related, it is however not correct to view dual role advising and stapled financing as identical means of financing. Stapled finance is a loan commitment by the investment bank advising the seller in an M&A transaction. Anyone who wins a bidding contest may use the stapled finance, but is not obliged to do so. As described by Povel and Singh (2009), stapled finance is usually offered early in the bidding process and provides potential buyers with an estimate of how much they can borrow against the target's assets and cash. Thus, whereas an advisor may not become a dual role lender until long after a deal announcement is made, stapled financing is something that is clearly disclosed in the investment memorandum and available to all bidders. However, notwithstanding the difference between stapled financing and dual role advising, Povel and Singh (2009) derive important predictions that may well be relevant also in a dual role setting. In particular, they find that an optimally designed stapled package can benefit the seller, lender and buyer only under certain conditions; there must be at least one financial bidder (as opposed to strategic or industrial buyers) and the terms of the financing package have to be fixed before the bidding starts. They also discuss the possible conflicts of interest that stapled finance might give rise to. Interestingly, the concern that the investment bank may push the seller to accept an offer from a bidder is now reversed; the investment bank may favor a bidder who is *not* going to accept the stapled finance package. The reason for this is that Povel and Singh (2009) find that the investment bank cannot expect to breakeven, as the bidder will only accept the stapled financing if she expects to benefit from it. This implies that the lender will make a loss. The bank will thus need to be compensated by the seller for providing financing. To avoid making a loss on the stapled financing the bank may thus be biased against firms willing to take up the financing packages they themselves offer.

2.1.4 General Hypothesis Formulation

The preceding review on related finance and law literature as well as recent court cases point to that the feature of a dual role advisor is expected to be commensurate with a high degree of conflicts of interest between the advisor and shareholders of the target. The possibility that the investment bank's advice to the seller throughout a bidding process is stained by a desire to obtain additional fees from financing the successful bidder is the driving force of such conflicts. This standpoint implies that dual role lending is unconditionally bad for sellers but an alternative hypothesis, which is in line with the Povel and Singh (2009) findings on the related issue of stapled financing, would state that the financing from the selling advisor could in certain special cases actually increase the price. For a seller this would be the case if financing were not readily available to any acquirer or only available at very unattractive terms. The selling advisor could then facilitate the transaction by offering financing at a discount, for which the seller must compensate them. One could also conjure a scenario where the seller benefits from a speedy sale process where the diligence process and getting access to credit for buyers are greatly simplified. Dual role advisors could also possibly play a certification role similar to the one mentioned in Allen et al. (2004) or simply eliminate financing as a buyer's bargaining tool.

To examine empirically whether dual role advising is commensurate with conflicts of interests, which lead to value destruction for target shareholders, or if it is a value-enhancing ingredient in a sale process I will turn to areas where either event may manifest itself. The most noticeable areas to investigate are shareholder premium and bidder returns but evidence may be found through indirect effects such as the likelihood of lawsuits or the level of advisor fees. The testable predictions and their expected coefficients for the base and alternative hypotheses are outlined in Figure I.

Figure I. Testable predictions

	Coefficient of dual role advisor	
	Base hypothesis	Alternative hypothesis
Target shareholder returns	-	+
Lawsuits	+	- / insignificant
Bidder CAR	+	- / insignificant
Advisor fees	-	+

The predictions stipulate that in accordance with the base (alternative) hypothesis; dual role advising should affect target shareholder returns negatively (positively), lawsuits should be more (less) common, bidder returns should be higher (lower) and advisor fees should be lower (higher).

2.2 Empirical Methodology

M&A deals are compiled from the SDC M&A database over the 15-year period 1 July 1993 to 30 June 2008. All targets firms are publicly traded in the United States when bid for. No firms are allowed to be in bankruptcy at the time of the merger announcement and the bidder must acquire at least 50 percent of votes. To be able to explore any dual relationship status only deals which have been financed through external financing and where the financial advisor to the target or seller is known are included. This forces the exclusion of any deals that have been financed by a bidder's existing corporate funds or exiting credit lines. An advisor may be an investment bank hired specifically by the target to deliver a fairness opinion of the deal or a general advisor that in addition to an assessment of the transaction pricing performs supplementary services such as advice on the overall approach to the transaction, negotiating tactics and assistance with the assembly of a team of professional advisors.

The SDC M&A data do not always list the identity of the lender or provider of bidder financing. For deals where such information is missing, I manually search and extract information from SEC filings or the deal prospectuses and memoranda. This information is gathered from a variety of sources such as EDGAR, SDC New Issues database, Perfect Information Debt and Perfect Information Filings. For transactions where any key financial information is missing in the SDC database, such information is manually added from the Compustat North America database. Bidder financing can come in a variety of sources such as direct lending, new credit facilities, underwriting of equity securities or underwriting of debt securities.³ Matching financing bank with advisors enables me to single out the dual role deals. Of the 1,023 transactions there are 97 (9.5%) cases where any of the dual role requirements are fulfilled. I search for documentation of financing up to one year after the deal announcement.

³ The type of financing is always disclosed in the SDC data although the identity of the provider is not always given.

Although a target advisor might prepare to try to be assigned a dual role far prior to a deal being announced, the actual existence of a dual role advisor situation may not arise until after the deal announcement. In the Toys “R” Us case the dual role bank did not approach bidders with financing until after two months after the merger agreement was signed.⁴

2.2.1 Summary Statistics

Panels A and B of Table I provide an overview of all transactions divided into dual role, non-dual role and total number of deals. In Panel A, we see that the median one-month deal premium is lower for deals with a dual role advisor (33.0%) compared to deals without dual role advisors (35.9%). Dual role deals also have a higher occurrence of lawsuits by shareholders (6.2% versus 2.9%). These are first indications of that dual role advising is commensurate with conflicts of interests.

The median ranking of dual role advising is Tier 3, whereas non-dual role advisors median rank is Tier 1. This indicates that lower ranked banks may be more prone to engage in dual role lending. The mean number of advisors is slightly higher for dual role transactions with 1.59 versus 1.29 for non-dual role deals. Target firms in dual role transactions are on average slightly higher valued compared to target firms in non-dual role deals, as their median market-to-book ratio (M/B) is 2.58 versus 2.47. Whereas it is surprising that the dual role deals, which are larger on average than non-dual role deals, have lower ranked advisors, this is counterbalanced for by that these deals also have more advisors involved. Interestingly, the median past 12 months return on equity (ROE) is 11.0% for dual role deals, which is somewhat higher than that for the non-dual role group at 9.59%. Hence, firms in dual role deals may not necessarily be firms with financial troubles.

Levels of advisory fees are indistinguishable between groups. Both have a median of 0.10%. Median leverage levels are at comparable levels with 0.54 for

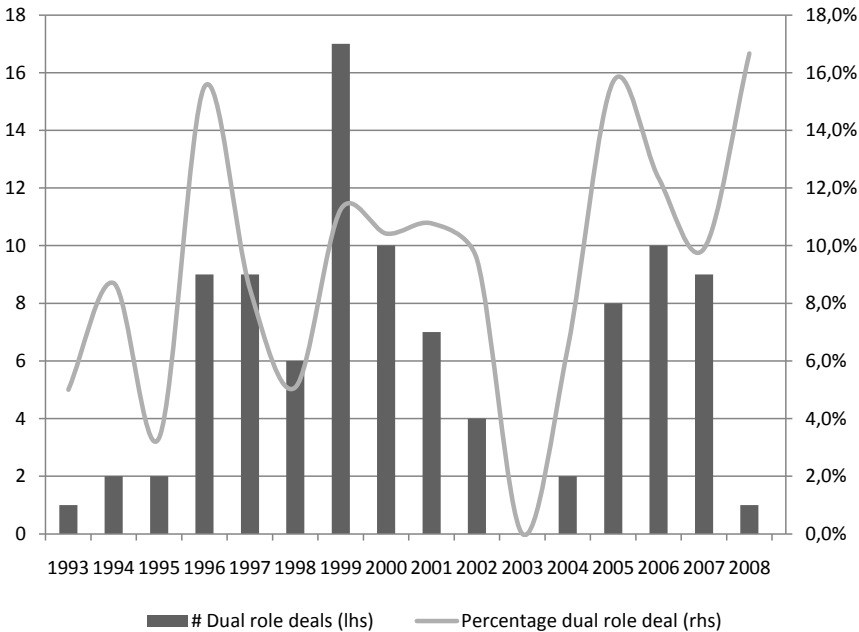
⁴ The lag in time from announcement of the deal to documentation of the financier’s identity makes it difficult to study the otherwise interesting case of withdrawn or failed transactions. In SDC there are 5,550 withdrawn bids over the period. 1,160 entries have a named advisor and of these, 179 were to be financed through one of the external financing methods listed (borrowing, bridge loan, common stock issue, debt issue, foreign provider, junk bonds, new line of credit, mezzanine, preferred stock issue, rights issue). However, only 15 cases disclose the name of the intended financier, which makes it infeasible to study if dual role situations have an impact on the probability of deal failure.

non-dual role versus 0.61 for dual roles. Whereas the median for the amount of deals performed within the same state is higher for dual role deals (18.6%) than for non-dual role deals (16.2%), the relationship is the reverse for the number of deals done within the same industry (47.4% versus 51.0%). The incidence of hostile deals is slightly higher in the non-dual role group (2.48%) compared to dual role deals (2.06%). The same holds for number of deals with competing bidders with ratios of 3.24% against 1.03%. Median size of transaction value is \$1,270 million for dual role and \$349 million for non-dual role deals. The median size of the target's assets is \$1,570 million for dual role targets and \$417 million for non-dual role targets. Cash only as well as shares only considerations are more common in non-dual deals (77.2% and 3.13%) compared to dual role deals (67.0% and 1.03%). Subsequently, hybrid consideration is more often used in dual role transactions with 24.7% versus 16.5% for non-dual role transactions.

In Panel B, some characteristics on the type of bidder financing are outlined. Comparing the various external means of financing, we see that the most prevalent financing form for non-dual role deals is bank borrowing, which constitute 59.2% of the transactions. This is followed by new lines of credit (29.5%), issuance of debt securities (19.3%) and issuance of common stock (8.86%). The pattern is slightly different for dual role deals with bank borrowing being the most common source of financing (48.5%) and thereafter followed by issuance of debt securities (43.3%), new credit lines (22.7%) and issuance of common stock (13.4%). Forms of financing such as the use of bridge loans, using a foreign provider of funds, junk bonds, mezzanine and the issuance of preferred stock are less common in both groups of deals. Note that a deal can include several different types of financing. Last, but not least, we see that the median CAR of bidders for non-dual role deals is 0.11%, which is considerably lower than the 0.50% enjoyed in dual role deals. This is an early indication of that acquirers may gain disproportionately on behalf of sellers in deals where they are financed by the target's advisor. A *t*-test between dual role and non-dual role transactions reveals that there are significant differences in the means for all three premium variables as well as for the fee ratio but not for the occurrence of lawsuits or for bidder CAR. Though these results do not unambiguously point in one or the other direction, they still suggest that dual role deals may carry with them manifested conflicts of interest.

Figure II shows the timing of dual role deals in absolute numbers and as percentages of the sample. Dual deal timing is measured from the announcement date. Whereas the number of dual role deals is on its highest level in 1999, the relative contribution to the total amount of deals peaks in 2005. The slightly higher number for the first half of 2008 should be viewed cautiously as only 6 deals were announced in that period.

Figure II. Time line of dual role deals



2.2.2 Model

The 1,023 deals are analyzed with a standard OLS model:

$$y = a + \beta x + \delta Z + \varepsilon \tag{1}$$

In the base model y is the deal premium measured as the offer price over the market price of stock for periods of one month, one week and one day prior to the deal announcement.⁵ x is the key independent variable of this paper as it indicates the presence of a dual role advisor. Z is a vector of 25 variables, which control for

⁵ The corresponding numbers of calendar days are 30, 7 and 1 respectively.

firm and deal characteristics. The vector includes variables for size, target profitability, leverage, geographic data, industry data, bidder hostility, lawsuits, number of competing bidders, method of payment, type of bidder financing, advisor rankings etc.⁶ All variables are detailed in the Appendix. I cluster standard errors by industry and employ year fixed effects for the 15-year sample period throughout the analysis.

2.3 Empirical Results and Analysis

2.3.1 Determinants of Dual Role Advising

Before turning to the possible impact of dual role advising, I first estimate the probability that such advising occurs using a probit model.

$$Pr(\text{Dual role}=1) = a + \beta W + \varepsilon \quad (2)$$

W includes the vector of standard controls Z , as well as measures for corporate governance and the strength of relations between target firms and advisors. Corporate governance is measured through the Gov-Score index, which is available for 478 of the transactions in my sample. For full details on the construction of Gov-Score and its 51 underlying components, see Brown and Caylor (2004, 2006).⁷ The strength of relations between the advisor and the target firm is measured as a percentage of the number of times the target has used the advisor as advisor in any M&A situation in the past 5 years using SDC data. This method of measuring the strength of advisory relations resembles that in Ivashina and Kovner (2008). The second column in Table II shows the marginal effects when the Gov-Score index is included in the regression. The higher the score of corporate governance quality, the lower is the prevalence of dual role advising. The

⁶ Because only 468 of the acquiring firms in my sample are public firms, I have to leave out some variables that have previously been found to affect takeover premium. E.g., Shleifer and Vishny (2003), Rhodes-Kropf and Viswanathan (2004) and Rhodes-Kropf, Viswanathan and Robinson (2005) find that the acquiring firm's market-to-book ratio prior to deal announcement is positively related to the premium, which is argued to be driven by the fact that growth firms (acquirers with high market-to-book ratios) may be overvalued which makes the acquirer's stock an attractive method of payment in a merger.

⁷ Brown and Caylor (2006) find that the factors that are the most significant valuation drivers are; the company either has no poison pill or a pill that was shareholder approved, option re-pricing did not occur within the last three years, directors are subject to stock ownership guidelines, all directors attended at least 75% of board meetings or had a valid excuse for non-attendance, the average options granted in the past three years as a percentage of basic shares outstanding did not exceed 3%.

coefficient, which is significant on the 1% level, indicates that the probability of dual role advising is decreasing with 3.0 pp. for each higher score point. Leverage has the opposite impact. The higher the target leverage, the more likely that dual role advising will occur. The coefficient is 4.2 pp. and statistically significant on the 1% level. The coefficient for previous interaction is negative but not statistically significant. Whether a bidder is friendly or hostile does not significantly affect the probability of dual role advising. Some further results of interest, which all are significant at the 5% level, relate to the number of competing bidders and the number of advisors. When competition is present in a takeover situation the prevalence of dual role advising is reduced by 10.4 pp. This result indicates that the more bidders, the less easy it is for the target advisor to control all events and secure both sides of a deal. We also see that the probability of dual role situations is increasing in the number of advisors that are hired.

2.3.2 Deal Premium

Table III presents results from OLS regressions with deal premium, defined as the percentage premium of offer price over target price one month, one week, and one day prior to deal announcement, as the dependent variable. After controlling for firm and deal characteristics, I find a negative, economically and on the 5% level statistically significant relation between a dual role advisor and deal premium. When the target advisor is a dual role advisor, one month deal premiums are 12.0 pp. lower compared to deals without a dual role advisor. Corresponding results for the one week and one day periods are 7.7 pp. and 7.3 pp. respectively.

These results point to that dual role advisors' integrity in advising a target is infected by the prospects of the fees they might obtain on the buy side. Overall, the hypothesis that dual role advisors bring along conflicts of interest between themselves and shareholders is supported. The magnitude of this conflict is large with shareholders losing out on comparatively low bid premiums. Focusing on the results for one-month premium, we see that, though not generally statistically significant, the control variables have the expected signs. For example, deals in the same state incur a premium, which is consistent with Kedia, Panchapagesan and Uysal (2008) as well as Grote and Ueber (2006) who find that acquirers have a strong and consistent preference for geographically proximate target companies. As one might have expected, I find that M&A in the same industry, which can give rise to synergy effects, as well as the presence of competing bidders are both

features that drive up transaction premium. The effects are 3.4 pp. and 2.3 pp. respectively.

As suggested by Hogan (2006) it may be that conflicts of interest can be mitigated by the use of several advisors where the key role of one is to provide a fairness opinion. However, we see that the premium is actually decreasing by 1.8 pp. per advisor engaged by the target. This could indicate that the conflict-mitigating effect of employing several advisors is dominated by the free riding problems that arise when several agents are hired to perform largely the same or overlapping tasks. Anecdotal, but highly entertaining, evidence of free riding among jointly hired advisors is given in William D. Cohen's comprehensive account of investment banking firm Lazard Frères & Co.⁸ Cohen tells the story of a deal where Lazard acted as co-advisor with Salomon Brothers (p 213): "...[the Salomon Brothers banker] couldn't get over the fact that the Lazard bankers had produced nothing in writing but [the Lazard banker] had figured, correctly, that the Salomon bankers would." The results are also consistent with Kisgen et al. (2009) who find that fairness opinions do not affect deal outcomes when used by targets.

We see that those deals where target shareholders file a lawsuit carry with them lower premium on average. The relatively high coefficient of -5.0 pp. is quite unsurprising. Even though lawsuits do not arise until after a deal is proposed, it serves as a proxy for general shareholder discontent, which may otherwise be unobservable. Other conventional results are that hostile takeovers are associated with 8.3 pp. higher bidding premium than in friendly deals and that the larger the target firms, the lower the deal premium. In terms of the method of financing, bridge loans, a foreign lender and junk bond deals are performed at large deal premium discounts. Whereas the use of junk bonds in particular could be an indicator of that a target company is in a very poor shape, the results on borrowing source should not be overplayed as the number of observations for these categories are very small, which was shown earlier in Table I.

2.3.3 *Lawsuits*

It is well established that lawsuits related to M&A are very costly for firms for numerous reasons. Thompson and Thomas (2003) document that plaintiffs generally receive large monetary settlements in acquisition related class action

⁸ William D. Cohen, *The Last Tycoons: The Secret History of Lazard Frères & Co.* Broadway Books New York 2007, ISBN 9780767919791.

lawsuits. Lawsuits are of course costly for both bidding and target firms. It has even been suggested in some professional journals that acquisitions in general are bad because the lawsuits they bring with them cause firms to fall behind their competitors.⁹ Gong, Louis and Sun (2008) find that post-merger announcement losses for bidders can partly be attributed to the probability that the acquirer will face a lawsuit. They also find that lawsuits are costly for the firm because of not only settlement costs and lawyer fees but also because it tends to distract management at the very moment when it should be concentrating on the merger at hand. In Table IV, I examine whether deals with a dual role advisor are more likely to be brought to court by shareholders than deals with no dual role advisors. A probit model with lawsuit as dependent variable on all remaining variables show that deals with dual role advisors are 3.0 pp. more likely to end up in a court. The result is statistically significant on the 10% level. Clearly, the action by shareholders to file legal charges against the board for accepting a bid for the firm is a strong indication of discontent with the deal and deal terms. Although the effects are not very strong, the results do support the hypothesis that dual role advisors are a feature that brings with it costly conflicts of interest with shareholders.

2.3.4 Target Advisor Fees

Another approach to examining if dual role advisors give rise to conflicts of interest is to look at merger fees as a percentage of the transaction value paid to the target advisors. McLaughlin (1990, 1992) document that fees paid to target advisors are contingent on the price realized and that different payoff functions may influence tender offer outcomes. Kale, Kini and Ryan (2003) observe that fixed fees are greater for target advisors than for acquirer advisors and conclude that target advisors have little incentive to complete a deal at any cost. Hunter and Walker (1990) examine different merger fee contracts and find that they commonly consist of a combination of a fixed fee and a fee based on the transaction price. Importantly, they find that this type of contract appears to provide the proper incentive for advisors to increase their efforts to generate better outcomes. Hunter and Jagtiani (2003) show that buy-side advisor fees are associated with greater acquisition gains realized by the acquirer.

⁹ This is for example argued by Barbara Etzel, “A chill wind on tech mergers: HP-Compaq controversy could stall further M&A activity in sector”. *Investment Dealers Digest*, April 15, 2002.

To examine whether there are differences in the fees of dual role advisors compared to non-dual role advisors, I run an OLS regression with fee as percentage of transaction value as dependent variable and all independent variables as in (1). We see in Table V that dual role advisors on average receive 0.2 pp. lower fees. The coefficient is significant on the 10% level. The economic effect is not trivial since the average fee ratio, as shown in Table I, is 0.52%. This could be an indication of that the target shareholders are unhappy with their advisory performance and thus pay them less. Again, this points to a conflict between shareholders and dual role advisors. We can also note that the levels of fees increase by 0.2 pp. per tier of advisor ranking. Pay is increasing in the size of the target. Both cash-only and shares-only considerations reduce the fee levels.

Overall, my results are consistent with existing literature to the extent that I also find that fees are related to the client's perceived notion of the quality of advice. I will return to these results as they play an important role in discussing the alternative hypothesis of dual role advisors being a value-increasing feature in mergers.

2.3.5 Bidder Returns

The announcement returns for acquiring firms around the deal announcement has been studied extensively in the finance literature. Most studies document negative bidder returns. Roll (1986), followed by Moeller, Schinglemann and Stulz (2004), suggest that this is due to management entrenchment or hubris. However, Becher (2009) notes that the literature on bidder returns generally suggest that mergers are likely motivated by synergies rather than managerial hubris. Jensen and Ruback (1983), Malatesta (1983), Asquith, Brunner and Mullins (1983) instead suggest that results may be driven by problems in measuring bidder returns. Both Bhagat, Ming, Hirshleifer and Noah (2004) and Hietala, Kaplan and Robinson (2003) point to that results may be caused by a surprise effect of the merger announcement rather than the pure economics of the deal itself. Boone and Mulherin (2008) find that low bidder returns are a function of a competitive takeover market. Fuller, Petrie, Netter and Stegmoeller (2002) study shareholder returns for firms that acquired five or more firms within a short time period. They find that whereas shareholders of the bidding firm gain when the bid is for buying a private firm or subsidiary they lose when the firm purchases a public firm. Mitchell, Pulvino and Stafford (2004) observe that price pressure from merger arbitrage bias bidder

returns downward. I study bidder returns with three day CAR around the acquisition announcement (-1, +1). CAR is computed using a market model with an estimation period from 180 trading days to 21 trading days prior to the announcement date. Table VI displays results with the CAR as dependent variable. We see that mergers with a dual role advisor have better announcement returns than deals without dual role advisors. The CAR is 1.9 pp. and statistically significant on the 10% level. Thus, dual role advising seems to be bad for the target party and good for the bidding party.

2.3.6 Alternative Hypothesis

As previously mentioned, an alternative explanation for the use of dual role advisors is that they may be needed as financiers in deals that are, for one or the other reason, difficult to finance. If this is the case, then the results that premiums are lower in dual role deals would not necessarily mean that the net effect for target shareholders is negative compared to the counterfactual effect of a deal not talking place. To control for whether there are observable or unobservable differences in the data that could explain dual role advising within the alternative story, I would like to compare deals with similar characteristic. Since it is difficult to match the transactions directly based on multiple relevant characteristics, I first use propensity score matching, which reduces the multiple-dimension matching problem to that of a single-dimension. To control for unobservable characteristics I use an instrumental variable (IV) approach.

2.3.6.1 Propensity Score

By using the propensity score, I can take into account that the characteristics of dual role transactions may differ from non-dual loan transactions and ensure that these characteristic do not drive the results. I follow the methodology used in Giannetti and Ongena (2009) and Hellman, Lindsey and Puri (2008) who use the matching techniques suggested by Rosenbaum and Rubin (1983). Algorithms for Stata estimation follow Becker and Ichino (2002). Using the probit model specified in (2), I estimate the propensity score that a firm in the sample encounters a dual role advisor. Since measures for the targets' level of corporate governance is only available for 478 transactions, regression (2) is estimated without including the Gov-Score index. The average effect of treatment on the treated is computed by matching each treatment observation (transaction with a dual role advisor) with

non-dual role transactions of similar propensity score and taking the average difference between these matched transactions. I report four different methods of measuring the average effect in Table VII. The Nearest-neighbor method performs matching with equal weights on the closest propensity score. The Radius method matches propensity scores that all fall into a neighborhood of 0.10. Gaussian kernel matching uses weights that are inversely proportional to the distance between the propensity scores of treated and controls. Finally, the Stratification method matches the range of score values within an interval were treated and control units have on average the same propensity score. Overall, we see that deals with dual role advisors consistently have lower premiums, higher probability of lawsuits and lower fees paid to advisors. Statistical significance varies across the various matching methods with the nearest neighbor matching standing out as yielding the weakest results. Statistically significant estimates for the one month premium vary from -12.2 pp. to -14.0 pp. Thus, controlling for observable differences in firm characteristic does not drive away the previously reported results that dual role advising is a feature that brings with it costly conflicts of interest with target shareholders.

In Table IV, we saw that there is an increased probability of lawsuits in dual role deals. These results hold also in the propensity score matching. Lawsuits are between 4.3 pp. and 5.2 pp. more likely when a dual role advisor is present compared to the control group of non-dual role advisor deals. As it is difficult to reconcile these results with the alternative explanation that dual role advising could be a good thing for target shareholders, they present strong evidence against the alternative story. In the related situation of stapled financing, Povel and Singh (2009) argue that for staples to be optimally provided the lender cannot expect to breakeven, but must be compensated by the seller for offering the loan. In the previous analysis of fees (Table VI), we saw that advisor fees are generally lower in dual role transactions than in other deals. This suggests that lenders do not receive special compensation for overly favorable loans. The propensity score estimates confirm that results hold after accounting for matching. Statistically significant results vary from -0.2 to -0.3 pp. Overall, the results in the propensity score analysis point to that the results obtained in the earlier regressions are not driven by observable differences between deals with dual role advisors compared to deals without.

2.3.6.2 Instrumental Variable

The propensity score is based only on observable characteristics and cannot take into account any bias coming from unobservable heterogeneity between treatment and control groups. To directly address such bias, I need an instrument that does not directly affect deal premium but is correlated with the dual-role advising indicator. Inspired by Allen and Dudley (2009) who instrument the quality of a financial advisor with the mean advisor quality in the same state and year and whether the issuer used an advisor on the previous issue, I use as instrumental variable the mean occurrence of dual role advising in the same state and year of the transaction. The general occurrence of advisors that turn out to be dual role advisors in a given state and year should affect the likelihood that a transaction is performed with a dual role advisor, but should not affect the size of the premium paid in the transaction once the target firm has chosen the advisor.¹⁰ Thus, the instrument satisfies the exclusion restriction requirement. First- and second-stage regressions are reported in Table VI where we see that the negative and significant impact of a dual role advisor on deal premium is robust in the premium regression after controlling for unobservable private information. Coefficients in the second stage regression are -18.47 pp., -11.84 pp. and -12.35 pp. for the one month, one week, and one day time periods. Results for one month and one day are significant on the 10% level. Finally, we can revisit the predicted outcomes in Figure I and conclude that the obtained results support the base hypothesis that dual role advising is bad for shareholders.

2.4 Conclusion

I study 1,023 US M&A over the period 1993 to 2008 and find that in deals where a bank engages in dual role advising, deal premiums are 12.0 pp. lower than in deals with no dual role advisor. Whereas sellers lose out, the bidding firm gains a CAR around the announcement day that is 1.9 pp. higher in deals with dual role advising compared to deals without. Furthermore, deals with dual role advisors are more likely to be taken to court by shareholders and the advisor fees are lower compared to non-dual role deals. Overall, the results do not support an alternative hypothesis that dual role lending is a helpful feature in transactions where it might be difficult

¹⁰ Similar motivations for using geographically related instruments are found in a range of papers, e.g. Hellman et al. (2008) and Berger, Miller, Petersen, Rajan and Stein (2005).

to otherwise obtain bidding financing. Results hold after both propensity score matching and instrumental variable analysis.

The findings in this paper are consistent with Delaware court statements, finance and law practitioners' views, as well as related literature on investments banks and conflicts of interests with shareholders. Altogether, these results point to that dual role advisors hired by target firms may not have fulfilled their obligation of improving the pricing of the transaction. Being a dual role advisor appears to create costly conflicts of interests, which stem from that the advice to target shareholders and board is polluted by a desire on the part of the advisor to obtain additional fees from financing the successful bidder. Importantly, sound corporate governance practices in target firms is associated with fewer occurrences of dual role situations. The results suggest that selling firms should be very careful in scrutinizing the activities of their advisors and should demand full disclosure of which activities the advisor is planning to engage in with the bidding firm.

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2.6 Tables

Table I. Summary statistics

Premium is the offer price over the market price of stock for periods of one day, one week and one month prior to the deal announcement. *Fee ratio* is the target/seller advisor fee as percentage of transaction value. *Target M/B* is market value of total assets divided by the book value of total assets. *Target ROE* is measured as last twelve-month net income over latest reported common equity. *Target leverage* is measured as book value of total debt divided by the book value of total assets. *Acquirer-target same state* indicates if acquirer and target are incorporated in the same state. *Acquirer-target same ind.* indicates if target and acquirer industries are classified at the same 2-digit SIC level. *Hostile* takes value one if bid is hostile. *Lawsuit* indicates if bid is contested in a lawsuit. *Competing bidders* indicates if competing bids are announced after deal announcement. *Target/seller advisor rank* ranks advisors in three tiers based on market value advised over the sample period. *Transaction value* is the natural log of transaction value. *Target assets* is the natural log of total assets. *#Target/seller advisors* give the numbers of advisors retained by target and/or seller. *Previous interaction* is the percentage of the number of times the target has used the advisor in an M&A situation in the past 5 years. *Gov-score* is a measure of the level of corporate governance. *Bidder CAR* is cumulative abnormal returns from -1 to +1 with date 0 being the announcement date. *Cash only consideration*, *Shares only consideration* and *Hybrid consideration* are indicator variables of whether the bid is in cash, shares or combination of both. Bidder financing is denoted by indicator variables for *Borrowing*, *bridge loan*, *Common stock issue*, *Debt issue*, *Foreign provider of funds*, *Junk bond issue*, *New line of credit*, *Mezzanine*, *Preferred stock issue* and *New rights issue*. * significant at 10%; ** significant at 5%; *** significant at 1%.

	Median			Mean			t-test of means
	No Dual Role	Dual Role	All	No Dual Role	Dual Role	All	
Panel A: Deal characteristics (%)							
Premium 1 month	35.9	33.0	35.5	44.5	32.7	43.1	-2.26**
Premium 1 week	32.1	28.4	31.8	38.6	32.9	37.6	-2.83***
Premium 1 day	27.3	23.8	26.8	32.9	32.5	32.2	-2.30**
Fee ratio	0.10	0.10	0.10	0.56	0.11	0.52	-5.00***
Target M/B	2.47	2.58	2.49	3.34	1.17	3.14	-1.13
Target ROE	9.59	11.0	9.70	6.77	2.16	8.17	-0.11
Target leverage	0.54	0.61	0.55	0.64	0.59	0.63	5.41***
Acquirer/target same state	16.2	18.6	16.4	16.2	18.6	16.4	0.57
Acquirer/target same ind.	51.0	47.4	50.6	51.0	47.4	50.6	-0.66
Hostile	2.48	2.06	2.44	2.48	2.06	2.44	-0.27
Lawsuit	2.92	6.19	3.23	2.92	6.19	3.23	1.30
Competing bidders	3.24	1.03	3.03	3.24	1.03	3.03	-1.87**
Target/seller advisor rank	1	3	1	1.47	1.92	1.52	3.15***
Transaction value (mUSD)	349	1,270	410	1,590	2,470	1,670	2.53**
Target assets (mUSD)	417	1,570	481	482	674	500	1.16
# Target/seller advisors	1	1	1	1.29	1.59	1.31	3.79***
Previous interaction	0.20	0.19	0.20	0.26	0.23	0.26	-1.53
Gov-score	9	6	9	9.04	7.41	8.71	-5.65***
Bidder CAR	0.11	0.50	0.17	0.63	0.79	0.65	0.18
Cash only consideration	77.2	67.0	76.3	77.2	67.0	76.3	-2.04**
Shares only consideration	3.13	1.03	2.93	3.13	1.03	2.93	-1.78*
Hybrid consideration	16.5	24.7	17.3	16.5	24.7	17.3	1.80*
Panel B: Bidder financing (%)							
Borrowing	59.2	48.5	58.2	59.2	48.5	58.2	-2.00**
Bridge loan	6.48	6.19	6.45	6.48	6.19	6.45	-0.11
Common stock issue	8.86	13.4	9.29	8.86	13.4	9.29	1.26
Debt issue	19.3	43.3	21.6	19.3	43.3	21.6	4.59
Foreign provider of funds	3.88	5.15	4.00	3.88	5.15	4.00	0.54
Junk bond issue	0.11	0.00	0.10	0.11	0.00	0.10	-1.00
New line of credit	29.5	22.7	28.8	29.5	22.7	28.8	-1.50
Mezzanine	0.54	1.03	0.59	0.54	1.03	0.59	0.46
Preferred stock issue	2.27	7.21	2.74	2.27	7.21	2.74	1.84*
New rights issue	0.97	0.00	0.88	0.97	0.00	0.88	-3.01**
Observations	926	97	1023	926	97	1023	

Table II. Determinants of dual role advising

The table presents marginal effect from probit regressions of each explanatory variable on the probability of a deal role situation. *Gov-score* is a measure of the level of corporate governance. *Target M/B* is market value of total assets divided by the book value of total assets. *Previous interaction* is the percentage of the number of times the target has used the advisor in an M&A situation in the past 5 years. *Target ROE* is measured as last twelve-month net income over latest reported common equity. *Target leverage* is measured as book value of total debt divided by the book value of total assets. *Acquirer-target same state* indicates if acquirer and target are incorporated in the same state. *Acquirer-target same industry* indicates if target and acquirer industries are classified at the same 2-digit SIC level. *Hostile* takes value one if bid is hostile. *Competing bidders* indicates if competing bids are announced after deal announcement. *Target/seller advisor ranking* ranks advisors in three tiers based on market value advised over the sample period. $\ln(\text{Transaction value})$ is the natural log of transaction value. $\ln(\text{Target assets})$ is the natural log of total assets. $\#\text{Target/seller advisors}$ give the numbers of advisors retained by target and/or seller. *Cash only consideration*, *Shares only consideration* and *Hybrid consideration* are indicator variables of whether the bid is in cash, shares or combination of both. Bidder financing is denoted by indicator variables for *Bridge loan*, *Common stock issue*, *Debt issue*, *Foreign provider of funds*, *New line of credit*, *Mezzanine* and *Preferred stock issue*. Standard errors adjusted for clustering on target industry in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	Dual Role Advising	
Gov-score		-0.030*** (0.007)
Target M/B	-0.001* (0.001)	-0.002 (0.002)
Previous interaction	-0.029 (0.028)	-0.070 (0.075)
Target ROE	0.002 (0.003)	0.019 (0.015)
Target leverage	0.010*** (0.003)	0.042*** (0.014)
Acquirer-target same state	0.020 (0.017)	0.035 (0.045)
Acquirer-target same industry	-0.013 (0.012)	-0.005 (0.033)
Hostile	-0.010 (0.033)	-0.014 (0.084)
Competing bidders	-0.035** (0.016)	-0.104** (0.048)
Target/seller advisor ranking	0.010** (0.005)	0.032** (0.013)
Ln(Transaction value)	0.020*** (0.007)	0.018 (0.023)
Ln(Target assets)	-0.005 (0.007)	-0.026 (0.022)
# Target/seller advisors	0.019** (0.008)	0.051** (0.026)
Cash only consideration	-0.076* (0.044)	-0.173* (0.100)
Shares only consideration	-0.043*** (0.009)	-0.123*** (0.038)
Hybrid consideration	-0.030* (0.018)	-0.073 (0.061)
Bidder financing: bridge loan	0.001 (0.024)	0.031 (0.086)
Bidder financing: common stock issue	0.040 (0.030)	0.041 (0.064)
Bidder financing: debt issue	0.077*** (0.022)	0.143*** (0.042)
Bidder financing: foreign provider of funds	-0.002 (0.022)	0.008 (0.054)
Bidder financing: new line of credit	-0.001 (0.010)	0.001 (0.032)
Bidder financing: mezzanine	0.036 (0.086)	-0.036 (0.105)
Bidder financing: preferred stock issue	0.110 (0.067)	0.412*** (0.147)
Year fixed effects	Yes	Yes
Observations	1023	478

Table III. Deal premium

OLS regressions of each explanatory variable on deal premium. *Dual role indicator* is one if the bid is financed by the seller or target advisor and zero otherwise. *Target M/B* is market value of total assets divided by the book value of total assets. *Target ROE* is measured as last twelve-month net income over latest reported common equity. *Target leverage* is measured as book value of total debt divided by the book value of total assets. *Acquirer-target same state* indicates if acquirer and target are incorporated in the same state. *Acquirer-target same industry* indicates if target and acquirer industries are classified at the same 2-digit SIC level. *Hostile* takes value one if bid is hostile. *Lawsuit* indicates if bid is contested in a lawsuit. *Competing bidders* is one if competing bids are announced after deal announcement. *Target/seller advisor*

	1 month	1 week	1 day
Dual role indicator	-12.038** (5.627)	-7.744** (3.444)	-7.250** (3.604)
Target M/B	-0.794 (0.922)	-0.143 (0.091)	-0.127** (0.050)
Target ROE	2.877 (3.118)	0.467 (0.330)	0.489* (0.281)
Target leverage	0.027 (0.171)	-0.045 (0.167)	-0.001 (0.153)
Acquirer-target same state	2.722 (4.179)	-1.093 (3.637)	0.561 (3.759)
Acquirer-target same industry	3.376 (4.916)	0.307 (2.424)	-0.183 (2.231)
Hostile	8.263 (7.464)	9.884 (7.615)	12.530* (7.267)
Lawsuit	-5.054 (7.396)	-1.769 (8.634)	-0.591 (8.683)
Competing bidders	2.269 (6.161)	5.065 (4.296)	3.590 (4.566)
Target/seller advisor ranking	-0.428 (1.295)	0.089 (0.828)	0.312 (0.686)
Ln(Transaction value)	5.376* (3.118)	1.175 (1.591)	2.058 (1.496)
Ln(Target assets)	-6.078** (2.484)	-2.511* (1.312)	-2.675** (1.246)
# Target/seller advisors	-1.832 (2.333)	-2.518 (1.690)	-2.131 (1.732)
Cash only consideration	0.095 (6.901)	3.258 (6.276)	1.343 (5.821)

ranking is a three-tier ranking of advisors based on market value advised over the sample period. Tier 1 includes advisors ranked 1-5, Tier 2 includes advisors ranked 6-15 and Tier 3 includes advisors below rank 16. $\ln(\text{Transaction value})$ is the natural log of transaction value. $\ln(\text{Target assets})$ is the natural log of total assets. # *Target/seller advisors* give the numbers of advisors retained by target and/or seller. *Cash only consideration*, *Shares only consideration* and *Hybrid Consideration* are indicator variables of whether the bid is in cash, shares or combination of both. Bidder financing is denoted by indicator variables for *Borrowing*, *Bridge loan*, *Common Stock Issue*, *Debt Issue*, *Foreign Provider of funds*, *Junk bond issue*, *New line of credit*, *Mezzanine*, *Preferred stock issue* and *New rights issue*. Standard errors adjusted for clustering on target industry in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

<i>continued</i>	1 month	1 week	1 day
Shares only consideration	-10.728 (10.153)	-4.580 (8.281)	-4.443 (7.920)
Hybrid consideration	-5.616 (7.306)	2.198 (6.846)	1.193 (6.877)
Bidder financing: borrowing	-2.572 (3.491)	-0.782 (2.845)	-2.345 (2.799)
Bidder financing: bridge loan	-14.198*** (5.224)	-9.897** (4.666)	-9.543** (4.259)
Bidder financing: common stock issue	-4.009 (4.910)	-6.810** (3.147)	-3.626 (3.368)
Bidder financing: debt issue	0.181 (3.664)	1.415 (3.141)	1.208 (3.097)
Bidder financing: foreign provider of funds	-11.527** (5.181)	-8.039** (3.788)	-7.870* (4.028)
Bidder financing: junk bond issue	-49.535*** (12.208)	-61.337*** (9.928)	-52.353*** (9.008)
Bidder financing: new line of credit	5.871** (2.589)	2.338 (1.940)	1.533 (2.094)
Bidder financing: mezzanine	7.856 (7.302)	9.109* (4.811)	8.442 (5.868)
Bidder financing: preferred stock issue	9.263 (7.486)	9.384 (8.362)	8.551 (7.172)
Bidder financing: new rights issue	-6.158 (11.433)	-7.245 (7.076)	-6.146 (5.918)
Constant	56.797*** (12.172)	54.634*** (11.700)	46.042*** (9.280)
Year fixed effects	Yes	Yes	Yes
Observations	1023	1023	1023
R-squared	0.09	0.10	0.08

Table IV. Lawsuits

The table reports marginal effects from probit regressions of each explanatory variable on the probability that a deal is subject to a lawsuit from target shareholders. *Dual role indicator* is one if the bid is financed by the seller or target advisor and zero otherwise. *Target M/B* is market value of total assets divided by the book value of total assets. *Target ROE* is measured as last twelve-month net income over latest reported common equity. *Target leverage* is measured as book value of total debt divided by the book value of total assets. *Acquirer-target same state* indicates if acquirer and target are incorporated in the same state. *Acquirer-target same industry* indicates if target and acquirer industries are classified at the same 2-digit SIC level. *Hostile* takes value one if bid is hostile. *Premium* is the offer price over the market price of stock for periods of one day, one week and one month prior to the deal announcement. *Target/seller advisor ranking* is a three-tier ranking of advisors based on market value advised over the sample period. Tier 1 includes advisors ranked 1-5, Tier 2 includes advisors ranked 6-15 and Tier 3 includes advisors below rank 16. $\ln(\text{Transaction value})$ is the natural log of transaction value. $\ln(\text{Target assets})$ is the natural log of total assets. # *Target/seller advisors* give the numbers of advisors retained by target and/or seller. *Cash only consideration*, *Shares only consideration* and *Hybrid consideration* are indicator variables of whether the bid is in cash, shares or combination of both. Bidder financing is denoted by indicator variables for *Borrowing*, *Bridge loan*, *Common stock issue*, *Debt issue*, *New line of credit* and *Preferred stock issue*. All variables as described in the Appendix. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	Lawsuit		
Dual role indicator	0.030* (0.024)	0.031* (0.024)	0.031* (0.024)
Target M/B	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Target ROE	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)
Target leverage	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Acquirer-target same state	0.009 (0.012)	0.009 (0.012)	0.009 (0.012)
Acquirer-target same industry	-0.001 (0.008)	-0.001 (0.008)	-0.001 (0.008)
Hostile	0.047 (0.051)	0.046 (0.050)	0.045 (0.050)
Premium 1 month prior to announcement	-0.000 (0.000)		
Premium 1 week prior to announcement		0.000 (0.000)	
Premium 1 day prior to announcement			0.000 (0.000)
Target/seller advisor ranking	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)
Ln(Transaction value)	-0.003 (0.004)	-0.003 (0.004)	-0.003 (0.004)
Ln(Target assets)	-0.000 (0.004)	-0.000 (0.004)	0.000 (0.004)
# Target/seller advisors	-0.005 (0.007)	-0.004 (0.007)	-0.004 (0.007)
Cash only consideration	-0.084** (0.039)	-0.085** (0.039)	-0.085** (0.039)
Shares only consideration	-0.019*** (0.005)	-0.019*** (0.005)	-0.019*** (0.005)
Hybrid consideration	-0.025*** (0.008)	-0.025*** (0.007)	-0.025*** (0.007)
Bidder financing: borrowing	-0.010 (0.011)	-0.010 (0.011)	-0.010 (0.011)
Bidder financing: bridge loan	-0.010 (0.010)	-0.010 (0.010)	-0.010 (0.010)
Bidder financing: common stock issue	0.024 (0.020)	0.024 (0.020)	0.024 (0.020)
Bidder financing: debt issue	-0.010 (0.008)	-0.010 (0.008)	-0.010 (0.008)
Bidder financing: new line of credit	-0.016* (0.008)	-0.016* (0.008)	-0.016* (0.008)
Bidder financing: preferred stock issue	-0.007 (0.015)	-0.007 (0.014)	-0.008 (0.014)
Year fixed effects	Yes	Yes	Yes
Observations	1023	1023	1023

Table V. Fees

Table presents results from OLS regression of each explanatory variable on the fees received by the target/seller advisor. *Dual role indicator* is one if the bid is financed by the seller or target advisor and zero otherwise. *Target M/B* is market value of total assets divided by the book value of total assets. *Target ROE* is measured as last twelve-month net income over latest reported common equity. *Target leverage* is measured as book value of total debt divided by the book value of total assets. *Acquirer-target same state* indicates if acquirer and target are incorporated in the same state. *Acquirer-target same industry* indicates if target and acquirer industries are classified at the same 2-digit SIC level. *Hostile* takes value one if bid is hostile. *Lawsuit* indicates if bid is contested in a lawsuit. *Competing bidders* indicates if competing bids are announced after deal announcement. *Target/seller advisor ranking* is a three-tier ranking of advisors based on

	Fees
Dual role indicator	-0.002* (0.001)
Target M/B	0.000 (0.000)
Target ROE	0.000 (0.000)
Target leverage	-0.001** (0.001)
Acquirer-target same state	0.003 (0.003)
Acquirer-target same industry	0.001 (0.001)
Hostile	0.001 (0.002)
Lawsuit	-0.004 (0.004)
Competing bidders	-0.004 (0.004)
Target/seller advisor ranking	0.002*** (0.001)
Ln(Transaction value)	-0.005 (0.007)
Ln(Target assets)	0.003** (0.001)
# Target/seller advisors	0.002 (0.001)
Cash only consideration	-0.007** (0.003)
Shares only consideration	-0.007** (0.004)
Hybrid consideration	0.001 (0.004)
Bidder financing: borrowing	-0.000 (0.002)
Bidder financing: bridge loan	0.004* (0.002)

market value advised over the sample period. Tier 1 includes advisors ranked 1-5, Tier 2 includes advisors ranked 6-15 and Tier 3 includes advisors below rank 16. $\ln(\text{Transaction value})$ is the natural log of transaction value. $\ln(\text{Target assets})$ is the natural log of total assets. # *Target/seller advisors* give the numbers of advisors retained by target and/or seller. *Cash only consideration*, *Shares only consideration* and *Hybrid consideration* are indicator variables of whether the bid is in cash, shares or combination of both. Bidder financing is denoted by indicator variables for *Borrowing*, *Bridge loan*, *Common stock issue*, *Debt issue*, *Foreign provider of funds*, *Junk bond issue*, *New line of credit*, *Mezzanine*, *Preferred stock issue* and *New rights issue*. All variables as described in the Appendix. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

<i>continued</i>	Fees
Bidder financing: common stock issue	0.001 (0.001)
Bidder financing: debt issue	0.001 (0.002)
Bidder financing: foreign provider of funds	0.003* (0.001)
Bidder financing: junk bond issue	-0.005 (0.005)
Bidder financing: new line of credit	0.002* (0.001)
Bidder financing: mezzanine	0.005** (0.002)
Bidder financing: preferred stock issue	-0.004* (0.002)
Bidder financing: new rights issue	-0.000 (0.002)
Constant	0.007 (0.005)
Year fixed effects	Yes
Observations	1023
R-squared	0.34

Table VI. Bidder CAR

Table presents results from OLS regressions of each explanatory variable on the cumulative abnormal returns of bidders from announcement day -1 to announcement day +1. Estimation period is from -180 to -21 with 0 being the announcement date. *Dual role indicator* is one if the bid is financed by the seller or target advisor and zero otherwise. *Premium* is the offer price over the market price of stock for periods of one day, one week and one month prior to the deal announcement. *Target M/B* is market value of total assets divided by the book value of total assets. *Target ROE* is measured as last twelve-month net income over latest reported common equity. *Target Leverage* is measured as book value of total debt divided by the same state. *Acquirer-target same industry* indicates if target and acquirer industries are classified at the same 2-

	Bidder CAR		
Dual role indicator	0.019* (0.011)	0.019* (0.010)	0.019* (0.011)
Premium 1 month prior to announcement	-0.000** (0.000)		
Premium 1 week prior to announcement		-0.000 (0.000)	
Premium 1 day prior to announcement			-0.000 (0.000)
Target M/B	-0.001 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Target ROE	0.001 (0.005)	-0.003 (0.006)	-0.003 (0.006)
Target leverage	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Acquirer-target same state	0.010 (0.010)	0.008 (0.010)	0.008 (0.010)
Acquirer-target same industry	0.007 (0.007)	0.006 (0.007)	0.006 (0.007)
Hostile	-0.013 (0.021)	-0.013 (0.021)	-0.013 (0.022)
Ln(Transaction value)	-0.006 (0.005)	-0.007 (0.005)	-0.007 (0.005)
Ln(Target assets)	-0.004 (0.006)	-0.003 (0.006)	-0.003 (0.006)
Cash only consideration	0.020 (0.026)	0.021 (0.026)	0.021 (0.026)
Shares only consideration	-0.012 (0.031)	-0.010 (0.031)	-0.011 (0.031)
Hybrid consideration	-0.005 (0.027)	-0.002 (0.028)	-0.002 (0.027)
Bidder financing: borrowing	0.006 (0.010)	0.007 (0.010)	0.007 (0.010)
Bidder financing: bridge loan	-0.019* (0.011)	-0.020* (0.011)	-0.020* (0.011)
Bidder financing: common stock issue	0.001 (0.012)	0.002 (0.013)	0.002 (0.013)

digit SIC level. *Hostile* takes value one if bid is hostile. $\ln(\text{Transaction value})$ is the natural log of transaction book value of total assets. *Acquirer-target same state* indicates if acquirer and target are incorporated in the value. $\ln(\text{Target assets})$ is the natural log of total assets. *Cash only consideration*, *Shares only consideration* and *Hybrid consideration* are indicator variables of whether the bid is in cash, shares or combination of both. Bidder financing is denoted by indicator variables for *Borrowing*, *Bridge loan*, *Common stock issue*, *Debt issue*, *Foreign provider of funds*, *Junk bond issue*, *New line of credit*, *Mezzanine*, *Preferred stock issue* and *New rights issue*. All variables as described in the Appendix. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

<i>continued</i>	Bidder CAR		
Bidder financing: debt issue	-0.004 (0.011)	-0.002 (0.010)	-0.003 (0.011)
Foreign provider of funds	-0.012 (0.025)	-0.010 (0.025)	-0.011 (0.026)
Bidder financing: junk bond issue	-0.069 (0.055)	-0.076 (0.060)	-0.074 (0.061)
Bidder financing: new line of credit	-0.007 (0.011)	-0.007 (0.012)	-0.008 (0.012)
Bidder financing: mezzanine	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Bidder financing: preferred stock issue	-0.014 (0.018)	-0.013 (0.018)	-0.013 (0.018)
Bidder financing: new rights issue	0.008 (0.024)	0.014 (0.027)	0.015 (0.027)
Constant	0.110 (0.069)	0.110 (0.071)	0.108 (0.072)
Observations	468	468	468
Year fixed effects	Yes	Yes	Yes
R-squared	0.14	0.13	0.13

Table VII. Propensity score analysis

The table presents differences in deal premium for periods of 1 day, 1 week and 1 month before deal announcement for transactions, which involved a dual role advisor, and their matching transactions where no dual role advisor was involved. Propensity score is estimated using a probit model with the dependant variable taking the value one if the deal included a dual role advisor (treatment) and zero otherwise. All independent variables are as described in the Appendix. 22 blocks of equal score range is used and the analysis is restricted to the common support. Balancing tests are performed at the significance level 0.005. Matching is performed using Nearest-neighbor with equal weight (matching on the closest propensity score), Radius (matching on propensity score that falls into a neighborhood of 0.1), Gaussian kernel (matching with weights that are inversely proportional to the distance between the propensity scores of treated and controls), and Stratification (dividing the range of variation of the propensity score in intervals such that within each interval, treated and control units have on average the same propensity score). Bootstrapped standard errors in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%, two tailed.

	1 month premium	1 week premium	1 day premium	Lawsuits	Fees
Nearest-neighbor	-6.521 (14.447)	-5.893 (7.110)	-4.330 (4.495)	0.052* (0.028)	-0.000 (0.001)
Radius	-12.222*** (3.867)	-9.808** (4.013)	-7.843** (3.528)	0.036 (0.032)	-0.003*** (0.001)
Gaussian kernel	-14.001*** (5.092)	-9.288** (4.063)	-7.014** (3.573)	0.043* (0.024)	-0.002*** (0.000)
Stratification	-13.323*** (4.837)	-8.957** (3.809)	-8.053* (4.525)	0.045 (0.03)	-0.001* (0.000)

Table VIII. Instrumental variable approach of dual role advisors impact on deal premium

Table presents first and second stage regressions of each explanatory variable on the deal premium. *Dual role indicator* is one if the bid is financed by the seller or target advisor and zero otherwise. The variable is instrumented by the *Average occurrence of dual role advisors per state/year*. *Target M/B* is market value of total assets divided by the book value of total assets. *Target ROE* is measured as last twelve-month net income over latest reported common equity. *Target leverage* is measured as book value of total debt divided by the book value of total assets. *Acquirer-target same state* indicates if acquirer and target are incorporated in the same state. *Acquirer-target same industry* indicates if target and acquirer industries are classified at the same 2-digit SIC level. *Hostile* takes value one if bid is hostile. *Lawsuit* indicates if bid is contested in a lawsuit. *Competing bidders* indicates if competing bids are announced after deal announcement. *Target/seller advisor*

		1 month	1 week	1 day
	1 st stage	2 nd stage	2 nd stage	2 nd stage
Dual role indicator		-18.473* (10.857)	-11.840 (7.658)	-12.346* (6.577)
Target M/B	-0.002* (0.001)	-0.811*** (0.208)	-0.154 (0.146)	-0.140 (0.126)
Target ROE	0.001 (0.004)	2.884*** (0.782)	0.471 (0.552)	0.494 (0.474)
Target leverage	0.001 (0.001)	0.032 (0.195)	-0.042 (0.137)	0.003 (0.118)
Acquirer-target same state	0.018 (0.020)	2.852 (4.561)	-1.010 (3.217)	0.664 (2.763)
Acquirer-target same industry	-0.007 (0.015)	3.292 (3.444)	0.254 (2.429)	-0.249 (2.086)
Hostile	-0.007 (0.049)	8.154 (10.870)	9.815 (7.667)	12.443* (6.586)
Lawsuit	0.025 (0.043)	-4.417 (9.675)	-1.364 (6.824)	-0.087 (5.861)
Competing bidders	-0.076* (0.044)	1.932 (9.901)	4.851 (6.984)	3.323 (5.999)
Target/seller advisor ranking	0.012* (0.007)	-0.330 (1.471)	0.151 (1.038)	0.390 (0.891)
Ln(Transaction value)	0.019** (0.009)	5.552*** (1.967)	1.288 (1.387)	2.198* (1.192)
Ln(Target assets)	-0.002 (0.009)	-6.086*** (1.904)	-2.517* (1.343)	-2.682** (1.154)
# Target/seller advisors	0.040*** (0.013)	-1.544 (2.921)	-2.335 (2.060)	-1.903 (1.770)
Cash only consideration	-0.041 (0.042)	-0.485 (9.443)	2.889 (6.661)	0.884 (5.721)
Shares only consideration	-0.089 (0.061)	-11.742 (13.680)	-5.225 (9.649)	-5.246 (8.288)
Hybrid consideration	-0.035 (0.045)	-6.023 (10.029)	1.939 (7.074)	0.870 (6.076)
Bidder financing: borrowing	0.012 (0.019)	-2.660 (4.149)	-0.838 (2.926)	-2.415 (2.514)
Bidder financing: bridge loan	-0.014 (0.032)	-14.278** (7.045)	-9.948** (4.969)	-9.606** (4.268)

ranking is a three-tier ranking of advisors based on market value advised over the sample period. Tier 1 includes advisors ranked 1-5, Tier 2 includes advisors ranked 6-15 and Tier 3 includes advisors below rank 16. $\ln(\text{Transaction value})$ is the natural log of transaction value. $\ln(\text{Target assets})$ is the natural log of total assets. # *Target/seller advisors* give the numbers of advisors retained by target and/or seller. *Cash only consideration*, *Shares only consideration* and *Hybrid consideration* are indicator variables of whether the bid is in cash, shares or combination of both. Bidder financing is denoted by indicator variables for *Borrowing*, *Bridge loan*, *Common stock issue*, *Debt issue*, *Foreign provider of funds*, *Junk bond issue*, *New line of credit*, *Mezzanine*, *Preferred stock issue* and *New rights issue*. All variables as described in the Appendix. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

<i>continued</i>		1 month	1 week	1 day
	1 st stage	2 nd stage	2 nd stage	2 nd stage
Bidder financing: common stock issue	(0.032) 0.055** (0.027)	(7.045) -3.705 (6.125)	(4.969) -6.616 (4.320)	(4.268) -3.385 (3.711)
Bidder financing: debt issue	0.075*** (0.020)	0.801 (4.585)	1.810 (3.234)	1.700 (2.778)
Bidder financing: foreign funds	0.023 (0.042)	-11.579 (9.310)	-8.071 (6.567)	-7.911 (5.640)
Bidder financing: junk bond issue	0.046 (0.244)	-49.282 (54.446)	-61.176 (38.403)	-52.152 (32.985)
Bidder financing: new line of credit	0.008 (0.019)	5.845 (4.295)	2.321 (3.029)	1.512 (2.602)
Bidder financing: mezzanine	0.102 (0.098)	8.126 (21.759)	9.281 (15.348)	8.656 (13.182)
Bidder financing: preferred stock issue	0.103** (0.046)	10.210 (10.464)	9.987 (7.380)	9.301 (6.339)
Bidder financing: new rights issue	-0.088 (0.082)	-6.767 (18.366)	-7.632 (12.955)	-6.628 (11.127)
Average occurrence of dual role advisors per state & year	0.939*** (0.046)			
Constant	-0.198*** (0.075)	55.640 (16.923)***	53.898 (11.937)***	45.126 (10.253)***
Year fixed effects	Yes	Yes	Yes	Yes
Observations	1023	1023	1023	1023
R-squared	0.39	0.09	0.10	0.08

2.7 Appendix

Variable	Description
# Target/seller advisors	The numbers of advisors in total retained by target and /or seller.
Acquirer-target same industry	Indicates if target and acquirer industries are classified at the same 2-digit SIC level.
Acquirer-target same state	Indicates if acquirer and target are incorporated in the same state.
Bidder CAR	Cumulative abnormal returns from -1 to +1 with date 0 being the announcement date. Estimation period is -180 to -21 trading days.
Bidder financing: borrowing	Indicates if bid is financed by bank borrowing.
Bidder financing: bridge loan	Indicates if bid is financed by bridge loan.
Bidder financing: common stock issue	Indicates if an issue of common stock finances the bid.
Bidder financing: debt issue	Indicates if bid is financed by issue of debt securities.
Bidder financing: foreign provider of funds	Indicates if bid is financed by a foreign domiciled financier.
Bidder financing: junk bond issue	Indicates if bid is financed by junk bonds.
Bidder financing: mezzanine	Indicates if bid is financed by mezzanine debt.
Bidder financing: new line of credit	Indicates if bid is financed by new line of credit.
Bidder financing: preferred stock issue	Indicates if bid is financed by new issue of preferred stock.
Bidder financing: new rights issue	Indicates if bid is financed by new rights issue.
Cash only consideration	Indicates if bid is cash only.
Competing bidders	Indicates if competing bids are announced after deal announcement.
Dual role indicator	Indicates if bid is financed by the seller or target advisor.
Fee ratio	The target/seller advisor fee as percentage of transaction value.
Gov-score	Measure of the level of corporate governance obtained from Brown and Caylor (2004, 2006).
Hostile	Indicates if bid is hostile as indicated by SDC.
Hybrid consideration	Indicates if bid is both cash and shares.
Lawsuit	Indicates if bid is contested in a lawsuit as indicated by SDC.
Ln(Target assets)	Natural log of total assets.
Ln(Transaction value)	Natural log of transaction value.
Premium	Offer price over the market price of stock for periods of one day, one week and one month prior to the deal announcement.
Previous interaction	Percentage of the number of times the target has used the advisor in an M&A situation in the past 5 years.
Shares only consideration	Indicates if bid is shares only.
Target leverage	Target leverage is measured as the book value of total debt divided by the book value of total assets.
Target M/B	Market value of total assets divided by the book value of total assets.
Target ROE	Target ROE is the last twelve-month net income over reported common equity.
Target/seller advisor ranking	Three-tier ranking of advisors based on market value advised over the sample period. Tier 1: advisors ranked 1-5, Tier 2: advisors ranked 6-15, Tier 3: advisors below rank 16.

∞ Paper Three ∞

Private Equity Firms and Quick Flip Sales*

Abstract: The norm for a private equity firm is to view their portfolio of companies as three to five year investments. However, sometimes a company is divested already after less than 18 months of ownership in a so called *quick flip*. Starting from established results in the academic literature on related themes, I contrast three hypotheses that might explain what drives quick flips; are quick flips the result of a speedy restructuring process, related to debt market conditions or driven by conflicts of interest between the limited and general partners of the private equity fund. 1,322 private-to-private transactions that took place over the period 1998 to 2008 are examined. Of these transactions, 188 were exited in less than 18 months after being added to the private equity firm portfolio. I find that quick flips do not follow upon operational improvements of the company, private equity firms are neither more likely to sell a company in a quick flip due to liquidity constraints nor do they earn relatively higher returns in these transactions compared to others. In addition, I find that as time passes by, the probability that a company is sold to an industrial buyer in a trade sale is reduced. Whereas these results offer little support for the debt market and the fast restructuring hypotheses, they do support the arguments that quick flips may stem from contractual conflicts of interests between investors and private equity managers.

* I thank José-Miguel Gaspar and Mariassunta Giannetti for helpful comments.

The practice of quick flips, whereby private equity (PE) firms dispose of assets within one to two years after adding them to their investment portfolio has added new fuel to the debate on the real contributions of PE firms.¹ Practitioner and stakeholder arguments for and against the merits of quick flips have been voiced both in US Congress hearings² and in the press.³ In this chapter I contrast established results from the academic literature on related themes to see if any of them can explain what drives quick flips.

The first hypothesis to be tested is that a quick flip is simply the result of a *speedy restructuring process* of the asset under management as described in Rappaport (1990). Though no previous studies have looked at whether restructuring drives quick flips, there is ample support for that PE ownership in general leads to operational improvements of firms.⁴

The second hypothesis is that quick flips are related to *debt market conditions*. If the PE firm, for one or the other reason, faces a dire financial situation this may lead to asset fire sales in the spirit of Shleifer and Vishny (1992). Or reversely, quick flips may occur due to PE firms' market timing of debt-equity markets as suggested in Kaplan and Strömberg (2009).

The third hypothesis is that quick flips are driven by *conflicts of interest* between the limited and general partners of the PE fund. Phalippou (2009) studies such agency conflicts and suggests that the PE general partners have an incentive to sell good investment immediately and to delay exit of the poorly performing investments. Partly, this behaviour is explained through the contracts between the

¹ The term *asset* denotes the companies owned by a PE firm.

² See "Congress warns private equity over excess profits" by Stephen Foley, *The Independent*, May 17, 2007.

³ See eg. "The Great Global Buyout Bubble" by Andrew Sorkin, *New York Times*, November 13, 2005 who states that "In recent months, several high-profile quick flips have left critics wondering whether buyout firms were using such offerings simply to line their pockets, rather than using the proceeds to support companies." and "Quick flips criticised in study" by Fransesco Guerrero and James Politi, *Financial Times*, September 20, 2006; "Private equity executives retort that quick sales can be in the interest of the institutions that invest in buyout funds if they maximise returns and free up capital for further investments."

⁴ See eg. Kaplan (1989), Lichtenberg and Siegel (1990), Muscarella and Vetsuypens (1990), Smith (1990), Wright, Thompson and Robbie (1992), Harris, Siegel and Wright (2005), Cressy, Munari and Malipiero (2007), Guo, Hotchkiss and Song (2009), Lerner, Sørensen and Strömberg (2008), Popov and Roosenboom (2008), Palepu (1990), Baker and Wruck (1989), Bull (1989), Ofek (1994), Smart and Waldfogel (1994), Holthausen and Larcker (1996), Weir and Laing (1998), Cotter and Peck (2001).

limited and general partners where, for example, some contracts allow re-investment of capital coming from investments that are shorter than 18 months. This provision provides a clear incentive for funds to exit investments early because it offers them a chance to reinvest funds and thus effectively increase the assets under management, which in turn leads to more fees.

I test these hypotheses using a sample of 1,322 private-to-private transactions that took place over the period 1998 to 2008. Of these transactions, 188 were quick flips; investments exited in less than 18 months after being added to the PE firm's portfolio of assets.

The results in this chapter generally support the third hypothesis. Most importantly, quick flips do not follow upon operational improvements of the asset, PE firms are not more likely to sell an asset in a quick flip due to liquidity constraints and do not earn relatively higher returns on these transactions. In addition, I find that as time passes by, the probability that an asset is sold to an industrial buyer in a trade sale is reduced. Trade sales are also commensurate with higher asset returns than other private-to-private exit transactions. Whereas there is little support for neither the debt market nor the fast restructuring hypotheses, these results do support the arguments raised in Phalippou (2009) on the underlying reasons for quick flips as stemming from contractual features between investors and PE fund managers

3.1 Background and Testable Predictions

The norm for a PE firm is to view their portfolio of assets as three to five year investments. The standard methods of exiting an investment is either by floating the company in an IPO, sell it to another PE firm (secondary buyout) or sell it to an industrial buyer for whom the asset would be a good strategic fit into their existing operations (trade sale). However, sometimes an asset is divested after much shorter holding periods than three to five years. Strömberg (2007) is one of the first papers that discuss the prevalence of quick flips. In a sample of 6,834 exits over the period 1970 – 2007 he finds that the share of one and two year exits are 2.9% and 12% respectively. Quick flips are more likely to occur in larger transactions, but controlling for size they are less likely for going private transactions. Lopez-de-Silanes, Phalippou and Gottschalg (2009) study 7,453 PE investments undertaken between 1971 and 2005. They find that exits within 24

months represent 12% in the full sample and 25% of firms exited through sales. Similar to Strömberg (2007), they do not find evidence that the frequency of quick flips has increased over time although quick flips are more frequent in good times. Phalippou (2009) finds that out of 2,500 exited buyout investments in his dataset, 6% are sold within one year, 23% within two years, and 44% within three years. Short term investments have similar transaction multiples as long term investments, but IRR:s of 69% versus 10% for longer term investments. Lopez-de-Silanes et al. (2009) find that investments held less than two years have an average IRR of 79%, those held between two and four years average 35% and the remainder average 10%. Thus, these two studies show that more successful investments are being exited more quickly. Cao and Lerner (2006) focus on reverse leverage buyouts and find that PE groups that flip companies by floating them on a stock exchange within a year of acquisition fail to create long-term value for equity investors. Such flips underperform other listings and the market.

3.1.1 Fast Restructuring

If quick flips occur as direct results of operational improvements we should expect to see evidence of that such improvements have taken place during the time of PE ownership. The first hypothesis to be explored is if quick flips are driven by operational improvements. From the classic view of PE firms as restructurers, a quick flip could indicate that the asset is “operationally cured” and has gone through a successful restructuring and improvement period. Thoughts on speedy restructuring formed the basis of the early debates on the purpose of PE in the 1980:s [see Jensen (1989) and Rappaport (1990)].

The testable predictions are two. Firstly, if quick flips are results of fast restructuring processes we should observe tangible improvements in operational measures. Secondly, if a quick flip take place among assets that are ready for industrial ownership, then such assets should relatively more often be purchased by industrial buyers in trade-sells compared to secondary buyouts to other financial sponsors. An industrial buyer might prefer to purchase an asset that needs little restructuring work and can generate positive cash flows early on.

3.1.2 Debt Market Conditions

Whereas this paper is focused on exits through trade sales and secondary buyouts, the literature on leverage buyout waves (in which publicly owned firms transfer to

private ownership) has identified liquidity as a key driver of cyclicality. A number of papers have suggested that buyout patterns are related to credit market conditions. Kaplan and Stein (1993) document this for the 1980:s, Guo et al. (2009) for the 1990:s, Kaplan and Strömberg (2009) and Axelson, Jenkinson, Strömberg, and Weisbach (2008) for the period 1982-2006. Whereas these studies stress the possibility that PE firms have the ability to buy low and sell high because they are able to time the debt-equity market, one could imagine the opposite situation; that shortage of liquidity due to debt market conditions force sales of assets under management. Shleifer and Vishny (1992) describe how a situation where liquidity disappears can be very costly for a forced seller. Such asset fire sales are possible when financial distress clusters through time within an industry with specialized assets. A firm that must sell assets because of financial distress may find that the potential buyers with the highest valuation for the specialized asset are other firms in the same industry, who are also likely to be in similar financial difficulties, and therefore will be unable to supply liquidity. Industry outsiders, who have lower valuations for the asset but no financial constraints, thus emerge as winning bidders. If quick flips are forced through liquidity sales we should see that they occur more often in periods of liquidity shortages for PE firms.

3.1.3 Conflicts of Interest

Phalippou (2009) studies the agency conflicts between the limited and general partners in PE funds and find that PE contracts often contain provisions that encourage early exit from investments. He suggests that quick flips could be driven by that the PE general partners have an incentive to sell good investment immediately and to delay exit of the poorly performing investments. Such behaviour is explained through the contracts between the limited and general partners where, for example, some contracts allow re-investment of capital coming from investments that are shorter than 18 months. This provision provides a clear incentive for funds to exit investments early because it offers them a chance to reinvest funds and thus effectively increase the assets under management, which in turn leads to more fees. The testable prediction is that PE firms do not earn higher returns on quick flips relative non quick flip assets.⁵

⁵ With the data available, it is however not possible to examine if quick flips are optimal from a fee perspective; do the increased management fees stemming from a higher turnover outweigh lower incentive fees induced by a possibly relatively lower IRR?

3.2 Empirical Methodology

Transactions data is gathered from the Mergermarket database. A total of 5,294 deals are listed as exited PE deals in the database. A minimum level of required information is available for 1,322 deals, which constitute my data sample. Crucially, information on the method of sale and valuation measures is required.⁶ The selected deals all have in common that they have been sold to a private or public firm (thus excluding IPO:s) from a PE firm's portfolio. Sellers may include more than one PE firm and also individuals such as the asset's management team. Pure venture capital deals are excluded so all firms have transferred into PE ownership as mature firms and not as start-ups. Quick flips are defined as assets held by PE firms for period up to 18 months.⁷

To properly calculate the internal rate of return (IRR), detailed information on the cash flows to and from the PE firm is needed. However, the only information available is the purchase and sale price as well as any major events such as a sell-off or add-on acquisition to the original assets during the course of the asset's lifespan with the PE fund. The return used in this paper, *asset return*, therefore excludes intermediate changes in the capital structure through dividends and capital injections and measures only the annualized return on the asset as the equity remaining at time of sale over equity contribution put in as investment per year of PE ownership. As pointed out in Driessen, Lin and Phalippou (2009), the IRR (and similarly the asset returns) does not account for risk, but by including industry fixed effects I control for industry specific risk in calculating the return.⁸

A range of explanatory variables are used to address the testable predictions described above. These variables include measures for operational results such as growth in revenue and profitability measures such as EBITDA, EBIT and net income. In addition, transaction specific details including method of purchase, holding periods and method of exits are included.⁹ The full range of variables used is described in the Appendix. Market development is controlled for both by

⁶ For some deals equity value is not implicitly given but the deal value and debt values are. I thus backward calculate implied equity as deal value.

⁷ Strömberg (2007) defines a quick flips using both 12 and 24 month holding periods, Lopez-de-Silanes et al. (2008) use 24 months and Phalippou (2009) use 18 months.

⁸ Another important control that impacts risk, but is not available to me at this point in time, is transaction leverage.

⁹ Purchase methods are management buyout, management buy-in, institutional buyout, institutional buy-in and buy-in management buyout.

including dummy variables for year of purchase and sale and the prevailing credit spreads at these times. As is argued in Phalippou (2009), the difference in yield on the bank prime loan rate and the 10-year treasury bonds in the month of the deal can be used as a proxy for the cost of financing a PE deal. This measure controls for whether liquidity concerns are driving quick flips. Industry fixed effects are included for all 30 industries and standard errors are clustered by each of the 48 countries in the data. Consistent with Sørensen (2007), who finds that a main driver of venture capitalist success rate with their portfolio companies is experience, I include the natural logarithm of the size of the fund as proxy for experience. Larger PE firms can be expected to have more resources in terms of employees, databases, and external experts and thus a larger total mass of experience. Demiroglu and James (2007) find that PE funds receive better financing conditions the higher reputation they have. I include their main reputational measures, the number of transactions performed by the PE firm the previous three years.

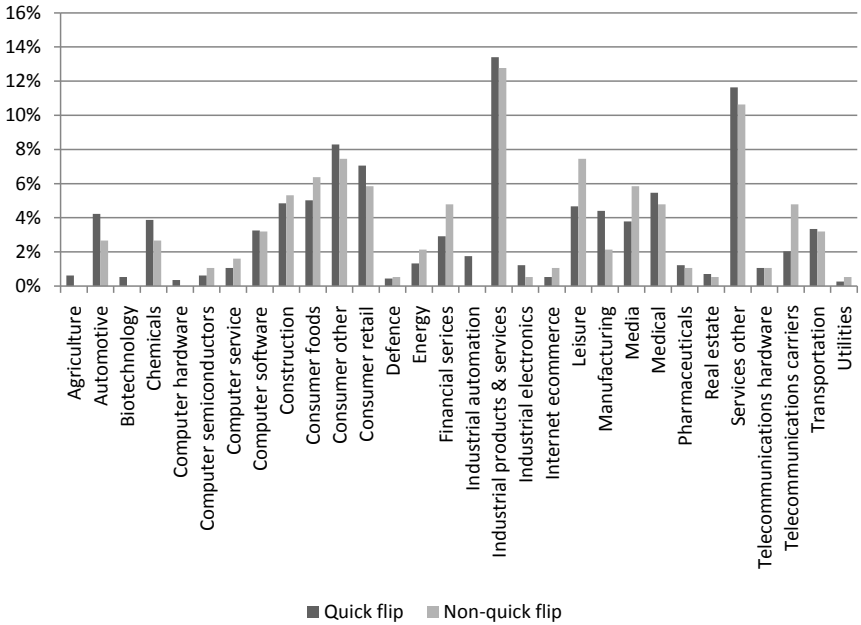
3.3 Results

In Table I, the particulars of quick flip transactions are compared to other, non-quick flip PE transactions. Trade-sales account for more than 70% of quick flips transactions compared to 53% in other deals. Some other notable results are that credit spreads at time of investment are wider in non-quick flips and that quick flips are typically performed by a smaller than average PE firm. The average length of PE firm ownership is 12.7 months for quick flips versus 39.3 months for remaining assets. Figure I displays the distribution of quick flips and non-quick flips across industries. We see that there is no clustering of quick flips to certain industries, but that they on the whole are dispersed over the full range of industries represented in the sample.

3.3.1 Operational Improvements and Quick Flips

Table II displays results on whether quick flips are driven by operational improvement made by the PE house on the asset. Operational improvements are measured as the logarithmic differences of revenue, EBITDA, EBIT and net income occurring over the PE firms holding period. The results do not indicate that quick flips drive operational improvements. Economic effects are low and the

Figure I. Industry distribution



only result which is statistically significant is that for EBIT, but observations are few. We can conclude that quick flips do not appear to be quick fixes; assets sold in quick flips are not sold following a quick turnaround process.

Another key finding is that credit conditions do not seem to drive either the original purchase or exit of an asset that is sold in a quick flip. The coefficient of credit spreads at time of exit is not statistically significant, indicating that asset fire sales are not causing quick flips. Neither do credit market conditions at the time of purchase seem to be driving which assets are sold in quick flips. When coupled with improvements in revenue, initial credit market conditions does indicate that the marginal impact of a widening credit spread increases the probability of a quick flip by 3.2 percentage points (pp.), but when looking at other measures of operational improvements this effect disappears.

Reputation has a weakly negative effect. More reputable firms are less likely to pursue a quick flip, but the effect is not robust across the various measures of operational improvements. The results in Table II point to that neither operational improvements nor debt market conditions are drivers of quick flips.

3.3.2 Time and Type of Exit

If quick flips take place among assets that are ready for industrial ownership, these assets may be relatively more often purchased by industrial buyers in trade-sells early after an addition to the PE firm inventory compared to secondary buyouts to other financial sponsors. Figure II indicates that trade sales are indeed more commonplace in quick flips. As time passes by, the relative amount of trade sales is decreasing compared to secondary buyouts. This is an indication of that for short and mid-term holding periods, the norm is to sell an asset to an industrial buyer rather than another PE house. After some 36 months the ratio is close to a steady state. It must be pointed out that the number of observed transactions up to 18 months is fairly small, but the main observation that trade sales are relatively less common as time passes buy still holds.

Figure II. Percentage of trade sale (TS) exits

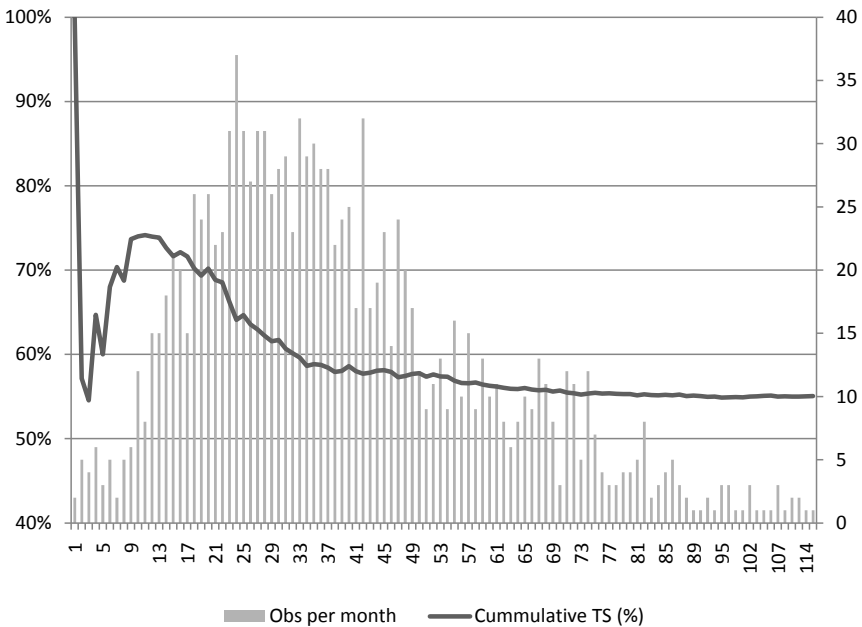


Table III confirms these observations. We see that the probability for an exit to take place through a trade sale diminishes with time, as was indicated in Figure II. In the first and third columns, the probability of a trade sale is regressed on time (measured as the natural logarithm of the number of months) whereas the

second and fourth columns make use of a dummy variable indicating a quick flip or not. On average, an increase in the logarithmic number of months under PE ownership reduces the probability of a trade sale with 9.7 pp. The magnitude increases to 22.0 pp. when controls for buy and sell side values are employed.

An asset sold in a quick flip is 0.12 to 0.18 pp. more likely to be sold in a trade sale transaction compared to a secondary buyout. The overall conclusions are that trade sales are common for quick flips and that they diminish with time. These results could indicate that the firms that are sold in quick flips have indeed undergone a sufficient amount of restructuring to be attractive for industrial buyers.

3.3.3 Asset Returns

Table IV shows that asset returns are 21.4% higher in trade sales than in secondary buyouts. The coefficient is significant at the 10% level when no PE firm fixed effects are in place. Results on quick flips versus non-quick flips are not statistically significant and offer little direction on their comparative merits, though economically, quick flips are associated with higher returns. Most variables are insignificant with the exception of PE firm size. The larger the value of the PE firm, the lower the asset returns. But results are only weakly significant. The main message in Table IV is that PE firms do not earn relatively higher returns in quick flip transactions compared to non-quick flips. The results are similar to those in Phalippou (2009). As mentioned above the asset return measure is not as good a measure as the IRR. Phalippou (2009) uses a similar measure to the asset return, the multiple,¹⁰ whereby he finds that short term investments have similar transaction multiples as long term investments.

3.3.4 Selection Bias

A general problem in studies on the PE market is that the data available are to some extent voluntarily disclosed. Hence, PE firms may therefore not disclose details on poor performing investments. Basically all studies on PE returns encounter selection bias in one way or another and several attempts have been made to address the issue. Ljungqvist and Richardson (2003) attempt to outwit self-reported biases by using PE investment data from one of the largest US

¹⁰ The multiple is the undiscounted sum of the cash flows received at exit divided by the sum of cash flows initially paid.

institutional investors. However, their data are also subject to selection bias since that data is not necessarily representative of the universe of deals. Cochrane (2005) address selection bias through a maximum likelihood estimate but the results relies heavily on the validity of his statistical assumptions. Hwang, Quigley, and Woodward (2005) apply a different approach (hybrid repeat sales) to account for potential selection bias. Jegadeesh, Kräussl and Pollet (2009) claim to side-step selection bias by analyzing funds of funds but run into a different form of selection bias as the funds may be biased in their investment in a non-representative sample of PE funds. Due to the nature of my data it is not possible for me to employ any of the approaches suggested by the above authors.

3.4 Conclusions

Whereas the collection of results offer little support for the fast restructuring and the debt market timing hypotheses, they do match with the conflicts of interest arguments raised in Phalippou (2009) as the underlying reasons for quick flips.

Market timing or liquidity concerns do not appear to be the driving force behind quick flips and PE firms do not earn significantly higher returns in quick flips than in other transactions. Most importantly, quick flips do not appear to be quick fixes. Firms that are being sold as quick flips are not sold because their underlying operational performance has been improved. However, the amount of work that has been done on the asset could be sufficient enough, as a quick flip is more likely to go to a trade buyer than to another PE firm. These two results could indicate that firms that are sold in quick flips were in good shape already when acquired by the PE firm and did not need improvements on. This raises the question whether the asset was originally acquired to be improved upon.

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3.6 Tables

Table I. Summary statistics

The table shows means and *t*-test statistic of quick flips versus non-quick flips. *Trade sale* takes the value one if the firm was sold to an industrial buyer. *Asset return* is the annualized return on equity of the asset. *Months of ownership* gives the number of months under PE firm ownership. *Reputation* measures the number of transaction per PE firm the past three years. *PE firm value* measures the total activity of the PE firm over the period 1999 to 2008. *Deal value* is the total transaction value including equity and debt contributions. $\text{Ln}(\text{REV}_{i,t}/\text{REV}_{i,t-1})$, $\text{Ln}(\text{EBITDA}_{i,t}/\text{EBITDA}_{i,t-1})$, $\text{Ln}(\text{EBIT}_{i,t}/\text{EBIT}_{i,t-1})$ and $\text{Ln}(\text{NETINC}_{i,t}/\text{NETINC}_{i,t-1})$ measures growth in revenue, EBITDA, EBIT and Net income over the holding period. *Credit spreads* are measured as the difference in yield on the bank prime loan rate and the 10-year treasury bonds in the month of the purchase and sale of asset. * significant at 10%; ** significant at 5%; *** significant at 1%.

Means	Full sample	Quick flips	Non-quick flips	<i>t</i> -test
Observations	1322	188	1134	
Trade sales	0.552 (0.497)	0.702 (0.458)	0.527 (0.450)	4.149***
Asset returns (%)	0.572 (1.334)	1.245 (2.468)	0.497 (1.121)	1.764*
Months of ownership	39.295 (21.042)	12.734 (4.521)	43.698 (19.401)	-39.877***
Reputation	3.6 (2.1)	3.2 (2.3)	3.7 (2.2)	-1.231
PE firm value (mEUR)	22843.43 (31903.112)	18515.46 (30963.312)	23560.95 (32013.042)	-1.786*
Deal value sell	276.990 (557.822)	232.622 (580.973)	283.094 (554.610)	-0.816
Deal value buy	165.063 (347.900)	157.139 (334.659)	166.161 (349.867)	-0.246
$\text{Ln}(\text{REV}_{i,t}/\text{REV}_{i,t-1})$	-0.095 (1.738)	-0.465 (1.964)	-0.0629 (1.716)	-1.019
$\text{Ln}(\text{EBITDA}_{i,t}/\text{EBITDA}_{i,t-1})$	-0.129 (1.92)	-1.673 (2.303)	-0.011 (1.849)	-1.461
$\text{Ln}(\text{EBIT}_{i,t}/\text{EBIT}_{i,t-1})$	-0.305 (1.877)	-0.833 (1.287)	-0.234 (1.941)	-0.970
$\text{Ln}(\text{NETINC}_{i,t}/\text{NETINC}_{i,t-1})$	0.120 (2.554)	-2.017 (2.875)	0.232 (2.521)	-1.031
Credit spread (buy)	2.442 (0.677)	2.344 (0.647)	2.459 (0.681)	-2.226**
Credit spread (sell)	1.887 (0.744)	1.988 (0.800)	1.871 (0.733)	1.886*

Table II. Drivers of quick flips

The table presents marginal results from probit regressions on the determinants of quick flips. $Ln(REV_t/REV_{t-1})$, $Ln(EBITDA_t/EBITDA_{t-1})$, $Ln(EBIT_t/EBIT_{t-1})$, $Ln(NETINC_t/NETINC_{t-1})$ measures growth in enterprise value, revenue, EBITDA, EBIT and Net income over the holding period. $Ln(PE\ firm\ value)$ measures the total activity of the PE firm over the period 1998 to 2008. Value represents the natural logarithm of the total value of the deals the PE firm has been involved in over the period. $Ln(Buy\ deal\ value)$ [$Ln(Sell\ deal\ value)$] are the natural logarithms of the total value of purchase [sale] including equity and debt contributions. *Credit spreads* are measured as the difference in yield on the bank prime loan rate and the 10-year treasury bonds in the month of the purchase and sale of asset. $Ln(Reputation)$ measures the number of transaction per PE firm the past three years. Robust standard errors in parentheses clustered by country. * significant at 10%; ** significant at 5%; *** significant at 1%

	Quick flip			
$Ln(REV_t/REV_{t-1})$	0.002 (0.009)			
$Ln(EBITDA_t/EBITDA_{t-1})$		-0.000 (0.002)		
$Ln(EBIT_t/EBIT_{t-1})$			0.017** (0.007)	
$Ln(NETINC_t/NETINC_{t-1})$				-0.015 (0.016)
$Ln(PE\ firm\ value)$	-0.009 (0.006)	-0.005 (0.006)	-0.010 (0.009)	-0.004 (0.003)
$Ln(Buy\ deal\ value)$	0.004 (0.009)	0.006 (0.007)	0.039*** (0.014)	0.002 (0.002)
$Ln(Sell\ deal\ value)$	-0.017** (0.008)	-0.006 (0.009)	-0.035** (0.015)	0.002 (0.001)
Credit spread (buy)	0.032*** (0.009)	0.002 (0.007)	0.025 (0.016)	-0.002 (0.002)
Credit spread (sell)	0.008 (0.015)	0.002 (0.005)	0.009 (0.040)	-0.003 (0.004)
$Ln(Reputation)$	-0.007* (0.003)	-0.004 (0.004)	-0.005 (0.009)	-0.002 (0.002)
Purchase method fixed effect	Yes	Yes	Yes	Yes
Errors clustered by country	Yes	Yes	Yes	Yes
Observations	221	57	50	35

Table III. Probability of trade sale

The table presents marginal effects of probit regressions of each explanatory variable on the probability of a trade sale. A trade sale is coded as one and a secondary buyout is coded as zero. *Quick flip* is an indicator variable for whether the firm was sold within 18 months after purchase by the PE firm. $Ln(\# \text{ month})$ measures the number of months the firm was owned by the PE firm. $Ln(PE \text{ firm value})$ measures the total activity of the PE firm over the period 1998 to 2008. Value represents the natural logarithm of the total value of the deals the PE firm has been involved in over the period. $Ln(\text{Buy deal value})$ [$Ln(\text{Sell deal value})$] are the natural logarithms of the total value of purchase [sale] including equity and debt contributions. *Credit spreads* are measured as the difference in yield on the bank prime loan rate and the 10-year treasury bonds in the month of the purchase and sale of asset. $Ln(\text{Reputation})$ measures the number of transaction per PE firm the past three years. Robust standard errors in parentheses clustered by country. * significant at 10%; ** significant at 5%; *** significant at 1%

	Trade sale			
Quick flip		0.120** (0.051)		0.181** (0.078)
Ln(# months)	-0.097* (0.058)		-0.220* (0.124)	
Ln(PE firm value)	-0.019*** (0.006)	-0.018*** (0.006)	0.010 (0.017)	0.009 (0.018)
Ln(Buy deal value)			-0.104*** (0.022)	-0.101*** (0.023)
Ln(Sell deal value)			-0.033** (0.014)	-0.034** (0.015)
Credit spread (buy)	-0.062 (0.047)	-0.068 (0.047)	-0.134 (0.087)	-0.143* (0.085)
Credit spread (sell)	0.000 (0.030)	0.002 (0.030)	-0.066 (0.113)	-0.061 (0.109)
Ln(Reputation)	0.012 (0.037)	0.018 (0.040)	0.013 (0.021)	0.009 (0.035)
Purchase method fixed effect	Yes	Yes	Yes	Yes
Buy year fixed effects	Yes	Yes	Yes	Yes
Sell year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Errors clustered by country	Yes	Yes	Yes	Yes
# Observations	1317	1317	429	429

Table IV. Asset return

The table presents results from OLS regressions of each explanatory variable on the Asset return. *Trade sale* is coded as one and a secondary buyout is coded as zero. *Quick flip* is an indicator variable for whether the firm was sold within 18 months after purchase by the PE firm. *Ln(PE firm value)* measures the total activity of the PE firm over the period 1998 to 2008. Value represents the natural logarithm of the total value of the deals the PE firm has been involved in over the period. *Credit spreads* are measured as the difference in yield on the bank prime loan rate and the 10-year treasury bonds in the month of the purchase and sale of asset. *Ln(Reputation)* measures the number of transaction per PE firm past three years. Robust standard errors in parentheses clustered by country. * significant at 10%; ** significant at 5%; *** significant at 1%

	Asset return					
Trade sale			0.214*	0.069		
			(0.125)	(0.150)		
Quick flip					0.180	0.142
					(0.252)	(0.328)
Ln(PE firm value)	-0.198*	-0.103*	-0.195*	-0.114	-0.199	-0.106*
	(0.098)	(0.049)	(0.094)	(0.100)	(0.114)	(0.051)
Credit spread (buy)	-0.069	-0.213	-0.046	-0.207	-0.089	-0.193
	(0.258)	(0.280)	(0.257)	(0.281)	(0.259)	(0.284)
Credit spread (sell)	0.146	0.026	0.148	0.029	0.129	0.037
	(0.207)	(0.241)	(0.206)	(0.241)	(0.208)	(0.243)
Ln(Reputation)	0.179	0.030	0.182	0.039	0.153	0.045
	(0.252)	(0.298)	(0.253)	(0.296)	(0.256)	(0.301)
Constant	6.684***	5.153*	5.545***	5.188*	5.750***	5.205*
	(1.851)	(2.770)	(1.848)	(2.776)	(1.849)	(2.778)
Purchase method fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
PE firm fixed effects	No	Yes	No	Yes	No	Yes
Buy year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Sell year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered by country	Yes	Yes	Yes	Yes	Yes	Yes
Observations	429	429	429	429	429	429
R-squared	0.28	0.30	0.29	0.29	0.28	0.32

3.7 Appendix

Variable	Description
Asset return	Annualized return on the equity. Return is measured as equity stake collected at time of sale over the original equity stake put in by the PE firm.
Credit spread buy (exit)	Difference in yield on the bank prime loan rate and the 10-year treasury bonds in the month and country of the purchase (sale) of the asset.
Ln(# month)	The natural logarithm of the number of months the firm was owned by the PE firm.
Ln(Buy deal value)	The natural logarithm of the total value of purchase including equity and debt contributions.
Ln(EBITDA _t /EBITDA _{t-1})	Measures growth in EBITDA over the holding period.
Ln(EBIT _t /EBIT _{t-1})	Measures growth in EBIT over the holding period.
Ln(EV _t /EV _{t-1})	Measures growth in enterprise value over the holding period.
Ln(NETINC _t /NETINC _{t-1})	Measures growth in net income over the holding period.
Ln(PE firm value)	Measures the total activity of the PE firm over the period 1998 to 2008. Value represents the natural logarithm of the total value of the deals the PE firm has been involved in over the period.
Ln(Reputation)	The number of transaction per PE firm past three years.
Ln(REV _t /REV _{t-1})	Measures growth in revenue over the holding period.
Ln(Sell deal value)	The natural logarithm of the total value of sale including equity and debt contributions.
Purchase method	Purchase methods may be either a management buyout (MBO) which takes place when the management already works for the firm, Management buy-in (MBI) when a manager or a management team from outside the company raises the necessary finance, buys it, and becomes the company's new management. Institutional buyout (IBO) denotes that an institutional investor initiated the buyout together with existing management. The term institutional buy-in (IBI) is used when the acquiring institution brings along their own management team. Fixed effects are employed relative the baseline specification of buyout management buy in (BIMBO) which takes place when existing management, along with outside managers, decides to buyout a company. The existing management represents the buyout portion while the outside managers represent the buy-in portion.
Quick flip	Indicates if the firm was sold within 18 months after purchase by the PE firm.
Trade sale	Indicates if the firm was sold to an industrial buyer in a trade sale.

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