Private Equity Deal Partner Background, Value Creation Strategies and Outperformance

by

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First draft: 26 May 2009

This draft: 5 October 2009

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Abstract

We study whether deal partner background affects the performance of private equity deals. In our sample of 102 large and mature PE fund investments in Western Europe between 1996 and 2005, we found evidence that there are specific combinations of value creation strategies and partner backgrounds that correlate with deal-level performance. First, partners with a strong operational background (ex-consultants or ex-industry experts) generate significantly higher outperformance in the so-called "organic" deals that focus exclusively on internal value creation programs. In contrast, partners with a background in finance (ex-bankers or ex-accountants) are more frequently associated with an M&A or so called "inorganic" strategy, in which they generate higher outperformance. Second, from data based on interviews with deal partners, we identified differences in PE governance practices in organic strategies based on partner background. In the early deal phase, operation partners more frequently make management plan revisions, management changes, and strong time commitments. The last two measures positively relate to outperformance in organic strategies. In contrast, finance partners give high cash incentives to management more often as well as devise new key performance indicators (KPIs) more frequently. Neither of these two measures relate to outperformance in organic strategies. Overall, we interpret these findings as evidence of heterogeneity in skills at deal partner levels in private equity transactions.

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Keywords: leveraged buyouts (LBO), management buyouts (MBO)

Executive Summary

We study whether deal partner background affects the performance of private equity deals. We find evidence that there are combinations of value creation strategies and partner background that correlate with financial performance. We are able to show with deal-level data that the background of the partners seems to partly determine the return of a deal and even some governance activity in the early deal phase. Overall, we interpret these findings as evidence of heterogeneity in skills at deal partner levels.

Our analysis is based on a sample of 102 deals of large and mature PE fund investments in Western Europe between 1996 and 2005. The data is ideally suited for our goal to identify persistent partner skills, which generate outperformance. (1) The deals seem to be representative in terms of performance of large and mature PE funds in Western Europe. And only those funds outperform the public market. (2) In contrast to the literature, which focuses only on the rare public-to-private deals, our data set covers the majority of vendor types, e.g., carve-out deals, where only part of a company is acquired, as well as private-to-private deals, where a non-listed business is acquired.

As a performance measure we use "Abnormal performance," in the spirit of Acharya et al. (2009), "Public market Equivalent," in the spirit of Kaplan and Schoar (2005) and "Internal Rates of Returns" (IRRs). We provide multivariate regression results in the cross section of deals, where we relate the performance measures to the partner background and deal strategy. We identify the strategy specific advantage of a certain deal partner background with interaction terms between the partner background and the deal strategy.

Our main findings in detail are:

- First, leading deal partners with a strong operational background (ex-consultants or ex-industry experts) generate 11% higher outperformance in the so-called "organic" deals that focus exclusively on internal value creation programs. In contrast, partners with a background in

finance (ex-bankers or ex-accountants) are more frequently associated with deals with M&A events or so called "inorganic" strategy, by which they generate 17% higher returns.

- Second, we identify 72 deals with interview-based data differences in PE governance practices by partner background in organic strategies. In the early deal phase, operation partners more frequently make early management plan revisions, early management changes and strong time commitments. The last two measures positively relate to outperformance in organic strategies. In contrast, finance partners give high cash incentives to management more often and devise new KPIs more frequently. Neither of the two relate to outperformance in organic strategies.

1. Introduction

Kaplan and Schoar (2005) provide evidence that large and mature PE funds generate persistent financial outperformance. The literature also shows that financial outperformance of large PE funds is not a result of financial engineering[1] and reveals a link between financial outperformance and operational improvement during Private Equity (PE) ownership.[2]

In this paper, we find evidence for heterogeneity in skills at the deal partner level, which relate to the observed outperformance of large and mature PE fund investments. There are specific combinations of PE value creation strategies and general partner characteristics that have a statistically significant correlation in the cross-section with the deal-level outperformance. We interpret this finding as an indication of skills at the fund manager level.

We start by classifying PE deals into two groups according to their value creation strategy. We also separate deals with purely organic strategies from deals that had major M&A events during the private phase. Almost 34% of our deals show major M&A events during the private phase and even 26% as early as the first two years. We further cluster the deals in our sample by the professional background of the partners who initiated the deal. We group ex-bankers and ex-accountants together as "Finance Partners" (FPs) and ex-consultants and ex-industry experts as "Operations Partners" (OPs). Interestingly, most of the partners (73%) are FPs. When analyzing the performance difference between the two partner groups by strategy, we find that partner characteristics matter.

First, OPs generate **a** statistically significant 12% higher financial outperformance at company enhancement strategies through purely internal value creation programs. In other words, partners who worked in the industry or as management consultants before joining a PE house seem to be able to

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[1] Acharya et al. (2009) show financial outperformance on an un-levered basis.

[2] Guo, Hotchkiss and Song (2009) find a strong and positive correlation between financial performance and EBITDA/sales margin increase for public-to-private deals in the US. Since public-to-private deals are larger on average than other PE deals, mostly large and mature PE funds initiate these deals. For a comprehensive review of the literature on the buyouts of the 1980s see Cumming et al. (2007).

improve the form of the corporation internally, which is often characterized by entrenched management who are prone to cash-flow diversion and averse to taking on sufficient levels of risk.

Second, in contrast to OPs, FPs more frequently and successfully follow an M&A strategy or a so-called inorganic strategy. Partners with a background in banking or accounting appear to be more familiar with significant mergers and acquisitions (M&A). They are in fact able to generate 16% higher financial outperformance in inorganic strategies.

Finally, we are able to show not only that the background of the partners seem to partly determine the returns of a deal, but also that the background determines even their governance activity level in organic strategies in the early deal phase (the first 100 days).[3] Based on interview-based data, we have found that OPs more frequently make management changes, management plan revisions and strong time commitments in organic deals. And interestingly, all three measures positively relate to outperformance in organic strategies. In contrast, finance partners more often give 1st and 2nd management line equity shares and devise new KPIs more frequently, none of which relates to outperformance in organic strategies.

The data used in this paper is ideally suited for our goal of identifying persistent partner skills that generate outperformance. (1) The data set, which covers 102 PE buyouts, is representative in terms of performance large and mature PE funds in Western Europe. And only large and mature PE funds outperform the public market according to Kaplan and Schoar (2005).[4] (2) In contrast to the literature, which has a focus on only public-to-private deals, the data set covers various vendor types, e.g., carve-out deals, where only part of a company is acquired, and private-to-private deals, where a non-listed business is acquired. To use carve-out and private-to-private deals is important, because they comprise 75% of PE deals in the last decade, and they are different in size (enterprise value) and

[3] We compare the activities in the early deal phase, since this ensures exogeneity in respect to the latter realized performance.

[4] We **have** also **found** that large PE funds outperform smaller PE funds in Western Europe with the same vintage years as our funds. As shown in Table A1 in the Appendix for Western European between 1996 and 2005, large PE funds outperform smaller PE funds.

profitability (EBITDA margin) than public-to-private deals. (3) The data set also includes a unique set of deal-level interview data, which enables us to identify the leading deal partner per deal and his or her individual governance activities.[5]

As we will discuss below, we are not able to rule out a reverse causality argument. Deal partners could potentially make their decision about the inorganic strategy based on the observed performance of a deal during PE ownership. In that case, it would not be OPs at inorganic strategies that cause underperformance; instead it would be underperformance that causes the inorganic strategy of OPs. However, we find it hard to believe that OPs and FPs behave diametrically in their endogenous decision to pursue an organic or inorganic strategy. Furthermore, our findings do not change when we only define deals as inorganic that had a clearly exogenous M&A activity. Since we have information on the exact M&A date, we are able to identify deals that had an M&A activity at an early point during PE ownership and therefore are exogenous to the realized performance.

In Section 2, we provide a description of the data we collected and some summary statistics. In Section 3, we discuss sample selection issues. In Section 4, we link financial returns to deal partner backgrounds. In Section 5, we discuss endogeneity issues. In Section 6, we present differences in governance activity by deal partner background. Section 7 concludes.

2. Data description

The analysis is based on proprietary company-level data set of PE leveraged buyouts (deals) in Western Europe. The data set was collected by McKinsey & Company from 14 large and mature PE houses and includes deals with an enterprise value above EUR ~50 million. It is the same data used in Acharya et al. (2009). In this paper, we only include the 102 deals for which the deal partner background was available.

[5] For 72 deals out of 102 deals, we have in-depth interview data on the governance approach; essentially wherever the relevant GPs had not left the PE house in question.

The data set consists of two separate parts. The first part covers deal characteristics, e.g., deal timing, deal entry and exit size, including data on debt and equity, and vendor type.[6] PE firms also reported basic accounting figures for the acquired companies, e.g., annual EBITDA, without exceptional items or sales. In addition, PE firms reported the year and month they acquired another company or business unit and merged it with the portfolio company during PE ownership. We further verified the M&A events reported by the PE houses and added on a few occasions M&A events if they were reported as major in the press, on the Capital IQ database, or on the PE house website.[7]

The second part consists of data from 72 in-depth interviews with general partners (GPs) involved in our deals, essentially whenever the relevant GPs had not left the PE house in question.[8] The interview data is an important novelty in this context, since it allows us to identify the professional background of the leading partner per deal. We use the most recent profession of the interviewee before he/she joined the PE industry as an indicator for the background. We further verified if the interviewee was indeed the single leading partner for the deal with information from the Capital IQ database, the PE house website, or press articles. We had to change the background for only a few deals, since another single leading deal partner with a different background from the interviewee was mentioned. Moreover, for 30 deals where no interview was available, we were able to find the deal partner in the Capital IQ database, the PE house website, or press articles.

Table 1, Panel A gives an overview of the years when the PE houses acquired (entry) and sold (exit) the portfolio companies in our sample. The deals are equally spread across the years between 1996 and 2005. In only the first and the last year and between 2000 and 2001 (due to the

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[6] A vendor type, for example, is a private-to-private or a public-to-private deal.

[7] We defined an M&A event as major if it altered sales or enterprise value of the deal by more than 20%.

[8] In some case, we have more data points than interviews **because** we have information, e.g., on the management equity share, from the hard-coded PE fund documents we received. In other cases, the full questionnaire was **not** covered, due to time constraints of the interviewed deal partner.

global recession and credit tightening) do we have slightly fewer observations. The sample also includes 4 bankruptcies and 7 deals, which the PE houses did not sell until 2008.[9]

The first part of Table 1, Panel B reports summary statistics for all deals in our sample. The deals have a high IRR (39.3%) and cash multiple (2.9). We also show "abnormal performance" (in the spirit of Acharya et al. 2009) and a "Public Market Equivalent (PME)" return (in the spirit of Kaplan and Schoar 2005) for the whole sample. Overall, the evidence points to outperformance of the deals in our samples.

In the second part of the table we show abnormal performance, duration for deals with M&A, and divestment events separately. Interestingly, deals with M&A events seem to show a higher performance, while deals with divestment events show a lower performance than the other deals. Moreover, first acquisition events happen earlier in the private phase than first divestment events. First M&A events take place on average after one year, while first divestment take place after two years. We therefore interpret the divestment events as performance endogenous, given that the divestment events appear in deals with low performance and later in the private phase. PE seems to use divestment as an ad hoc reaction to underperforming deals and not as an exogenous value creation strategy.

3. Sample selection issues

The 14 participating PE houses in our sample did not report their deals to us at random. Rather, they only reported the deals if the PE house wanted to give the data. Furthermore, the sample consists of deals initiated by mature and large PE funds only. This begs the question if the sample of deals is representative for PE investments. However, in Table 2, Panel A-D we are able to show that our deal sample seems to be representative for large and mature PE houses. In detail: (1) The

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[9] For those 7 deals we do not have all cash flows, because there is not any final cash flow from exit nor can it be deemed to be zero as in the case of bankruptcies. Therefore, the end enterprise-value cash flow is simulated using the EV / EBITDA multiple at the start of the deal and applying that to 2006 year-end EBITDA.

participating funds in our sample did not seem to cherry-pick the deals they reported. (2) The funds in our sample do not seem to differ in terms of performance to large and mature PE funds and, (3) have a bias towards large buyouts, but (4) cover various types of deal sources, e.g., also private-to-private deals.

(1) First, in Table 2, Panel A we contrast the performance of the deals with the funds in our sample. Before we can compare the deal and fund performance, we first need to convert our gross deal-level IRRs (before fees charged by PE houses to fund investors) to net IRRs (after fees, or in other words, IRRs from the viewpoint of fund investors). [10] This is because the data we have on the overall universe is primarily in the form of net IRRs. Finally, we find no statistical difference on average between the net returns of the funds and deals in our sample (t=0.62). The 32 funds participating generated an average (median) net return of 24.5 (26.5) % and the 102 deals generated an average (median) net return of 27.1 (25.1) %. When we pool the cash flows of our deals into one pseudo fund we get a net return of 24.3%, which is even lower.

(2) In Table 2, Panel B, we compare the net returns of our funds with the PE universe in Western Europe to find out if our funds are representative in terms of performance. Overall, we are able to show that our participating funds are representative PE funds, once we take into account the fact that we are focusing on funds whose sizes are above €500 million. First, the average (median) return of 16.3 (9.8) % of ALL funds in Western Europe is much lower than the average (median) 24.5 (26.4) % performance of the funds in our sample (t=-2.29). But the 22.0 (18.9) % average (median) return of funds with the SAME SIZE as our funds (above €500 Mio) is not statistically different from the return of our funds (t=-0.61). In row (0) we also report the net IRR of the previous funds, e.g.,

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[10] More specifically, if a) Gross IRR<=10%, then LPs keep all return except 2% fees, so that Net IRR = Gross IRR - 2% fees; b) 10%<Gross IRR<12.5%, then LPs keep all return up to 10% except for 2% fees and GPs keep all return from 10% to 12.5%, so that Net IRR = Gross IRR - 2% fees – (Gross IRR – 10%) = 8%; and c) Gross IRR>=12.5%, then LPs and GPs share in 80:20 ratio the return exceeding 12.5%, so that Net IRR = Gross IRR - 2% fees - 2.5% - 20%*(Gross IRR - 12.5%).

fund Europe II for fund Europe III, to show that the high performance of our funds seems to be persistent over time and not a flash in the pan.

(3) Third, Panel C shows that we ultimately have a sample with a large-size bias. The number of deals in our sample is significantly smaller than that of all Western European deals over the sample period. Our sample only represents 102 out of 5,384 deals. In contrast, in value terms we cover 13.1 % of large and very large deals – €100 to €500 million and greater than €500 million. However, most of the literature also has an implicit large-size bias. The reason is that it a) focuses exclusively on public-to-private deals, which are mostly large deals or b) on deals with public debt financing, which are also typically larger.[11]

(4) Finally, Panel D shows the biggest advantage of our data set. As previously mentioned, our sample includes all types of deals. For example, the sample also includes carve-out deals, where only part of a company is acquired, or private-to-private deals, where PE acquires a non-listed business. Moreover, our data also includes deals that were previously owned by PE and former state-owned companies. We think covering all vendor types is an important novelty. This is in contrast to the literature, which mostly analyzes public-to-private deals. First, public-to-private transactions represent by volume (by value) only 4% (17%) of the total buyout activity. In contrast, the majority of deals are carve-out and private-to-private. For examplek, in Western Europe, they comprise 74% (58%) of all PE deals between 1995 and 2005. Second, we find that carve-out and private-to-private deals are already different pre-acquisition. They are smaller in size (enterprise value) and different in profitability (EBITDA to sales ratio) **from** public-to-private deals in the Western European universe, as shown in Table 2, Panel D.

4. Financial performance and deal partner background

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[11] However, it should also be noted that the large-size bias makes our sample more comparable to the benchmark group we employ, which consists of publicly quoted companies. Since the size of publicly quoted companies is generally larger than a typical private equity deal in the entire universe of such deals.

In this section we (1) provide an overview of the deal partners' background and their performance by deal strategy. We distinguish inorganic, which are deals with M&A events, from organic strategic, which are deals without M&A events. (2) We then show with multivariate regressions that the background of a partner, depending on the deal strategy, seems to be important in explaining financial returns. Since the background or skills of a partner is fixed and the skill requirements vary with the strategy, we interpret the finding as evidence that skills on fund manager level partly determine PE outperformance.

We base our analyses on un-levered returns above the sector (abnormal performance) to purge of effect of sector movement and financial leverage as described in Acharya et al. (2009).[12] In addition, we provide evidence that our findings are robust also to alternative return measurements, e.g., levered returns (IRR) or PME returns, which we calculate according to Kaplan and Schoars' (2005) "Public Market Equivalent." Given the small sample size, we cluster the partners into two groups, either Finance Partners (FPs) or Operation Partners (OPs). We define FPs as partners who before working for PE worked for a bank, as an accountant or have a background in law. In contrast, we define OPs as partners who had worked as consultants or in the industry.[13]

(1) Table 3 gives an overview of the partners' background and their performance by strategy. First, in our sample the majority of deals have FPs rather than OPs (75 out of 102 deals). Interestingly, FPs almost always manage deals with an inorganic strategy. FPs lead 30 out of 35 inorganic deals. Second, neither an organic nor an inorganic strategy per se generates higher performance. The 67 deals in our sample with an organic strategy have, on average (median), an un-levered return of 6.91 (8.22) % above the sector, which has no statistical difference from the 35 inorganic deals 11.80 (11.49) % (t=- 1.19). The average and median IRR for inorganic deals is even

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12 In short, we un-lever each deal IRR (based on cash-flows between PE fund and portfolio company) and sector IRR with the standard un-levering formula. The difference between the two un-levered returns we then call Alpha. $R_{U,i} = (R_{L,i} + R_{D,i} (1\text{-}t)(D/E_i)) / (1 + (D/E_i))$. The un-levered return $R_{U,i}$, is the return generated at company level. The levered return, $R_{L,i}$, the return generated for the PE house.

13 Only one deal partner went to the PE house immediately after graduating college and is not included in the sample.

lower. Third, OPs in general, with an average (median) abnormal performance of 14.26 (11.45) %, seem to outperform FPs, with an abnormal performance of 6.66 (8.22) %. The same holds true for PME or IRR.

(2) In Table 4, Panel A, we provide multivariate regressions evidence that the success of OPs or FPs depends on the strategy. OPs with organic strategies outperform by 11%. In contrast, FPs with inorganic strategies, outperform by 18%. The finding that OPs outperform at organic and FPs at inorganic is robust to specifications (e.g, exited deals only) and alternative outperformance measures, e.g., IRR or PME returns.

More specifically, we define three dummy variables for the RHS for deals with 1) a FPs in the lead (1 if FPs and 0 if OPs), 2) an inorganic strategy (1 if inorganic during PE ownership and 0 if organic strategy only) and finally 3) for the interaction of both (FPs x inorganic). Accordingly, the base group are deals with OPS in organic strategies (n=22). All effects are measured relative to the performance of this group. In addition, we add holding length in years and time period dummies to all regressions, since we want to control for time based variations in outperformance or deal returns. We also added for robustness in Table 4, Panel A, regression (4), a dummy for 4 deals, which were not exited in 2007, given that we simulate returns for those deals.

We start in Table 4, Panel A, regression (1)-(4), with alpha as the dependent variable; then provide in regression (5)-(8) the same for IRR and in regression (9)-(12) for PME as the dependent variable.

First, in regression (1), (5) and (9) we only add a dummy for FPs. When we use the FPs dummy only, it is not clear if FPs in general underperform OPs. In regression (1) and (9), with alpha or PME as dependent variable, we find no statistically significant underperformance of FPs (t=-1.48 and t=-1.00). Only in regression (5), when using IRR is a dependent variable, do we find a weak relationship (t=-1.70).

Second, we also include a dummy for inorganic strategy on the RHS, to see if the weak result, that FPs underperform, interferes with potential lower returns for inorganic deals, which FPs most frequently lead. Again Alpha, IRR and PME show mixed findings.

Third, when we finally add an interaction term for FPS and inorganic, in order to control for partner background effects that are strategy specific, we get similar results in sign and significance for all three dependent variables. FPs underperform the base group in organic strategies (for alpha as dependent variable t=-2.24, for IRR t=-2.27, for PME t=-1.92), but outperform in inorganic strategies (for alpha t=2.61, for IRR t=2.69, for PME t=2.33).

Finally, we also include dummies for deals **that** were not exited by 2007 and find our results qualitatively unchanged.

5. Endogeneity issues

In this section we discuss endogeneity concerns, which could potentially cause our unveiled partner background pattern. The first is a (1) reversed causality argument, (2) the second **a** concern about PE house fixed effect and finally (3) the effects of sector picking ability of PE partners. We are not able to rule out these concerns, but we are convinced that there is sufficient evidence against all of them.

(1) Since the deal partners in some deals decide to follow an inorganic strategy late during PE ownership, the observed findings are potentially subject to a reverse causality.[14] There are two alternative possibilities of a reverse causality in the context of inorganic strategy:

First, OPs could follow an inorganic strategy if the deal shows underperformance in the first years of PE ownership. For example, OPS are opposed to inorganic strategy but do M&A in order to blur their underperformance, if necessary. So, it is not a lack of skills of OPs at inorganic strategies

[14] Fortunately we do not face the same issue of reversed causality with the deal partner background; the deal partner background is fixed and determined before the acquisition.

that causes the relative underperformance at inorganic strategies. Instead it is rather the underperformance that causes the inorganic strategy decision for OPs. Given the small sample size, we cannot rule out or validate this argument. First, we only have 5 inorganic deals with OPs in our sample. Out of the 5 deals, 2 show an M&A activity already in the first year, 1 in the end of the second year, 1 in the third year and 1 after 4 years. So the causality is potentially reversed for only 2 of those 5 deals, if we assume that it takes at least one year to find out that a deal is underperforming and another year to identify and buy another company.

A second and alternative concern on reverse causality is that FPs are willing to apply an inorganic strategy late during PE ownership if the deal is already outperforming. Again, if this argument is true, outperformance would cause the inorganic strategy for FPs, rather than an inorganic strategy causing the outperformance. However, again out of the 30 inorganic/FPS deals, only 6 deals have an M&A activity after the end of the second year of PE ownership.

In Table 4, Panel B, we more narrowly defined, due to the reversed causality concern, the inorganic strategy and only considered inorganic deals that show the first M&A events until the end of the second PE ownership year. This early inorganic strategy is then exogenous to the performance, if we are willing to assume that it takes at least one year to find out that a deal is underperforming and another year to identify and buy another company. This reduces the number of early inorganic deals with OPs to 3 deals and with FPS to 24. The findings in Panel B are qualitatively unchanged to Panel A. FPs still underperform in organic and outperform in inorganic deals measured with alpha, IRR and PME.

Overall, we do agree with the reverse causality argument. First, in the operational performance (measured with EBITDA-to-Sales ratio and sales growth) until the first M&A event, we find no clear indication that OPs deals already underperform, while FPS deals already outperform before the first M&A event. Second, even if we could find **a** performance difference between FPs and OPs before the first M&A event, it would only be an indication for the reverse causality argument, since it would not inevitably have an effect on the later strategy decision. Third and most importantly, it is hard to believe that only OPs use inorganic strategies to blur their underperformance and only FPs apply M&A strategies when the deal is already outperforming. Finally, our findings do not qualitatively change when we defined inorganic strategy more narrowly and used only deals with early M&A events to make sure that we captured exogenous inorganic strategies.

(2) Another concern is that PE house fixed effects instead of the partner background cause outperformance and we are identifiying a spurious correlation if some PE houses hire mainly OPs or FPs. In Table 6, we provide an overview of returns, deal partner background, and deal strategy ranked by PE fund returns (which we have measured in abnormal performance). We find no pattern between fund returns and deal partner background, which would point to a spurious correlation. For example, the top two PE houses, as well as the two PE houses with the lowest abnormal performance, have no OPs. Moreover, we find that some PE houses apply particularly high or low D/E ratios. The D/E ratio varies significantly between the PE houses; three PE houses show statistically significant different leverage ratios. In untabulated results, this finding also holds in a multivariate setting, in which we control among other things for entry time. To use time dummies seems important, since the PE houses with a high (low) leverage ratio tend to have reported deals in our early (late) sample period. However, we do not find a pattern between abnormal fund performance and leverage.

(3) In Table 6, we show that the outperformance of FPs or OPs do not seem to be caused by sector picking abilities. As a dependent variable, we use the levered sector returns and the same independent variables as in Table 5. In contrast to Table 5, we do not find any statistically significant pattern.

6. Deal partner background and differences in the management of a PE deal

In the previous chapter we show that partner skills, which we proxy by the deal partner background, explain outperformance. In this chapter we go one step further and show that a) there are differences in governance practices or skills, in how OPs and FPs manage a PE engagement per deal strategy. Moreover, since some of the practices relate to a higher performance, we b) discuss how these differences might explain in part the identified performance differences by strategy and partner background.

We use the same interview data as in Acharya et al. (2009). More specifically, for 72 deals we have data on PE governance practices just before the PE acquisition and during PE ownership, essentially whenever the relevant GP had not left the PE house in question.[15] For example, we know if the PE house changed the management or business plans, or how much time they spent with company etc. In order to make sure that we capture governance patterns, which are genuine for FPs or OPs, we use only PE actions in the 1st 100 days phase, which means in the first 3 months after the PE house bought the company. First, this ensures that the activity of a deal partner is not an endogenous reaction to the performance of the company during PE ownership,[16] since in the first 100 days the deal partner does not yet know the deal performance. [17] Second, as discussed in Acharya et al. (2009), the PE partner activity level in the 1st 100 days is probably the most important factor for the later performance of the PE deal.

In the following, we try to the cover most important facets of PE governance practices with the following interview topics: (1) In "Management Turnover & Incentives" we talk about interview section concerning the replacement of the management team and also 3 answers for the ownership share of the management. (2) In "Support & Control" we cover the interview topics on PE time commitment and external support, e.g., through external consultants. (3) In "Interventions &

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15 In some cases, we have more data points on the PE practices than interviews, since we have information, e.g., on the management equity share, from the hard-coded PE fund documents we received. In other cases, the full questionnaire was not covered due to the time constraints of the interviewed deal partner

16 For example, an endogenous reaction would be a PE partner spends a lot of time on a deal because it is underperforming.

17 In this chapter we define as inorganic only deals that had an M&A in the first two years, since we can only assume that an inorganic strategy in the first two years is exogenous – given that it takes at least one year to find out that a deal is underperforming and another year to identify and buy another company. If we also flagged late M&A activity as inorganic we could potentially find spurious correlations. Similar to the endogeneity discussion in the previous chapter, a problem for example could arise if OPs do not like inorganic strategies per se. However, if a deal were not going well OPs would do an inorganic strategy to hide their bad performance. And deals do not do well according to a low governance activity level in the first 100 days. So we would see very active OPs in organic and very passive in inorganic strategies. So this would cause the difference from the FPs and not their different governance practices.

Initiatives" we look at plan adjustments and value creation initiatives applied by the PE house to a deal and accordingly described in the interview. For each topic we use the answers to 6 questions. We code the interview answers with a 1 if the answer was yes, and with a 0 if the answer was no. Therefore a score of 0.38, for example, means that 38% have answered the question with yes.

For each interview section, we first show which answer relates to outperformance before we compare the scores by partner background and strategy. Here, we rank the deals by their abnormal performance and compare average answers (scores) of the top alpha tercile with the mid & bottom tercile. Finally if a question is more frequently answered with a yes in the top alpha tercile and there is a difference between the partners in the same answer, we interpret this as a PE governance practice dimension, which indicates potential relevant partner skill difference.

However, the fact that we only have 72 interviews limits our analyses in the following way: First, we are not able to identify differences in governance pattern for deals with an inorganic strategy and in return cannot uncover what FPs improve at those deals. Furthermore, since OPs outperform FPs in organic strategies, we are only able to show what OPs do better than FPs. Second, in contrast to the financial performance analyses with 102 deals and multivariate regressions with interaction terms, we are only able to test for differences non-parametrically with bivariate tests, due to the small sample size. Finally, we cannot rule out that, intentionally or unintentionally, partners in successful or unsuccessful deals overplayed or underplayed their role in the interview. We therefore interpret our findings as descriptive rather than causal.

Overall it seems that FPs are less active in PE governance practices, which relates to outperformance, and more active in an aspect of governance, which is not important for outperformance.

(1) **Management turnover & incentives:** In Table 7, Panel A, we provide evidence that FPs are less active in management changes in the first 100 days in organic deals (t=-1.65). OPs change the management 52% of the time, in the deals we review**.** FPs only in 33% of the cases. The finding

comes mainly from the differences in the replacement of other management and there is only weak evidence that OPs replace the CEO or CFO more often. In contrast, FPs seem to give higher incentives to management. In particular, FPs give equity shares more frequently to 1st and 2nd management line (t=1.78).

However, only early management changes happen more frequently in the top tercile of organic strategies (t=1.96). In contrast, there is an inverse pattern between top alpha deals and giving equity shares to 1st and 2nd management line (t=-1.86 and t=-1.98). These findings point to skill differences between deal partners, which are related to higher performance.

(2) **Support and Control:** Yet again, FPs execute PE governance practices less frequently, which relate to higher performance in organic strategies. In addition, FPS apply PE governance practices more frequently, which are less important in terms of outperformance.

According to Table 7, Panel B FPs spend less time **on** management interactions (t=-3.08) in organic deals. OPs reach a total management interaction score of 81%, which is the simple average of the three sub-questions; FPs only reach a score of 59%. The usage of external support, although highly positively correlated with abnormal performance, is not different between FPs and OPs.

Again, time commitment, a PE governance practice in which FPs are less active, correlates positively with alpha in organic strategies (t=2.08). Top alpha deals reach a score of 79% in management interactions in comparison to 60% in the middle and bottom alpha tercile.

(3) **Interventions & Initiatives:** First, in Table 7, Panel C, we find that FPs seem to engage less in revising management plans in organic strategies than OPs (t=-1.71). 87% of OPs revise management plans in organic deals, in contrast to only 57% of FPs. On the other hand, OPs devise new KPIs less often (t=1.89). More specifically, OPS devise new KPIs in 53% of their deals, but FPS in 76% of their organic deals. We find no clear pattern for differences in partner value creation initiatives for organic deals.

However, neither an early revision of management plan nor the answer to the question "revised KPIs?" has a statistically significant correlation with the top tercile organic deals.

Overall, we interpret the findings on early management changes, incentives and new KPIs as most convincing in all our three interview sections. Those answers are less likely to be over or underplayed in an interview than, for example, early PE time commitment.

7. Conclusion

In this paper we find evidence that there are certain combinations of Private Equity value creation strategies and leading deal partner characteristics which correlate with deal-level performance of 102 large and mature PE fund investments in Western Europe between 1996 and 2005. We associate this finding with skills at a fund manager level.

The data set we use is ideally suited for our goal of identifying persistent skills at a deal partner level. (1) It is representative in terms of performance of PE investments of large and mature PE houses. These large and mature PE funds persistently outperform the public market. (2) In contrast to the existing literature, which has a focus on public-to-private deals only, the data set covers all vendor types, e.g., carve-out deals, where only part of a company is acquired, as well as private-to-private deals, where a non-listed business is acquired. Carve-out and private-to-private transactions comprise 75% of PE deals in the last decade, are smaller in size and different in profitability (EBITDA margin) than public-to-private deals. (3) Most importantly, the data also includes a unique set of in-depth deal-level interview data, which enables us to identify the leading deal partner background and governance patterns per deal.

Coming to our main findings, first, leading deal partners with a strong operational background (OPs) generate 11% higher financial performance at purely internal company enhancement deals (organic strategy). In other words, the deal partner who worked in the industry or as management consultant before joining a PE house seems to be well suited to internally improve corporations, which are often characterized by entrenched management and prone to cash-flow diversion, and are averse to taking on efficient levels of risk.

Second, deal partners with a background in finance (FPs) more frequently follow an M&A (inorganic) strategy. FPs lead 30 out of 35 inorganic deals. Moreover, FPs generate 17% higher returns when implementing an inorganic strategy. Partners with a background as a banker or an accountant appear to be more familiar with significant mergers and acquisitions (M&A) and in executing "buy and build" opportunities successfully.

Finally, we identify, with interview data, differences in PE governance practices between FPs and OPs, which are performance relevant. OPs more frequently make management changes, management plan revisions, and strong time commitments to management in the early deal phase. In contrast, FPs more often give equity shares to 1st and 2nd management line and devise new KPIs more frequently. However, we find that these two measures are not performance relevant.

However, much more research is needed in understanding PE fund manager skills, which drive outperformance. First, we are not able to show the success factors of FPs in inorganic deals. An active governance approach is probably less important. Instead, the identification of potential synergy in "buy and build" strategies is probably key. Second, PE houses define themselves either as "Specialist," which means a PE house focus on specific sectors, or, in contrast, as “Generalist.” Possibly because of the size of our data set, we were not able to find performance differences between the two. Finally, we are also curious if fund manager experience in PE plays a major role in explaining outperformance of large and mature PE funds. It could be the case that over time "surviving" PE partners in mature PE funds were able to accumulate skills that generate outperformance.

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Table 1 – Panel A: Distribution of deals by entry and exit years

The table shows the years in which the PE houses bought (entry) or sold (exit) the portfolio companies (deals) in our sample.

Years	96	97	98	99	2000	01	02	03	04	05	06	07	Sum
Entry	4	8	11	13	10	9	15	17	13	2	n/a	n/a	102
Exit	n/a	n/a	n/a	1	2	7	6	9	18	17	19	23[1]	102

1 Including seven deals for which exit is simulated

Table 1 – Panel B: Summary statistics

The table shows various financial measures for the deals in our sample.
The first part reports the financial performance and durations for all deals in our sample. We calculate the deal IRRs (internal rate of return) using the entire time pattern of cash inflows and outflows for each deal (portfolio company), as experienced by the PE house (before fees). The cash in/cash out multiple measures the absolute value of all positive cash flows divided by all negative cash flows minus 1. The duration captures the length of the deals in years, using the entry and exit months and years as reported by the PE house.
The second part reports abnormal performance, duration for deals with M&A and divestment events separately.

Variable	n	mean	median	std. dev.	min	max
Deal IRR %	102	39.3	36.3	40.5	-87.8	123.4
Cash in/cash out multiple		2.9	2.7	1.9	0.0	10.3
Abnormal performance		8.7	10.5	20.7	-86.1	73.4
PME		1.2	1.1	1.5	-1.0	9.1
Duration (years) [1]	95	3.9	3.6	1.5	1.4	7.3
Deals with M&A events only [2]						
Abnormal performance	35	12.1	13.2	16.3	-34.7	55.5
Duration (years) [1]	32	4.2	4.3	1.7	1.8	8.1
Time until first M&A event (years)	35	1.2	0.9	1.3	-0.2	4.3
Deals with divestment events only [2]						
Abnormal performance	14	0.2	-2.0	14.2	-20.3	19.7
Duration (years) [1]	14	4.4	4.3	1.3	2.5	6.8
Time until first divestment event (years)	14	2.5	2.1	1.9	0.4	7.3

Note: In Mio, EUR; significance level * p<0.1, ** p<0.05, *** p<0.01
1 Only exited deals
2 Major M&A or divestment events during PE ownership as mentioned by the PE house or in the press, Capital IQ database, or PE house website. Events are major if they altered sales or enterprise value by more than 20%.

Table 2 – Panel A: Benchmarking of our deals vs. our funds by net IRR comparison

This table compares the deals with the funds in our sample by Net IRRs. Row (1) provides the Net IRR for 32 out of 36 funds that participated in our sample and for which Prequin reports the NET IRRs by end of 2007. [6] We weight the 32 fund returns by the number of participating deals per fund. In row (2) we show the simple average NET IRRs for all deals in our sample for which we have fund return data (for 88 out of 110 deals). In row (3) we pool these deals artificially in one pseudo fund. Since the publicly available data on the European universe is primarily in the form of net IRRs, we convert our gross deal-level IRRs (before fees charged by PE houses to fund investors) to net IRRs (after fees, or in other words, IRRs from the viewpoint of fund investors). In the last column we test if the PE houses cherry-picked the deals out of their funds in terms of performance.

	n	**Net IRR** [1]		**t-stat of diff. to our funds**
		mean	**median**	
(1) Our funds [4]	32	24.5 [5]	26.4	
(2) Our deals	93	27.1 [2]	25.1	0.62 [7]
(3) Our deals pooled in 1 pseudo fund [3]	1	24.3		

Note: All values in percent or Mio EUR , vintage year 1993-2003, significance level * p<0.1, ** p<0.05, *** p<0.01

1 NET IRR, estimated for our deals in the following way: If a) Gross IRR<=10%, then LPs keep all return except 2% fees, so that Net IRR = Gross IRR - 2% fees; b) 10%<Gross IRR<12.5%, then LPs keep all return up to 10% except for 2% fees and GPs keep all return from 10% to 12.5%, so that Net IRR = Gross IRR - 2% fees – (Gross IRR – 10)% = 8%; and c) Gross IRR>=12.5%, then LPs and GPs share in 80:20 ratio the return exceeding 12.5%, so that Net IRR = Gross IRR - 2% fees – 2.5% - 20%*(Gross IRR - 12.5%).
2 Simple averages
3 Pooled by calendar period using quarterly cash flows
4 As reported in Prequin.
5 Weighted averages by number of participating deals per fund
6 In 5 cases, more than one fund of a PE house is involved; in these cases we take the simple average of the funds involved and treat the funds as one fund. For 1 deal the Fund names is unknown, for 3 funds we could not find fund returns.
7 We use Welch's t-test of difference between (1) and (2) assuming unequal variance for (1) and (2).

Table 2 – Panel B: Benchmarking of our funds vs. PE universe by net IRR comparison

This table compares the returns of the funds in our sample with fund returns of the EU universe. First, row (1) provides the Net IRR for 32 out of 36 funds, which participate in our sample and for which Prequin reports the NET IRRs. [3] Second, row (2) provides the Net IRRs for all funds in Western Europe and (3) for very large funds only, as reported in Thomson Financial Venture Expert.

In addition, we added in row (0) the performance of previous funds, e.g., of fund "Europe I" for fund "Europe II" in our sample. However, we only find Net IRRs for 25 funds (out of the 32 funds), since 5 funds did not have a previous fund in Western Europe and for two previous funds there is no Net IRR available. In the last column we test if the PE funds in our sample are different in terms of Net IRR from a) the Western European universe, b) the universe with the same fund size and c) the previous funds.

	n	**Net IRR**		**fund size**	**t-stat of diff. to our funds**
		mean	**median**		
(0) Previous funds of our funds [1]	25	23.2 [4]	22.1	500-5000	-0.49 [5]
(1) Our funds [1]	32	24.5 [4]	26.4	500-5000	
(2) All funds in Western Europe [2]	229	16.3	9.8	0-1000+	-2.29*** [6]
(3) All large funds in Western Europe [2]	53	22.0	18.9	500-1000+	-0.61 [7]

Note: All values in percent or Mio EUR , vintage year 1993-2003, significance level * p<0.1, ** p<0.05, *** p<0.01

1 As reported in Prequin
2 According to Thomson Financial Venture Expert
3 In 5 cases, more than one fund of a PE house is involved; in these cases we take the simple average of the funds involved and treat the funds as one fund.
4 Weighted averages by number of participating deals per fund
5 We test for the difference between (0) and (1) assuming equal variance for (0) and (1) and use for (1) only the 25 funds, for which previous fund Net IRR was available (Net IRR 24.18%).
6 We test for the difference between (2) and (1) assuming equal variance for (2) and (1)
7 We test for difference between (3) and (1) assuming equal variance for (3) and (1). Unequal variance assumption leads to t= -0.58

Table 2 – Panel C: Benchmarking of sample by distribution of deal size

The table classifies the deals by the price paid for the acquired company (deal size). The first part of the table shows the distribution by size for the deals in our sample, and the second part for the European universe. The last column shows the share of our sample on all large and very large buyouts

	Deal size (in Mio EUR)				**total**	**Sample coverage of large & very large deals**
	Small (0-50)	**Medium** (50-100)	**Large** (100-500)	**Very large** (>500)		
Our deals per #	2.0%	6.9%	43.1%	48.0%	102	
Our deals per value	0.1%	0.8%	14.4%	84.8%	70,381	
EU universe per #	67.3%	11.9%	15.2%	5.5%	5,384	8.3%
EU universe per value	9.4%	7.1%	26.9%	56.5%	636,604	13.1%

Note: In Mio, EUR **Source:** EU universe data from Private Equity Insight, covering all deals acquired from 1995 to 2005 in Western Europe for which information on deal value or deal size category was available

1 For 22.8% of all deals in EU universe only deal size category was available. Deal value estimated with the mean deal value per category. Mean deal value per category calculated with 77.2% of all deals for which exact deal value was available (sum deal value = mean deal value per category * number of deals)

Table 2 – Panel D: Benchmarking of sample by vendor type

The table classifies the deals by vendor types into five different categories. Category (1) shows public-to-private deals, in which PE acquired a whole public company and (2) carve-out deals, in which PE acquired only a part of a company. Category (3) reports PE acquisitions of former family-owned or private companies, (4) of companies that were owned by institutional investors, e.g., other PE funds, and (5) of former state or government owned companies. The first part of the table reports the categories for the deals in our sample, the lower part for the PE universe in Western Europe. In addition, the table reports the mean (median) size (enterprise value) and profitability (EBITDA margin) of the company at the acquisition date. In the last column we test for differences in profitability by vendor type.

vendor type (previous owner)	**N**	**split in %**		**enterprise value** [1]		**EBITDA margin**	
		by n	**by value**	**mean (median)**	**test of diff.** [2]	**mean (median)**	**test of diff.** [2]
Our sample							
(1) Public-to-Private	11	10.8%	12.6%	806.4 (425.7)	0.57	15.3 (14.3)	-0.35
(2) Carve-out	40	39.2%	38.0%	668.1 (507.9)	-0.24	16.7 (16.0)	0.16
(3) Family/Private	32	31.4%	27.0%	594.7 (382.4)	1.06	14.1 (12.4)	-1.46
(4) Instit. Investor	17	16.7%	21.2%	878.3 (469.3)	1.19	22.3 (21.9)	2.04**
(5) State	2	2.0%	1.2%	414.8 (414.8)	-0.55	10.9 (10.9)	.
Total	102	100.0%	100.0%	690.1 (447.5)		16.5 (14.5)	
EU universe							
(1) Public-to-Private	249	4.6%	17.3%	442.7 (170.7)	16.67***	10.3 (8.1)	-2.66***
(2) Carve-out	2,066	38.4%	44.7%	137.6 (31.3)	6.09***	9.8 (8.9)	-3.52***
(3) Family/Private	1,937	36.0%	13.2%	43.4 (14.1)	-18.50***	13.5 (10.4)	2.85***
(4) Instit. Investor	749	13.9%	19.3%	163.7 (55.7)	13.01***	14.3 (11.1)	3.71***
(5) State	74	1.4%	2.6%	226.5 (36.9)	1.45	12.3 (8.4)	0.72
(6) Not Disclosed [3]	309	5.7%	2.9%	59.5 (9.5)	-9.70***	10.8 (9.8)	0.44
Total	5,384	100.0%	100.0%	118.2 (25.0)		11.8 (10.0)	

Note: In Mio EUR, significance level * p<0.1, ** p<0.05, *** p<0.01

Source: Private Equity Insight, all deals acquired from 1995 to 2005 in Western Europe with deal size or size category available

1 We estimated the mean for 22.8% of the deals in the EU universe for which only information on the deal size category was available. We estimate the mean with the mean of the deal size category.
2 We test for differences with Wilcoxon tests and compare each vendor type with all other deals. Test on margins for the EU universe (n=1,524) and for deals in our sample (n=94) for which data on margin was available.
3 Including "In Receivership"

Table 3: Outperformance by deal partner background PE strategy [1]

The table gives an overview of the background of the partners who led the deals in our sample, for all deals and by deal strategy (organic vs. inorganic strategy). We cluster the partners into 4 categories. We call partners in the first two categories Finance deal partners (partners with a background in Banking or Accounting) and in the second two categories Operations deal partners (partners with a background in Consulting or Industry). For each category, we report summary statistics on (1) abnormal performance, (2) IRR and (3) PME.

Strategy	Leading partner background [2]	N	(1) Abnormal performance		(2) IRR		(3) PME	
			Mean	Median	Mean	Median	Mean	Median
All deals	Banking	33	8.93	14.00	0.35	0.34	1.57	1.44
	Accounting [4]	42	4.87	3.13	0.31	0.31	0.76	0.7
	Subtotal (FPS)	75	6.66	8.22	0.33	0.34	1.11	1.01
	Consulting	15	16.40	11.45	0.68	0.63	1.53	1.27
	Industry Expert	12	11.59	11.92	0.44	0.41	1.23	1.29
	Subtotal (OPS)	27	14.26	11.45	0.57	0.56	1.4	1.27
	Total	102	8.67	10.49	0.39	0.36	1.19	1.05
Deals without M&A events	Banking	14	0.64	5.03	0.23	0.24	0.77	0.99
	Accounting [4]	31	3.27	1.83	0.31	0.33	0.79	0.7
	Subtotal (FPS)	45	2.45	1.83	0.28	0.28	0.79	0.73
	Consulting	14	17.27	12.12	0.68	0.63	1.6	1.35
	Industry Expert	8	13.82	14.55	0.54	0.63	1.38	1.89
	Subtotal (OPS)	22	16.02	12.12	0.63	0.63	1.52	1.44
	Total	67	6.91	8.22	0.40	0.37	1.03	0.99
Deals with M&A events [3]	Banking	19	15.04	14.19	0.44	0.36	2.16	1.79
	Accounting [4]	11	9.38	4.47	0.31	0.27	0.65	0.54
	Subtotal (FPS)	30	12.97	13.46	0.39	0.36	1.61	1.16
	Consulting	1	4.13	4.13	0.71	0.71	0.61	0.61
	Industry Expert	4	7.14	3.81	0.26	0.26	0.92	0.56
	Subtotal (OPS)	5	6.54	4.13	0.35	0.40	0.86	0.61
	Total	35	12.05	13.19	0.39	0.36	1.5	1.08

Note: Alpha in percent
1 Including bankruptcies and non-exited deals
2 Professional background of the partner interviewed if not mentioned otherwise in Capital IQ database, PE house website, or press articles. For deals without an interview available or if the interviewed partner is not the leading deal partner, we use the professional background of the leading deal partner if mentioned in Capital IQ database, PE house website, or press articles.
3 Deals with major M&A activity during PE ownership as reported by the PE house or as mentioned in the press, Capital IQ database, or PE house website (if M&A altered sales or enterprise value of the deal by more than 20%)
4 Including deal partners with background in law

Table 4 – Panel A: Alpha, IRR and PME by deal partner background and PE strategy [1]

The table reports multivariate regression results of financial performance on the background of the deal partner who initiated the deals in our sample. We cluster the partner into two categories. We call partners with a background in Banking or Accounting as "FPs" and with a background in Consulting or Industry as "OPs." In regression (1) – (4) we run the regression with abnormal performance as dependent variable in (5) – (6) IRR and (9) – (12) PME.

Independent variables	**(1) Dependent variable abnormal performance**				**(2) Dependent variable IRR**				**(3) Dependent variable PME**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
FPs [2]	-0.06	-0.07*	-0.11**	-0.11**	-0.13*	-0.15*	-0.22**	-0.21**	-0.33	-0.42	-0.71*	-0.69*
	(-1.48)	(-1.78)	(-2.24)	(-2.20)	(-1.70)	(-1.83)	(-2.27)	(-2.19)	(-1.00)	(-1.29)	(-1.92)	(-1.84)
M&A event [3]		0.08**	-0.05	-0.06		0.09	-0.17*	-0.20**		0.55*	-0.53	-0.60
		(2.30)	(-1.11)	(-1.19)		(1.40)	(-1.82)	(-2.10)		(1.70)	(-1.26)	(-1.35)
FPs x M&A event			0.17**	0.18**			0.32***	0.36***			1.32**	1.42**
			(2.61)	(2.53)			(2.69)	(2.96)			(2.33)	(2.40)
no exit [4]				-0.09				-0.32				-0.81**
				(-0.64)				(-1.45)				(-2.01)
holding_ length (in yrs)	-0.06***	-0.06***	-0.06***	-0.06***	-0.13***	-0.13***	-0.12***	-0.11***	-0.21**	-0.22**	-0.20**	-0.15
	(-4.94)	(-5.26)	(-5.09)	(-4.21)	(-5.40)	(-5.59)	(-5.44)	(-4.33)	(-2.21)	(-2.32)	(-2.05)	(-1.42)
Entry period dummy [5]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	102	102	102	102	102	102	102	102	102	102	102	102
R2 adjusted	0.21	0.24	0.25	0.25	0.29	0.30	0.31	0.34	0.02	0.04	0.06	0.07

Note: OLS regression, t-stat in parenthesis with robust standard errors, significance level * p<0.1, ** p<0.01, *** p<0.001

1 Including bankruptcies and not exited deals

2 Dummy equals 1 (and 0 otherwise) for deals with leading deal partners who have a background in banking, accounting or law (in contrast to consulting or industry). Professional background of the partner interviewed if not mentioned otherwise in Capital IQ database, PE house website, or press articles. For deals without an interview available or if the interviewed partner is not the leading deal partner, we use the professional background of the leading deal partner if mentioned in Capital IQ database, PE house website, or press articles.

3 Dummy equals 1 (and 0 otherwise) for deals with major M&A activity during PE ownership as reported by the PE house or as mentioned in the press, Capital IQ database, or PE house website (if M&A altered sales or enterprise value of the deal by more than 20%)

4 Dummy equals 1 (and 0 otherwise) for deals, which were not **yet** exited

5 Dummies for entry period 1998 – 2000, 2001 – 2002 and 2003 - 2007

Table 4 – Panel B: Alpha, IRR and PME by deal partner background and PE strategy [1]

The table reports multivariate regression results of financial performance on the background of the deal partner **who** led the deals in our sample. We cluster the partner into two categories. We call partners with a background in banking or accounting as "FPs" and with a background in consulting or industry as "OPs." In regression (1) – (4) we run the regression with abnormal performance as dependent variable in (5) – (6) IRR and (9) – (12) PME.

We use as M&A dummy variable early M&A events. We use deals only with M&A in the first 2 years of PE ownership, since late M&A events might be endogenously determined by the performance of the deal.

Independent variables	**Dependent variable Alpha**				**Dependent variable IRR**				**Dependent variable PME**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
FPs [2]	-0.06	-0.08*	-0.09**	-0.09**	-0.13*	-0.15*	-0.18*	-0.17*	-0.33	-0.44	-0.59*	-0.57
	(-1.48)	(-1.90)	(-2.08)	(-2.02)	(-1.70)	(-1.77)	(-1.98)	(-1.86)	(-1.00)	(-1.36)	(-1.77)	(-1.66)
early M&A events [3]		0.08**	-0.04	-0.05		0.06	-0.19*	-0.21**		0.47	-0.91***	-0.98***
		(2.02)	(-0.92)	(-1.03)		(0.91)	(-1.79)	(-2.05)		(1.19)	(-3.23)	(-3.43)
FPs x early M&A events			0.14**	0.15**			0.28**	0.32**			1.56***	1.66***
			(2.15)	(2.15)			(2.25)	(2.50)			(3.09)	(3.17)
no exit [4]				-0.08				-0.31				-0.78*
				(-0.59)				(-1.35)				(-1.96)
holding_ length (in yrs)	-0.06***	-0.06***	-0.06***	-0.05***	-0.13***	-0.13***	-0.12***	-0.10***	-0.21**	-0.19*	-0.17	-0.12
	(-4.94)	(-4.78)	(-4.61)	(-3.66)	(-5.40)	(-5.21)	(-5.16)	(-3.98)	(-2.21)	(-1.83)	(-1.63)	(-1.05)
Entry period dummies [5]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	102	102	102	102	102	102	102	102	102	102	102	102
R2 adjusted	0.21	0.23	0.23	0.23	0.29	0.29	0.29	0.32	0.02	0.03	0.04	0.05

Note: OLS regression, t-stat in parenthesis with robust standard errors, significance level * p<0.1, ** p<0.01, *** p<0.001

1 Including bankruptcies and not exited deals

2 Dummy equals 1 (and 0 otherwise) for deals with leading deal partners, which have a background in banking, accounting or law (in contrast to Consulting or Industry). Professional background of the partner interviewed if not mentioned otherwise in Capital IQ database, PE house website, or press articles. For deals without an interview available or if the interviewed partner is not the leading deal partner, we use the professional background of the leading deal partner if mentioned in Capital IQ database, PE house website, or press articles.

3 Dummy equals 1 (and 0 otherwise) for deals with major M&A activity during PE ownership before the end of year 2 of PE ownership as reported by the PE house or as mentioned in the press, Capital IQ database or PE house website (if M&A altered sales or enterprise value of the deal by more than 20%)

4 Dummy equals 1 (and 0 otherwise) for deals, which were not exited yet

5 Dummies for entry period 1998 – 2000, 2001 – 2002 and 2003 - 2007

Table 5: Sector returns by deal partner background and PE strategy [1]

Independent variables	Dependent Variable Levered Sector Return			
	(1)	(2)	(3)	(4)
FPs [2]	1.49	1.97	1.83	1.92
	(0.67)	(0.86)	(0.78)	(0.82)
inorganic [3]		-2.85	-3.36	-3.66
		(-1.38)	(-0.56)	(-0.61)
FPs x inorganic			0.63	1.08
			(0.10)	(0.17)
no exit [4]				-3.56
				(-1.02)
holding_ length (in years)	0.51	0.58	0.59	0.79
	(0.77)	(0.83)	(0.84)	(1.05)
d_98_00	-1.27	-1.14	-1.13	-0.92
	(-0.51)	(-0.44)	(-0.43)	(-0.35)
d_01_02	3.86	3.63	3.68	4.09
	(1.20)	(1.08)	(1.08)	(1.18)
d_03_07	18.75***	18.63***	18.67***	19.81***
	(5.64)	(5.48)	(5.43)	(5.08)
constant	-0.56	-0.14	-0.11	-1.28
	(-0.13)	(-0.03)	(-0.03)	(-0.27)
No. of obs.	102	102	102	102
R2 adjusted	0.44	0.44	0.44	0.44

Note: OLS regression, t-stat in parenthesis with robust standard errors, significance level * p<0.1, ** p<0.01, *** p<0.001

1 Including bankruptcies and not exited deals

2 Dummy equals 1 (and 0 otherwise) for deals with leading deal partners who have a background in banking, accounting or law (in contrast to Consulting or Industry). Professional background of the partner interviewed if not mentioned otherwise in Capital IQ database, PE house website, or press articles. For deals without an interview available or if the interviewed partner is not the leading deal partner, we use the professional background of the leading deal partner if mentioned in Capital IQ database, PE house website, or press articles.

3 Dummy equals 1 (and 0 otherwise) for deals with major M&A activity during PE ownership as reported by the PE house or as mentioned in the press, Capital IQ database, or PE house website (if M&A altered sales or enterprise value of the deal by more than 20%)

4 Dummy equals 1 (and 0 otherwise) for deals, which were not yet exited

Table 6: Performance and PE house characteristics

The table reports various measures by the 14 PE houses participating in our sample. We rank the PE house by simple average abnormal performance. We also test for difference in the D/E ratio. In addition, we include in the table partner background, strategies, fund size and entry and exit years by PE house.

		Financial performance			**Partner background**	**PE strategy**	**Leverage**	**Fund size**	**Deal period**	
PE house	**# of deals**	**mean (median) abnormal performance**	**mean IRR**	**mean PME**	**share of deals with partner background in Operations**	**share of organic deals**	**mean (median)**	**Mean**	**Entry year**	**Exit year**
(1)	3	19.5 (14.6)	37.7	4.5	0	0.6	1.93	1.989	1999	2004
(2)	1	19.5 (14.2)	51.1	2.5	0	0.6	2.21	3.200	1996	2003
(3)	4	17.5 (15.6)	42.9	2.2	0.2	0.7	2.46	1.222	1998	2003
(4)	11	14.9 (18.6)	36.8	1.4	0.3	0.2	1.13***	2.224	2002	2005
(5)	8	14.4 (19.8)	79.5	1.4	1	0.2	2.13	3.799	2003	2006
(6)	1	14 (14)	84.9	1	0	0	2.26	3.867	2003	2005
(7)	7	10.2 (7.5)	29.4	0.8	0.1	0.5	3.28 ***	1.113	1999	2003
(8)	21	8.4 (10.7)	27.8	0.8	0.1	0.2	1.96	2.664	2000	2004
(9)	8	7.1 (7.5)	36.6	1.2	0.2	0.3	1.93	851	2000	2005
(10)	9	7.1 (4.5)	42.6	1.2	0.2	0.4	1.7	1.125	2003	2007
(11)	2	6.1 (6.2)	83.3	1.4	0	1	2.38	532	2003	2006
(12)	8	3 (3.5)	55.3	0.6	0.6	0	2.34	3.714	2003	2006
(13)	15	2.9 (-4.4)	25.9	0.5	0	0.2	1.46 *	1.452	2000	2004
(14)	4	-0.4 (-1.2)	16.8	0.6	0	0.2	2.06	1.663	1999	2005
Total	102	8.7 (10.5)	38.5	1.1	0.2	0.3	1.94	2.092	2001	2005

Note: significance level * p<0.1, ** p<0.05, *** p<0.01

Table 7 – Panel A: Management turnover and incentives [1]

The Table reports the mean score of deal involvement questions by (1) performance and (2) partner background of the deal. We further show the mean scores for all deals and deals without early M&A events separately. First, in column (1) we rank the deals by abnormal performance and show the mean score of the deal involvement for different performance terciles. Second, we show in column (2) the mean scores for partners with backgrounds in finance and in operations separately.
The upper part of the table covers management changes in 1st 100 days or before, the lower part the change in incentives.
The sample size varies per answer. In some cases, we have more answers than interviews, since we have also information from PE fund documents, e.g., on the mgmt. equity share. In other cases, the full questionnaire was not covered, due to time constraints of the interviewee. [6]

	Total	(1) Abnormal perf. tercile			(2) Partner background		
		Top tercile	**Other**	**t-test [5]**	**FIN [2]**	**OPS [3]**	**t-test [5]**
1st 100 days management change							
All deals (N)	72	20	52		56	16	
CEO replacement	0.38	0.45	0.35	0.81	0.34	0.50	-1.17
CFO replacement	0.36	0.45	0.33	0.97	0.36	0.38	-0.13
Other replacement	0.39	0.50	0.35	1.19	0.32	0.63	-2.24**
Total mgmt. change [6]	0.38	0.47	0.34	1.28	0.34	0.50	-1.51
Deals without early M&A events [4]	55	12	43		41	14	
CEO replacement	0.40	0.67	0.33	2.15**	0.34	0.57	-1.42
CFO replacement	0.36	0.50	0.33	1.09	0.34	0.43	-0.4
Other replacement	0.36	0.58	0.30	1.42	0.29	0.57	-2.15**
Total mgmt. change [6]	0.38	0.58	0.32	1.96*	0.33	0.52	-1.65*
1st 100 days change in incentives							
All deals (N)	75	26	49		54	21	
Mgmt. with high equity share	0.41	0.42	0.41	0.12	0.43	0.38	0.35
Mgmt. with high cash-multiple	0.29	0.09	0.40	-1.86*	0.36	0.00	1.78*
1st & 2nd mgmt. line with equity	0.57	0.65	0.54	0.83	0.62	0.41	1.53
Total incentives [6]	0.48	0.47	0.48	-0.17	0.51	0.39	1.32
Deals without early M&A events [4]	54	17	37		35	19	
Mgmt. with high equity share	0.43	0.47	0.41	0.51	0.46	0.37	0.33
Mgmt. with high cash-multiple	0.26	0.00	0.38	-1.98*	0.35	0.00	1.28
1st & 2nd mgmt. line with equity	0.53	0.62	0.50	0.7	0.58	0.40	0.59
Total plan adjustments [6]	0.45	0.48	0.44	0.48	0.49	0.38	0.45

Note: significance level * p<0.1, ** p<0.05, *** p<0.01
1 Professional background of partner interviewed if not mentioned otherwise in Capital IQ database, PE house website, or press articles. For deals without an interview available or if the interviewed partner is not the leading deal partner, we use the professional background of the leading deal partner from Capital IQ database, PE house website, or press articles.
2 Partner with a background in Banking, Accounting or Law
3 Partner with a background in Consulting or Industry
4 Deals without major M&A events during the first two years of PE ownership as reported by the PE house or as mentioned as a major strategy in the press. We classify M&A events as major if they alter sales or enterprise value by more than 20%
5 t-test of difference to mean of all other deals
6 We fill data holes for deriving subtotals with the average of the three questions answered.

Table 7 – Panel B: Support and Control [1]

The Table reports the mean score of deal involvement questions by (1) performance and (2) partner background of the deal. We further show the mean scores for all deals and deals without early M&A events separately. First, in column (1) we rank the deals by abnormal performance and show the mean score of the deal involvement for different performance terciles. Second, we show in column (2) the mean scores for partners with backgrounds in finance and in operations separately.
The upper part of the table covers management support in the 1st 100 days or before. The lower part covers external support. The sample size varies per answer. In some cases, we have more answers than interviews, since we have also information from PE fund documents, e.g., on the mgmt. equity share. In other cases, the full questionnaire was not covered, due to time constraints of the interviewee. [6]

		(1) Abnormal perf. tercile			(2) Partner background		
	Total	Top tercile	Other	t-test [5]	FIN [2]	OPS [3]	t-test [5]
1st 100 PE support							
All deals (N)	73	21	52		56	17	
Multiple CEO interactions per week	0.53	0.76	0.44	2.55**	0.52	0.59	-0.5
Frequent CFO interactions	0.97	0.95	0.98	-0.66	0.96	1.00	-0.84
High PE partner time commitment	0.52	0.50	0.53	-0.18	0.45	0.67	-1.36
Total PE support [6]	0.67	0.78	0.63	1.83*	0.65	0.75	-1.22
Deals without early M&A events [4]	55	13	42		40	15	
Multiple CEO interactions per week	0.49	0.77	0.40	2.65**	0.42	0.67	-2.65**
Frequent CFO interactions	0.98	1.00	0.97	0.63	0.97	1.00	-0.63
High PE partner time commitment	0.55	0.56	0.55	-0.23	0.44	0.77	-1.93*
Total PE support [6]	0.65	0.79	0.60	2.08**	0.59	0.81	-3.08***
1st 100 days external support							
All deals (N)	68	21	47		53	15	
Used in acquisition phase	0.78	0.81	0.77	0.39	0.74	0.93	-1.64
Used in 1st 100 days	0.34	0.57	0.23	2.83***	0.32	0.40	-0.57
Total external support [6]	0.56	0.69	0.50	2.12**	0.53	0.67	-1.36
Deals without early M&A events [4]	51	13	38		38	13	
Used in acquisition phase	0.80	0.85	0.79	0.44	0.76	0.92	-1.13
Used in 1st 100 days	0.33	0.69	0.21	3.73***	0.29	0.46	-0.77
Total external support [6]	0.57	0.77	0.50	2.56**	0.53	0.69	-1.14

Note: significance level * p<0.1, ** p<0.05, *** p<0.01
1 Professional background of partner interviewed if not mentioned otherwise in Capital IQ database, PE house website, or press articles. For deals without an interview available or if the interviewed partner is not the leading deal partner, we use the professional background of the leading deal partner from Capital IQ database, PE house website or press articles.
2 Partner with a background in banking, accounting or law
3 Partner with a background in consulting or industry
4 Deals without major M&A events during the first two years of PE ownership as reported by the PE house or as mentioned as a major strategy in the press. We classify M&A events as major if they alter sales or enterprise value by more than 20%
5 t-test of difference to mean of all other deals
6 We fill data holes for deriving subtotals with the average of the three questions answered.

Table 7 – Panel C: Interventions and initiatives [1]

The Table reports the mean score of deal involvement questions by (1) performance and (2) partner background of the deal. We further show the mean scores for all deals and deals without early M&A events separately. First, in column (1) we rank the deals by abnormal performance and show the mean score of the deal involvement for different performance terciles. Second, we show in column (2) the mean scores for partners with backgrounds in finance and in operations separately.
The upper part of the table covers plan adjustments in 1st 100 days or before. The lower part covers value creation initiatives.[7] The sample size varies per answer. [6]

	Total	(1) Abnormal perf. tercile			(2) Partner background		
		Top tercile	**Other**	**t-test [5]**	**FIN [2]**	**OPS [3]**	**t-test [5]**
1st 100 days plan adjustments							
All deals (N)	68	21	47		51	17	
Revised management plan	0.68	0.76	0.64	1	0.63	0.82	-1.5
New Key Performance Indicators	0.73	0.77	0.70	0.58	0.80	0.53	2.17**
Acted on deviations	0.56	0.50	0.59	-1.34	0.56	0.57	-0.2
Total plan adjustments [6]	0.64	0.67	0.63	0.47	0.65	0.63	0.23
Deals without early M&A events [4]	50	13	37		35	15	
Revised management plan	0.66	0.77	0.62	0.99	0.57	0.87	-1.71*
New Key Performance Indicators	0.69	0.71	0.69	0.45	0.76	0.53	1.89*
Acted on deviations	0.59	0.50	0.62	-1.55	0.59	0.58	0.73
Total plan adjustments [6]	0.63	0.66	0.62	0.44	0.62	0.66	0.19
1st 100 days value creation initiatives							
All deals (N)	74	23	51		57	17	
At least one productivity initiative	0.62	0.48	0.69	-1.36	0.58	0.76	-1.39
At least one organic growth init.	0.70	0.87	0.63	2.38**	0.72	0.65	0.57
At least one strategic repo. initiative	0.12	0.13	0.12	0.57	0.16	0.00	1.76*
Total incentives [6]	1.09	1.13	1.08	0.5	1.12	1.02	0.47
Deals without early M&A events [4]	58	16	42		40	15	
At least one productivity initiative	0.66	0.63	0.67	-0.35	0.63	0.73	-0.28
At least one organic growth init.	0.69	0.88	0.62	1.87*	0.70	0.67	0.07
At least one strategic repo. initiative	0.12	0.19	0.10	0.77	0.15	0.00	1.55
Total plan adjustments [6]	1.13	1.29	1.06	1.02	1.16	1.07	0.35

Note: significance level * p<0.1, ** p<0.05, *** p<0.01
1 Professional background of partner interviewed if not mentioned otherwise in Capital IQ database, PE house website, or press articles. For deals without an interview available or if the interviewed partner is not the leading deal partner, we use the professional background of the leading deal partner from Capital IQ database, PE house website, or press articles.
2 Partner with a background in banking, accounting or law
3 Partner with a background in consulting or industry
4 Deals without major M&A events during the first two years of PE ownership as reported by the PE house or as mentioned as a major strategy in the press. We classify M&A events as major if they alter sales or enterprise value by more than 20%
5 t-test of difference to mean of all other deals
6 We fill data holes for deriving subtotals with the average of the three questions answered.
7 Productivity initiatives are 1) purchasing (e.g., supplier consolidation), 2) process efficiency, 3) overhead reduction (e.g., in Selling, General and Admin costs), 4) other cost reduction (detailed by interview), 5) working capital reduction, 6) CAPEX reduction. Organic growth initiatives are 1) review of pricing, 2) new channels, 3) new products or new geographies.

Appendix Table A1 – EU LBO fund performance between 1994 and 2007 by fund size

Independent variables	Dependent variable: Fund IRR	
	OLS coefficient	t-stat
Fund size d_1 (0 – 25Mio)	0.10	(1.00)
Fund size d_2 (25 –100Mio)	-0.02	(-0.67)
Fund size d_3 (250 – 500Mio)	0.08	(1.57)
Fund size d_4 (500 – 1000Mio)	0.09	(1.72)
Fund size d_5 (1000Mio +)	0.08**	(2.33)
Vintage year d_6 (1994 – 1997)	0.16***	(4.29)
Vintage year d_7 (1998 – 2000)	0.11***	(2.94)
Vintage year d_8 (2003 – 2007)	0.01	(0.31)
Constant [1]	0.04	(1.63)
No. of obs.	234	
Adjusted R^2	0.07	

Note: OLS regression with robust standard errors, significance level * p<0.1, ** p<0.05, *** p<0.01
Source: Data from Thomson Financial Venture Expert
1 Base group are funds with a size between EUR 100 and 250 million (most frequent fund size) and vintage year 2001 – 2002 (most frequent vintage year category)