

The Role of Deal-Level Compensation in Leveraged Buyout Performance

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January 2014

Abstract

This paper analyzes the influence of deal-level compensation structures for buyout fund managers on the performance of leveraged buyouts. We use a unique and hand-collected data set of 93 LBO deals in the United States over the period 1999-2008 for which we can distinguish fund- and deal-level compensation that fund managers receive. Our analysis offers two major results. First, deal-level fees are apparently paid out to compensate buyout fund managers for their efforts in restructuring unprofitable and highly levered portfolio companies. However, our results show that higher deal-level compensation is negatively related to deal-level performance. These results are robust to endogeneity issues, changing market environments, characteristics of the LBO and restructuring activities in the target company, terms of the partnership agreements between investors and fund managers, fund structure and –profitability and different performance measures.

JEL classification: G20, G23, G24, G32, G34

Keywords: Private Equity, Compensation, Principal-Agent, LBOs

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For valuable comments and suggestions we would like to thank Michael Grote, Günter Strobl, as well as participants at the 2012 Southern Finance Association Annual Meeting, the 2012 Financial Management Association Europe Annual Meeting, the Frankfurt School of Finance Brown Bag Seminar, the Goethe-University Brown Bag Seminar, and the UniCredit Research Workshop. Sven Fürth gratefully acknowledges the financial support of "Vereinigung der Freunde und Förderer der Goethe Universität Frankfurt" and of "Commerzbank Stiftung Frankfurt". All remaining errors are our own.

Which incentive structures should principals choose for agents to maximize their returns? This question is the core of many agency problems and has therefore been tackled in various settings in prior research. Based on agency theory, performance-linked compensation helps align the interests of principals and agents, ultimately resulting in a higher return to the principal (Jensen and Meckling, 1976; Fama, 1980; Fama and Jensen, 1983a and 1983b; Jensen and Ruback, 1983; Jensen, 1986). Following the notion of an alignment of interests between principals and agents, compensation structures are usually based on two components: First, a fixed and non-performance linked payment, such as a regular salary, compensating the agent for general services for the principal. Second, a performance-linked payment, allowing the agent to participate in the returns generated for the principal, e.g., stock-based compensation benefits for corporate managers. The stock-based component aligns the interests of shareholders and corporate managers and should lead to higher corporate value (for an extensive overview of the relevant literature in this field see Murphy, 1999, and Core, Guay and Larcker, 2003). Most principal-agent relationships contain these features to create higher returns for principals. For financial companies this has most recently been shown by e.g. Fahlenbrach and Stulz (2011), for non-financial companies by e.g. Core and Larcker (2002), and for investment funds by e.g. Agarwal, Daniel and Naik (2009).

It is the goal of this paper to build on this research by analyzing a compensation component which, in spite of very interesting features, has never been investigated in empirical research before: so called deal-level fees in leveraged buyout (LBO) investments. In LBO funds, the usual compensation for fund managers (General Partners, or "GPs") is paid by the investors (Limited Partners, or "LPs") and it consists of two components: a non-performance linked annual fund management fee based on the fund volume and a performance-linked percentage of the fund returns attributable to the GPs called "Carried Interest". Hypothetically, these two components should suffice to compensate the GP and to align the interests with the LPs, thereby leading to return maximization. However, some LBOs exhibit a third compensation component: deal-level fees. These deal-level fees are interesting and have perhaps wide-ranging implications for the performance of LBOs due to three very peculiar features: First, they are strictly effort-linked. GPs receive deal-level fees only in connection with certain restructuring activities of an LBO (such as e.g. M&A deals or recapitalizations). The success of the restructuring activities has no influence on the fees whatsoever; the volume of the fees for each restructuring activity is set ex-ante (i.e. before

any restructuring activities are started). Second, since only the GPs decide about how to restructure an LBO target, the GPs can directly influence whether or not they receive the deal-level fees. This notion of agents choosing their own compensation without direct oversight by the principal is unique. Third, deal-level fees are paid by the portfolio company directly to the GP. This is highly unusual in investment funds, especially in Private Equity, since all compensation is usually paid for by the fund investors. Even though deal-level fees are related to certain services rendered by the GP, the portfolio firm compensates selected owners for certain efforts, whose beneficiaries are the fund investors. This might perhaps induce a conflict of interest.

Given the role of compensation in principal-agent relationships, it seems at first sight perhaps puzzling why deal-level fees are paid in some LBOs.¹ One reason might be that LPs presume that additional effort-linked compensation leads to higher LBO returns. After all, some restructurings might be more difficult or time-consuming than others. To incentivize the GP for certain costly efforts (instead of success, since the success might not be anticipated in restructuring-intense LBOs) will make the GP engage in these restructurings and perhaps create higher value for the LPs. In that sense, deal-level fees should create strong positive incentives for the GP to perform well, ultimately boosting the return of the buyout. Including deal-level fees in an LBO compensation structure might therefore be beneficiary for the LPs as principals. However, paying these fees might as well hurt the LP's returns. After all, the portfolio companies' cash used to fund the fees could also be paid out to investors or be used for debt servicing. Additionally, GPs could use the existence of the fees to reap private benefits from LBOs by engaging in economically invalid and consequently unsuccessful restructuring activities to obtain the fees and boost their overall compensation. The existence of these fees in spite of their possibly detrimental features might therefore perhaps only be explained by fee shrouding in contracts, a phenomenon frequently observed and documented in the Private Equity Industry.

¹ We acknowledge that in addition to the mentioned reasons, another reason for paying these deal level-fees might be taxation. In order for carried interest to be taxed at the capital gains rate of 20 percent instead of the regular income rate (going up to about 40 percent), PE funds must satisfy rules that they are not actively running the companies they invest in (they must not be engaged in a "trade or business" with the portfolio company). Being paid fees for management and advisory service might serve as a signal to authorities that they are merely an external advisor instead of an active manager. However, we believe that this is not the prevalent reason for the existence of these fees. As our analyses show, the fees are paid out irregularly and only in about half of all in-sample deals. If taxation were the reason, we should see these fees in all buyout deals. Also, the magnitudes of the fees are too high to just use them as a tax loophole.

It is the goal of this paper to shed light on the existence of these deal-level fees in LBOs and to analyze their relationship with LBO deal performance. Specifically, we try and find answers to two distinct research questions: First, what factors determine the occurrence of deal-level fees in LBOs? And second, does the payment of deal-level fees lead to higher returns to the LPs? The answers have potentially valuable implications for LPs in buyouts and help gain a deeper insight into compensation structures in principal-agent relationships. In spite of the importance of these questions, they have been largely ignored by the existing body of literature. To the best of our knowledge, there are only two papers which include certain deal-level fees in their analysis of buyout funds' economics, these are Metrick and Yasuda (2010) and Choi, Metrick and Yasuda (2013). Both papers provide an extensive analysis of private equity compensation structures and analyze the determinants of compensation for GPs. The papers distinguish between performance and non-performance linked compensation components and show that the broad majority of compensation for GPs stems from performance-insensitive components. However, the papers do not include all three types of deal-level fees in their analysis and they do not explain the occurrence and return implications of the fees. Our goal is to fill this gap by finding answers to the questions above.

We tackle our main research questions by running a two-step analytical framework. In a first step, we formulate two theoretical explanations for the existence of the deal-level fees and how they might influence LBO performance, the *Effort Incentivization Theory* and the *Opacity Theory*. Based on existing research the theories offer two possible explanations. Either, deal-level fees are economically valid due to their incentivization of restructuring efforts which should lead to higher deal performance. Or, deal-level fees are economically invalid because they exist because of non-optimal contracts which allow GPs to shroud the true nature of their compensation and to reap private benefits from LBOs at the expense of the LPs. In the second step of our analysis, we test these theories in an empirical framework. We use a data set of 93 leveraged buyouts over the period from 1999 to 2008 in the United States. Although this number represents only a fraction of the total U.S. leveraged buyout market in this period, our sample is highly representative and contains all fund- and deal-level information needed for the purposes of our analysis. For every LBO, we have the GP compensation both on fund- and deal-level. This includes the management fees, preferred returns, and performance-linked carried interest on fund level. And, on deal-level, we obtain all portfolio

company-specific deal-level fees. To measure the relationship between compensation and performance, we obtain commonly used performance metrics on fund- and deal-level. These are the Internal Rate of Return (IRR) and Cash Multiple (CM) on fund level (annually throughout the duration of the funds, as well as ex-post numbers after the fund closings), as well as deal-level IRR and cash multiple for each LBO. We choose these performance measures based on a broad body of literature in this field which has established the IRR and the Cash Multiple as the most widely used and relevant performance metrics in private equity. In a first step of this empirical framework, we document the relative and absolute magnitudes of the deal-level and fund-level fees to obtain a first understanding of the occurrence and characteristics of the compensation in our LBO sample. In a second step, we run a multivariate regression model to understand under which circumstances an LBO pays out deal-level fees to the GP. We are predominantly interested in understanding whether deal-level fees are a result of the structure of the overall GP compensation, the characteristics of the GP or the buyout fund, or the features of the LBO itself. In a third step, we use a multivariate regression setting to test the influence of deal-level fees on LBO performance.

This analysis yields two major results. First, we find that the occurrence of deal-level fees is neither determined by fund-level compensation nor by characteristics of the respective GP or buyout fund, but solely on the characteristics of the portfolio company. Portfolio companies with lower profitability and cash holdings but higher leverage tend to have higher deal-level fees. We believe this is an indication that deal-level fees are paid in LBOs in which the restructuring process to generate returns is more complicated, lengthy and intense. However, our second major result shows that deal-level fees substantially hurt the returns to the LPs. Regarding the optimal compensation structure, the benefits do not seem to outweigh the costs and, therefore, deal-level fees should not be paid. Our results are robust to a large number of checks regarding endogeneity, regression methodology, performance- and fee measurement variation, and a gross-of-fees versus net-of-fees approach.

The paper is structured as follows. Part 1 contains a background on fees in LBOs as well as a literature overview and our hypothesis development. Part 2 describes the data set, followed by a description of the methodology and results in Part 3. All robustness tests are discussed in Part 4 concludes, Part 5 concludes.

1 Theoretical Background

1.A Compensation Structures – Fund Level Fees

There are two different layers of fees in private equity, i.e., deal-level and fund-level fees. The standard compensation structure for the GP in almost all types of private equity is comprised of an annual fund-level management fee and a performance-based fee called carried interest. The fee conditions are written down in the partnership agreement, which is the contract governing the structure of a private equity fund, along with all duties and obligations of the GP and LPs.² Management fees are paid by the LPs to the GP for general fund management services. Their magnitude is measured as a percentage of the total money invested in the fund. The Preqin (2013) survey on fund terms shows that the management fee of U.S. buyout funds is set at 1.5 to 2.5 percent of the fund volume. The fees are usually calculated on an annual basis and paid out pro rata on a quarterly or annual basis. The GP receives the management fee over the whole fund lifecycle, disregarding the actual performance of the fund. At times, the management fee is restricted to the period in which the fund can draw down on committed capital or makes investments. This stands in contrast to the performance fee, i.e., the carried interest. It is meant to reward the GP for financially successful transactions by letting them participate in the profits. Consequently, the carried interest is measured as a percentage (that is, as Preqin, 2013 show, virtually always 20 percent) of the generated profits. A most simple example of a carried interest payment would be to pay 20 percent of the profits from a single transaction to the GP. However, in reality the carried interest payments are usually structured in a more complex manner. As illustrated in Panel A of Figure 1, the payment depends on the profitability of the fund. Instead of splitting all deal-level distributions beyond on a 80-to-20 basis, the carried interest is usually distributed to the GP after the entire fund has reached a certain profitability, measured by the fund-level IRR. This threshold level of profitability is referred to as “Hurdle Rate” or “Preferred Return”. Beyond this rate, the GP begins receiving a share of carried interest, which moves towards the 80-to-20 split once the so called “Catch-Up Zone” has been cleared. Not until the IRR has cleared this threshold the GP receives the full share of fund-level compensation. Structuring fund manager compensation in this way is meant to

² The broadest and most general overviews of partnership term structures and compensation schemes are provided by Fleischer (2008) and Litvak (2009). Fleischer (2008) provides a very general overview of the Private Equity fund terms, especially from a regulatory perspective and in the light of tax considerations; Litvak (2009) provides a very in-depth overview of venture capital fund terms, also regarding the distribution waterfall.

alleviate agency costs by aligning the interests between GP and LPs. The GP is strongly incentivized to create performance early on in a fund's lifetime.

(Figure 1)

1.B Compensation Structures – Deal Level Fees

In addition to fund-level fees, some buyout fund managers also receive deal-level fees. Whereas the aforementioned fund-level fees are employed by every fund-type in private equity (Venture, Mezzanine, etc.), deal-level fees are a special occurrence in buyout funds. There are three kinds of deal-level fees, i.e., transaction fees, advisory fees and termination fees.

Transaction fees are paid to compensate the GP for services in any kind of corporate transaction in the portfolio company. These transactions could be the initial LBO acquisition of the portfolio company along with its recapitalization and/or possible other corporate restructuring activities upon initial investment. Any subsequent transactions, such as further recapitalizations, debt or equity issuances and all M&A transactions are rewarded with the payment of a designated transaction fee. This means that transaction fees are always paid in connection with corporate transactions. Advisory fees are paid to compensate the fund managers for their general advisory and for the monitoring they perform while invested in a portfolio company. To create value in portfolio companies, the GP actively restructures the operating business, financing structure, and strategic direction. In addition to advising the board of management, the GP also holds board seats and actively monitors the implementation and success of the restructuring activities. Since the GP constantly advises and monitors the portfolio companies throughout the duration of the investment, the advisory fees are paid on an annual or quarterly basis. The advisory and monitoring relationship between GP and portfolio companies are governed by advisory contracts, which also include the advisory fees. Finally, at the exit when the buyout fund sells its shares and gives up all board seats, the advisory contract is also terminated. In case these contracts are terminated earlier than expected, a contract termination fee has to be paid to the GP. To summarize, the advisory fee is paid on an annual or quarterly basis over the investment's lifetime, the transaction fees are paid when certain corporate transactions occur, and, the termination fee is always paid at the exit of the investment. A typical payoff structure is

illustrated in Panel B of Figure 1. The Figure shows the chronology of a typical LBO, from start (t_0) to exit (t_3). Fund-level management fees are paid independently of the deal, which is why they continue to be paid after the exit of the deal. The carried interest is only paid out in connection with distributions being made from the investments to the LPs (assuming that the fund has already cleared both the preferred return and the catch-up zone). The advisory fee is paid constantly over the lifetime of the investment. The transaction fee is paid out in connection with transactions (here, the deal itself and one subsequent, hypothetical refinancing). Finally, the termination fee is paid out upon the termination of the advisory contract.

There are three major differences between fund- and deal-level fees. First, deal-level fees are effort-based and neither linked to fund management services nor the financial success of the investments. Second, the GP decides on the payment of these fees herself. Consequently, the GP is able to substantially increase the compensation from buyout deals. Clearly, since the fund owns the portfolio company, every payment by the company indirectly is a payment with “tacit consent” by the owners, i.e., the LPs. Still, there is no official agreement on deal-level fees, and, although LPs are well aware of their existence, they do not seem to be aware of their specifics – as long as the overall fund performance is satisfactory. The only regulation of the deal-level fees is made through the transaction fee rebate, which is included in the partnership agreement. It states what percentage of the deal-level transaction fees have to be paid out from the GP to the LPs. Even though this rule might not affect advisory or termination fees, it directly links the deal-level transaction fees to the fund-level compensation structure. And third, the portfolio company pays the fees, as opposed to the LPs. This is especially interesting, because the portfolio company’s cash which is used to fund the fees could also be used as a distribution to the LPs. Therefore, we believe deal-level fees have potentially high implications for the performance of buyout deal performances.

1.C Literature Review and Hypothesis Development

To obtain a first understanding of compensation structures in Private Equity and their causes and consequences, we turn to prior research which has dealt with the two interrelated topics of this paper before: to understand the reason behind the use of deal-level fees in LBOs and to determine the influence these fees have on the performance of the LBOs.

First, we would like to obtain a theoretic understanding of the determinants behind certain compensation structures in Private Equity. Usually, the existence of fee structures in Private Equity funds is explained using *Learning and Signal Theories*. A lot of papers dealing with compensation structures use these theories to explain the phenomena associated with it, such as Gompers and Lerner (1999), Metrick and Yasuda (2010) or Chung et al. (2012). The theories explain the compensation structures as the result of a multi-period game between fund managers and investors. Since effort is private information, the generated returns in the PE funds play a crucial role. The idea is that PE firms raise several consecutive funds over a large number of years, allowing both fund managers and investors to use the generated returns from past funds to obtain information about the optimal compensation in current funds. For the investors, past performance reveals the ability of the fund managers to generate returns; for the fund managers, past performance can be used to signal their ability to select high-return projects and use them to generate profits for the investors. These implications are shown by several papers. Gompers and Lerner (1999) focus on the U.S. venture capital sector and document the structural and economic features of compensation structures. They show that compensation structures vary greatly across GPs of different age and maturity. Younger GPs exhibit much different compensation structures in their funds than older GPs. Metrick and Yasuda (2010) provide a very detailed analysis of the economics of Private Equity funds. As part of their analysis they also investigate the features of compensation structures, how they change and how they generate revenue to the GPs. They show that the total Dollar-revenue generated by the compensation is a function of time. They show that buyout fund managers increase the sizes of their funds over time, which leads to more absolute income despite the fact that later funds have lower revenue per Dollar invested. A reverse causality between performance and compensation is shown by Chung et al. (2012). They show that the lifetime income of a GP (i.e., the aggregate compensation from all funds the GP is involved in) is significantly influenced by the performance of these funds. Their argument is that past fund profitability does not only impact the GP's overall compensation in that same fund through carry. It also positively influences future fund raising, which leads to even higher compensation due to higher management fees based on the larger fund sizes. In conclusion, these studies show that a major driver behind certain compensation schemes and the overall compensation package in a given Private Equity fund is strongly influenced by past funds of the same GP. As Gompers and Lerner (1999) point out: there are two general rule of thumbs regarding the occurrence of certain compensation

structures in Private Equity funds. First, the learning model suggests that greater effort with higher (noisy) performance in past funds leads to higher total compensation for the PE fund managers in current funds. Second, the signaling model suggests that higher past performance leads to higher fixed compensation in current funds. Apparently, we have to turn to the past of a GP to understand current compensation structures, especially its performance. Although this is an important finding and shows how closely connected compensation structures and performance are in Private Equity, none of the mentioned papers analyze deal-level fees in particular. The studies either focus on total compensation or fixed versus variable performance-linked compensation. So, in spite of the reasoning for the occurrence of fixed and performance-linked compensation structures, the learning and signaling models do not help us in understanding the specific occurrence of deal-level fees. However, we believe there are two theories which can help us get a grasp on deal-level fees and also on their relationship with deal performance.

The first theoretic explanation for the existence of the deal-level fees is the *Effort Incentivization Theory*. This theory is based on the general contract theory notion that performance is the noisy result of effort. Whereas more effort of the agents is desirable for the performance, it is costly for the agents. Principals must therefore compensate effort. The deal-level fees in LBOs might hence be seen as a means of the principals to compensate their agents for the effort they put into restructuring their investments. Effort compensation might be important because the effort put into the restructuring might be heterogenous in LBOs. Papers such as Jensen (1989) or Muscarella and Vetsuypens (1990) show that companies can be restructured fundamentally if undergoing an LBO. The restructurings range from changes to the leverage and governance structures to strategic changes through M&A deals or operating changes to increase profitability. These kinds of restructurings require a great deal of effort from the agents to generate returns for their principals. However, other and more recent papers such as Cao and Lerner (2009) or Cao (2011) show that some LBOs are conducted as so called “quick flips”, in which the restructuring effort is very little. In a “quick flip”, companies are bought in an LBO setting, but exited very quickly (usually within <12 months), sometimes without any restructuring. Based on these notions, deal-level fees might be used by principals to compensate the effort which fund managers put into restructuring the investments. Since more effort can lead to better performance, but GPs sometimes avoid costly effort in LBOs, incentive schemes to foster (restructuring) effort

might be a useful compensation tool in LBOs. The structural features of the deal-level fees support this notion. Explicitly, deal-level fees compensate GPs for corporate transactions, monitoring, and a successful exit, all features which require a great deal of effort from the GPs and which are necessary for return creation in LBOs. The *Effort Incentivization Theory* therefore states that deal-level fees are used to create incentives for GPs to put effort into the restructuring of the LBO targets to generate higher returns for the LPs. Consequently, we should expect to observe these fees predominantly in those deals in which more restructuring effort is required to make them profitable.

Given that deal-level fees are used to compensate GPs for restructuring efforts, how should they influence performance? Interestingly, the empirical evidence on the relationship between compensation structures and performance in Private Equity is ambiguous. Gompers and Lerner (1999) do not find any meaningful relationship between compensation structures and returns in Venture Capital funds. Conner (2004) tests the effects that different contractual terms in the partnership agreements might have on a private equity fund's profitability. Predominantly, he focuses on management fees versus carry. Using a hypothetical example, he shows that preferred returns do not impact the return, whereas a higher carry might actually hurt the return of the fund. Robinson and Sensoy (2013) perform a long-term study of the impact of certain fund terms on absolute and relative fund performance in the private equity industry. As a form of compensation, they analyze management fees and carry. Their study finds that both components do not influence net-of-fees fund performance. Their interpretation of the finding is that GPs which receive higher compensation also earn higher returns for their investors. In spite of these mixed results, we hypothesize that deal-level fees should lead to higher returns in LBO deals. We do so for two reasons. First, because an incentive for effort should lead to more effort, ultimately causing better (noisy) performance, as explained above. Second, because it is known that an explicit compensation for performing a certain task also increases the willingness to perform this task well (see e.g. Holmstrom and Ricard I Costa, 1986; Agarwal and Ben-David, 2012). Deal-level fees should therefore not only lead to more monitoring or M&A deals, but also to better monitoring and economically more valid M&A deals.

We believe that the assumption of a positive relationship between deal-level fees and LBO returns is further supported by a different strand of literature: managerial discretion and

investment fund returns. There are several papers on performance and compensation in investment funds which show that higher discretion of the fund managers over the investments leads to better performance of the funds, such as e.g. Agarwal, David and Naik (2009) for hedge funds or Nanda, Narayanan, and Warther (2000) for mutual funds. Apparently, the less restricted fund managers are by their contracts with the investors to make fund investments, the higher is the generated performance. We believe this notion can be adapted to the compensation structures of buyout funds. If deal-level fees are implemented, GPs are granted full discretion over the type of LBO they make, encompassing LBOs with and without intense restructuring. If deal-level fees are not in place (either deliberately or involuntarily by the LPs), GPs might be discouraged from engaging in restructuring-intense LBOs. This limits the spectrum of possible investments for the buyout fund, i.e. the GPs have lower discretion over how to invest the committed capital. Although this effect might perhaps be minor to the effort incentivization, we believe it could further add to the positive relationship between deal-level fees and deal performance.

However, it has to be noted that there might also be another theoretical explanation for the existence of deal-level fees in LBOs, which also suggests a different relationship between these fees and the deal performance: the *Opacity Theory*. It is based on the notion that investment funds are often able to shroud the true fee structures of a financial services contract in order to impose excessive fees on the investors. There is a broad body of research which shows that fee structures in any kind of financial product market are highly opaque and often well suited to mislead the purchasers of the products. This is not only true in e.g. retail finance markets (shown by Carlin, 2009), but happens even more so in Private Equity. Phalippou (2009), Morris and Phalippou (2012) and Robinson and Sensoy (2013) all argue that fee shrouding can substantially increase the total compensation cost for LPs. The reasons for successful fee shrouding can be manifold. The most valid explanations for why LPs do not realize the total cost of their LP compensation (and what exactly they are paying for) are either complicated payoff structures in the distribution waterfall or multifaceted information asymmetries within the LPs. The contracts between GPs and LPs are therefore not always optimal, allowing the GPs to impose these excessive fees on the LPs. The GPs can make use of these imperfections to reap private benefits through the deal-level fees. The *Opacity Theory* therefore explains the existence of the deal-level fees in LBOs as the result of imperfections in markets and contracts.

Should the *Opacity Theory* hold true, what kind of relationship would we therefore expect between deal-level fees and deal performance? We believe the relationship should be negative. If deal-level fees do not create an incentive to put restructuring effort into LBOs, the performance of the LBOs should not benefit from these deals. We believe that paying these fees might hurt the LP's return for two specific reasons. First, the fact that the portfolio companies' cash is used to fund deal-level fees has a direct influence on the performance of the LBO: Instead of compensating the GP, the cash could be distributed to the LPs in form of a dividend, directly increasing their rate of return. Deal-level fees are only rational as long as the value added by the effort-incentivization exceeds the value of cash paid out as fees. If the *Opacity Theory* holds true, the GPs could use the deal-level fees to reap private benefits from the LBOs at the expense of the LPs. Second, the combination of deal-level and fund-level compensation constitutes a redundancy: On fund level, the GP is compensated for "running the fund" and for creating value (management fee and carry, respectively). This should sufficiently compensate the effort that is put into the LBO – even if the level of effort varies across deals. Instead, deal-level fees create a disproportionately high monetary participation for the GP in certain LBOs which allows the agent to partially detach income from the income generated for their principals, i.e., the LPs. Since an agent's commitment will correlate positively with her share in the pay-off, this could lead to an imbalance between the general and specific efforts by the GP. Consequently, this conflict of interest might hurt the LP's returns if the fraction of deal-level compensation becomes substantially large as opposed to the GP's income on fund level. This should, however, only be true if the LPs do not understand or realize that these fees are in place because it allows the GPs to make use of these benefits. Consequently, we will design our subsequent tests regarding the existence of the deal-level fees and their performance implications based on these two theories, the *Effort Incentivization Theory* and the *Opacity Theory*.

2 Data and Methodology

2.A Data Collection

Our data collection is based on four steps. First, we identify every leveraged buyout along with the respective buyout investors. Second, we identify all fund- and deal-level fee-compensation in these deals. Third, we collect the data used to calculate the LBO performance. And fourth, we add information to control for any other potential influence

factor on the performance of LBOs. Our core sample contains 224 LBOs that went public in an initial public offering (IPO) at the New York Stock Exchange (NYSE) or the NASDAQ between 1999 and 2008.³ We restrict our sample to IPO companies for reasons of information disclosure and transparency. The data necessary for our analyses is obtained from filings with the Securities and Exchange Commission (SEC) during the share registration process prior to the IPO. Since this information is made publicly available by the SEC, we are able to collect and use otherwise proprietary (or classified) data about the portfolio companies and the structures of the buyout deals. We are well aware that this data collection might induce a sample selection and survivorship bias. As a consequence, our results might not be representative for the entire asset class of private equity. Schmidt, Steffen and Szabó (2010), for example, show that only the most successfully buyouts are taken public. However, given that the IPO filings are the only conduit for this level of detail, we do not see a possibility to either adequately control for this bias or to use different sources. Given this trade-off between representativeness and unprecedented buyout insight, we opt for the latter.

All IPO data is taken from the Thomson Reuters SDC database. To identify leveraged buyouts, we use the “buyout flag”-indicator provided by Thomson Reuters. This variable shows which company had a non-venture private equity investor at the time of the IPO. We obtain 273 buyout-backed IPOs in our observation period. We validate the buyout-backing of the IPO firms as indicated by the SDC database using the firms’ stock offering prospectuses (S-1 and 424-B). In a second step, we complement the LBO data with our main explanatory variables, i.e., the fees, for which we use two different sources. The Preqin Fund Term and Compensation database provides fee information on fund level. And, we use publicly available SEC filings by the portfolio companies to retrieve deal-level fee information. All deal-level fees are taken from S-1 filings of the portfolio companies prior to the IPO. These prospectuses discuss the investment of the buyout firm, and which transactions took place between the portfolio company and the buyout firms prior to the IPO. The SEC considers this to be material information for any future shareholder of the post-IPO corporate entity, and it is therefore to be disclosed in the S-1 filing. We extract all fee information from S-1 filings (as well as through the amended 424B updates of the S-1 filings) to determine transaction, advisory and termination fees on deal-level. Usually, the advisory and

³ All holdings in these LBOs were sold by the end of Q3/2012, i.e., all deals had a full exit.

transaction fees are mentioned in the “Certain Transactions” sections of the prospectuses, whereas the termination fee is usually mentioned in the “Use of Proceeds” section. Fortunately, the prospectuses also explicitly mention if the portfolio company does not pay any fees (or not pay a specific fee) to the GP. We therefore do not face the risk of having biased data through misreporting. There are only 14 companies for which we cannot explicitly identify deal-level fees (or their absence), which is why we reduce our initial sample of 224 portfolio companies to 210.

All fund-level fee information is taken from Preqin. It contains detailed data on all GP compensation used in those funds that were invested in our sample of portfolio companies. Preqin provides the volume of carried interest, management fees, preferred returns, as well as transaction fee rebates. Additionally, the data contains the absolute volumes of all fees paid by the LPs to the GP in any given year during the fund duration. Matching with Preqin data further reduced our sample size to 134 LBOs. We match the data on the buyout fund level. In cases where several funds are invested in a portfolio company, we use the data of the lead fund, i.e., the fund owning the largest ownership stake.

In the third step we collect all information necessary to calculate the performance of the LBOs. As explained in more detail later in section 3.A, we use the cash flow-based performance measures IRR and CM. Both are commonly used in the buyout industry to measure deal- and fund-level performance. IRR and CM are based on cash in- and outflows of the investments. We manually collect these cash flows from the S-1 IPO prospectuses (e.g., the investments in the IPO companies, as well as the cash flows through sales at the IPO, all dividend payments and share redemptions), and from mandatory S-4 post-IPO insider share sale filings made with the SEC and available through SEC EDGAR (for all post-IPO cash inflows through share sales). Matching all cash in- and outflows on deal level allows us to determine the exact cash flow-based performance of each deal.

These previous steps leave us with a set of 93 LBOs that went public on NYSE or NASDAQ in the period between 1999 and 2008. For these 93 deals, we have all fund- and deal-level fees that the GPs received as part of their compensation. We also document all relevant fund-level terms governing the payoff distributions, preferred returns, fee rebates, management fees, and carried interest. In a final step, we complement our sample with a number of

additional databases to obtain control variables for our multivariate analyses and to run robustness tests to validate our results. First, we use the Thomson ONE Banker data for all Mergers and Acquisitions (M&A) transactions that the IPO companies were engaged in during the pre- and post-IPO period (while the buyout funds was invested). Second, we use Standard & Poor's COMPUSTAT data for all balance sheet and P&L information on the IPO companies. Third, we use the U.S. GAO (Government Accounting Office) Financial Restatement Database for information on financial restatements. Information on the IPOs themselves, such as date, volume, and pricing details are taken from the Thomson Reuters SDC data base. Also, we use the aforementioned S-1 IPO prospectuses (and the 424B amendments) to collect additional variables which are not available in other databases, such as shareholder, management and board structures, details on the structure of the buyout investment (investment periods etc.), and pre-IPO financial and accounting information on the firm which might not be available in COMPUSTAT. This information is manually extracted from the prospectus and merged into our data.

2.B Summary Statistics

Table 1 contains selected summary statistics on our sample of 93 buyout-backed IPOs. Starting in Panel A, the average portfolio company had total assets in the amount of USD 923.3 million at the time of the LBO, and revenues of USD 564.0 million. Based on these numbers, the average portfolio company of a buyout fund seems to be of medium size. However, comparing mean and median numbers shows that there is some degree of heterogeneity in the data. Median asset and revenue numbers are smaller as compared to average numbers. Apparently, the mean is driven by few large companies, a finding also supported by the large standard deviations. Although this result is not surprising, given that buyout firms are known to engage in single large transactions, we will thoroughly control for this heterogeneity in all further analyses. The average profitability of all portfolio companies seems rather low with a negative 10.4 percent; the median is considerably larger at 1.1 percent. At LBO, portfolio companies have an average debt-to-assets ratio of 81.2 percent and cash holdings in the amount of 11.9 percent as a fraction of total assets.

(Table 1)

Looking at the characteristics of the buyout deals itself, we see that the average deal is syndicated with 1.69 private equity investors, it has 1.43 investment rounds, all buyout investors jointly purchase the majority of the ownership rights in the portfolio companies (74 percent), and already divest parts of their shareholdings before going public (49.8 percent shareholdings at the time of the IPO). We also see that the management of the portfolio company holds 10.6 percent prior to the IPO, and that the buyout funds exercise control in the portfolio companies through the board of directors by holding more than one third (3.2 of 8.1. seats overall) of the board seats. Overall, these numbers are in line with “typical” buyout deals found in practice; a syndicate of buyout funds purchases controlling stakes in a portfolio company, reduces agency costs by awarding the portfolio company’s management shareholdings, divests parts of their ownership before the actual exit through the IPO and controls the company through the board. Finally, Panel B of Table 1 reports summary statistics of the buyout investments and IPOs over time and across industries.

3 Methodology and Results

3.A Measuring Compensation and Calculation Returns on Deal-Level

Our empirical analysis comprises three consecutive steps. In a first step, we calculate the main deal-level compensation and performance measures. In the second step, we analyze how and under which circumstances deal-level fees are paid. And in a third and final step, we use the compensation and performance measures to analyze the influence of deal-level fees on the performance of LBO deals. It should be noted that all analyses are made on deal-level as opposed to fund-level. Since we observe deal-level compensation we consequently analyze the performance on deal-level to maintain consistency.

As mentioned in the description of our data collection, we use the total USD volume numbers for transaction, advisory, and termination fees on buyout deal level, as stated in the portfolio companies’ S-1 filings. To calculate our main compensation proxies for deal level-fees, we use the absolute Dollar-volumes of the fees in relation to the absolute Dollar-volumes of total proceeds generated by the deal. We classify all cash flows to the buyout fund (and, therefore, ultimately to GP and LPs) generated through each investment as a “proceed”. We label all cash flows from the perspective of the buyout investor. Cash outflows are cash injections into the investment, i.e., investments in the portfolio company

such as the initial cash investment upon acquisition and all subsequent cash injections made by the buyout investors into the portfolio company. Cash inflows are cash proceeds from the investment to the buyout fund, i.e., payouts from the portfolio company to the investors, such as dividend payments or cash proceeds from the sale of stocks. The cash flows are taken from several sources, i.e., the S-1 filings (for dividends and pre-IPO share transactions), and post-IPO share sale data from Thomson M&A data (for share sales through one-time M&A transactions), and SEC S-4 insider trading data (for gradual exits with many smaller share sales). All proceeds are aggregated on deal level.

We normalize all deal-level fees by the total proceeds for two major reasons: First, this creates a comparable measure for the relative fee volume paid to the GP across different deals of different size. Second, deal-level fees could instead be paid out as deal proceeds to the LPs if they were not paid out to the GP as part of their compensation. Comparing the fees to the remaining proceeds therefore shows what relative cash volume is used as GP compensation as opposed to LP proceeds⁴. We calculate four different fee-type variables as indicators for GP deal-compensation: (1) the ratio of total deal-level fees to total proceeds (aggregating all three deal-level fees), (2) the ratio of transaction fees to total proceeds, (3) the ratio of deal-level advisory fees to total proceeds, and (4) the ratio of termination fees to total proceeds.

To measure deal performance, we use the cash flows generated by the deals and calculate two main variables, i.e., the IRR and CM. We use these measures for two primary reasons: First, both are well-established performance measures in the private equity industry (Kelleher and MacCormarck, 2005; Phalippou, 2009; Fraser-Sampson, 2010; Cumming, 2012) and they are widely used in the prior literature on performance measurement in private equity transactions (such as in e.g. Kaplan and Schoar, 2005; Phalippou and Gottschalg, 2009; Schmidt, Steffen and Szabó, 2010; Acharya et al., 2013). Second, we use both IRR and CM as a realized measure, because Gompers and Lerner (2000) show that valuations of private equity portfolio companies can be severely biased by the surrounding market environment and funding inflows. By looking at realized ex-post values instead of (market) valuations of the portfolio companies before the value realization we avoid this bias. We calculate the deal-

⁴ Of course, the proceeds to the buyout fund are not entirely received by the LPs. Instead, given the preferred return and catch-up are cleared, the proceeds will be split between GP and LPs according to the share of carried interest.

level IRR using all cash in- and outflows (as described above) of each buyout deal in our sample. The cash outflow is the initial equity investment made by the buyout funds in the portfolio company. There are three different kinds of cash inflows; (1) all cash dividends paid by the portfolio company to the buyout fund and its investors during the investment period, (2) the cash proceeds generated through share sales of the buyout fund at the portfolio company's IPO, (3) all proceeds generated through the sale of shares the buyout fund holds until after the IPO. The identical cash flows are used for the CM calculation.

3.B Overview of Compensation Structures in Buyout Deals

Panel A of Table 2 gives an overview of deal-level fees in our sample. Overall, 57 percent of all portfolio companies pay deal-level fees to the GP (53 out of 93). The most prevalent type of fee is the advisory fee with 54.8 percent of all LBOs. 38.7 percent of all firms pay transaction fees and only 24.7 percent pay termination fees. The volume of fee payments differs even more drastically. On average, USD 10.79 million is paid out in deal level fees across our sample. The median and standard deviation indicate that the distribution is heavily skewed with few, large cases. Taken together, our sample therefore shows that even though a large number of buyout deals contain deal-level fee payments, some of these deals pay considerably higher fees than the majority of deals. This can be seen in the histogram in the Appendix (Figure A2) in more detail.

The table further shows that the deal-level fees are 2.41 percent of total proceeds. Considering that 43 percent of all portfolio firms do not pay deal-level fees, 2.41 seems a substantial fraction – especially because these are payments in addition to fund-level fees. Again, median and standard deviation indicate that there are few large observations. Given the ratio's distribution, GPs in the top decile demand a fee-to-proceeds ratio of more than 6.9 percent. Table 2 also shows that the total deal-level fees are mainly driven by the advisory fees which comprise 1.36 percent on average and has a standard deviation of 5.94 percent. The table also reports the ratio of deal-level fees to estimated carried interest. This documents the economic significance of deal-level compensation. The ratio of total fees to total estimated carried interest⁵ per deal is 11.59 percent. This means that close to 12 percent

⁵ We measure the estimated carried interest per deal by calculating 20 percent of all proceeds generated through each buyout deal in our sample. This payoff structure would resemble a deal-by-deal split distribution waterfall with no hurdle rate. We do not know the actual waterfall structure as set forth in the partnership agreements, so this is only a best educated guess. However, we only use this number to put the deal-level fees in perspective.

of the GP's total compensation per deal is rooted in deal-level fee income. We believe that this is a startling number which shows the importance the fees can have for the GP as part of the overall compensation package. The bottom of Panel A contains correlation coefficients for the three fee types. The correlation numbers show two things: first, even though we see that the different types of deal-level fees are heavily correlated, we still detect a considerable heterogeneity in the combination of fees. Second, we document that almost all LBOs that pay one of the three deal-level fees, also pay advisory fees ($q=0.96$).

(Table 2)

The summary statistics for the corresponding fund-level compensation structures are given in Panel B of Table 2. In contrast to the heterogeneous deal-level fees, the fund level terms seem rather homogenous. The average fund management fees are 1.83 percent with a very low standard deviation at 0.24 percent. Also, the preferred return shows a narrow distribution. A fact that cannot directly be seen from Table 2 is that funds either have no preferred return or they have a rate around 8 percent. Interestingly, we see the largest variation of all fund-level compensation components in the transaction fee rebate. Roughly 23 percent of all funds have a zero rebate and the rest of them show a rebate between 50 and 100 percent. With a mean of 57.6 percent and a standard deviation of 37.1 percent, the distribution of transaction fee rebates is rather heterogenous. This is especially interesting because it is the only fund-level fee component which is linked to deal-level compensation. Apparently, the transaction fee rebate is just as heterogenous as the deal-level fees themselves. Strong conformity can be seen in the carried interest which is literally the same across all funds of our sample. This picture does not change in a comparison of LBOs with-versus-without deal-level fees. Management fee, preferred return, and rebate seem slightly larger for LBOs without fees; however, none are statistically significant. Overall, this is a surprising result with regards to GP compensation. We find very strong heterogeneity on deal-level, yet, almost all funds show very similar fund-level terms.

3.C *The Influence of Deal Characteristics on Deal-Level Fees*

In a first analytical step, we intend to analyze the nature of deal-level fees and to identify certain drivers which might be able to explain the occurrence of these fees. The underlying

question of this analysis is: In which deals and under what circumstances are deal-level fees part of the GP's overall compensation? By answering this question we might also be able to better understand the strong heterogeneity among them. We run multivariate regressions using the deal-level fee variables as dependent variables. We use OLS regression to test the impact of deal and fund characteristics at the time of the LBO, and we use characteristics of the invested buyout funds, the portfolio companies and the GP directly as the potential determinants for deal-level fees. This selection of variables is based on prior literature. As discussed above, a large body of literature has developed an understanding that compensation in private equity funds depends on the past profitability of the fund as a proxy for reputation (Chung et al., 2012), the size of the buyout fund (Metrick and Yasuda, 2010), the age of the firm and/or the fund as a proxy for experience (Gompers and Lerner, 1999; Aragon and Qian, 2006), deal syndication (Hochberg, Ljungqvist and Lu, 2007), and the total fundraising in the buyout industry as a whole in a given year (Robinson and Sensoy, 2013).

In addition to these more established influence factors, we also control for portfolio company characteristics in explaining deal-level fees. We do so for two primary reasons. First, because prior literature shows that PE firms tend to adjust their investment approaches in accordance with the characteristics of their portfolio companies, e.g., the exit strategies (Cao, 2011). This gives us reason to believe that deal-level compensation might also be chosen based on the characteristics of the portfolio companies. Second, we include portfolio-specific control variables to account for the restructuring intensity of the respective investments, in line with our postulated theories. We include proxy variables for the portfolio companies' cash availability, profitability and leverage structure. We choose these variables based on prior literature which shows that they are valid proxies for the restructuring activities in a leveraged buyout transaction (such as e.g. Jensen, 1989; Muscarella and Vetsuypens, 1990). Note that all proxy variables are measured at the time of the LBO since this is when the payment of deal-level fees is decided on. A low profitability at the time of the LBO might result in more restructuring activities for the GPs, calling for additional compensation for these activities, especially in comparison to deals with lower restructuring needs. In contrast, a higher profitability of the target at the time of the LBO might not call for an intense, complicated or time-consuming restructuring. Instead, it might allow for facile value creation so additional compensation is not necessary. The same notion applies to cash

holdings. High cash holdings of a portfolio company could be used to pay off debt more quickly and, therefore, allow for a quicker boost of equity returns to the LPs without restructuring. In contrast, low cash holdings make debt repayment more difficult. At first, free cash flow would have to be created through restructuring to eventually pay off debt. To control for the actual debt volume, we also include the post-LBO leverage ratio of the portfolio company in the regressions.

Finally, we include the fund-level compensation represented by three variables, i.e., the percentage of the annual fund-level management fee, the percentage of preferred return, as well as the transaction fee rebate. Arguably, this might be the most important group of variables in explaining deal-level fees. As discussed in part 2 of the paper, GPs are to a large degree compensated on fund-level through management fees and performance-based carried interest. It might be presumed that there is a tradeoff in fund- and deal-level fees. GPs might be more inclined to boost their compensation through deal-level fees if the fund compensation is low. These factors, therefore, have to be controlled for when analyzing the deal-specific compensation of the GP. Since carried interest is the same 20 percent for all funds in our sample, we exclude it from the regression.

(Table 3)

Table 3 shows the regression results revealing two major findings. First, the restructuring intensity of the portfolio company apparently seems to be a major determinant of deal-level compensation. We find that lower return on assets and cash holdings, as well as a higher leverage at the time of the LBO significantly contributes to the payment of advisory fees in buyout deals. Additionally, lower cash holdings correlate with higher overall total fee payments and transaction fees, and higher return on assets also positively influences termination fees. Jointly, these results suggest that portfolio companies with lower profitability and cash holdings, but, a higher leverage, call for higher deal-level fees to the GPs. This is in line with and in support of the *Effort Incentivization Theory*. Whenever a GP needs to make a portfolio company profitable, and needs to create free cash flow to pay off debt, and when the debt burden on the company is overly high, then restructuring activities will be more difficult, costly and time-consuming than in otherwise similar portfolio companies. Since value creation is more difficult in these portfolio companies, the GPs

receive deal-level fees to compensate them for the additional effort. This result supports the economic validity of paying additional fees on top of the usual fund manager compensation. Accordingly, the LPs might use deal-level fees to set incentives for the GP to engage in more-difficult investments. Consequently, the level of difficulty translates into higher risk that should be reflected in higher upside potential. From the LPs' perspective, it makes sense to base GP-compensation on the effort to restructure a portfolio company instead of the success of the restructuring. The success of a difficult restructuring process cannot be anticipated ex-ante. If GPs were only compensated based on success, they might refrain from engaging in difficult investments due to the uncertainty of the outcome. However, being compensated based on effort could alleviate the reluctance that the GP will undertake all necessary efforts to create value in the portfolio company. Taken together, these results suggest that deal-level fees in buyout investments can align the interests between the GP as agent and the LPs as principals and might therefore be a valid compensation tool. To test whether or not the compensation really has a positive influence on deal success, we analyze the relationship between deal-level fees and deal-level performance in the subsequent section 3.D.

3.D The Influence of Deal-Level Fees on Performance

In the third step, and main part of our analysis, we measure the influence of deal-level fees on the performance of the LBOs. To obtain a first grasp on the relation, we present some introductory descriptive statistics in Table 4.

(Table 4)

Table 4 gives a descriptive overview on the average investments, proceeds and returns, split by different compensation indicators. The top line shows the overall averages and the lower part splits the sample according to the type of deal-level fees. Overall, the mean initial investment amounts to USD 203.8 million. The average LBO pays a dividend of USD 116.2 million, generates IPO proceeds of USD 51.1 million, and returns a total of USD 691.7 million back to the private equity fund. The average IRR is 92.6 percent and the CM is 5.08 (median IRR is 47.2 percent, and median CM is 3.54), clearly reflecting some of the most successful LBO transactions. Once we split the sample according to deal-level fee type, a slight difference can be seen: LBOs with deal-level fees are, on average, larger, and more profitable

than LBOs without deal-level fees. Given any type of deal-level fee, the initial investments are USD 76.9 million larger and generate an IRR that was 25.2 percentage points higher than those without fees. However, these differences are not statistically significant. This pattern is repeated for almost every univariate comparison of LBOs with and without fees. Only exceptions are slightly significant size differences for LBOs with and without transaction fees and statistically significant differences in size and volume of proceeds for LBOs with and without termination fees. For all other comparisons we cannot detect any statistical differences in profitability based on the occurrence of deal-level fees. Hypothetically, this would be an interesting finding because it would suggest that the occurrence of deal-level fees has not valid implications for the deal performance.

However, to deepen our analysis of the relationship between deal-level compensation and performance and to see if the observed univariate pattern prevails in a statistical setting, we run multivariate OLS regressions. Three things should be noted here: First, we run the model in several different specifications, i.e., varying explanatory and dependent variables, to cover all possible effects of the influence that deal-level fees have on deal-level performance. The model specifications are explained in detail below. Second, we use an instrumental variable (IV) approach for all model specifications to take endogeneity of deal-level fees into account. Why might this be important? Deal-level fees are agreed upon at the time of the LBO and, therefore, are somewhat endogenous. After all, there might be factors which influence both the compensation and the subsequent performance, as argued above in part 3.B. We use these factors in the first stage of the regression.⁶ Third, we run IV-Tobit regressions because of the truncated distributions of both IRR and CM.

(Table 5)

We run the model in a total of 12 different specifications, as can be seen in Table 5. Models (1) to (8) contain the results of our analysis using the main compensation and performance measures. As the dependent variable, we use the IRR in models (1) to (4) and the CM in models (5) to (8). For the main explanatory variables, model (1) and (5) use the ratio of total deal-level fees to proceeds, whereas the models (2) to (4) and (6) to (8) use the ratios of

⁶ In the first stage regression we use the following LBO characteristics total assets, cash to assets ratio, RoA, debt to assets, called up capital at LBO, DPI at LBO and industry fixed effects as exogenous variables.

specific deal-level fees. We do not include all deal-level ratios jointly in the models due to the high correlation among these variables (as shown in Panel A of Table 2). Models (9) to (12) contain four additional model specifications. In it, we use alternative dependent variables and one additional explanatory deal-level fee dummy to control for potential biases and to cover different performance dimensions of the LBOs. In model (9) we use the so-called “public market equivalent” (PME) as an additional deal-level performance measure. The PME is based on Kaplan and Schoar (2005), who introduce it as a market-adjusted performance measure for private equity returns. We calculate the PME following Kaplan and Schoar (2005), using ICB sector returns as our benchmark.⁷ In model (10) we use the “gross IRR” as a dependent variable. So far, our IRR is calculated net-of-fees, i.e., without the cash flows from the fee payments. The gross IRR is calculated based on the IRR, but, including all cash flows used in deal-level fee payments. We do so to control for possible mechanical effects that the fees might have on the performance measure. Since subtracting the fee payments from the IRR might mechanically lower the IRR, this could cause a negative relationship between fees and performance. By including the fee cash flows in the gross IRR calculation, we are able to alleviate this problem and to measure the actual economic relationship between fees and performance. In model (11) we use the unlevered IRR as performance measure. This variable is based on Acharya et al. (2013) who show that a substantial fraction in buyout performance is driven by the leverage that is used in the acquisition of the portfolio company. To measure the actual economic value creation while disregarding any effects from leverage, we adjust our deal-level IRR for the leverage that is used in the specific LBO following Acharya et al. (2013). Finally, in model (12) we use the IRR as main dependent variable but replace the deal-level fee variables by a dummy variable indicating whether or not an LBO paid deal-level fees or not.

For each of the 12 models, we use the identical set of control variables. The selection of these variables is based on prior research which has established a variety of drivers for buyout performance. We specifically have to control for factors which are known to influence the overall performance of the buyout investments, in addition to the compensation structures. Since we already control for portfolio company specific factors, we also turn to the restructuring activities the buyout funds perform in their LBO targets to generate returns. By

⁷ We use the median of the total return index across ICB sectors. The matching of our in-sample LBOs to the respective sectors is based on the ICB “sector” classification.

controlling diligently for these factors, we are able to disentangle the influence that actual restructuring activities (which are paid for by deal-level fees) have on the LBO performance from the influence that deal-level fees have on performance. The existing body of literature shows that there are three groups of factors which can influence the (operational) performance of portfolio companies: (1) Fundamental engineering, aimed at increasing profitability and optimizing governance structures (based on Muscarella and Vetsuypens, 1990; Holthausen and Larcker, 1996; Cotter and Peck, 2001; Degeorge and Zeckhauser, 2003; Edgerton, 2012); (2) Financial engineering, aimed at leverage (based on Acharya et al., 2013; Axelson et al., 2013), and earnings management (based on Teoh, Welch and Wong, 1998; Chou, Gombola and Liu, 2006); and (3) market timing (based on Cao, 2011). Also, we believe cash draining in the form of excessive dividend payments or dividend recapitalizations might play a role in deal-level performance, which is why we include it as a control variable. We also include fund-specific control variables from the first part of our analysis, since literature also shows that factors like historic buyout firm profitability (Kaserer and Diller, 2005; Demiroglu and James, 2010), the age of the buyout firm (Covitz and Liang, 2002), the size (Gompers, 1996; Strömberg, 2007), the total fundraising in the buyout industry (Ljungqvist and Richardson, 2003), and deal syndications (Hochberg, Ljungqvist and Lu, 2007) might also directly impact the performance of LBOs. For each, we include a specific control variable. A detailed list of these control variables can be found in Appendix Table 1A, summary statistics for these variables are given in Appendix Table A2.

Overall, deal-level fees show a significantly negative coefficient of -1.27 on the IRR as can be seen in model 1. This strong, negative relationship between deal-level fees and LBO performance persists although we directly control for restructuring activities, e.g., M&A, recapitalizations, change of management, etc. (coefficients of additional control variables are shown in appendix table A5). Even fund-level terms like the preferred return or the transaction fee rebate – which should help reduce agency costs between the GP and LPs – do not seem to amend a significantly lower return in LBOs that pay deal-level fees. Rather, fund management fees turn out to be significantly negative related to performance as well. In terms of a principal-agent situation, our results do not support the hypothesis that deal-level fees help incentivize the GP to engage into effort-intensive, yet, highly profitable LBOs. Instead, the outcome of our regression suggests that deal-level fees are payments at the expense of the LPs.

This negative pattern is robust against a variation in performance measures, such as the CM in model 5 or the PME in model 9. However, the types of deal-level fees differ substantially in terms of their economic nature. While transaction fees are perspicuous for certain restructuring transactions, advisory fees might be harder to relate to specific actions, and an early exit should be somewhat incentivized by carried interest already. To disaggregate and to see whether different deal-level fees might show different impact on LBO performance, we report each fee in separate regressions. Possibly, transaction fees for restructuring activities, e.g., M&A, could have a positive impact on LBO profitability. Also, termination fees could set the incentive for a rapid and profitable exit instead of procrastination and waiting for the “right” moment. Models 2 and 6 reveal that transaction fees show the same negative relationship throughout different performance measures. In similar fashion, advisory fees have large negative coefficients as reported in models 3 and 7. It vaguely appears that advisory fees have the largest economic significance of all three deal-level fees. Termination fees turn out to be insignificant although z-values of 1.53 and 1.58 in model 4 and 8 suggest an error probability of below 13 percent.

Our results also hold for the gross IRR performance, i.e., the LBO performance including all deal-level fees. The coefficient of -1.27 in model 10 is virtually the same as in model 1 and the significance level only slightly decreases – still remaining at the 1 percent level. This documents that the mechanical relationship of deal-level fees on performance (deal-level fees reduce the proceeds to the fund which, in turn, decreases the IRR) is of minor importance. In contrast, the impact of leverage on the IRR is very large, as is reflected in the coefficient of -0.48 in model 11. This difference is in line with the findings of Acharya et al. (2013) who already document that a large fraction of IRR is resulting from leverage. However, the highly significant, negative impact of deal-level fees remains and the significance level is even increased. In the right-most regression model 12, we finally exchange our deal-fee ratio by a simple dummy variable. Again, the decreasing impact of deal-level fees on LBO performance persists.

To summarize, although the descriptive statistics in table 4 give the impression that fee-paying LBOs are more - albeit insignificantly - profitable, the multivariate analysis disproves that perception. Rather, deal-level fees have a strong and persistent negative impact on LBO

performance, even after controlling for preferred returns and transaction rebates. The occurrence of deal-level fees in LBOs and their incentive-effect are more than questionable given our results. It seems that the *Opacity Theory* is supported by our results, suggesting that there is no economic validity in including deal-level fees as part of the overall compensation package of LBO deals.

4 Robustness Tests

To validate our results we have to run a number of robustness tests which will be presented subsequently. First, we need to address the issue of endogeneity. The IV Tobit regressions in Table 5 display that the exogeneity of deal-level fees is not rejected for all deal-fee types. We cannot entirely rule out whether weak endogeneity or bad instruments is the cause, but the Chi²-values of the Wald test for exogeneity in all IV models for transaction fees and termination fees are very low. Appendix Table A5 shows the results of regular Tobit regressions without instrumenting for deal-level fees. Our results are robust and even become more pronounced, both statistically and economically. Especially for termination fees, models 4 and 8 in the IV-regressions show Wald tests indicating very low endogeneity with error probabilities of 56 and 24 percent. These two models show insignificant coefficients for termination fees in the IV regression, but, given the rejection of the null for exogeneity, a regular Tobit could be applied. Doing so yields a strong negative impact of deal-level termination fees.

Since endogeneity proves to be an issue in deal-level fees, the question of instruments in the IV regression is of importance. Although our results do not seem to suffer from severely bad instruments, as indicated by the overidentification tests in table 5, we did run various specifications of explanatory variables to explain deal-level fees. We tested every relationship that was economically plausible. Two problems are dominant in finding adequate regression models: First, fund characteristics show considerable correlation with other fund specifics. For example, fund management fees correlate with fund preferred returns at a level of $\rho=0.20$. The transaction rebate even shows a correlation of $\rho=-0.34$. To see whether multicollinearity is an issue in explaining deal-level fees we analyze variance inflation and correlations, and we run a large amount of sub-set regression models. The second problem in model identification is the surprising homogeneity of fund terms as opposed to very

heterogeneous deal-level fees across funds. Over all, it seems that there is no strongly persistent pattern in explaining deal-level fees. However, our main results hold to different specifications in the first-stage regression of our IV-Tobit. We initially use Tobit regressions because our dependent variables are truncated, i.e., -1 for the IRR and zero for the CM, respectively. For robustness reasons we also run OLS and IV OLS regressions both leaving our findings unchanged (tables not reported, available upon request). The OLS regressions show a weaker overall significance in the F-test than our Tobit regressions which underscores the adequacy of choosing Tobit as our method. In addition, we also run our analysis on winsorized IRR and CM performance measures, e.g., as in Acharya et al. (2013), which does not alter our findings.

In a second broad robustness test we address the role of the transaction fee rebate in deal-level compensation. As explained in section 1 of the paper, the transaction fee rebate sets forth whether or not some deal-level fees (in particular the transaction fees paid for making the initial buyout transaction) have to be shared between the GP and the LP. Hypothetically, this could mean that the GP only gets to keep a fraction of these deal-level fees. The transaction fee rebate should therefore serve the purpose of aligning the interests of LP and GP. Although we already control for the effects the transaction fee rebate might have on deal-level performance by including it as an explanatory variable in our main regression model, one could argue that adding the rebate as a control variable is too trivial and that this is not sufficiently addressing all re-distribution effects. To fully account for the effects of the rebate, we do two additional things. First, we exclude the rebated fees (measured as the percentage of the fee rebate) from the volume of fees paid to the GP. Second, we run the regressions using the net-of-fee IRR and the gross-of-fee IRR separately (models 1 and 10 of table 5). This should capture every degree of re-distribution by the transaction rebate on fund level: Using the gross IRR this is equivalent to a rebate of 100 percent because every dollar of deal-level fees is explicitly reflected in the IRR. On the other hand, the net-of-fee IRR is equivalent to a rebate of zero percent. Every other proportion defined by the rebate should be allocated somewhere in between.

5 Conclusion

This paper analyzes the influence of deal-level compensation on the performance of leveraged buyouts (LBO). We use empirical data on transaction fees, advisory fees, and termination fees that are paid to fund managers (GP) in 93 LBOs in the United States between 1999 and 2008. These deal-level fees are paid in addition to fund-level compensation that the buyout fund manager receives in form of the non-performance-linked management fee and the performance-linked carried interest. We analyze deal-level fees because of their unique characteristics which make them suitable to learn more about incentive structures and their implications for performance in principal-agent relationships: First, they are strictly effort-linked. GPs receive deal-level fees only in connection with certain restructuring activities of an LBO (such as e.g. M&A deals or recapitalizations). The success of the restructuring activities has no influence on the fees whatsoever. Second, since only the GPs decide about how to restructure an LBO target, the GPs can directly influence whether or not they receive the deal-level fees. Third, deal-level fees are paid by the portfolio company directly to the GP. This is highly unusual in investment funds, especially in Private Equity, since all compensation is usually paid for by the fund investors. Our analysis shows that higher deal-level fee compensation significantly decreases the performance of LBOs. In addition, we find that deal-level fees are paid in LBOs in which the restructuring process to generate returns is more complicated or lengthy. Our results are robust to changing market environments, characteristics of the LBO and restructuring activities in the target company, terms of the partnership agreements between investors and fund managers, fund structure and –profitability. Our results are robust to deal-fee endogeneity are not affected by different performance measures.

This paper contributes to the existing literature in two ways: This is the first paper to empirically analyze the structure of deal-level fees in buyouts and their implications for LBO performance. Second, we show that the positive incentives that deal-level fees may provide for GPs to engage in effort-intensive, yet, highly profitable LBOs, seems to be dominated by negative incentives to extract deal-level fees at the cost of limited partners. This documents a dramatic conflict of interest between general partner and limited partners in leveraged buyouts.

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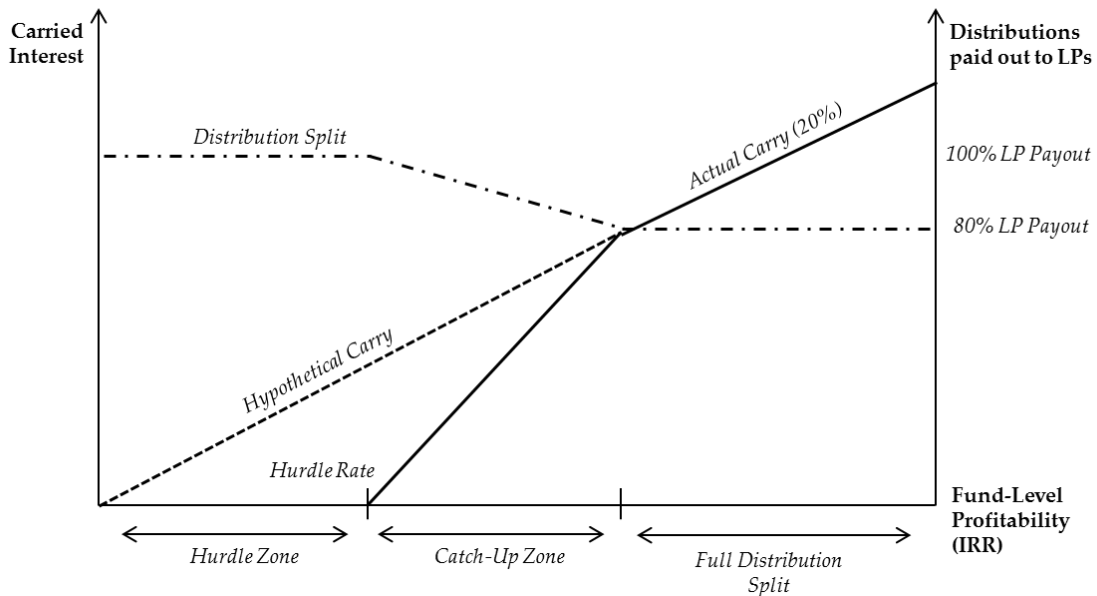
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Figure 1 Fund- and Deal-Level Compensation Structures in Leveraged Buyouts

The presented figures show exemplary compensation schemes in buyout investments. Panel A shows the payoff structure of compensations on buyout fund-levels, Panel B shows the typical compensation structure of GP on buyout deal levels. Panel A shows: on the primary y-axis the total volume of carried interest paid out to the GP, on the secondary y-axis the share of the total distributions paid out to the LPs. The x-axis shows the development of the fund-level IRR. The figure depicts how the GP do not receive any carry until a hurdle rate is cleared, at which point the LPs cease to receive 100 percent of the distributions. If the IRR moves past the catch-up zone, the GP receives the full carry (assumed to be 20 percent), making each distribution split in 80 percent for the LPs and 20 percent for the GP. Panel B shows: the chronology of a typical buyout deal from the investment (t0) to the exit (t3). The bottom of the graph shows deal- and fund-level fees received by the GP at any stage during the investment. The GP receives fund-level management fees throughout the lifetime of the fund. Carry is paid out only if distributions are generated. Deal-specific advisory fees are paid from the portfolio company to the GP from t0 to t3. Transaction fees are paid out whenever the GP advises the portfolio company on a refinancing or M&A acquisition. Finally, termination fees are paid upon exit.

Panel A:



Panel B:

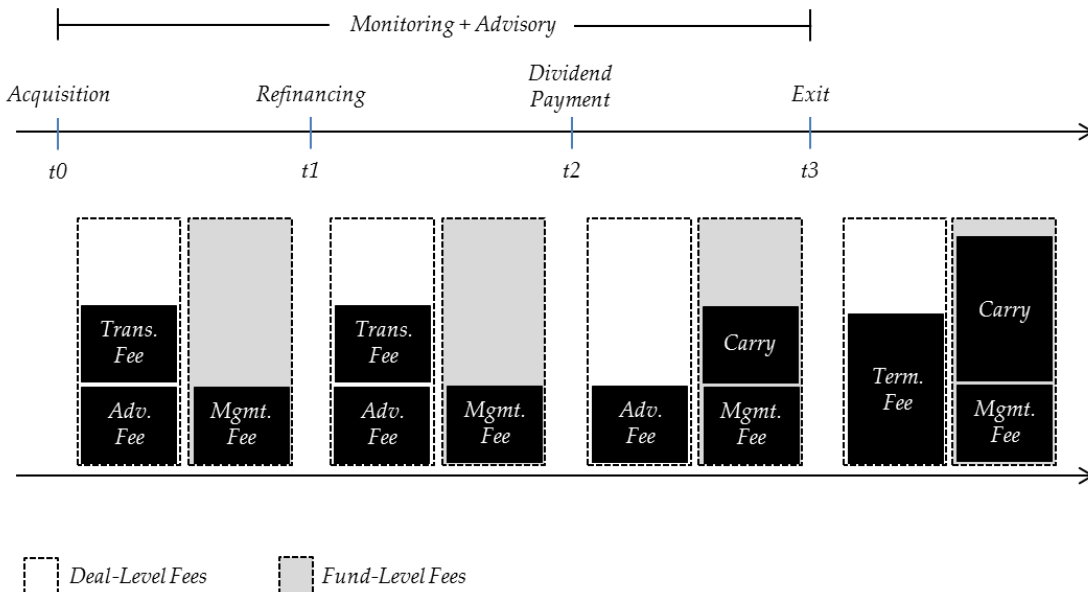


Table 1 **Summary Statistics**

The following table displays summary statistics for the 93 buyout-backed IPO firms in our sample. Panel A reports statistics on the portfolio company and on characteristics of the buyout deal at LBO. The expression “pre” LBO/IPO refers to items based on the last financial statements of the portfolio company before LBO or IPO; the expression “at” LBO/IPO refers to the first financial statement after the LBO/IPO. All variables are defined as in Appendix Table 1A. Panel B reports the number of buyouts over time and the industry distribution of the deals based on the 1 digit Standard Industrial Classification (SIC). Unless otherwise indicated, all numbers are reported in million U.S.-Dollars.

PANEL A: Portfolio Company and Buyout Deal Characteristics			
	Mean	Median	St.Dev.
Portfolio Company (at LBO)			
Total Assets	923.3	427.6	1501.7
Revenues	564.0	218.1	1072.2
Return on Assets	-10.4%	1.1%	62.3%
Debt to Assets	81.2%	60.0%	135.6%
Cash to Assets	11.9%	4.5%	27.2%
Buyout Deal Characteristics			
Number of Buyout Firms invested at IPO	1.69	2.00	0.79
Number of Investment Rounds	1.43	1.00	1.19
Joined Ownership by all Buyout Firms – pre IPO	74.3%	77.1%	23.9%
Joined Ownership by all Buyout Firms – at IPO	49.8%	51.6%	17.8%
Management Ownership – pre IPO	10.6%	4.0%	19.2%
Management Ownership – at IPO	7.7%	2.5%	14.1%

PANEL B: Buyout Deals over Time and Industry Distribution

Year	# of Buyouts	Avg. Amount Invested	# of IPOs	IPO Proceeds	Industry	# of Buyouts	Avg. Amount Invested	IPO Proceeds
1996	1	568.2			Mining	9	87.9	246.5
1997					Manufacturing	34	248.2	236.8
1998					Transportation, Communications	17	413.6	234.3
1999	2	50.0			Wholesale Trade	5	105.9	169.8
2000	6	254.8			Retail Trade	4	107.5	56.4
2001	8	259.2	1	108.6	Services	24	142.0	131.3
2002	17	138.9	2	156.9				
2003	16	248.7	9	197.4				
2004	26	270.9	12	161.4				
2005	12	168.3	25	296.3				
2006	4	175.8	20	154.9				
2007	1	250.0	21	161.4				
2008			3	148.9				
Total	93	221.8	93	198.7	Total	93	221.8	198.7

Table 2 Summary Statistics of LBO Compensation

The displayed table contains summary statistics for the fee variables. For each variable we report the number and percentage, as well as absolute and relative volumes. For each value we report mean, median and standard deviation, respectively measured in million U.S.-Dollars. TEV is the Total Enterprise Value of the portfolio company at the LBO. The estimated Carried Interest is measured as 20% of all proceeds generated by each buyout. Additionally, the bottom of Panel A contains correlation coefficients of the single deal-level fee variables. Panel A contains all information on deal-level compensation; Panel B contains all information on fund-level compensation. The fund-level compensation numbers are taken from the funds which invest in our in-sample LBOs.

Panel A: Deal-Level Compensation				
	Total Fees	Transaction Fees	Advisory Fees	Termination Fees
Number of Deals with Fees				
Number	53	36	51	23
Percent	57.0%	38.7%	54.8%	24.7%
Fee Volumes				
Mean (mn. USD)	10.79	5.22	2.83	2.75
Median (mn. USD)	1.35	0.00	0.51	0.00
St. Dev. (mn. USD)	24.59	13.50	9.10	9.08
Fees as Percent of Deal Proceeds				
Mean	2.41%	0.69%	1.36%	0.36%
Median	0.59%	0.00%	0.07%	0.00%
St. Dev.	6.36%	1.38%	5.94%	0.95%
Fees as Percent of TEV				
Mean	2.32%	0.87%	1.02%	0.42%
Median	0.21%	0.00%	0.08%	0.00%
St. Dev.	5.48%	2.14%	4.64%	1.15%
Fees as Percent of (Est.) Carried Interest				
Mean	11.59%	4.37%	5.10%	2.11%
Median	1.05%	0.00%	0.38%	0.00%
St. Dev.	27.40%	10.69%	23.20%	5.75%
Correlations of Fee Combinations				
Transaction Fees	0.69	1		
Advisory Fees	0.96	0.63	1	
Termination Fees	0.49	0.65	0.51	1

Panel B: Fund-Level Compensation			
	Mean	Median	St.Dev.
Fund-level Characteristics of all In-Sample LBOs			
Fund Management Fee	1.83%	1.83%	0.24%
Fund Preferred Return	6.82%	8.0%	2.90%
Fund Transaction Rebate	57.6%	75.0%	37.1%
Fund Carried Interest	20.0%	20.0%	0.00%
Fund-level Characteristics of LBOs with Deal-Level Fees			
Fund Management Fee	1.82%	1.83%	0.25%
Fund Preferred Return	6.41%	8.00%	3.28%
Fund Transaction Rebate	54.03%	70.00%	38.28%
Fund Carried Interest	20.0%	20.0%	0.00%
Fund-level Characteristics of LBOs without Deal-Level Fees			
Fund Management Fee	1.84%	2.00%	0.23%
Fund Preferred Return	7.38%	8.00%	2.16%
Fund Transaction Rebate	62.53%	75.00%	35.32%
Fund Carried Interest	20.0%	20.0%	0.00%

Table 3 Deal-level Fee Determinants

The table present results of OLS regression models to determine factors influencing deal-level fees. All dependent deal-level fees are measured by their natural logarithm of the percentage of total proceeds. All variables are defined in Appendix Table A1. ***, **, * denote significance at 1%, 5%, and 10% respectively. t-values are in the parentheses based on robust standard errors.

	(1)	(2)	(3)	(4)
<i>Dependent: log(x)</i>	Total Fees to Proceeds	Transaction Fees to Proceeds	Advisory Fees to Proceeds	Termination Fees to Proceeds
Fund Management Fee	-0.751 (-1.48)	0.476 (1.36)	-0.538 (-1.16)	0.076 (0.26)
Fund Preferred Return	-0.040 (-1.14)	-0.038 (-1.38)	-0.016 (-0.62)	-0.033 (-1.51)
Fund Transaction Fee Rebate	-0.002 (-0.91)	-0.001 (-0.75)	-0.003 (-1.40)	-0.001 (-0.58)
Cash over Assets at LBO	-0.638** (-2.32)	-0.214** (-2.02)	-0.212* (-1.78)	-0.086 (-0.95)
RoA at LBO	0.005 (0.07)	-0.104 (-1.46)	-0.183*** (-2.91)	-0.277*** (-3.49)
Debt to Assets at LBO	-0.005 (-0.14)	-0.021 (-0.54)	0.147*** (3.86)	-0.023 (-1.61)
GP Average Past Profitability	-1.326 (-1.51)	-0.887 (-1.67)	-0.613 (-1.18)	-0.621* (-1.74)
Syndicated Deal	-0.110 (-0.53)	-0.083 (-0.61)	-0.078 (-0.52)	-0.041 (-0.42)
Fund DPI in LBO year	-0.385 (-1.57)	-0.035 (-0.18)	-0.125 (-0.71)	-0.102 (-1.17)
Total GP Past Fundraising	-0.015 (-0.15)	0.054 (0.61)	-0.061 (-0.70)	0.009 (0.16)
Fund Age at LBO	-0.021 (-0.26)	0.026 (0.54)	-0.058 (-1.11)	0.006 (0.16)
FE year- and industry level	Yes	Yes	Yes	Yes
Adj. R ²	0.135	-0.034	0.146	0.09
N	93	93	93	93
Prob(p>F)	0.000	0.273	0.000	0.079

Table 4 Proceeds and Returns

The table presents the investments, proceeds, and returns of buyout deals. We report the numbers for our full sample of buyouts, and split the sample in accordance with whether or not the deal have deal-level fees or not. All values are reported in million U.S.-Dollars, except for all Return Measures which are reported in percent. Test statistics base on a two-sample t-test with unequal variances. ***, **, * denote significance at 1%, 5%, and 10% respectively.

Investments			Proceeds				Return Measures		
	Initial Cash Investment	Overall Cash Investment	Dividends	IPO Sale	Share Sale	Total	IRR	Unlev. IRR	Cash Multiple
All Firms	203.8	222.5	116.2	51.1	524.5	691.7	0.926	0.407	5.088
Any Fee(s)									
No	159.1	178.3	69.9	44.4	421.8	536	0.780	0.395	4.185
Yes	236	254.4	149.6	55.9	598.6	804.1	1.031	0.415	5.741
Diff.	-76.9	-76.1	-79.7*	-11.6	-176.9	-268.1	-0.252	-0.02	-1.556
Transaction Fees									
No	155	182.2	93.7	38.7	488.9	621.4	0.736	0.365	4.604
Yes	277.6	283.5	150.1	69.7	578.3	798.1	1.214	0.469	5.82
Diff.	-122.7*	-101.2	-56.4	-31	-89.4	-176.8	-0.478	-0.104	-1.216
Advisory Fees									
No	155.3	173.5	72.2	46.7	427.4	546.3	0.832	0.411	4.768
Yes	242	261.2	150.8	54.5	601	806.3	1.000	0.403	5.34
Diff.	-86.7	-87.6	-78.5*	-7.8	-173.6	-260	-0.168	0.007	-0.572
Termination Fees									
No	147.6	173	91.3	45.9	447.6	584.9	0.805	0.381	4.81
Yes	374.5	373.3	191.8	66.7	758.3	1016.8	1.293	0.484	5.935
Diff.	-226.9***	-200.3**	-100.5**	-20.7	-310.6*	-431.9**	-0.488	-0.103	-1.125

Table 5 Main Regression Model

The table present results of IV Tobit regression models to determine factors influencing various return measures. All variables are defined in Appendix Table A1. We use a cross-sectional left-censored Tobit regression because of the truncated underlying distribution of IRRs and all of its components. ***, **, * denote significance at 1%, 5%, and 10% respectively. z-values are in the parentheses and standard errors are clustered at industry level using two-digit SIC codes. Additional controls on firm and deal level are included which can be found in appendix table 8.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IRR	IRR	IRR	IRR	CM	CM	CM	CM	PME	Gross IRR	Unlev.IRR	IRR
log(Total Deal-Level Fees to Proceeds)	-1.27*** (-2.77)				-3.67** (-2.56)				-2.46** (-2.42)	-1.27*** (-2.75)	-0.48*** (-3.09)	
log(Transaction Fees to Proceeds)		-1.40** (-2.20)				-4.98** (-2.28)						
log(Advisory Fees to Proceeds)			-2.20*** (-2.72)				-5.33** (-2.50)					
log(Termination Fees to Proceeds)				-1.76 (-1.53)				-7.31 (-1.58)				
Deal-Level Fee Dummy												-2.21* (-1.93)
Fund Management Fee	-2.79*** (-3.30)	-2.21*** (-3.16)	-2.86*** (-2.87)	-2.62*** (-3.48)	-5.35** (-2.03)	-3.90 (-1.61)	-5.11* (-1.95)	-5.76* (-1.91)	-2.88 (-1.54)	-2.70*** (-3.18)	-1.00*** (-3.53)	-2.20** (-2.27)
Fund Preferred Return	-0.15** (-2.24)	-0.14** (-2.35)	-0.14* (-1.72)	-0.12** (-2.29)	-0.30 (-1.39)	-0.28 (-1.35)	-0.24 (-1.14)	-0.19 (-0.95)	-0.33** (-2.18)	-0.16** (-2.27)	-0.03 (-1.36)	-0.18** (-2.00)
Fund Transaction Fee Rebate	0.00 (0.53)	0.00 (1.07)	0.00 (0.55)	0.01 (1.46)	-0.05*** (-3.20)	-0.05*** (-3.04)	-0.05*** (-3.02)	-0.04*** (-2.88)	-0.03*** (-2.81)	0.00 (0.60)	0.00 (0.17)	-0.00 (-0.24)
Total Past Fundraising	0.02 (0.98)	-0.00 (-0.11)	0.04 (1.21)	-0.01 (-0.41)	-0.02 (-0.22)	-0.09 (-1.33)	-0.00 (-0.00)	-0.10 (-1.56)	-0.02 (-0.34)	0.02 (1.02)	0.01 (1.31)	-0.00 (-0.20)
GP Average Past Profitability	-3.25** (-1.97)	-2.33* (-1.67)	-3.42* (-1.75)	-3.39** (-2.33)	-0.44 (-0.09)	2.05 (0.42)	-0.34 (-0.07)	-2.46 (-0.42)	0.14 (0.04)	-3.33** (-2.01)	-1.23** (-2.23)	-2.29 (-1.17)
Fund Age at LBO	-0.40** (-2.56)	-0.30** (-2.16)	-0.51*** (-2.71)	-0.36*** (-3.04)	-0.27 (-0.56)	0.05 (0.11)	-0.55 (-1.11)	-0.13 (-0.27)	-0.24 (-0.70)	-0.36** (-2.32)	-0.14*** (-2.74)	-0.47** (-2.43)
Syndicated Deal	0.80** (2.02)	1.01*** (2.96)	0.51 (1.02)	1.20*** (3.71)	1.89 (1.53)	2.51** (2.12)	1.27 (0.97)	3.27** (2.53)	2.08** (2.36)	0.81** (2.03)	0.37*** (2.76)	1.05** (2.19)
Buyout Industry Fundraising Deal Year	0.02*** (3.33)	0.02*** (3.80)	0.02*** (2.79)	0.02*** (4.03)	0.03* (1.65)	0.03* (1.84)	0.03 (1.57)	0.03 (1.47)	0.02 (1.61)	0.02*** (3.15)	0.01*** (3.38)	0.01* (1.73)
Called-up Capital	-0.04* (-1.85)	-0.03* (-1.76)	-0.04 (-1.62)	-0.04** (-2.34)	-0.17** (-2.42)	-0.15** (-2.23)	-0.17** (-2.39)	-0.19** (-2.54)	-0.08 (-1.61)	-0.04* (-1.94)	-0.02** (-2.08)	-0.03 (-1.16)
DPI	0.01** (2.21)	0.01** (2.27)	0.01*** (2.63)	0.01*** (3.46)	-0.00 (-0.02)	-0.00 (-0.29)	0.01 (0.73)	0.00 (0.22)	0.00 (0.20)	0.01** (1.99)	0.00** (2.07)	0.01** (2.56)
Observations	93	93	93	93	93	93	93	93	93	93	93	93
Chi ²	84.09	104.40	61.27	136.30	78.33	81.16	76.91	77.96	94.73	83.61	83.77	55.03
Prob (p>Chi ²)	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0035
Endogeneity Chi ²	6.69	2.59	13.42	0.34	4.15	2.89	4.27	1.36	3.127	6.626	4.784	10.50
Endogeneity Prob.	0.010	0.108	0.000	0.562	0.042	0.089	0.039	0.244	0.077	0.010	0.029	0.0012
Overidentification Chi ²	12.05	20.85	6.52	32.23	13.16	15.72	13.17	18.25	14.36	11.98	10.54	9.50
Overidentification Prob.	0.211	0.013	0.687	0.000	0.155	0.073	0.155	0.032	0.110	0.214	0.309	0.393

Appendix Table A1: Variable Overview

The following table contains variable descriptions for our main dependent and explanatory variables. For all variables, we list the name, the unit in which it is measured, as well as a brief description of how it is calculated.

Variable Name	Unit	Description
<i>Deal-Level Fees</i>		
Deal-Level Fees over Proceeds	%	The absolute U.S.-Dollar denominated volume of total deal-level fees (advisory, transaction and termination) paid out to GPs in relation to the absolute U.S.-Dollar denominated volume of all distributions made from LBO investments to the LPs of the invested fund.
<i>Fund-Level Fees</i>		
Management Fee	%	The annual fund-level management fee paid from the LPs to the GP based on the total U.S.-Dollar denominated fund volume (usually 1.5-2%)
Carried Interest	%	The performance-linked profit share the GP receives from all distributions made to the LPs from their investments, on fund-level.
Preferred Return	%	The preferred return (also called "hurdle rate") the GP have to generate on fund-level before they receive carried interest.
Transaction Fee Rebate	%	The percent of all deal-level transaction fees which have to be passed on to the LPs.
<i>Return Measures</i>		
IRR	%	Internal Rate of Return on LBO deal-level. Calculated using all cash in- and outflows of an LBO deal.
Unlevered IRR	%	Internal Rate of Return component attributed to the leverage used in the buyout deals. Calculated as the difference between the levered and unlevered IRR. It is calculated in line with the methodology provided by Acharya et al. (2013)
Cash Multiple	Metric	Calculated as the ratio between all cash inflows (all investments, i.e. contributions) and cash outflows (all divestments, i.e. distributions) of a single LBO transaction.
<i>Additional Explanatory Variables</i>		
Cash over Assets at LBO	%	Ratio of total cash to total assets, as recorded on the balance sheet of the portfolio company in the LBO year
RoA at LBO	%	Return on Assets of the portfolio company in the LBO year, measured by the ratio of net income (as recorded on the P&L statement) to total assets (as recorded on the balance sheet).
Debt to Assets at LBO	%	Ratio of total debt to total assets, as recorded on the balance sheet of the portfolio company in the LBO year.
GP Average Past Profitability	%	Mean fund IRR of all past funds of each invested buyout firm in the respective LBO deals.
Syndicated Deal	Dummy	Dummy variable indicating whether or not a buyout deal in our sample is syndicated (i.e. has more than one buyout fund investor, also known as a "club deal") or not. Dummy takes the value of 1 if the deal is syndicated.
Fund DPI in LBO Year	%	Buyout fund-level performance multiple indicating the ratio of distributions to paid-in capital (measured on fund-level with all distributions and contributions made to and from LPs). Measured in the year in which the LBO took place.
Total GP Past Fundraising	Metric	U.S.-Dollar denominated volume of the total fundraising in all prior funds of each buyout investor in our sample.

Fund Age at LBO	Metric	Age of each invested buyout fund in our sample at the time of the LBO, measured as the number of years between the fund's inception year and the LBO year.
Buyout Industry Fundraising Deal Year	Metric	Total U.S.-Dollar denominated fundraising in the whole buyout industry in the United States in each respective year of our observation period.
Called-up Capital	%	Percent of the total capital drawn down by the GPs in the year of the LBO (measured on fund-level).
DPI	%	Buyout fund-level performance multiple indicating the ratio of distributions to paid-in capital (measured on fund-level with all distributions and contributions made to and from LPs).
Chairman from GP	Dummy	Variable indicating if the Chairman of the Board of a portfolio company is also a manager in an invested buyout fund.
Any Mgmt Change 360 days around LBO	Dummy	Variable indicating if the CEO or CFO of a portfolio company was replaced in the 180 days before or after the initial LBO (i.e. the first investment of the buyout funds), based on the pressure of the invested funds.
Mgmt Holdings pre IPO	%	Percent of shares held by top-level management (Chief Officers) in the portfolio companies before the IPO.
M&A	Dummy	Variable indicating whether or not the portfolio company engaged in any Mergers or Acquisitions (M&A) activities after the LBO as part of the restructuring process.
RoA Growth	%	Growth in Return on Assets between the LBO and the buyout funds' exit. RoA is calculated as described above.
Change D/E Ratio LBO to IPO	%	Relative change in the debt to equity ratio of the portfolio company from the LBO to the IPO
Debt to Assets at LBO	%	Leverage ratio of the portfolio company expressed by the ratio of debt to assets at the time of the LBO (already including the LBO-recapitalizations)
Earnings Mgmt	Dummy	Variable indicating if the portfolio company engaged in any active earnings management.
Firm paid Dividend	Dummy	Variable indicating if the portfolio company paid out a cash dividend to the invested buyout funds during the LBO period.
Dividend Recap	Dummy	Variable indicating if the portfolio company funded the paid out cash dividend with debt capital.
Entry Bear, Exit Bull Market	Dummy	Variable indicating if the buyout funds actively and successfully timed the market in their LBO investment by purchasing the portfolio company in a stock bear market (i.e. low market valuation environment) and sold it in a stock bull market (i.e. high market valuation environment). Stock bull and bear markets are measured using the Dow Jones Industrial Index and its 250-day moving average.
Days Invested	Metric	Number of days from the LBO to the actual exit of the last invested buyout fund.
log(Total Assets)	Metric	Natural logarithm of the Total Assets of the portfolio company at the time of the LBO, as recorded on the balance sheet.

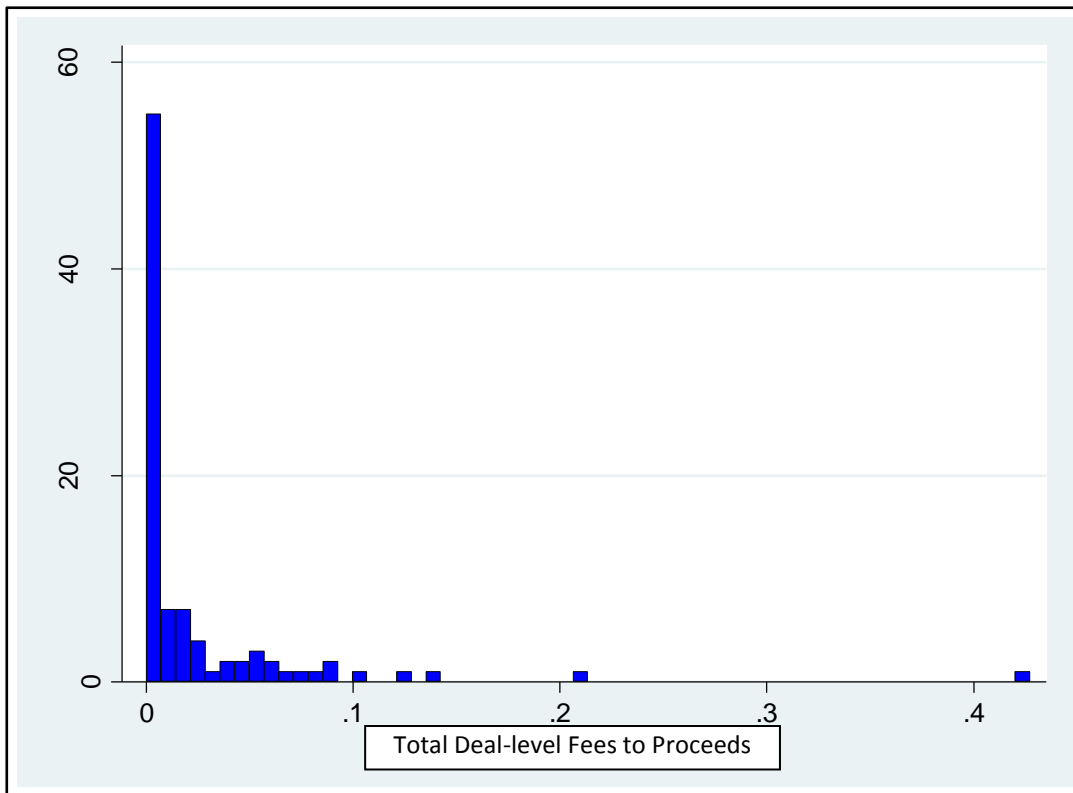
Appendix Table A2: Overview of Restructuring Activities

The table presents summary statistics for different types of restructuring activities of buyout firms in their portfolio companies. All variables are reported as defined in Appendix Table A1. We classify four different groups of value creation: fundamental engineering, financial engineering, cash draining, and market timing. By group, we report several types of those value creation measures. In the third column, we show the actual instruments which are used to implement the corresponding type of value creation measures. For each instrument, we report the number of portfolio companies in which the instruments are used, their mean, median and standard deviation, if applicable.

Hypothesis	Subtype	Instrument	# of Companies	Mean	Median	SD
Fundamental Engineering	Monitoring	Board Seat	216	96.4%		
		Chairman from Buyout Firm	49	21.9%		
		Ownership by Buyout Firms	224	71.0%	76.60%	24.13%
		Percent of Buyout Firm Directors	224	34.4%	31.01%	17.43%
		Management Ownership	210	10.3%	4.45%	17.26%
	Governance Intervention	CEO Change	77	34.4%		
		CFO Change	60	26.8%		
		Any Management Change	105	46.9%		
	Operational	M&A Deals	78	34.8%		
Financial Engineering	Debt	Long-term Debt pre LBO	161	183.49	21	555.82
		Long-term Debt at LBO	224	346.7	140.43	649.17
		Long-term Debt at IPO	224	369.5	172.56	623.36
	Leverage	Leverage pre LBO	161	0.71	0.15	2.34
		Leverage at LBO	224	1.49	1.08	1.46
		Leverage at IPO	224	1.44	0.99	1.75
	Fin. Reporting	Earnings Management	47	21.0%		
		Financial Restatement	33	14.8%		
	Cash Draining	Dividends	Firms with Dividends	115	51.3%	
Dividend to Revenues at IPO			115	25.0%	14.36%	42.89%
Dividend to Proceeds			115	26.2%	19.92%	23.71%
Market Timing	Initial Timing	Bear Market Investment	60	26.8%		
	Exit Timing	Bull Market IPO	165	73.7%		
		Time Invested	224	6.21	5.89	2.96
		Time from Investment to IPO	224	3.19	2.59	2.31

Appendix Figure A3: Frequency Distribution of Total Deal-level Fees to Proceeds

This histogram shows the frequencies of our main ratio of Total Deal-level Fees to Proceeds. The figure picture indicates that most transactions have zero deal-level fees (39 out of 93) and many more show very low ratios of below 0.05.



Appendix Table A4: Regular Tobit Regressions with Full Set of Control Variables

The table present results of OLS and tobit regression models to determine factors influencing various return measures. All variables are as defined in Appendix Table A1. We use a cross-sectional left-censored tobit regression in models 2 to 5 because of the truncated underlying distribution of IRRs and all of its components. ***, **, * denote significance at 1%, 5%, and 10% respectively. z-values are in the parentheses and standard errors are clustered at industry level using two-digit SIC codes.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IRR	IRR	IRR	IRR	CM	CM	CM	CM	Unlev. IRR	Unlev. IRR	Unlev. IRR	Unlev. IRR
log(Total Fees to Proceeds)	-0.42*** (-3.31)				-1.41** (-2.45)				-0.22*** (-4.46)			
log(Transaction Fees to Proceeds)		-0.55*** (-3.05)				-1.98** (-2.38)				-0.30*** (-3.90)		
log(Advisory Fees to Proceeds)			-0.40** (-2.25)				-1.89** (-2.29)				-0.20*** (-2.97)	
log(Termination Fees to Proceeds)				-1.04*** (-3.63)				-2.47** (-2.04)				-0.49*** (-4.42)
Management Fee	-2.25*** (-2.82)	-2.08** (-2.63)	-2.12** (-2.59)	-2.37*** (-2.94)	-3.76 (-1.38)	-3.22 (-1.19)	-3.60 (-1.29)	-3.79 (-1.43)	-0.84*** (-2.90)	-0.75** (-2.65)	-0.77** (-2.55)	-0.88*** (-3.15)
Preferred Return	-0.12* (-1.99)	-0.12* (-1.91)	-0.11* (-1.78)	-0.11* (-1.85)	-0.22 (-1.19)	-0.21 (-1.15)	-0.19 (-1.03)	-0.18 (-0.97)	-0.02 (-0.98)	-0.02 (-0.91)	-0.02 (-0.73)	-0.02 (-0.75)
Transaction Fee Rebate	0.01 (1.09)	0.01 (1.21)	0.01 (1.22)	0.01 (1.30)	-0.05** (-2.03)	-0.04* (-1.97)	-0.05* (-1.99)	-0.04* (-1.91)	0.00 (0.63)	0.00 (0.81)	0.00 (0.82)	0.00 (0.91)
Total Past Fundraising	0.00 (0.14)	-0.01 (-0.48)	-0.00 (-0.05)	-0.01 (-0.59)	-0.08 (-1.50)	-0.11** (-2.14)	-0.08 (-1.41)	-0.11** (-2.28)	0.00 (0.77)	-0.00 (-0.03)	0.00 (0.48)	-0.00 (-0.21)
Average Past Profitability	-2.32** (-2.41)	-2.03** (-2.07)	-2.21** (-2.19)	-2.75** (-2.57)	0.77 (0.17)	1.67 (0.35)	0.94 (0.20)	0.37 (0.08)	-0.97** (-2.58)	-0.81** (-2.11)	-0.90** (-2.16)	-1.14*** (-2.75)
Fund Age at LBO	-0.42** (-2.63)	-0.39** (-2.40)	-0.44*** (-2.72)	-0.39** (-2.53)	-0.24 (-0.61)	-0.11 (-0.28)	-0.34 (-0.88)	-0.20 (-0.51)	-0.15*** (-2.94)	-0.13** (-2.59)	-0.16*** (-2.99)	-0.14*** (-2.69)
Syndicated Deal	0.99** (2.38)	1.06** (2.61)	0.96** (2.29)	1.16*** (2.84)	2.32* (1.95)	2.57** (2.19)	2.11* (1.77)	2.80** (2.38)	0.42*** (3.30)	0.46*** (3.63)	0.41*** (3.11)	0.51*** (3.94)
Buyout Industry Fundraising Deal Year	0.02*** (2.66)	0.02*** (2.72)	0.02** (2.58)	0.02** (2.64)	0.02* (1.78)	0.02* (1.83)	0.02* (1.78)	0.02 (1.65)	0.01*** (3.09)	0.01*** (3.15)	0.01*** (2.92)	0.01*** (3.06)
Called-up Capital	-0.03** (-2.09)	-0.03* (-1.94)	-0.03** (-2.00)	-0.04** (-2.12)	-0.15** (-2.59)	-0.15** (-2.48)	-0.15** (-2.53)	-0.16** (-2.53)	-0.01** (-2.28)	-0.01** (-2.06)	-0.01** (-2.13)	-0.01** (-2.30)
DPI	0.01*** (2.87)	0.01*** (2.74)	0.01*** (3.20)	0.01*** (3.03)	0.01 (0.69)	0.01 (0.57)	0.01 (1.06)	0.01 (0.85)	0.00*** (2.78)	0.00** (2.56)	0.00*** (3.24)	0.00*** (2.97)
Chairman from GP	0.48 (1.58)	0.46 (1.51)	0.52* (1.70)	0.54* (1.82)	1.87* (1.80)	1.79* (1.71)	2.04* (1.89)	2.08* (1.94)	0.22** (2.14)	0.21** (2.03)	0.24** (2.17)	0.25** (2.48)
Any Mgmt Change 360 days around LBO	0.75*** (2.79)	0.82*** (3.01)	0.62** (2.28)	0.84*** (3.12)	2.68*** (2.88)	2.96*** (3.03)	2.26** (2.40)	2.82*** (3.02)	0.38*** (3.47)	0.42*** (3.68)	0.31*** (2.83)	0.42*** (3.79)
Mgmt Holdings pre IPO	-0.97 (-1.64)	-0.75 (-1.32)	-0.85 (-1.48)	-1.12* (-1.80)	-4.51* (-1.71)	-3.85 (-1.45)	-4.17 (-1.58)	-4.45 (-1.67)	0.01 (0.02)	0.12 (0.50)	0.07 (0.28)	-0.05 (-0.21)
M&A	-0.62 (-1.55)	-0.57 (-1.40)	-0.62 (-1.55)	-0.77* (-1.88)	-0.24 (-0.26)	-0.05 (-0.05)	-0.18 (-0.19)	-0.62 (-0.64)	-0.18 (-1.54)	-0.15 (-1.28)	-0.18 (-1.55)	-0.26** (-2.07)
RoA Growth	0.01 (1.16)	0.02 (1.54)	0.01 (0.91)	0.01 (0.62)	0.09 (1.65)	0.11* (1.87)	0.09 (1.54)	0.08 (1.37)	0.01* (1.97)	0.01** (2.50)	0.01 (1.52)	0.00 (1.06)
Change D/E Ratio LBO to IPO	0.27*** (2.84)	0.28*** (2.86)	0.27*** (2.68)	0.28*** (3.21)	0.39 (1.60)	0.42* (1.72)	0.38 (1.64)	0.42 (1.59)	0.08** (2.64)	0.09** (2.64)	0.08** (2.37)	0.09*** (3.15)

Debt to Assets at LBO	-0.11 (-1.52)	-0.14* (-1.88)	-0.13* (-1.81)	-0.11 (-1.53)	0.23 (0.79)	0.16 (0.57)	0.20 (0.68)	0.20 (0.70)	-0.06** (-2.15)	-0.07** (-2.62)	-0.07** (-2.57)	-0.06** (-2.20)
Earnings Mgmt	0.05 (0.20)	0.07 (0.24)	0.10 (0.36)	0.05 (0.16)	0.45 (0.36)	0.49 (0.38)	0.55 (0.43)	0.50 (0.40)	-0.10 (-0.94)	-0.09 (-0.83)	-0.08 (-0.73)	-0.10 (-0.86)
Firm paid Dividend	-0.08 (-0.32)	-0.12 (-0.48)	-0.04 (-0.14)	-0.15 (-0.57)	0.97 (0.83)	0.81 (0.70)	1.10 (0.90)	0.84 (0.68)	-0.07 (-0.68)	-0.09 (-0.90)	-0.05 (-0.42)	-0.10 (-0.95)
Dividend Recap	0.07 (0.16)	0.03 (0.06)	-0.09 (-0.20)	0.42 (0.99)	1.94 (1.31)	1.82 (1.25)	1.47 (1.01)	2.59 (1.61)	0.23 (1.35)	0.21 (1.24)	0.15 (0.88)	0.39** (2.24)
Entry Bear Market, Exit Bull Market	-0.05 (-0.11)	-0.22 (-0.49)	0.01 (0.03)	-0.14 (-0.31)	5.05*** (2.73)	4.43** (2.37)	5.51*** (2.91)	4.78** (2.58)	-0.07 (-0.44)	-0.17 (-1.00)	-0.04 (-0.23)	-0.12 (-0.72)
Days Invested	-0.00*** (-2.70)	-0.00** (-2.26)	-0.00*** (-2.68)	-0.00* (-1.92)	-0.00 (-0.04)	0.00 (0.25)	-0.00 (-0.20)	0.00 (0.31)	-0.00** (-2.39)	-0.00* (-1.90)	-0.00** (-2.32)	-0.00 (-1.60)
log(Total Assets)	0.04 (0.38)	0.07 (0.66)	0.00 (0.00)	0.09 (0.84)	-1.14*** (-3.16)	-1.04*** (-3.04)	-1.31*** (-3.38)	-1.04*** (-3.00)	-0.07* (-1.80)	-0.06 (-1.48)	-0.09** (-2.18)	-0.05 (-1.23)
N	93	93	93	93	93	93	93	93	93	93	93	93
F	1.936	1.950	1.965	2.060	2.337	2.238	2.432	2.491	2.487	2.374	2.071	2.243
Prob(p > F)	0.0140	0.0132	0.0123	0.00807	0.00234	0.00365	0.00153	0.00117	0.00119	0.00198	0.00770	0.00356

Appendix Table A5: IV Tobit Regressions with Full Set of Control Variables

The table present results of OLS and tobit regression models to determine factors influencing various return measures. All variables are as defined in Appendix Table A1. We use a cross-sectional left-censored tobit regression in models 2 to 5 because of the truncated underlying distribution of IRRs and all of its components. ***, **, * denote significance at 1%, 5%, and 10% respectively. z-values are in the parentheses and standard errors are clustered at industry level using two-digit SIC codes.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IRR	IRR	IRR	IRR	CM	CM	CM	CM	Unlev. IRR	Unlev. IRR	Unlev. IRR	Unlev. IRR
log(Total Fees to Proceeds)	-1.27*** (-2.77)				-3.67** (-2.56)				-0.48*** (-3.09)			
log(Transaction Fees to Proceeds)		-1.40** (-2.20)				-4.98** (-2.28)				-0.53** (-2.47)		
log(Advisory Fees to Proceeds)			-2.20*** (-2.72)				-5.33** (-2.50)				-0.80*** (-2.85)	
log(Termination Fees to Proceeds)				-1.76 (-1.53)				-7.31 (-1.58)				-0.79* (-1.89)
Management Fee	-2.79*** (-3.30)	-2.21*** (-3.16)	-2.86*** (-2.87)	-2.62*** (-3.48)	-5.35** (-2.03)	-3.90 (-1.61)	-5.11* (-1.95)	-5.76* (-1.91)	-1.00*** (-3.53)	-0.79*** (-3.33)	-1.02*** (-2.95)	-0.99*** (-3.62)
Preferred Return	-0.15** (-2.24)	-0.14** (-2.35)	-0.14* (-1.72)	-0.12** (-2.29)	-0.30 (-1.39)	-0.28 (-1.35)	-0.24 (-1.14)	-0.19 (-0.95)	-0.03 (-1.36)	-0.03 (-1.32)	-0.03 (-0.91)	-0.02 (-0.95)
Transaction Fee Rebate	0.00 (0.53)	0.00 (1.07)	0.00 (0.55)	0.01 (1.46)	-0.05*** (-3.20)	-0.05*** (-3.04)	-0.05*** (-3.02)	-0.04*** (-2.88)	0.00 (0.17)	0.00 (0.69)	0.00 (0.27)	0.00 (0.94)
Total Past Fundraising	0.02 (0.98)	-0.00 (-0.11)	0.04 (1.21)	-0.01 (-0.41)	-0.02 (-0.22)	-0.09 (-1.33)	-0.00 (-0.00)	-0.10 (-1.56)	0.01 (1.31)	0.00 (0.15)	0.01 (1.43)	-0.00 (-0.09)
Average Past Profitability	-3.25** (-1.97)	-2.33* (-1.67)	-3.42* (-1.75)	-3.39** (-2.33)	-0.44 (-0.09)	2.05 (0.42)	-0.34 (-0.07)	-2.46 (-0.42)	-1.23** (-2.23)	-0.89* (-1.88)	-1.28* (-1.89)	-1.38*** (-2.60)
Fund Age at LBO	-0.40** (-2.56)	-0.30** (-2.16)	-0.51*** (-2.71)	-0.36*** (-3.04)	-0.27 (-0.56)	0.05 (0.11)	-0.55 (-1.11)	-0.13 (-0.27)	-0.14*** (-2.74)	-0.11** (-2.25)	-0.18*** (-2.82)	-0.13*** (-2.93)
Syndicated Deal	0.80** (2.02)	1.01*** (2.96)	0.51 (1.02)	1.20*** (3.71)	1.89 (1.53)	2.51** (2.12)	1.27 (0.97)	3.27** (2.53)	0.37*** (2.76)	0.45*** (3.86)	0.26 (1.53)	0.53*** (4.52)
Buyout Industry Fundraising Deal Year	0.02*** (3.33)	0.02*** (3.80)	0.02*** (2.79)	0.02*** (4.03)	0.03* (1.65)	0.03* (1.84)	0.03 (1.57)	0.03 (1.47)	0.01*** (3.38)	0.01*** (3.85)	0.01*** (2.74)	0.01*** (3.77)
Called-up Capital	-0.04* (-1.85)	-0.03* (-1.76)	-0.04 (-1.62)	-0.04** (-2.34)	-0.17** (-2.42)	-0.15** (-2.23)	-0.17** (-2.39)	-0.19** (-2.54)	-0.02** (-2.08)	-0.01** (-1.97)	-0.02* (-1.75)	-0.02** (-2.54)
DPI	0.01** (2.21)	0.01** (2.27)	0.01*** (2.63)	0.01*** (3.46)	-0.00 (-0.02)	-0.00 (-0.29)	0.01 (0.73)	0.00 (0.22)	0.00** (2.07)	0.00** (2.08)	0.00** (2.51)	0.00*** (2.95)
Chairman from GP	0.40 (1.04)	0.37 (1.09)	0.56 (1.24)	0.56* (1.96)	1.71 (1.44)	1.52 (1.30)	2.15* (1.81)	2.24* (1.94)	0.19 (1.50)	0.18 (1.58)	0.25 (1.62)	0.26** (2.46)
Any Mgmt Change 360 days around LBO	0.98** (2.54)	1.11*** (2.82)	0.59 (1.37)	0.98*** (2.66)	3.58*** (2.97)	4.28*** (3.17)	2.46** (2.16)	4.04*** (2.74)	0.45*** (3.49)	0.50*** (3.79)	0.31** (2.06)	0.48*** (3.58)
Mgmt Holdings pre IPO	-1.46 (-1.45)	-0.80 (-0.93)	-1.33 (-1.13)	-1.40* (-1.66)	-4.77 (-1.52)	-2.88 (-0.98)	-4.14 (-1.34)	-5.38 (-1.59)	-0.14 (-0.42)	0.11 (0.37)	-0.09 (-0.22)	-0.17 (-0.54)
M&A	-0.53 (-1.37)	-0.41 (-1.17)	-0.44 (-0.96)	-0.84*** (-2.68)	0.14 (0.12)	0.64 (0.53)	0.30 (0.25)	-1.02 (-0.81)	-0.16 (-1.21)	-0.11 (-0.94)	-0.13 (-0.79)	-0.29** (-2.52)
RoA Growth	0.02 (0.88)	0.03 (1.46)	0.01 (0.37)	0.01 (0.36)	0.12* (1.95)	0.16** (2.48)	0.09 (1.56)	0.08 (1.31)	0.01 (1.26)	0.01* (1.93)	0.00 (0.64)	0.00 (0.65)
Change D/E Ratio LBO to IPO	0.25*** (2.87)	0.28*** (3.58)	0.24** (2.28)	0.28*** (4.12)	0.36 (1.31)	0.44 (1.64)	0.34 (1.21)	0.43 (1.61)	0.08*** (2.69)	0.09*** (3.39)	0.08** (2.06)	0.09*** (3.63)

Debt to Assets at LBO	-0.05	-0.12	-0.06	-0.09	0.35	0.15	0.27	0.31	-0.04	-0.07*	-0.05	-0.05
	(-0.34)	(-1.02)	(-0.39)	(-0.78)	(0.80)	(0.36)	(0.62)	(0.71)	(-0.89)	(-1.71)	(-0.85)	(-1.29)
Earnings Mgmt	-0.10	-0.03	-0.06	-0.01	-0.05	0.07	0.18	0.04	-0.15	-0.12	-0.13	-0.12
	(-0.23)	(-0.06)	(-0.11)	(-0.03)	(-0.03)	(0.05)	(0.12)	(0.03)	(-0.96)	(-0.87)	(-0.68)	(-0.96)
Firm paid Dividend	-0.15	-0.22	-0.03	-0.22	0.78	0.41	1.12	0.30	-0.09	-0.12	-0.05	-0.13
	(-0.35)	(-0.59)	(-0.07)	(-0.64)	(0.59)	(0.31)	(0.85)	(0.22)	(-0.64)	(-0.93)	(-0.27)	(-1.05)
Dividend Recap	0.43	0.22	0.05	0.78	2.93*	2.56	1.75	5.09*	0.34*	0.27	0.20	0.54**
	(0.76)	(0.44)	(0.08)	(1.08)	(1.67)	(1.52)	(1.06)	(1.76)	(1.81)	(1.61)	(0.92)	(2.07)
Entry Bear Market, Exit Bull Market	0.08	-0.42	0.70	-0.17	5.53***	3.95**	6.92***	4.86***	-0.03	-0.22	0.19	-0.12
	(0.14)	(-0.88)	(0.97)	(-0.42)	(3.23)	(2.37)	(3.62)	(2.96)	(-0.17)	(-1.35)	(0.76)	(-0.82)
Days Invested	-0.00*	-0.00	-0.00*	-0.00	-0.00	0.00	-0.00	0.00	-0.00*	-0.00	-0.00*	-0.00
	(-1.67)	(-1.27)	(-1.80)	(-1.26)	(-0.08)	(0.51)	(-0.46)	(0.67)	(-1.84)	(-1.38)	(-1.92)	(-1.16)
log(Total Assets)	0.07	0.13	-0.11	0.14	-1.06**	-0.80*	-1.52***	-0.72	-0.07	-0.04	-0.13**	-0.03
	(0.46)	(0.95)	(-0.61)	(1.01)	(-2.31)	(-1.68)	(-3.18)	(-1.33)	(-1.32)	(-0.88)	(-2.09)	(-0.64)
FE year-level	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	93	93	93	93	93	93	93	93	93	93	93	93
Chi ²	84.09	104.4	61.27	136.3	78.33	81.16	76.91	77.96	83.77	101.3	57.51	114.0
Prob (p>Chi ²)	0.000	0.000	0.000644	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00182	0.000
Endogeneity Chi ²	6.691	2.585	13.42	0.336	4.146	2.893	4.268	1.356	4.784	1.533	11.06	0.479
Endogeneity Prob.	0.00969	0.108	0.000249	0.562	0.0417	0.0889	0.0388	0.244	0.0287	0.216	0.000884	0.489
Overidentification Chi ²	12.05	20.85	6.515	32.23	13.16	15.72	13.17	18.25	10.54	19.61	5.208	26.27
Overidentification Prob.	0.211	0.0134	0.687	0.000181	0.155	0.0731	0.155	0.0324	0.309	0.0205	0.816	0.00185