

Private Equity and Value Creation: Evidence from Swedish PE transactions

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Investigating the impact of restructuring measures targeting company operations and employees

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Abstract

This thesis investigates the impact of restructuring measures targeting company operations and employees on the abnormal financial performance when a Swedish PE house acquires a portfolio company. Evidence based on OLS regression analysis is complemented with qualitative data from a unique survey of PE managers. The results show that the deals in our sample underperformed their sector peers prior to PE ownership but outperformed them during PE ownership when comparing operational measures. Positive abnormal financial performance of the PE portfolio companies is associated with improvements in the EBITDA margin and measures targeting employees. Furthermore, personal characteristics of the Investment managers and their specific responsibilities within the PE houses explain deal performance. Our thesis supports the results of earlier studies that PE houses have a positive impact on the financial performance of their portfolio companies.

Tutor: Ramin Baghai

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1. Introduction

The practice of buying and controlling equity stakes in companies for a short to a medium-term holding period, called Private Equity (PE), first emerged in the United States during the 1980's. Already in 1989 Jensen predicted that takeovers, leveraged buyouts (LBOs), and going-private transactions would be the most visible manifestations of a substantial, organizational change in the economy. He also argued that LBOs create value through high leverage and management incentive programs. Jensen's arguments later became supported by for example Kaplan (1989) and Lichtenberg and Siegal (1990), who both found evidences that LBOs creates value by both improving operational performance and by changing the capital structure of the acquired firm.

The spread of PE over the coming decades was fast across the world with a huge boom during 2005-2007 where respectively €71.8billion, €112.3billion, €79.9billion in different funds were raised every year. In 2010, €20billion in funds was raised in Europe (€18billion in 2009), €41billion invested into 4 816 European business (€23billion into 4 696 business 2009) and there were 1 696 active Private Equity and Venture Capital firms managing €523 billion of European capital. In 2010, Sweden was number one in Europe in terms of PE-investments as percentage of GDP with a number of almost 0.8% (number two in 2009 with 0.43%), reporting an all-time high level. The other Nordic countries except from Island were not far behind with top six rankings in Europe.¹ (EVCA Research Statistics 2011)

In line with the broad spread and increasing importance of the PE industry, the debate around the subject has also evolved during the last decades. The debate has often concerned the real operational impact of the portfolio company. Critics accuse PE houses for buying considered unattractive companies, restructuring them to generate large profits by laying off employees, selling properties and changing capital structure to include a large and potentially dangerous amount of debt (Kaletsky, 2007). In line with this criticism, Kaplan and Schoar (2005) studied internal rates of return (IRRs) net of management fees for 746 funds during 1985-2001. They found that the median PE fund underperformed the S&P500 Index with 20% while the mean was slightly better with 10% below the same benchmark.

PE industry supporters, on the other hand, argue that many aspects of the critique are unjustified and that PE houses contribute with much more than the critics claim. Several academic studies, for example Bergström et al. (2007) and Guo et al. (2009), show that PE-owned companies outperform the industry average based on well-used metrics such as IRR and EBITDA-margin. Whether the

¹All information regarding PE funds worldwide is based on the annual report constructed by EVCA.

improvements made by the PE house are a sustainable long-term improvement is, on the other hand, still not clear. In addition, Dr. Holger Frommann, a Managing Director of the German Venture Capital Association, argues that PE-owned companies grow faster, increase firm value, create more jobs and also invest more thanks to the expertise, advice and support they receive from their PE owners (German Private Equity and Venture Capital Association 2005).

Operational improvements, market timing and change in capital structure are the three main reasons for value creation in portfolio companies according to Liechtenstein et al. (2008). Modigliani–Miller (1958) argues that changes in capital structure do not change the firm value but gives the possible benefit from an increase tax shield. Hence, leverage cannot be seen as a value creator but instead as a value redistributor. However, the market timing ability depends on the distribution of the value between investments with different market momentum. Based on these above mentioned arguments the authors believe, in line with Bergström et al. (2007) that operational improvement is the only true value creator together with inorganic growth through Mergers & Acquisitions (M&A's). Our first research question is based on this assumption:

- (1) *What is the effect of ownership by Swedish PE houses on the operating performance of portfolio companies relative to quoted peers, and how does this operating performance relate to the financial value (if any) created by these houses?*

In a recent number of The Economist (28th January 2012) the article “Bain or Blessing” cover the on-going PE debate, where the preamble raises the debate whether the PE houses decrease the employment rate by cutting jobs or not. In the article they discussed a recent NBER working paper that analyzed employment of 3,200 LBOs in the US and their results showed that PE ownership resulted in both more rapid job destruction and faster job creation than other forms of ownership structures. Based on this continuing debate our second research question is:

- (2) *In the Swedish PE houses portfolio companies, how do changes in Employment rate, resources allocated to employment related questions and changes in Board of director and/or Executive management relate to the financial value created (if any) by these houses?*

The last research question is selected due to the gap in existing research in the Nordic region regarding Investment managers' background, education level and professional experience. We aim to study how the human capital of the Investment managers affects the selected strategy for their portfolio companies and how the managers' characteristics correlate with deal performance. A similar study is written by Acharya, Gottschalg, Hahn and Kehoe (2011) where they, through data from Western Europe PE houses, investigate the human capital factors. To extend the current research the same

methodology is used but applied on Swedish PE houses and their Nordic deals. This leads us to our third and last research question:

- (3) *Are there any distinguishing characteristics of Swedish PE houses Investment managers such as background, education or experience level that are better associated with deal value creation than others and also, what strategy, organic or inorganic, do they prefer?*

To answer the first question, we collected accounting data from two years before PE ownership (t-2), the last pre-acquisition year (t) and the last year of ownership (T). A methodology is developed to calculate the abnormal financial performance by unlevering the compounded annual change in deal value and in the next step deduct the unlevered Total Return to Shareholders (TRS). TRS is a proxy for the average sector performance during the same period as the PE house held the portfolio company. OLS regressions are the method used to determine the potential impact from operational performance on abnormal financial performance.

What can be concluded is that the deals in our sample underperformed their sector peers prior to the PE ownership, which can emphasize the hypothesis that PE houses tend to acquire companies exposed to a potential negative idiosyncratic shock or financial distress. The deals underperformed the sector peers with 3.79% when comparing the median log sales and the absolute margin with 0.15%. After the PE houses had entered as owners the numbers changed to the opposite. Now the deals in the sample outperform the sector peers both comparing to the log sales and the margin with 2.00% and 0.79% respectively. We further analyze the impact of operational measures on abnormal financial performance and can conclude that the EBITDA-margin has the biggest impact on changes in abnormal financial performance. A 1% improvement in margin increases the abnormal performance with 0.94%, a regression where we controlled for size (Log EV), duration, industry- and time-fixed effects. The results are significant for both the entire sample and after dividing the sample into organic and inorganic deals.

To answer the second research question, we use the same dependent variable as for the first question: the abnormal financial performance but varies the independent variables. These are now based on answers regarding employment from the survey. To analyze and answer the second research question - What impact changes in employment rate from entry to exit, the time and resource spend on employment related issues and if a change in the board of directors or executive management – affects the financial performance, we ran regressions. Additionally, a case study based on the other employment related questions answered in the survey, further analyzed the PE houses' view and focus on employment related issues.

The results here show that the Investment managers working at the Swedish PE houses rank employment related question at position six out of nine, (Appendix E). On the other hand, the regressions results show that both change in employment rate and time spend on employment related issues have a statistically significant and positive impact on the abnormal financial performance with 0.41% and 6.13% respectively. Another interesting result is that replacing a position in the Executive management has a large and significant impact of 14.7%. In contrast, changing a position in the Board of directors has a negative impact (-11.6%).

To answer the third and last research question, we once again use responses from the survey. This time information regarding the Investment managers' background (finance or operational), education level, years within the PE industry and experience from working abroad (international) are used as independent variables. Based on each Investment manager's answers, we generated nine dummies to separate and investigate what impact, if any, different characteristics have on abnormal financial performance.

When analyzing the results we could conclude that Investment managers with a background in finance report a higher average abnormal financial performance than managers with an operational background, 3.66% against 1.65%. This effect is robust even after dividing the sample into organic- and inorganic deals. Furthermore, the average abnormal financial performance is almost the same for deals where the Investment manager has worked within the PE industry more than 7 years with the deals where the managers has less than 7 years of experience, 5.02% and 4.55% respectively.

We further analyze what impact the Investment managers background has on changes in abnormal financial performance. A total of nine regressions were run with different independent variables and they all reported that an operational background has a negative impact on the abnormal financial performance. The results show that if a manager wants to apply an organic strategy, the experience is crucial since the interaction term in Regression (9) reports 11.7% but the single term Organic has a negative number of -1.66% (however, without any statistical significance). The results are the same for an international career (-8.35% Regression (6)), which implies that if you want to be a successful PE manager you should stay in Sweden and learn how to manage operational improvements. Education has a positive and significant impact on the abnormal financial performance for deals with organic characteristics, (Regression (7) shows 4.60%). One explanation for this trend could be that an MBA focus on real case studies and educate the students in this, giving an advantage for organic deals. Finally, a background in finance has compared to a operational background, a positive impact on abnormal financial performance. This indicates that Investment managers with a finance background outperform those with an operational background, but without any statistical significance.

There are some potential limitations of our thesis. One can argue that the size of the sample ($n=53$) is a potential limitation, especially when we divide the sample into organic ($n=31$) and inorganic deals ($n=22$). Yet, we find statistically significant results for regressions including all independent variables and likewise separated for organic and inorganic deals. Another potential limitation of our method is the possibility that respondents have not accurately reported their situation in the survey. To overcome this possible problem, the survey was answered anonymously. A third potential limitation is the lack of transparency within the PE industry. This is especially essential when dealing with possible follow-on M&A's and the impact of those on abnormal financial performance. To overcome this problem the sample is separated into organic and inorganic deals to compare deals with the same characteristics.

Based on an intensive academic screening we can conclude that there are no other papers examining the exact same topic as we are. A plethora of studies have been made worldwide regarding value creation but this paper is the first to analyze Nordic deal data from Swedish PE houses combined with an unique survey answered by 122 Investment managers from the selected houses. This novel approach, combined with our hand-collected dataset gives our study an opportunity to bring something new to the world of research.

This paper proceeds as follows: In Section 2, a literature review will be presented. In Section 3, the data collection process is described and Section 4 explains how we developed our methodology. In Section 5 we report an analysis of the results regarding the impact of operating performance, changes in employment related questions and human capital factors on abnormal financial performance. Results from the robustness test are also presented. Finally in Section 6, conclusions and further research question is discussed as well as limitations of the study.

2. Related literature

The amount of research on the subject of Private Equity performance is very extensive, partly due to the heated debate surrounding PE. Another reason is probably the huge spread of the Private Equity industry during the last couple of decades with the financial crisis in 2009 as the all-time high when it comes to amount invested in Private Equity funds. Even though the research can be seen as quite extensive there is still a lot of questions and doubts whether or not the PE houses creates value for their portfolio companies. The reason might be the fact that existing research regarding value creation within the PE industry are not in line with each other.

In the early years of the Private Equity industry, studies were both focused on operational performance but also on whether the potential financial gain was at the expense of the workers who had to resign. The studies took off by discussing cost cutting and changes in employment rate but switched later on towards the impact from operational measure. The first studies showed that the positive abnormal financial performance were not due to either laying off employees or lowering their wages (Kaplan,

1989; Smith, 1990; Lichtenberg and Siegel, 1990). These papers were followed up by Jensen (1989), where he argues that PE ownership is superior for public corporations since it can reduce the agency problem between the dispersed owners and the managers of the firm. He continues to argue that this dispersed ownership makes it easier for the managers to avoid tough decisions such as firing employees or reducing wages. With PE ownership these problems can be reduced thanks to their concentrated ownership, implementation of incentive programs and increased leverage (Lesile and Oyer, 2009). Increasing leverage can in contrast also create cost problems and increase the bankruptcy risk (Andrade and Kaplan, 1997; Strömberg, Hotchkiss and Smith, 2012) and in the next step force the owners to slim down the organization and as a result fire employees. Even if reduced wages and laying of employees are difficult to implement due to governmental regulations and/or collective agreements, a bankruptcy risk from for example a dangerously high amount of debt can be seen as an increased unemployment risk.

However, not all studies show that PE ownership has a negative effect on the employment rate. Newer studies instead showed that PE houses focus much more on operational improvements than just cutting costs as argued in the beginning of the PE era (Kaplan and Strömberg, 2008; Boucly, Sraer and Thesmar 2011). The last mentioned authors argue that PE ownership is just another source of capital that can be used to accelerate the firm growth and therefore also the employment rate. This is true if the firm was financially constrained before the buyout and there is a great deal of reasons to believe that PE ownership can relax firm financial constraints. They discussed further that the PE houses probably have better internal connections and more experience dealing with larger banks and therefore have better access to lend money as capital to invest with, an access which may provide a better and lower interest rate. In addition they are more likely to reinvest their money instead of paying dividend due to tax reasons and their short-term focus and exit planning. Thanks to this, the portfolio company can be more resilient to a negative profitability shocks and therefore reduce unemployment risk.

Operational improvements as a valuation metric play a central part in the PE industry when time for exit often is expressed in ratios of EV (Enterprise value) to EBITDA (Earnings before interest, tax, depreciation and amortization) or EV/EBIT. Hence, if the PE houses manage to increase their operating profitability measures their portfolio company is more likely to be sold at a higher value and in the next step generate higher return to the fund investors. Operational improvements during the holding period are thus very central for the PE houses (Acharya, Gottschlag, Hahn and Kehoe, 2011; Guo, Hotchkiss and Song, 2009). Bergström (2007) took the argumentation one step further when saying that operational improvements are the *only* true way of value creation.

The results between those studying operational improvements in buyouts differ as well but most of them have found improvements during the holding period (Kaplan, 1989) and based on Swedish data by Bergström, Grubb and Jonsson (2007). Lerner, Sorensen, and Strömberg (2008) provide evidence

with a sample of 495 buyouts that PE ownership actually increase even long-term innovation and not only have the short-term incentives which opponents accuse them for.

What should be mentioned is that not all evidence points in the same direction. Guo, Hotchkiss and Song (2009) showed when analyzing 94 US buyouts between 1990 and 2006 that the operational performance is not statistically different from the observed benchmark. Similar results were found over the same period in the UK (Weir, Jones and Wright 2007). Also, when comparing portfolio companies to public companies, Leslie and Oyer (2009) only found weak or non-existent evidence for increased operational profitability.

When screening the related literature on human capital factors and its impact on the strategy applied in each of the PE houses portfolio companies, there are gaps especially for the Nordic region. Kaplan, Klebanov, Mark and Sorensen (2008) analyzed the relationship between the CEO's skills and the success of the buyout. They provided evidence that there is a relation between the execution skills and the success of the buyout but not between the interpersonal skills and the success of the buyout.

There has been written one, for our thesis particular important study. The fact that PE Investment managers seem to add value to portfolio companies by applying skills they have learned over time is something Acharya, Gottschlag, Hahn and Kehoe (2011) provided evidence for. They examined deal-level data from 395 PE deals in Western Europe during 1991-2007 and showed that partners from the PE house with an operational background (ex-consultants or ex-industry-managers) involved in a deal generally generated a higher abnormal financial return when they applied an organic strategy (focusing only on internal value creation). They also showed that the opposite goes for deal partners with a finance background (ex-bankers or ex-accountants) since they seemed to outperform financially when applying an inorganic strategy (M&A activity).

To our knowledge, no similar study is done in the Nordic region, which is the reason why we chose to analyze the link between financial performance of the buyout and human capital factor. This can be essential to understand as quoted below:

“...there is a need to understand the human capital expertise that successful PE firms require. There appears to be a need to broaden the traditional financial skills base of private equity executives to include more product and operations expertise.”

Cumming, Siegel and Wright (2007)

3. Data collection

This section begins by describing the chosen theoretical framework, continuing with data collection of the dependent variable abnormal financial performance and the selected accounting metrics in order to measure operating performance. The section further continues with describing the survey and finally the quoted sector peer groups.

3.1 The Theoretical framework

The chosen theoretical framework is based on previous studies found at the online databases Google Scholar, Science direct and Social Science Research Network Financial covering full scholarly journals and previous papers written by reputable authors. The research started by screening relevant academic thesis and articles to form an overall understanding of the industry and topical discussions. From the screening process a reference lists and relevant sources was gathered. Based on careful screening of information we found empirical studies focusing on the operating performance impact on abnormal financial performance. Other studies focusing on potential explaining variables affecting abnormal financial performance such as employment related questions and human capital was also found and is nearby what we aim to examine.

3.2 Data Collection

Our data sample is constructed from Swedish PE houses, which have exit Nordic buyouts between the years 2001-2011 (Appendix A). This period made it possible to study the portfolio company performance two years before PE ownership to compare both prior and during PE ownership relative to selected peers.

The *deal data* was collected by screening all PE houses connected to Swedish Private Equity & Venture capital Association (SVCA), (Appendix B).² To make the sample as homogenous as possible the dataset was constraint to deals exited in the Nordic countries. Differences within country laws, taxes and employment rights are all variables affecting homogeneity. Due to the lack of reported deal values only 76 realized deals from 20 out of 32 PE houses were collected. To control for the effect that industries perform differently, the deals were divided in to five sectors: *Retail/Consumer goods, IT, Medical, Manufacturing, and Service* (Appendix A).

The deal value (price at entry and exit) and what strategy the PE house used for each portfolio company (organic vs. inorganic) was collected from the databases Zephyr and Mergermarket. The dataset was restricted to deals where the PE houses acquired and owned at least a 50% stake during the full investment period. This is to minimize the risk for using data where a PE house acquired a smaller amount of shares with little or no impact on performance and strategy. The collected deal

² Counted for 32 different Swedish PE houses

value data was complemented manual with information from the PE houses websites. Only 53 deals were left when further constraining for deals including both entry and exit value. The PE houses are not obligated to display the deal value as long as they go private to private (which they tend to do), making the data much harder to find. As for the corresponding peer group the variable Total Return to Shareholders (TRS) is used as a proxy for performance between industries with data collected from DataStream, one for each sector.³ TRS is used as a proxy in a great deal of PE performance studies, for example Acharya, Gottschalg, Hahn and Kehoe (2011).

To continue, the *accounting data* for each selected deal was collected from a number of databases: Orbis, Zephyr and Mint global, complemented with Retriever and Affärsdata for deals situated solely in Sweden. The accounting data were doubled checked with annual reports from the portfolio companies' own websites and the library basement on Saltmätargatan, a very important but time consuming procedure.⁴ The accounting data ranged between two years before entry (t-2), to exit day (T), the years 1995-2011. After finishing the data collection the reported variables are: Sales, EBITDA, Cash flow and Enterprise value for the periods (t-2), (t) and (T) and finally Employment rate between entry (t) and exit (T) (Table 3, Panel B).

For the second and third research question we created a *survey*, which was sent out to Investment managers working at the selected Swedish PE houses. We used Qualtrics to create a survey containing 24 questions divided into two parts⁵, (Appendix F). To study the characteristics affecting abnormal financial performance the last question ending the survey answered what company they worked for and what deal/deals they had been involved in. This extension made it possible to receive answers not available in any Swedish database or website. 334 e-mail addresses was collected manually and after 3 weeks when closing the survey, 122 (36.53%) Investment managers had answered.

Furthermore, to hedge against the effect that certain industries perform better than others during different time period, *Peer groups* were constructed. The same breakdown as for our deals were used: *Retail/Consumer goods, IT, Medical, Manufacturing and Service*. The accounting data for each sector was downloaded manually from DataStream to further perform as homogenous peer groups as possible. As for the accounting data used for our deals, three areas of data were collected: Sales,

³For each deal, one average TRS is calculated based on the same years as the PE house held the corresponding portfolio company.

⁴By studying the annual reports as a double check we could establish a better picture of what happened with the portfolio companies during the holding period: If the PE house for instance changed the amount owned in the company, completed any merger or acquisitions or just changed the company's name. It also worked as an extra check if the collected numbers were correct.

⁵The first part focused on questions answering the second thesis question regarding *Employment related issues*. The second part focused on the third thesis questions regarding the *Human capital* and questions related to investment style (inorganic or organic).

EBITDA and Enterprise Value.⁶ For further description of our search criteria's for the corresponding sectors peers, see Appendix D.

4. Methodology

In this section the objective with the thesis is described and continues with reporting the selected methodology.

4.1 The objective

The objective with this thesis is to study what measures impact the abnormal financial performance when PE houses realize their investment in a certain portfolio company.

As stated in the Introduction, three different research questions⁷ will be answered, where each focus on how much, if any, different independent variables affect abnormal financial performance. The two main statistical methods used in this study are OLS regressions and a case study. The regression analysis, analyzing variables relationship between a dependent variable and one or more independent variables, is used to answer all three research questions. With these regressions we aim to draw conclusion of what type of operational measures that have the biggest impact on abnormal financial performance in our sample. We also want to examine what kind of characteristics of the Investment managers and employment related questions that leads to an increase in abnormal financial performance and which do not. Four control variables are used: Duration, Log EV, Industry, and Entry period and performed fixed effect for industry and time. Fixed effects methods completely ignore the between-industry variation and focus only on the within-industry variation. This is useful in our data sample where there is great variety in the characteristics between the industries. The time fixed effects used, further exclude correlations between years.

The case study is used to, in a more qualitative way to understand what the Swedish PE houses believe is important when trying to improve their performance and how they allocate their internal resources. These answers can hopefully later be matched with the results from the regressions and answer both part one and two in research questions two.

4.2 The measure of abnormal financial performance

After gathering the data as described in Section 3 the *dependent variable* – abnormal financial performance based on deal value - was generated. Internal rate of return (IRR) is another common

⁶After downloading the data we calculated average change/growth in percentage for each peer group and year. We matched the sector peer result with the corresponding deal by calculating the average value for the sector during the years the PE house held the corresponding portfolio company.

⁷The three research questions are: Operational performance, Employment related issues and Human capital factors effect on abnormal financial performance.

measure of PE houses calculated return. Lately, IRR has been questioned whether or not it is the best way to compare PE houses since two firms rarely calculate IRR in the same way (Peter Morris 2010). Some authors also mean that IRR can overstate the return the investors actually realizes (Ludovic Phalippou 2011). Based on these arguments and the limited access to available data to calculate IRR, the measure used when comparing the abnormal financial performance is based purely on the change in deal value from entry to exit.

To disentangle the effect of the financial performance that comes from pure financial leverage and that comes from genuine operational improvements the deal value is unlevered. This will further exclude the effect that some industries, for instance a company that operates in the machine tool industry will have a higher debt capacity than a company in the software industry and could as follows have a higher leverage. The formula below was used to unlever the main component for abnormal financial performance; $\Delta Unleveraged\ CAGR$ and $\Delta Unleveraged\ TRS$ from (T-t)

$$R_{Ui} = \frac{R_{Li} + R_{Di} * (1-t) * (\frac{D}{E})}{(1 + (\frac{D}{E}))}$$

R_{Li} is the leverage return for each deal in our sample. The ratio D/E and average tax rate are proxies from People Stern NYU Education⁸. One proxy for each industry is calculated due to limited access of this information for our selected deals in the sample. Furthermore, since the Swedish PE houses do not report their average cost of debt, R_{Di} , the intra-bank rate collected from each country's Central bank is used⁹.

The dependent variable is calculated with the formula:

$$\Delta_{T-t} Abnormal\ financial\ performance = \Delta_{T-t} Unleveraged\ CAGR - \Delta_{T-t} Unleveraged\ TRS$$

The final step is to separate organic and inorganic deals with a dummy variable. This is to distinguish the different effects on the performance measures between the two strategies and as mentioned above, avoid comparing groups of different characteristics.

4.2.1 Operational performance in the portfolio companies

After generating the dependent variable we continued with our first thesis question. “How much of abnormal financial performance (deal value) could be explained from operating performance?”, an

⁸Our calculated proxies for D/E ratio, based on the information from People Stern NYU Education is also double-checked with the table in the financial textbook “Corporate Finance” from Berk & DeMarzo, 2007, pp. 476.

⁹The average cost of debt R_{Di} was calculated from the average intra-bank rate (1Y) between each deal's holding period. We separated for countries and downloaded, Euribor, Stibor, Nibor and Cibor from respectively country's central bank between the years 1997-2012, (except from Finland (Euribor) which was N/A until 1999 when EU was introduced).

issue that can be shown in two ways. Either you compare the operating performance *during* PE ownership with the performance of the firm *pre-acquisition* or one analyzes the operating performance *during* PE ownership compared to sector peers. Both this approaches will be analyzed in this thesis.

The method used to analyze the impact of PE ownership *during* PE ownership is to compare the three different operational measures with the corresponding sector peer to see if they outperform the industry, ($\Delta X_{\text{During } T-t} = \Delta X_i - \Delta X_s$).

The three measures analyzed in detail are:¹⁰

Log sales, is equal to the growth in operating revenues or turnover. Two variables are used, *pre sales* and *during sales*. *Pre sales* are the log annual growth in sales between two years before entry (t-2) to the last pre-acquisition year (t). The second variable *during sales* shows annual growth during the holding period (T-t).

EBITDA-Margin, is equal to (Earnings before Interest, Taxes, Depreciation and Amortization)/sales. Annual growth in EBITDA-margin is created by dividing with the number of years of PE ownership (duration) for both *pre* and *during*.

EV-multiple, is the Enterprise value divided by EBITDA and subsequently calculate the average annual differences between years (T-t) by dividing by the duration.

The same procedure was made for each sector peer group on each variable with data from DataStream. For further descriptions of the variables, see Appendix C.

4.3.2 Employment related issues and financial performance

The second focus in this thesis is to study changes in Employment rate and additional employment related questions (the independent variables) on the same dependent variable as used in research questions one. From the survey, five independent dummy variables is created¹¹ and an OLS regression method is used to study the strength and direction of the possible effect a certain independent variable has on the abnormal financial performance.

4.3.3 Human capital - Investment managers' background

To answer the last research question the survey sent out to Investment managers working at the selected PE houses was used. The purpose of the survey was to receive more information about the Investment managers' background, education and experience level to further study correlations

¹⁰ Since the currency differs for all deals we convert them all to € with the exchange rate from the 1st of January the entry year and exit year.

¹¹ Changes in employment rate, time spend on employment related questions, if they offer some kind of training/education and lastly if they change Executive management and/or Board of directors in the portfolio companies.

between Investment managers' characteristics and abnormal financial performance. We still analyze explaining factors for abnormal financial performance (the same dependent variable) and therefore again vary the independent variables.

From the survey nine different variables were created¹² and further described in Appendix C. These variables are dummies (binary) with potential effect on abnormal financial performance.

5. Analysis

In this section we aim to analyze abnormal financial performance to answer our three research questions. This through the two common statistical methods: a case study and an OLS regression analysis. We will start by analyzing the operational measures on abnormal financial performance, continuing with changes in employment rate and finally end with Investment managers' background on abnormal financial performance. To examine whether our results are robust or not a test will end this section.

5.1. PE houses' impact on operating performance

In this section sales growth, EBITDA-margin and EV-multiple and their effect on abnormal financial performance prior to and during PE ownership are analyzed. These variables show how the portfolio company has performed during the holding period but can also be seen as an indication of the company's attractiveness. Sales growth for instance, could give us a picture of what situation the company is situated in and also what the PE house seems to focus on improving. Is the portfolio company generating business or just cutting cost? Some might argue that cost cutting is not a long-term sustainable solution. The EBITDA-margin, a measurement for a company's operating profitability, could further explain the company's attractiveness. The EBITDA measure excludes interest, taxes, depreciation and amortization, resulting in a margin that could give investor a clearer view of a company's *core* operational profitability. The EBITDA-margin is a useful measure to evaluate the PE industry, as for many others, because it excludes the effect from taxes that could vary between industries, funds and countries. It is a pure operational profitability measure. An increase in EBITDA-margin is a good indicator for a successful work and a more profitable operation. Running regressions will clarify, if statistical significance is present, both how much and if the abnormal financial performance could be explained from operating improvements.

The final variable with a potential explaining effect on abnormal financial performance is the EV-multiple, a multiple commonly used to determine the value of a portfolio company. The EV-multiple takes debt into account compared to measures like Price/Earnings, which is the reason why it is used

¹² The nine different variables created: Background Operational, Background Finance, Background Operational*Organic, Education, Experience PE, Background Finance*Inorganic, Background Finance*Organic, Experience PE*Organic, and International (further described in Appendix C).

from a potential acquirer perspective. In this thesis the EV-multiple can be useful to show a potential acquirer the changes in attractiveness for the portfolio company during the holding period and hopefully increase the value of the company looking from the PE house perspective. The multiple could also be useful for transnational comparisons since it ignores the distorting effect of individual countries' taxation policies (Investopedia 2012). This is useful since the dataset have deals from Finland, Sweden, Norway and Denmark.

The reason why changes in EV-multiple $\Delta x_{i(T-t)} = x_{iT} - x_{it}$ divided by the number of holding years (T-t) is used in the regressions instead of log EV-multiple has to do with multicollinearity. Using the Farrar-Glauber test we found multicollinearity between the log EV-multiple and both the size variable (Log EV)¹³ and change in EBITDA-margin¹⁴. Multicollinearity was found for Log EV¹⁵ but not for changes in EBITDA-margin¹⁶ when testing the EV-multiple calculated as changes in absolute numbers. Log sales report no multicollinearity neither with change in EV-multiple in absolute numbers¹⁷ nor log EV-multiple¹⁸. Based on these tests, the change in EV-multiple in absolute numbers is used as the independent variable in the regression analysis.

Our hypothesis here is that there will be a positive impact from the operating performance in the portfolio companies on abnormal financial performance, relative to the sector peers. We hope to provide evidence that higher abnormal financial performance is associated with a stronger operating improvement in all operating measures; log sales, EBITDA-margin and EV-multiple. By performing regression studies both how the variables affect abnormal financial performance and if so, in what direction and magnitude will be observed.

Table 5, Panel A provides information regarding the operating performance for our sample deals *prior* to PE entry as well as for the selected sector peers during the same period. The two reported operating performance measures, sales and margin (x), are calculated as $(\Delta x_{i,pre} = x_{it} - x_{it-2})$, from two years prior to PE ownership to the last year prior to the acquisition. The annual change is calculated by dividing with the number of years (duration). The exact same method is used for the corresponding sector peers, $(\Delta x_{s,pre} = x_{st} - x_{st-2})$, where (t) and (t-2) are based on the average performance for all different sector peer groups during year (t) and (t-2) respectively. Median is used since the sample in the study

¹³ The H_0 , that there is no multicollinearity could be rejected at a P-value 0.0014 (margin), indicating multicollinearity for the two tested variables.

¹⁴ The H_0 , that there is no multicollinearity could be rejected at a P-value 0.0499 (margin), indicating multicollinearity for the two tested variables.

¹⁵ The H_0 , that there is no multicollinearity could be rejected at a P-value 0.0118 (margin), indicating multicollinearity for the two tested variables.

¹⁶ The H_0 , that there is no multicollinearity could not be rejected at a P-value 0.8735 (margin), indicating no multicollinearity for the two tested variables.

¹⁷ The H_0 , that there is no multicollinearity could not be rejected at a P-value 0.3266 (margin), indicating no multicollinearity for the two tested variables.

¹⁸ The H_0 , that there is no multicollinearity could not be rejected at a P-value 0.6957 (margin), indicating no multicollinearity for the two tested variables

is not perfect homogenous¹⁹, which is often the case when using samples with fewer than 100 companies. The median change in deal log sales *pre* acquisition is 5.23% while the mean is 10.8%, compared to the sector median of 9.02% and mean 9.05%. The change in deal EBITDA-margin *pre* acquisition has a positive median, 0.34%, but a negative mean, -0.55%. The sector peer shows the same pattern with a median of 0.49% and mean -0.57%. From these numbers, one can see that the sector peers outperform the portfolio companies prior to the PE ownership, which is in line with the general perception that PE houses search for undervalued companies struggling with their performance. This gives the PE houses a better chance to actually improve the company's performance and hence try to increase the valuation of the company when it is time for an exit rather than if they acquire an already blooming and efficient company.

Table 5, Panel B reports the changes in all three operating performance measure *during* PE-ownership but in different approaches. Log is used to analyze the annual growth sales and annual growth in EV-multiple and changes in absolute number for EBITDA-margin and EV-multiple. To capture the change in EBITDA-margin and EV-multiple the difference is calculated between the last PE-ownership year (T) to the last year prior to the acquisition (t) ($\Delta x_i = x_{iT} - x_{it}$). The annual change is calculated by dividing the differences with the number of holding years (T-t). In columns (i) results for the entire sample of 53 observations are reported, in column (ii) for all organic deals (n=31) and in column (iii) for all inorganic deals (n=22) hence, analyzing performance depending on strategy. Organic deals focus only on internal value creation compared to inorganic deals, which have had some sort of follow-on M&A activity during the holding period. This gives us the chance to control for either internal value creation for sales, margin and multiple or the effects of M&A events, which increase sales and could either increase or decrease margin and multiple depending on how the acquisition targets initial performance stands in the respective measure.

The conclusions found from comparing Table 5 Panel A and Table 5 Panel B reports, first of all that PE ownership in general tend to have a positive impact on operating performance. Secondly, PE owned portfolio companies in our sample tend to outperform their sector peers. In column (i) in Table 5, Panel B the results shows that the PE houses seem to have outperformed their sector peers in all four different operational measures. The median difference in log sales between the deals and the peers is 2.0% (8.35% and 6.35% respectively) and comparing the differences in margin, it shows 0.79 percentage points. Our reported margin improvement is not in line with Kaplan's (1989) reported numbers, 1.4%-3.8% when comparing the median, but more in line when comparing the means, 1.96%, (2.14% and 0.18% respectively).

¹⁹There are some deals with extreme values that increases/decreases the mean even after the all values are winsorized. Due to the circumstances, median is used to compare the results.

An organic strategy tends to have a higher median growth in sales (9.20%) compared to an inorganic strategy (7.67%) and the entire sample (8.35%) as showed in Table 5, Panel B, Row 1. The opposite is the fact for the margin, where inorganic deals have the largest annual increase in margin, 1.38% and organic has the lowest, 0.46%. Conclusions can be drawn that an organic strategy is preferable if the PE house want to increase the portfolio company's revenue and an inorganic strategy if margin improvements are more desirable.

Both the entire sample and organic deals report positive median changes in the EV-multiple (0.25% respectively 0.55%) compared to inorganic deals that reports a negative median changes in EV-multiple of -0.22%. This is in line with the results in log EV-multiple where both the entire sample and organic deals additionally reports positive numbers (2.38% respectively 10.9%), but in a higher magnitude and inorganic deals as well reports a small negative growth with a median of -0.28% for the log EV-multiple. These numbers shows that the portfolio companies (from a PE house perspective) could possible generate a higher deal value when exit (for the entire sample and organic deals), since the increase in EV-multiple could indicate a higher attractiveness for the companies.

Another interesting finding is that organic deals outperform their sector peers more than inorganic, 2.63% vs. 1.62%, for log sales and the opposite is the fact for EBITDA-margin. To note is that inorganic deals outperform their sector peers with 1.59% and organic deals outperform their sector peers with only 0.33% for EBITDA-margin. This is in line with the earlier reported results that the best way of improving the margin is by using M&A activity, which is what we call an inorganic strategy. Disregarding the effect if any M&A activity has been done (analyzing the entire sample), the PE houses on average outperformed their sector peers. The most successful strategy for our sample differs depending on what measure they value the most but as reported in Table 4, abnormal financial performance when applying an organic strategy is significantly larger than the abnormal performance for deals with an inorganic strategy.

When analyzing the differences between the portfolio companies operational performance *pre* PE ownership and the performance *during* PE, reported in Table 5, Panel C, both sales growth and margin have increased since the change in ownership structure. The median outperformance of growth in sales is 2.91% but the results seem to vary among the deals. Also, the absolute margin has increased with a median of 1.87% showing that the PE houses in our sample have on average managed to impact the profitability in their portfolio companies in a positive way. When studying the differences between the organic deals and the inorganic deals the results vary. The biggest impact on margin is related to the inorganic deals (only nine available²⁰) that reports a median increase of 4.35% compared to 1.11%

²⁰Not all deals have accounting figures in year (t-2), which make it impossible to show the differences between pre and during ownership for those.

for organic deals. Even though the difference is not huge one might still be able to conclude that it is easier for the PE houses to increase margin by practice M&A activity. The opposite is the fact for the growth in sales where an organic strategy tends to increase the growth in sales significantly more. The median increase in sales for organic deals is 6.37% but negative with -0.48% for inorganic deals.

5.1.2 Abnormal financial performance and operating performance

In this section the relationship between the operational performance and the abnormal financial performance is identified and reported in Table 6. More specifically, we regress our unlevered abnormal financial performance on log sales, increase in EBITDA-margin and changes in EV-multiple.

Unlevered Abnormal Financial Performance

$$:= \varphi + x' + \theta_1 \Delta x_i - \Delta x_s \log \text{ sales} + \theta_2 \Delta x_i - \Delta x_s \text{ margin} + \theta_3 \Delta x_i - \Delta x_s \text{ multiple} + \varepsilon$$

All operating measures in the regression are calculated as the value above sector peers, $(\Delta x_i - \Delta x_s)$. This is done because we want to exclude the factor of luck that the PE house acquired the portfolio company at the right time when margins and multiples in the sector were generally growing and not because they actually improved the performance themselves. Column (i) present results for the entire sample, while column (ii) reports for organic deals and (iii) for inorganic deals. For all three categories, one regression result with Duration (2), (5) & (8) as an independent variable and one result without are reported. To further test for significant results control for both duration and size (at entry) is used in Regression (3), (6) & (9). In order to control for time and industry fixed effect we use time and industry dummies for each regression.

All three operating performance measures show significant results and an impact on abnormal financial performance in a positive and economically meaningful way. In Regression (3) a 1% change in $\Delta x_i - \Delta x_s$ margin increases the abnormal financial performance with roughly 0.94%. Both the abnormal changes $\Delta x_i - \Delta x_s$ in log sales and $\Delta x_i - \Delta x_s$ multiple as well appear to be determinants of abnormal performance but in a slightly lower magnitude, with only the last variable reporting a significant value.

For organic deals, Table 6, Regression (4), all three operating measures reports a positive impact on abnormal financial performance. However, only two out of three show significant results. The two with significant result, improvement of EBITDA-margin and EV-multiple, shows that a 1% change in the two measures impact the abnormal performance with 1.94% and 0.32% respectively. When including Duration and size in our regressions lower significance level are reported. Studying log sales in Regression (1) and (2) compared to Regression (3) we receive a P-value=1 for the third regression. A situation that could be due to multicollinearity between log sales and Log EV. The Farrar-Glauber

multicollinearity test is used to evaluate that assumption and the results showed that log sales and Log EV (size) correlates and therefore remove the significance and increase the P-value²¹. However, there is an improvement in Regression (6) and (9) when including Log EV but the P-value is still too high >0.35 and therefore insignificant. This leads to the conclusion that Log EV is not a good control variable for log sales and results without are therefore also reported.

Furthermore, the deals with an inorganic strategy are analyzed. Regression (9) including both Duration and Log EV reports a significant result showing a negative impact for the first time. Here, a 1% improvement in EBITDA margin above sector increases abnormal financial performance by roughly 1.30%. A 1% change in the EV-multiple above sector peers decrease abnormal performance by roughly -1.77%. The results regarding log sales above sector peers do not show any significant results, which could be explained from the lower number of observations compared to the organic deals and as discussed above, multicollinearity with Log EV. These results are supported by Regression (7) and (8) including different control variables.

Based on the general result from the entire sample the most efficient way of increasing deal value is to focus on improving the EBITDA-margin. The result is equivalent for both an organic strategy as for an inorganic strategy. Growth in sales has also a positive impact on change in abnormal financial performance but in a much smaller magnitude. Finally the changes in EV-multiple provides a positive impact studying the entire sample. This is something not very surprising since a company's value often is expressed in different EV-multiples and the portfolio companies in our sample has on average increased the value of their company, (median 16.3%, Table 3, Panel A). This in general implies an increase in the EV-multiple.

5.2 Abnormal financial performance and employment related questions

The next step in our thesis is to analyze the effect on abnormal financial performance, if any, from changes in employment related questions. Does PE houses increase or decrease the employment rate, is it common with movements between important positions within the portfolio company and does PE houses offer some kind of training portfolio company's employees? These can be seen as interesting questions since there are many prejudices and debates regarding PE houses way of working with cost cutting and changes in employment rate.

Our hypothesis is based on Dr. Holger Frommann's, a Managing Director of the German Venture Capital Association, argumentation that PE houses rather create than destroy jobs in their portfolio companies. We aim to prove that this is a correct assumption and by that refute the general perception in the society partly supported by The Economist article (28th January 2012) saying that the PE

²¹The H_0 , that there is no multicollinearity is rejected at a P-value of 0.0255, indicating that there is multicollinearity.

industry destroys jobs. We assume that a change in employment rate has, in the next step, a positive effect on the abnormal financial performance. A continuation of our hypothesis is that the time spend on employment related questions from each PE house will have an positive impact on change in the abnormal financial performance and the same goes for the amount of training given to the employees. We finally assume that changing positions in Executive management and/or the Board of directors within the portfolio company will have an impact on abnormal financial performance.

Necessary data on employment related questions are collected in two ways. First, changes in employment rates are collected from the accounting data. The more qualitative information about for example resources spent on employment questions and training offered is based on the survey answers. The survey was sent to 334 Investment managers working at the selected Swedish PE houses and three weeks later, 122 managers had answered. Since the Investment managers answering the survey also answered which deals they have been involved in, a match between the answers regarding employment and the specific deals were possible. When the matching was completed dummy variables based on the answers from these questions was created.²² To analyze the potential effect, regressions were performed with our dummies and Δ Employment rate on abnormal financial performance. When running these regressions both time dummies and industry dummies were included in order to control for time- and industry fixed effects.

$$\text{Unlevered Abnormal Financial Performance} := \varphi + x' + \theta_1 \Delta \text{Employment rate} + \theta_2 \text{Time spend} + \theta_3 \text{Training} + \theta_4 \Delta \text{Executive mgmt} + \theta_5 \Delta \text{Board of directors} + \varepsilon$$

Analyzing the results 38 out of the 53 deals increased the employment rate during the holding period and only 14 decrease it. The average change in employment rate per year during the holding period has a mean of 10.5% compared to the median of 7.41%. This is in line with our hypothesis that PE houses create jobs but if it is really due to skills and knowledge from the PE houses or just an effect from a booming industry is still not clear.

In Table 7 the results whether changes in employment rate actually has any significant effect on the abnormal financial performance are reported. As reported in all regressions the changes in employment rate only has a small but a positive and significant effect on the abnormal financial performance. Time spend on employment related questions, on the other hand, has a large and significant effect (when the control variable for size is not included). Based on this, we prove through the Farrar-Glauber multicollinearity test that time spend on employment related questions and size correlates and therefore remove the significance and as a consequence increase P-value²³. The dummy

²² The questions answered were: “How much time do you spend on employment regarding questions in the portfolio companies over the course of a month?”, “Have you offered the employees in the portfolio company some kind of training/education during the holding period?”, “Did you do any changes in the board of directors in the portfolio company?” and lastly “Did you do any changes in the executive management in the portfolio company?”

²³ The H_0 , that there is no multicollinearity is rejected at a P-value of 0.0040, indicating that there is multicollinearity.

Time spend shows that if a PE house allocate at least two days a month they could higher their abnormal financial performance with 7.61%, Regression (1). These results are supported by all the other regressions reported in Table 7, for example Regression (8) where all variables except size are included report a statistical significant result of 6.13%.

Table 7, Regression (3) & (4), reporting the same regressions but with one added independent variable; if the PE house offers any training or education to the employees in the portfolio company. This variable does not affect the values of the other two independent variables but shows that training has a negative effect on the abnormal financial performance. Notable is that this result is not statistically significant.

In Table 7, Regression (5)-(9), results including dummies whether the PE houses replaced anyone sitting in the Board of directors or the Executive management are reported. The only statistically significant result given from those two are the dummy representing changes in the Executive management. What is interesting in our sample is that a replacement of a person sitting at an Executive management position will have a large positive impact on the abnormal financial performance. A change in the Executive management affects the abnormal performance with 10.8%, Regression (9) including all control variables. A potential reason for the high reported numbers could be due to the fact that almost every deal reported a change in the Executive management combined with a majority of the deals had a positive abnormal financial performance. Another potential reason for this big impact of changing a person in the Executive management could come from the PE house managing to hire competent, professional and experienced people with the right skills set for that specific task and company.

Generally, the length in years the PE house holds the portfolio company (the independent variable Duration) has in these regressions a negative and significant effect on abnormal financial performance with -1.10% for Regression (7). Another general conclusion is that spending time on employee related questions seems to be a sufficient way of allocating resources if improving the financial performance is the overall goal.

When creating our survey one predetermined usage was to perform the regressions but another was a more qualitative case study of how Swedish PE houses essentially work with and values questions concerning the employees in their portfolio companies. From this qualitative case study some interesting results are found. Except from “Changes in cash holdings”, “Changes in capital structure” and “Changes in amortization & depreciation”, “Questions regarding employee/ employment” is the one where the least resources are allocated to, based on average numbers. Looking at that specific question, 55 respondents out of 80 ($\approx 69\%$) spend *less than one day* in the course of a month on

employment related questions in the portfolio companies. This finding is of course very interesting since the results in all regressions concerning employment shows that time spent on this function has a large impact on the abnormal financial performance. What is also interesting to notice is that 63 out of 81 ($\approx 78\%$) respondents believe that they should devote *less* or *the same* amount of resources to employment related questions. This can be interpreted as if the PE houses is not aware of the importance of this function when to increase their financial performance. On the other hand, 19.8% of the respondent's think they should allocate "*more*" or "*much more*" resources into employment questions and the variety in the answers between the respondents is very small. The statistics reports a variance of only 0.41, a level in line with the answers to most of the other questions. What can be interpreted is that the Investment managers at the selected PE houses believe that the allocation of resources they do is solid and in order. An average of 72.8% believe that they should continue to allocate the same resource to each mentioned function for their portfolio companies.

When further asking them to rank how important questions regarding employment/employees in the portfolio companies are in relation to eight other types of functions, (for example M&A activity, capital structure and corporate governance issues) employment was ranked at position six out of nine (Appendix E). The most important function when asking the Investment managers is operational improvements and the least is changes in amortization and depreciation. *Operational improvements* are ranked as top 3 at 80.5% of the answers and *changes in amortization/depreciation* is ranked at the bottom 3 at 79.0% of the answers. *Investment related decisions for the portfolio company* (M&A activity) is ranked at a top 3 position 59.3% of the answers. Notable is also that 55.0% of the Investment managers think that the time spent on each function differs a lot depending on what industry the portfolio company is operating in. 17.5% thinks it does not matter what industry they work with and 27.5% neither agree or disagree regarding this question.

Interesting to conclude is also the fact that even though the Investment managers rank operational improvements as number one out of nine and employment related questions at position six the results from the regressions shows the opposite. Even if operational improvements have a positive impact on the abnormal financial performance as well, especially from an increase in the EBITDA-margin, it is not in the same range as if they increased the time spent on employment related matters.

Analyzing what kind of changes (related to the employment questions) the PE houses actually do within their portfolio companies the answers received was very definite. Changes in the Board of directors are done in 93% of the cases and in 97% when it comes to changes in the Executive management if they done any changes at all. So, the PE houses more or less always replace positions in the Executive management and board of directors. When replacing employees in the Board of directors, it is the chairman of the board in 76% of the cases and representatives in 96% of the cases. The reason why they change representatives more often than the chairman could be because it is easier

to replace a representative than the chairman. When answering “*Always*” or “*Often*” on the question if they replaced *any* position in the Executive management, a replacement of the CFO seems to be the most common change, whereas 68% answered that they changed the CFO. The second most common position to change is the CEO (64% of the cases when changing *any* position). Other common answers are replacing the business developer, M&A manager and positions in the Project Management Office (PMO). Changes in responsibilities for the employees (32% of the respondents) are also a quite common way to improve the quality and performance within the portfolio company. Changes in incentive programs, performance management, size of the management team and reorganization of the company structure are changes mentioned in the answers as well. A further interesting observation is that when the PE houses replace people in the Board of directors they replace them with either their own employees or people within the professional network (92% answered *always*). When they perform changes in the Executive management or at any operational position, it seems on the other hand, to be very rare that their own employees or people from their professional network are hired.

When analyzing if the PE houses allocate any resources to training or education for the employees in their portfolio companies the answers were more dispersed. 21% of the respondents said that they *always* offer training/education and 58% answered either that they *often* or *sometimes* offered training/education. The most common position to whom they offer training to is the Executive management (95% of the cases). Only 17% of the respondents said that they offer training to people at operational level.

A final interesting finding is the fact that only 8% of the respondents thought they lowered the employment rate during their holding period, 53% believed they increased the employment rate and 40% thought it was hard to answer or that there was no change. When comparing those answers to the real change in employment rate based on our sample, one can conclude the respondent included in the 53% were right. The mean change per year in employment rate during the PE ownership is 11.3% and the median is a bit lower with 7.22%. This is even above what the Investment managers stated themselves and the numbers must of course be seen as something positive and something that possibly could still the on-going debate regarding whether or not they create or destroy jobs.

Overall, based on the reported results the best way to increase the abnormal financial performance for the PE houses, when it comes to employment related issues, seems to be to focus on the actual time spend on these types of questions. The responses from our survey shows that the Investment managers only rank employment related questions as number six out of nine. They also think they devote as much resources as need and that they neither should increase the resources allocated to employment or decrease them, thoughts that do not match with the reality if increasing the abnormal financial performance is the goal.

5.3 Abnormal financial performance and Investment managers' background

In this section a test performed to see whether there is a difference between Investment managers background, their choice of strategy, if any, and how that correlates with the abnormal financial performance. For instance, is it more profitable to have Investment managers with a financial background or managers with an operational background that probably knows the industry better? What strategy chosen, inorganic vs. organic, is also controlled for to see whether one of the strategies are more profitable together with a certain background, financial or operational.

The survey (Appendix E) was used to collect information regarding professional background, finance vs. operational and what strategy they applied, organic vs. inorganic. One again, each Investment manager answers were matched with the corresponding deal to be able to study performance. We assumed that managers task-specific skills are relevant and correlated with the performance.

Both Gibbons and Waldman (2004) and Acharya and Gottschalg et.al (2011) applied a similar approach that task-specific learning-by-doing leads to an accumulation of human capital. To clarify this, they assume that Investment managers with a financial background have learned skills through investment banking activities or similar, preferable within inorganic deals. Managers with operational backgrounds on the other hand have learned revenue growth and efficiency improvement skills by undertaking these actions at their previous positions, preferable within organic deals.

If this is true, our hypothesis is that we will find a correlation between Investments managers with a financial background and deals with M&A activity (inorganic deals) and managers with an operational background matched with organic deals. This hypothesis is based first on the assumptions that the Investment managers apply the strategy he or she is most familiar with and have the best expertise in. Secondly, we based the hypothesis on the assumption that the PE house matches the skills of their employees with the planned strategy of the specific portfolio company.

We further chose to extend our study by looking at other factors describing Investment managers' background that potentially could have an impact on abnormal financial performance. These factors are education level, number of years within the PE industry and experience working abroad. Does it matter if a manager has "only" a bachelor or master degree compared to a managers with an MBA as well and how much does experience from a longer career within PE, (some cases over 10 years) affect abnormal financial performance compared to a graduate. International experience as a factor could be more interesting to look at nowadays due to better opportunities to move and work abroad from less severe EU regulations. An international career could potentially improve the Investment manager's competences but is this really true? Does working overseas have any visible effect on abnormal financial performance and if so, in what way?

Table 8 gives an overview of the Investment managers' background and experience involved in our selected deals. 36 managers have a background in finance, including both investment banking and consulting since consulting could present both finance and operational background through for example due diligences or strategy projects. In total 28 of the survey participants have worked at operational positions meaning that there are a few managers who worked in both industries and has therefore acquired experience within them both. We could therefore conclude that most Investment managers in our sample are ex-bankers or managers with experience from both finance and operational work and less with only an operational experience.

The results in Table 8 show that Investment managers with a financial background generate a higher average abnormal financial performance (3.66%) compared to managers with operational background (1.65%). For organic deals only, a background in finance compared to a background in operational generates as well a higher abnormal performance, 7.36% compared to 3.36%. There is an even more positive view for managers with a background in finance working in inorganic deals, (3.37%) is reported compared to (-5.16%) if the managers has an operational background. This is in line with our hypothesis that task-specific learning-by-doing leads to an accumulation of human capital. A background in finance where you learn M&A activities and later on work with inorganic deals improves average abnormal financial performance more than a manager with a background in operational working with inorganic deals. What is surprising and went against our hypothesis was that those with an operational background and chose to apply an organic strategy underperformed deals against those with a background in finance who chose an organic strategy. However, we should not forget that both present a positive abnormal performance (7.36% for finance) respectively (3.36% for operational) saying that both backgrounds matched with corresponding strategy seem to perform well. Our hypothesis that there will be a correlation between managers with finance background and an inorganic strategy cannot be rejected or supported. Of the 36 managers with an finance background, 18 chose an inorganic strategy and 18 chose an organic strategy. Potentially because both reports a positive average abnormal financial performance. Moreover, the results is almost the same for those with operational background where 13 managers applied an inorganic strategy and 15 applied an organic. A result weakly supporting our hypothesis.

In this study, there are 34 managers with a bachelor and/or master degree as their highest education level and 12 managers with an MBA as their highest level, showing that Investment managers emphasizes an education. Studying Table 8, higher education level only has a positive impact on organic deals, 16.2% compared to -4.61% for inorganic deals. This could indicate that people studying towards an MBA degree, were the focus in the education lies on live cases and practical assignments, a potential advantage for organic deals (16.2% with an MBA, 7.65% without), benefit within organic deals compared to managers with a bachelor/master degree where the program focus lies more on

theory.. The results above could be compared to managers with a lower education level who generates positive abnormal financial performance for all deals together and as well for both organic vs. inorganic. When analyzing Education within only inorganic deals managers with less education receives higher abnormal performance than higher educated managers do, 6.28% respectively -4.61%. It is difficult to find reasons for this but a possible explanation could be that Investment managers with only a bachelor/master degree often directly goes to investment banking related jobs where their employers hire them in an early stage before they had the time to reach the level of an MBA degree. As an investment banker you learn M&A activities, skills that could be an advantage you might miss out if you choose to study for an MBA. This argument could be a potential explanation why managers with an MBA who applies an inorganic strategy tend to perform worse than if they applied an organic strategy. This leads us to a conclusion that a manager with an MBA does not have an advantage in terms of knowledge for inorganic deals, as showed in Table 8, but the opposite is the case for organic deals, reporting 16.2%.

To continue with the variable Experience PE, 28 persons have more than 7 years of experience within the PE industry, the same number of managers has experience from working abroad. Studying the results in Table 8 show a small difference in abnormal financial performance if the Investment managers worked more or less than 7 years. The abnormal financial performance for experience over 7 years, gives an abnormal performance of 5.02% compared to 4.55% for less than 7 years.

Finally, studying International experience for all deals we could conclude that developing your career in Sweden instead of working abroad generate an average abnormal financial performance of 8.42% compared to 2.49% for the managers who worked abroad. Studying inorganic deals a slightly weaker trend for manager who stayed in Sweden their whole career is found, generating 8.42% in average abnormal financial performance compared to international experience generating a result of 1.15% dittos. A reverse trend were found for the organic deals reporting 10.2% for the lack of international experience, even though the difference to the result for international experience, 11.9% is quite small.

To continue and examine each variable's impact on abnormal financial performance following regression is used and represented in Table 9:

$$\begin{aligned} \text{Unlevered Abnormal Financial Performance} := & \varphi + x' + \theta_1 \text{Background}_{\text{Operational}} + \theta_2 \text{Background}_{\text{Finance}} + \\ & \theta_3 \text{Organic} + \theta_4 \text{Background}_{\text{Operational}} * \text{Organic} + \theta_5 \text{Education} + \theta_6 \text{Experience}_{\text{PE}} + \theta_7 \text{Background}_{\text{Finance}} * \\ & \text{Organic} + \theta_8 \text{Experience} * \text{Organic} + \theta_9 \text{Experience}_{\text{International}} + \varepsilon \end{aligned}$$

Where unlevered abnormal financial performance represents our Y, x' stands for our control variables: Industry (control for differences in performance between industries) Log EV (control for size), Duration (control for holding period) and Entry period (control for the year the PE house entered the portfolio company). This is to control for time-based variations in financial returns. In the beginning,

the purpose was to use fixed effects for PE houses to discern the effect between houses but due to too few observations for each PE house that option was not doable and instead time- and industry fixed effects were used.

We regress through cross-sectional variation with the estimated coefficients θ_{1-9} , in nine various formations represented in Table 9, this since there is only one observation of Y per deal. Finally, ε is the regression error. As described in Section 4, nine dummy variables were generated (Appendix C).

In Table 9 the regressed coefficients are reported and the results display an overall low significance for Regression (1)-(5) and (8)-(9). However, some coefficients provide evidence and Regression (6)-(7) show significant results for almost every coefficient included in the regression.

First, in Regressions (1) and (2) we regressed Background in operational, Organic and the interaction term Background Operational*Organic, studying the effect of working with organic deals with an operational background. Yet, it is unclear what effect working with organic strategies and the manager has an operational background, actually has on abnormal financial performance due to statistical insignificance (P-value >0.1). However, what statistically can be concluded is that an operational background solely has a negative effect on abnormal financial performance since Regression (1) reports -8,99% and Regression (2) -11,6% for the coefficient Background operational.

Regressions (3) and (4) observing finance background and inorganic deals have no statistical significant variables. However, inorganic has as a strategy negative coefficients in both Regressions when Duration is control for (3) and Duration and Log EV in (4). This can be seen as an indicator of what direction (negative with -4.56% and -3.00%) the impact from that variable has on abnormal financial performance, despite the lack of significance. Background in finance seems to be more successful than background in operational and so is the case for Investment managers with a background in finance working with inorganic deals as well. This could indicate that if you chose to apply an inorganic strategy it is crucial that the people working with the portfolio company have a financial background. Nevertheless, we shall not forget that we have no statistical significance (P-value >0.68 in Regression (3)). To reconnect to the quote in Section 2 the regression and analysis performed in this section is in line with Cumming, Siegel and Wright (2007) words: That it appears to be a need to broaden the traditional financial skills base of Private Equity executives to include more product and operational expertise. A statement that is beneficial for both the PE houses and the portfolio companies.

In Regression (6) controlling for Duration and (7), controlling for both Duration and Log EV, considerably more variables compared to Regression (1)-(4) is used. Here, the statistical significance level is noticeably higher. We find that an operational background has a negative impact on abnormal

financial performance (6) -7,33% and (7) -8,46%. This is supported by the same significant results through Regressions (1), (2) and (6)-(8). However, an operational background together with applying an organic strategy has a significant value in Regression (6) compared to other regression including the same variables. The lack of explanatory factor could be explained from multicollinearity, since all four regressions include the independent variable Organic and Background operational*Organic together with Organic seem to have close linear relationship due to similar effects on abnormal financial performance. However, to be absolutely sure we further test for multicollinearity with the Farrar-Glauber test if Organic and Background operational*Organic correlates and after the test we could conclude that it seemed to be the case and hence, lowering the significance level²⁴. As a consequence, without the variable Organic as in Regression (6) the P-value for Background operational*Organic increases tremendously.

Furthermore, the education level seems to have a positive effect on abnormal financial performance through Regression (6)-(8). For instance Regression (7) presents a 4.60% positive impact on abnormal financial performance, but in Regression (5) the impact seems to be the opposite and we receive a negative value for Education. As studied in Table 8 we suggest that this has to do with Investment managers having an MBA degree. As mentioned, they received a higher advantage in organic deals (16.2%) compared to inorganic deals (-4.61%) and affected abnormal financial performance more positive in comparison. The regressions in Table 9 provide further proofs for that statement. In Regression (6)-(9) Education on Organic related characteristics receive a positive value on abnormal financial performance compared to Regression 5 when regressing Education on Inorganic deal characteristic variables and received a negative value.

Another interesting variable is the interaction term Experience*Organic, reporting a positive impact on abnormal financial performance for Regression (6)-(9) where for example Regression (6) reports 11.9%. This could indicate that more experience the Investment manager has within PE, where he or she has learned how the businesses work and how to handle certain industries, could provide an advantage when later on working with organic deals. Regressing with Experience*Inorganic there is a negative effect on abnormal financial performance, further proving this statement.

Finally, the last interesting finding regards international experience indicating a negative effect on abnormal financial performance throughout Regression (6)-(9). In Regression (8) for example the highest negative percentage impact on abnormal financial performance -11.9% is reported. As mentioned above, our hypothesis was that international experience would accumulate an understanding for diversity and improve the managers' working skills. Studying Regression (6)-(9) does not prove any advantageous and instead tell us that experience from working abroad affect

²⁴ The H_0 , that there is no multicollinearity is rejected at a P-value of 0.0000, indicating that there is multicollinearity.

abnormal financial performance negative. Therefore, Investment managers should stay and work in Sweden to further learn how business in the Nordic region works if increasing the abnormal financial performance is the manager's main goal.

Conclusions for differences between Investment managers background, their choice of strategy, and if, and how that correlates with the abnormal financial performance tells us that the "optimal" Investment manager should have a finance background preferable working with organic strategy. However, a manager with finance background working within inorganic deals generate as well a higher abnormal performance compared to a manager with a background in operational. The education level seems to be less important even though we see that a bachelor/master degree in general receives higher abnormal financial performance compared to an MBA degree. To succeed within organic deals an MBA is to prefer. Something surprising and quite unexpected was that Investment manager working solely in Sweden for their entire career affect abnormal financial performance on average higher than managers with experience from working abroad.

5.4 Robustness test

In order to test whether our results are robust we perform several regressions with alternative proxies for both operational measures, employment related questions and Investment managers background. First, we tested to change our dependent variable from *Unlevered* abnormal financial performance to *Levered* ditto, reported in Table 10. This is to be able to determine if the results in our regressions produce any significant differences with the difference dependent variable. When performing these robustness tests we can conclude that our results seems to be stable and not vary greatly neither in the independent variables direction (positive/negative) or the significance level. The only exception is for the Δ EBITDA-margin where the P-value went from 0.11 to 0.095, now showing a significant value when regressing for the leverage dependent variable. What can be concluded is that R^2 keeps almost the same level for the regressions with an even slightly higher value for the Unlevered variable compared to the Levered in some regressions. This is something strengthening our results further.

In Table 10, results from the test were changing selected proxies used when unlevering our dependent variable are also reported. The purpose was to prove that altering the tax level when unlevering CAGR and TRS do not have any impact on the final variable abnormal financial performance, this since the change, proportionally, for the values when unlevering both CAGR and TRS are the same. Once again, the regressions results did not change to a greater extent compared to previous definition further strengthening our results.

6. Conclusion and Discussion

To adequately answer our research questions stated in the Section 1 an interesting result that confirms most people's prejudices about the PE industry can be verified. It is the fact that the PE houses seem to acquire companies struggling with their performance compared to their sector peers, since one can see that the sector peers outperform the portfolio companies prior to the PE ownership. The reason for this is probably to have a fair chance to improve the turnover and margins, which the PE houses seem to do since the deals in our sample *outperformed* their sector peers for all four different operational measures when comparing the measures *during* the PE ownership period. The results also conclude that if you as an Investment manager at a Swedish PE house want to improve the EBITDA margin more sufficient an inorganic strategy was to prefer. If sales improvements are the priority on the other hand, the strategy to apply is an organic. The operational measure that had the biggest impact on changes in abnormal financial performance was improvements in the EBITDA-margin. This is another indicator that the efficiency of the revenues (the margin) is more important than just a large-scale business. Whether the improvement are sustainable or only a short-term fix to increase the valuation multiple before the exit, is hard to draw any conclusions about.

The results answering the second research question showed that annual change in the employment rate, spending more than two days a month on employment related questions and changing people in the Executive management, all contributes to an increase in the abnormal financial performance. This is not directly in line with the argument that operational improvements are the only true value creator together with an inorganic growth through M&A activities (Bergström et al. 2007). However, one should not forget that the above mentioned activities related to employment are all indirect actions contribution to improving the operational performance. The reported findings could potentially be a new insight for the PE industry but what must be noticed is once again the question whether or not this is a sustainably way of creating value in the portfolio company.

From the last research question, the conclusions regarding what the most sufficient background is for a PE manager if the main goal is to improve the abnormal financial performance, we found that neither an operational or an international background are preferable. Instead, a background in finance is the most value creating background, a result not fully in line with Acharya, Gottschalg, Hahn and Kehoe (2011), who stated that both operational and finance create value depending on the strategy, organic or inorganic. What is interesting with this finding is the fact that the career path nowadays for a young ambitious student that in the future wants to work within the PE industry is to move and work abroad, often in a big financial mecca like London, New York or Hong Kong. According to our study, this is not the most fruitful and efficient career choice for a graduate who wants to be successful and bring a great deal of value when he or she returns home. Instead, having an MBA degree is something that, in our sample, brought value to the portfolio companies, but solely for organic deals. Maybe the

experience both from practical teaching and within the PE industry is a bigger advantage when trying to improve operational performance due to the fact that there are often large organizational challenges and therefore problematic to accomplish. This extensive experience might not be as crucial when applying an M&A strategy where only a couple of years of experience within the finance industry seem to be enough.

Our findings are interesting in many ways but not complete. Suggestions to a further research question is to investigate what kind of strategies the PE houses apply depending on what industry the portfolio company is operating in or the shape of the company. A second interesting approach is to expand the research whether the PE houses create even more value within some industries than others. As a final suggestion based on the findings in our study, is to expand the research regarding the time spend on employment related questions in the portfolio company. What is it that actually brings value and why?

There are some potential limitations with this thesis. First of all it is hard to measure the effect of M&As. In this industry it is difficult to find information about both internal and external changes during the holding period, especially regarding follow-on M&As. This could lead to an inconclusive result since deals with a significant additional investment are subject to an error term due to the bias by the acquired entity. Therefore, we separate the deals into organic and inorganic deals to overcome the lack of transparency. Two other problems due to this matter is the usage of IRR and the PE houses tax planning. As discussed before, IRR is not always a perfect way of evaluating the PE houses performance. Based on this argument and lack of information to further calculate IRR, compounded annual growth rate (CAGR) for the differences in deal value between entry and exit is used as a proxy instead. Furthermore, it is impossible for us to have full information about PE funds being situated at different offshore financial centers (for example Cayman Island) an issue that might affect PE houses tax planning and in the next step their profit (Huffington Post, January 2012).

What can also be discussed regarding this thesis is the sample size. Only 53 observation is used and when dividing the sample into organic and inorganic it narrows the sample down to $n=31$ and $n=22$ respectively. The theory says that at bigger sample provides a more truth telling result but in our study some statistically significant results for both the entire sample and divided into strategy are reported. The final limitation is the reliability of the responses from the survey. We cannot know how honestly the Investment managers answered our survey but we tried to overcome this problem by letting the respondents be anonymous. After trying to prevent the problem we assume that they answered as truthfully as possible.

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Table 1 – Literature review

This table reports the related literature used in our study. The aim is to give a clear overview of the differences between the existing studies and their reported results. Outperform/underperform chosen benchmark

Paper	N	Sample region	Sample Year	Results	Benchmark	Note
Kaplan (1989)	76	US	1980-1986	Outperform	4-digit SIC Code	Operating changes are due to improved incentives rather than layoffs.
Jensen (1989)	1514	US	1979-1988	-	Public companies	Publicly held corporation has outlived its usefulness in many sectors of the economy --> increased PE activity
Smith (1990)	58	US	1977-1986	Outperform	4-digit SIC Code	Operating returns increase significantly from the year before to the year after buyouts.
Lichtenberg and Siegel (1990)	20 493	US	1981-1986	Outperform	4-digit SIC Code	Plants involved in LBOs had higher rates of total-factor productivity growth than other
Andrade and Kaplan (1997)	124	US	1980-1989	Outperform	Value Line's classifications (survey)	The sample firms experience a marginally positive change in (market- or industryadjusted) value.
Bergström, Grubb and Jonsson (2007)	73	Sweden	1998-2006	Outperform	4-NACE 1.1-digits of the buyout	The LBOs have a positive impact on operating performance. No support that the increased value is created at the expense of the employees.
Weir, Jones and Wright (2007)	122	UK	1998-2004	Underperform	3 digit SIC group and 2 digit SIC group	No performance deteriorates relative to the pre-buyout situation but firms do not perform worse than firms that remain public
Kaplan and Strömberg (2008)	17 171	Worldwide	1970-2007	Outperform	S&P500 Index	Strong evidence that PE activity creates economic value.
Lerner, Sorensen, and Strömberg (2008)	495	Worldwide	1980-2005	Outperform	Public peers (IPO's)	Find no evidence that LBOs are associated with a decrease in investment innovations in the long-term perspective
Kaplan, Klebanov, Mark and Sorensen(2008)	224	US	2000-2006	-	-	The subsequent performance in the firms is positively related to general ability and execution skills of the CEOs
Leslie and Oyer (2009)	144	US	1996-2005	Week/ No evidence	2-digit SIC Code	PE-owned companies provide higher managerial incentives to their top mgmt compared to public corporations. No proof for outperforming sector peers
Guo, Hotchkiss and Song (2009)	192	US	1990-2006	No diff.	4-digit SIC Code	Show that the deals in the sample are somewhat more conservatively priced and less highly levered than their predecessors from the 1980s
Boucly, Sraer and Thesmar (2011)	839	France	1994-2004	Outperform	Similar companies not go through an LBO	3 yr following a LBO, targets become more profitable, grow faster compared to their peers.
Acharya, Gottschlag, Hahn, Keohe (2011)	395	Europé	1991-2007	Outperform	3-digit ICB	Abnormal performance is positive for operational measures relative to peers. Partners with an operational (finance)
Strömberg, Hotchkiss and Smith (2012)	2 156	Worldwide	1997-2010	-	4-digit SIC Code	PE owned firms are no more likely to default than other firms with similar leverage characteristics

Table 2: Distribution of the deals by entry and exit years

The table below reports the year that the PE house acquired (Entry) and sold (Exit) their portfolio companies based on the collected sample used in the paper. A total of 53 observations are used.

Years	1997	1998	1999	2000	2001	2002	2003	2004
Entry	1	0	5	4	12	3	4	8
Exit	0	0	0	0	1	1	0	3
	2005	2006	2007	2008	2009	2010	2011	SUM
Entry	5	6	2	2	1	0	0	53
Exit	11	11	7	3	2	4	10	53

Table 3 - Panel A: Summary statistics on financial measures

This table reports summary statistics on the financial performance. The first part, (Row1-3) reports information regarding changes in the deal value from entry to exit. Deal unlevered CAGR is the compounded annual growth rate from entry date (t) to exit date (T) for the deals in our sample. The CAGR is unlevered by using industry average D/E-ratio, industry average tax rate and the intra-bank rate from the country the portfolio company has its headquarter.

$$R_{Ui} = \frac{R_L + R_D * (1-t) * (\frac{D}{E})}{(1 + (\frac{D}{E}))}$$

The Deal abnormal financial performance is the Deal unlevered CAGR minus calculated unlevered Total Return to Shareholders (TRS). TRS are computed using DataStream and one TRS is calculated for each industry in the sample varying for each portfolio company's holding period. Duration is the number of years the PE house held the specific portfolio company. Second part of the table, (Row 4-8) compares the deal size (Enterprise value) and the deal EV multiple from entry to exit.

Variables	N	mean	median	std. dev.	min	max
Deal Unlevered CAGR ^{a b}	53	21.8	16.3	20.4	-4.4	78.8
Deal Abnormal Performance ^{a b}	49	7.02	4.55	15.8	-17.0	46.0
Duration	53	4	4	2	1	11
Deal size (entry) ^{a c}	53	222	89.4	311	1.42	1600
Deal Size (exit) ^{a c}	53	364	250	350	3.52	1650
Deal EV (entry) ^{a d}	53	21.6	10.1	32.1	-9.0	98.9
Deal EV (exit) ^{a d}	53	11.6	11.1	32.2	-164	124

a) The values are winsorized due to a few but large outliers. Winsorized highest 5% and lowest 5% and replaced them with the values at the predefined 95% and 5% limit.

b) Values in percent

c) Values in MEUR

d) Only deal where both EV and EBITDA is available

Table 3 - Panel B: Summary statistics on the portfolio companies operational performance

This table reports five different summary statistics for the deals in our sample both at entry and exit date. Entry is based on accounting data from the last pre-PE ownership year (t) and exit is based on the last PE ownership year (T). The number of observation differs since accounting data is missing for a few deals. No deals are excluded in these statistics and even the one with a negative cash flow or EBITDA are reported.

Variable	N	mean	median	std. dev.	min	max
Sales (entry) ^{a b}	53	231	78.3	415	0.28	2140
Sales (exit) ^{a b}	53	300	110	533	0.54	3180
EBITDA (entry) ^{a b}	52	19.4	7.8	40.2	-39.4	213
EBITDA (exit) ^{a b}	53	41.0	16.5	80.4	-17.2	515
Cash flow (entry) ^{a b}	49	10.2	4.3	20.7	-22.7	104
Cash flow (exit) ^{a b}	52	18.8	7.7	40.5	-14.1	201
Employment (entry)	53	1415	307	2513	2	11696
Employment (exit)	53	1610	453	3053	2	16748
Growth Employment rate	53	10.5	7.41	18.4	-20.5	75.3

a) The values are winsorized due to a few but large outliers. Winsorized highest 5% and lowest 5% and replaced them with the values at the predefined 95% and 5% limit.

b) Values in MEUR

Table 4: Unlevered Abnormal financial performance

The table reports the Unlevered abnormal financial performance broken down in a couple of different angles. We report for the entire sample and for organic and inorganic deals based on the entire period of entry. We also report the same measure but decomposed into the four chosen entry time periods. The four time periods are: 1997-2000, 2001-2003, 2004-2006 and 2007-2009 by using dummy-variables for each year.

Standard deviation is reported to show the variation of the unlevered abnormal performance.

Variables	All deals				Organic deals				Inorganic deals			
	N	mean	median	std. dev.	N	mean	median	std. dev.	N	mean	median	std. dev.
All deals	49	7.02	4.55	15.8	28	11.4	7.65	17.2	21	1.18	4.55	11.8
Entry period 1	10	4.26	0.01	19.6	5	16.3	3.36	21.1	5	-7.80	-6.53	7.47
Entry period 2	18	9.63	5.02	17.4	10	15.6	8.73	20.5	8	2.18	5.02	9.23
Entry period 3	16	2.87	4.20	12.1	10	3.66	-0.07	12.9	6	1.55	6.24	11.6
Entry period 4	5	16.4	16.2	8.97	3	15.1	16.2	2.61	2	18.5	18.5	17.2

Note: All numbers are in percent.

a) Due to a few but large outliers we winsorize by replacing the 5% highest and 5% lowest values and as well dropped 4 extreme values, making us left with 49 observations.

b) Proxies is used for D/E ratio collected from the People Stern NYU Education due to limited access and R_D is an average for each country's intra-bank rate. Since Euribor did not exist 1997 and 1998 we used 1999 as a proxy for those two years regarding deals from Finland.

Table 5 - Panel A: Change in operating performance before PE ownership

This table reports the changes in various operating measures (x) for *pre* PE ownership between entry year (t) and two years before the acquisition ($t-2$) for both sales and EBITDA-margin (EBITDA/sales). The table presents both each deal and the calculated, corresponding sector peers from DataStream. To be more specific the formula for each deal is: $\Delta x_{i,pre} = x_{it} - x_{it-2}$ where (t) represent the year the PE house acquired the portfolio company and ($t-2$) the value two years before the PE house entered. The deal corresponding sector companies is calculated the same way ($\Delta x_{st} = x_{st} - x_{st-2}$). As reported below we had 31 observations for deal log sales, 53 for sector log sales, 29 for deal margin and finally 53 observations for sector margin. The difference in the number of observations is due to missing accounting values for ($t-2$).

Variables	All deals			Organic deals			Inorganic deals		
	N	mean	median	N	mean	median	N	mean	median
$\Delta x_{i,pre}$ deal log sales	31	10.8	5.23	22	14.0	5.27	9	3.12	4.15
$\Delta x_{s,pre}$ sector log sales	53	9.05	9.02	31	9.13	9.42	22	8.94	9.00
$\Delta x_{i,pre}$ deal margin	29	-0.55	0.34	20	-0.10	0.53	9	-1.56	-1.25
$\Delta x_{s,pre}$ sector margin	53	-0.57	0.49	31	-0.25	0.57	22	-1.02	-0.01

Note: All values in percent, median sector changes.

a) Only deals where all accounting data is available.

b) Extreme values within the sector peer groups are dropped, this to make the peer groups comparable.

c) Sales and EBITDA-margin are winsorized for both deal (portfolio) companies and corresponding sector companies with the highest 5% and the lowest 5% values.

Table 5 - Panel B: Change in operating performance during PE ownership

This table reports the changes in various operating measures (x) for *during* PE ownership between exit year (T) to the last year pre-acquisition (t), $\Delta x_i = x_{iT} - x_{it}$. We report the same measures for corresponding sector, $\Delta x_s = x_{sT} - x_{st}$. The sector measures are an average of the values during the year the PE house own the corresponding portfolio company, which leads to all deals in the sample to have a different and custom made sector peer. We divide the difference in margin and multiple between (T) and (t) with the number of ownership years (T-t) to obtain annual nominal growth. For log sales and log multiple we used instead the formula $\Delta x_i = \log(x_{iT} - x_{it})^{\frac{1}{\text{Duration}}}$ to get annual figures. The first column (i) is all deals and in column (ii) and (iii) the deals are separated based on the strategy applied from the PE house.

Variables	(i) All deals			(ii) Organic deals			(iii) Inorganic deals		
	N	mean	median	N	mean	median	N	mean	median
Δx_i deal log sales	53	13.9	8.35	31	16.1	9.20	22	10.8	7.67
Δx_i sector log sales	53	6.25	6.35	31	6.35	6.57	22	6.11	6.05
Δx_i deal margin	49	2.14	0.80	28	1.87	0.46	21	2.51	1.38
Δx_i sector margin	53	0.18	0.01	31	0.53	0.13	22	-0.31	-0.21
Δx_i deal multiple	53	-2.44	0.25	31	-2.29	0.55	22	-2.64	-0.22
Δx_i sector multiple	53	0.12	0.06	31	28.9	6.30	22	-11.2	8.15
Δx_i deal log multiple	49	-3.46	2.38	28	2.19	10.9	21	-11.0	-0.28
Δx_i sector log multiple	53	0.12	0.07	31	10.6	7.47	22	13.1	9.93

Note: All values in percent, median sector changes.

Note 2: The difference in the number of observations is due to missing accounting data for a few deals.

Table 5 - Panel C: Change in operating performance between during and pre PE ownership

This table reports the average difference between the operational measure log sales and EBITDA-margin for *during* (T-t) the PE ownership and *before* the PE ownership (t-(t-2)). Both the values during and before are calculated with the formula; $\Delta x_i = x_{iT} - x_{it}$ and is annualized by the number of years (Duration) between (T-t) and (t-(t-2)) respectively $\Delta x_{Dur-Pre} = x_{iDur(T-t)} - x_{iPre(t-(t-2))}$. The table reports both for the entire sample and divided into the two separate strategies, organic and inorganic.

Variables	All deals				Organic deals				Inorganic deals			
	N	mean	median	std. dev.	N	mean	median	std. dev.	N	mean	median	std. dev.
$\Delta x_{i \text{ during-pre}}$ deal log sales	31	2.03	2.91	25.2	22	3.11	6.37	28.8	9	-0.63	-0.48	14.3
$\Delta x_{i \text{ during-pre}}$ deal margin	29	3.24	1.87	5.96	20	2.41	1.11	4.76	9	5.08	4.35	8.07

Note: All values in percent, median sector changes.

Note 2: The difference in the number of observations is due to missing accounting data for a few deals.

Table 6: Abnormal financial performance by operational improvements

The table reports cross-sectional abnormal financial performances to changes in log sales, margin and multiple (the operating measures) with OLS regressions for the realized deals in the collected data set.

To test operational changes on abnormal financial performance we obtained log sales, EBITDA-margin and EV-multiple by calculating the difference between the last pre-PE-ownership year ($t=0$) to exit year (T), ($\Delta x_i = x_{iT} - x_{it}$). We divide the difference in margin and multiple between (T) and (t) with the number of ownership years (T-t) to obtain annual nominal growth. For log sales we instead used the formula $\Delta x_i = \log(x_{iT} - x_{it})^{\frac{1}{\text{Duration}}}$ to get annual figures. In the same way we calculated median changes in deal corresponding sector companies ($\Delta x_s = x_{sT} - x_{st}$). As independent variables in the regression we then used the difference between deal changes and sector changes ($\Delta x_i - \Delta x_s$).

We divided our regressions into three parts (i)-(iii) and varied our control variables Log EV and Duration through the regressions. First part (i) represents all deals including both organic and inorganic deals (REG1-3), Second part (ii) only organic deals (REG4-6) and last part (iii) only inorganic deals (REG7-9). All deals are controlled for Entry Period (Time, 1997-2000, 2001-2003, 2004-2006 and 2007-2009) and industry fixed-effects

Independent Variables	Dependent variable: Abnormal Performance in %								
	(i) All Deals			(ii) Organic Deals			(iii) Inorganic deals		
	REG1	REG2	REG3	REG4	REG5	REG6	REG7	REG8	REG9
$\Delta x_i - \Delta x_s$ log sales	0.28	0.27	0.00	0.37	0.39	0.24	0.24**	0.20	-0.25
P-value	0.12	0.14	1.00	0.40	0.27	0.44	0.04	0.10	0.37
$\Delta x_i - \Delta x_s$ margin	1.31*	1.04	0.94**	1.94***	0.59	0.03	0.23	0.45***	1.30*
P-value	0.10	0.11	0.03	0.00	0.12	0.91	0.54	0.00	0.08
$\Delta x_i - \Delta x_s$ multiple	0.26*	0.24	-0.23	0.32*	0.11	-0.14	-0.51	-0.67	-1.77**
P-value	0.10	0.11	0.39	0.10	0.59	0.43	0.44	0.16	0.04
LogEV		0.43***				0.42*			0.62**
P-value			0.00			0.06			0.05
Duration		-1.76	-0.96*		-4.92***	-2.60		1.44**	0.32
P-value		0.12	0.09		0.01	0.19		0.04	0.69
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entry Period	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	43	43	43	23	23	23	20	20	20
r2	0.23	0.30	0.59	0.40	0.71	0.80	0.35	0.44	0.68

Note; * p<.1; ** p<.05; *** p<.01

Table 7: Abnormal financial performance by Employment related issues

The table reports the relationship between cross-sectional abnormal financial performance from Employment related issue with OLS regressions for all realized deals. We created five independent variables, where Δ Employment rate was taken from the collected data set and the four other variables from the survey. We started by analyzing how Δ Employment rate affects abnormal financial performance. We continued with studying a Time spend-dummy, indicating how much time spend on employment related questions affect performance and as well an Education-dummy, showing whether the PE houses offering education to employees affect abnormal performance. We ended our study by looking at the potential differences if PE houses changed positions in Executive management and/or the Board of directors. We controlled our regressions for Duration and Log EV (size effect). We also add Entry period (Time, 1997-2000, 2001-2003, 2004-2006 and 2007-2009) and industry fixed effects.

Independent Variables	Dependent Variable: Abnormal Performance in %								
	REG1	REG2	REG3	REG4	REG5	REG6	REG7	REG8	REG9
Δ Employment	0.35**	0.23*	0.36**	0.24**	0.37**	0.25**	0.44**	0.41**	0.29**
P-value	0.03	0.06	0.02	0.04	0.02	0.03	0.02	0.03	0.03
Time Spend	7.61**	3.41	8.15**	4.23	6.92**	3.67	5.20*	6.13**	3.14
P-value	0.04	0.29	0.02	0.26	0.04	0.32	0.06	0.03	0.34
Training			-1.80	-3.47	-3.52	-4.48	-8.68	-6.65	-7.19
P-value			0.81	0.42	0.65	0.39	0.25	0.35	0.25
Δ Executive mgmt					10.1	6.56	16.9**	14.7**	10.8**
P-value					0.19	0.40	0.02	0.01	0.12
Δ Board of Directors							-15.0*	-11.6	-10.2
P-value							0.10	0.21	0.04
Duration	-2.22**	-1.64**	-2.10**	-1.38*	-1.95**	-1.33*		-1.10*	-0.61
P-value	0.01	0.04	0.02	0.06	0.02	0.08		0.09	0.29
LogEV		0.30**		0.31**		0.29*			0.28**
P-value		0.02		0.03		0.05			0.01
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entry Period	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	42	42	42	42	42	42	42	42	42
r2	0.38	0.54	0.39	0.56	0.43	0.58	0.47	0.50	0.63

Note; * $p < .1$; ** $p < .05$; ***

Table 8: Performance overview by deal partner background (Human capital) and PE strategy

This table gives an overview of the background of the Investment managers involved in our selected deals. The dummy describing Background Finance indicate 1 for manager with finance related jobs such as Investment banking and consulting and as well those working in both finance and operational. Background Finance=0 indicates if they worked solely within operational businesses before. The Education dummy indicates whether Investment Managers has an MBA or solely a Bachelor/Master degree. The PE Experience dummy shows how much experience the Investment managers have within the PE industry in which 1 stand for more than 7 years and 0 less than 7 years. Finally the International dummy describes whether the Investment manager has experience of working abroad.

For each category we report median of our dependent variable, abnormal financial performance.

		Dependent variable: Abnormal Performance in %					
		(i) All deals		(ii) Organic Deals		(iii) Inorganic deals	
Investment Managers Background		Abnorm. N Perfom.		Abnorm. N Perfom.		Abnorm. N Perfom.	
Professional background	Background Finance=1	39	3.66	18	7.36	18	3.37
	Background Finance=0	10	8.45	7	12.1	3	5.49
	N/A	3	-9.79	3	-9.79	0	0.00
Professional background	Background Operational=1	28	1.65	15	3.36	13	-5.16
	Background Operational=0	18	8.42	10	13.3	8	7.06
	N/A	3	-9.79	3	-9.79	0	0.00
Education	Education=1	12	-0.88	3	16.2	9	-4.61
	Education=0	34	6.28	22	7.65	12	6.28
	N/A	3	-9.79	3	-9.79	0	0.00
PE experience	Experience_PE=1	28	5.02	15	3.36	13	5.49
	Experience_PE=0	18	4.55	10	13.3	8	1.67
	N/A	3	-9.79	3	-9.79	0	0.00
International experience	International=1	28	2.49	13	11.9	15	1.15
	International=0	18	8.42	12	10.2	6	8.42
	N/A	3	-9.79	3	-9.79	0	0.00

Note: For detailed descriptions of variables (Appendix C).

Note 2: Values in median percent

Table 9: Abnormal performance by deal partner background and PE strategy

The table reports the relationship between cross-sectional abnormal financial performance and Investment managers background with OLS regressions for all realized deals. We created 11 independent variables to capture the background for each Investment manager. The background dummy, described in Table 8, indicates if the managers have financial- or operational background. With financial background we mean investment banking or consulting related jobs. Some managers who worked with consulting have also worked operational and will therefore be represented in both the financial and operational background. We further studied PE Experience (>7 years=1, 7<=0) and Educational (MBA=1, Bachelor/Master=0) impact on abnormal performance. We extended our regression by including International experience. To study the hypothesis that working with inorganic deals if a managers has a finance background would provide an advantage, we created interaction terms for Background finance*Inorganic. A corresponding interaction term was made for Background Operational* Organic. The lower part of the table reports the control variables Duration and Log EV (size effect).

We also add Entry period (Time, 1997-2000, 2001-2003, 2004-2006 and 2007-2009) and industry fixed effects.

Independent Variables	Dependent variable: Abnormal Performance in %								
	REG1	REG2	REG3	REG4	REG5	REG6	REG7	REG8	REG9
Background Operational	-8.99**	-11.6**				-7.33***	-8.46***	-7.95*	-7.54
P-value	0.03	0.03				0.00	0.01	0.06	0.20
Background Finance			1.13	1.68	6.13				4.39
P-value			0.88	0.79	0.2				0.18
Organic	-1.64	-3.43						-2.15	-1.66
P-value	0.83	0.56						0.79	0.83
Inorganic			-4.56	-3.00	-1.94				
P-value			0.21	0.40	0.49				
Background Operational*Organic	5.58	7.72				-10.8***	-7.61	-9.50	-8.40
P-value	0.55	0.37				0.01	0.14	0.21	0.50
Background Finance*Inorganic			2.37	0.87	2.23				
P-value			0.68	0.85	0.47				
Education					-1.75	5.23*	4.60*	4.99*	4.84
P-value					0.63	0.10	0.06	0.07	0.16
Experience PE									-3.72
P-value									0.42
Background Finance*Organic						1.97	2.53	2.91	0.72
P-value						0.74	0.46	0.68	0.87
Experience*Organic						11.9*	7.17	12.1*	11.7**
P-value						0.08	0.12	0.08	0.04
International					-9.36	-8.35**	-10.5**	-8.27**	-11.9**
P-value					0.13	0.03	0.02	0.03	0.02
Duration		-1.89*		-1.40	-1.56		-2.07*		-2.03*
P-value		0.08		0.12	0.12		0.05		0.09
LogEV	0.39**	0.35***	0.42***	0.39***	0.39***	0.38**	0.33**	0.39**	0.36
P-value	0.01	0.08	0.00	0.00	0.00	0.03	0.02	0.02	0.02
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entry Period	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	46	46	46	46	46	46	46	46	46
r2	0.51	0.60	0.45	0.50	0.52	0.59	0.68	0.59	0.69

Note; * p<.1; ** p<.05; *** p<.01

Table 10 – Robustness test

The table reports the results from our robustness test. First, we again report our *Unlevered* abnormal financial performance but as well the *Levered* abnormal financial performance to be able to compare potential differences in values. Finally, the abnormal financial performance with another tax rate is also reported, only to show that the choice of proxies do not matter since they are used when calculating both the CAGR (deal) and the TRS (sector peers) variables.

Variables	N	mean	median	std. dev.	min	max
Abnormal Performance (Unlevered)	49	7.02	4.55	15.8	-17.0	46.0
Abnormal Performance (Levered)	53	13.1	7.55	26.0	-21.4	76.3
Abnormal Performance (Tax 26,3%)	49	7.02	4.55	15.8	-17.0	46.0

Note: Values in percent

9. Appendices

Appendix A – Overview of the sample

Portfolio Company	PE House	Entry	Exit	Sector	M&A
Alfa Laval AB	Industi Kapital	2000	2002	Manufactur	JA
Arexis AB	SEB Venture Capital	2003	2005	Medical	NEJ
Artic Grycksbo Paper AB	Accent Equity Partners	2006	2010	Manufactur	NEJ
Atos Medical AB	Nordic Capital	2005	2011	Medical	JA
C More Group	Nordic Capital	2003	2005	Retail/consumer goods	NEJ
Camfil AB	Ratos	2000	2011	Manufactur	JA
Com Hem AB	EQT Partners AB	2003	2005	Retail/consumer goods	NEJ
Component Software Group AS	Norvestor Equity AS	2006	2007	IT	NEJ
Coromatic Group	Litiorina Kapital	2008	2011	IT	JA
Cory Environmental Ltd	Montagu Private Equity	2005	2007	Service	NEJ
Dahl International AB	Ratos	1999	2004	Retail/consumer goods	NEJ
Dahl Sverige AB	EQT Partners AB	1999	2004	Retail/consumer goods	NEJ
Dometic International AB	EQT Partners AB	2001	2005	Manufactur	NEJ
Dynal Biotech ASA	Nordic Capital	2001	2005	Medical	JA
Dynal Biotech ASA	Ratos	2001	2005	Medical	JA
Elfa AB	Industi Kapital	2006	2008	Retail/consumer goods	JA
Emotron AB	Polaris Equity	2007	2011	IT	NEJ
Expan AS	Procuritas AB	2004	2007	Manufactur	NEJ
Falck A/S	Nordic Capital	2004	2011	Service	NEJ
Ferrosan A/S	Altor Equity partners	2005	2011	Medical	JA
Findus AB	EQT Partners AB	1999	2006	Retail/consumer goods	JA
Flexlink System AB	EQT Partners AB	1997	2005	Manufactur	JA
Gant Company AB	3i Group PLC	2003	2006	Retail/consumer goods	JA
Grammer AS	Permira	2001	2005	Manufactur	NEJ
Guide Konsult	Nordic Capital	2001	2006	IT	NEJ
Haglöfs Holding AB	Ratos	2001	2010	Retail/consumer goods	NEJ
Handitek AB	Medcap AB	2009	2011	Manufactur	NEJ
Hemtex AB	Priveq Partners AB	2004	2005	Retail/consumer goods	NEJ
Häggblunds Drives AB	Ratos	2001	2009	Manufactur	JA
Interpeak AB	SEB Venture Capital	2002	2006	IT	NEJ
KappAhl Sverige AB	Nordic Capital	2004	2006	Retail/consumer goods	NEJ
Kongsberg Automotive Holding ASA	FSN Capital Partners	2001	2005	Manufactur	JA
Kongsberg Automotive Holding ASA	Industi Kapital	1999	2001	Manufactur	NEJ
Kreatel Communications AB	SEB Venture Capital	2000	2006	IT	NEJ
Lehnkering GmbH	Triton	2005	2011	Service	NEJ
Lekolar AB	Procuritas AB	2004	2007	Retail/consumer goods	JA
Marioff Oy	Nordic Capital	2001	2007	Manufactur	NEJ
Medisize Oy	Ratos	2008	2011	Medical	NEJ
Myresjöhus AB	Industi Kapital	2005	2007	Manufactur	NEJ
MySQL AB	Scope Capital Advisory AB	2001	2008	IT	JA
NEA-gruppen AB	Segulah	2006	2010	Service	JA
NVS Installation AB	Segulah	2002	2006	Service	JA
Paroc Oy AB	Accent Equity Partners	2002	2006	Manufactur	NEJ
Perstorp Group/Sydsvenska Kemi AB	Industi Kapital	2001	2005	Medical	JA
Phadia AB	Triton	2004	2006	Medical	NEJ
Pronova Biopharma ASA	Ferd Group PE	2004	2007	Medical	NEJ
Securitas Direct	EQT Partners AB	2007	2011	Service	JA
Semantix Språkcentrum AB	Accent Equity Partners	2006	2009	Service	NEJ
Survitec Group Ltd	Montagu Private Equity	2004	2010	Manufactur	NEJ
Swedish Orphan Biovitrum AB/Biovitrum AB	Nordic Capital	2001	2006	Medical	JA
Thule AB	EQT Partners AB	1999	2004	Manufactur	JA
Tognum AS	EQT Partners AB	2006	2008	Manufactur	JA
Tradex Converting AB	EQT Partners AB	2000	2006	Manufactur	NEJ

Appendix B – Private Equity houses connected to SVCA

The following Private Equity houses are connected to the Swedish Association for Private Equity and Venture Capital (SVCA). This list was used to screen all deals made by Swedish PE houses in the Nordic region.

- Accent Equity Partners
- Altor Equity Partners
- Anchor Capital Management
- Armada Mezzanine Capital
- Bridgepoint Capital
- CapMan
- Connecting Capital
- Credelity Capital
- EDP
- EQT Partners
- FSN Capital Partners
- Granitix NPE
- IK Investment Partners Norden
- K III Sweden
- Litorina
- Mannerheim Invest
- MedCap
- Naxs Nordic Access Buyout Fund
- Nordic Growth
- Norvestor Equity
- Permira Adviser
- Polaris Private Equity
- Priveq Investment
- Procuritas
- Ratos
- Riverside Europe Partners
- Scope Capital Advisory
- SEB Venture Capital
- Segulah Advisor
- Valedo Partners Fund 1
- Vinovo
- Volati

Appendix C – Description of variables

Topic	Variable	Unit	Description	Source
Dependent variable	CAGR	Percent MEUR	Divide unlevered deal value exit with unlevered Deal value entry and took the power to (1/Duration) $(Value(T)/Value(t))^{(1/Duration)}$	Zephyr and Megermarkets
	TRS	Percent MEUR	Average Total Return to Shareholders between exit and entry, matched with corresponding deal's holding period. $(TRS(T)/TRS(t))^{(1/Duration)}$	DataStream
	Abnormal Performance	Percent MEUR	<i>Abnormal financial performance = Unleveraged CAGR - Unleveraged TRS</i>	
Operational measures	Log sales	Percent MEUR	Logarithm of annual sales collected during three periods, Sales(t-2), Sales(t) Sales(T)	Orbis, Retriver, Annual reports
	EBITDA-margin	Ratio	Annual EBITDA per annual sales for all three periods: (t-2), (t) and (T)	
	EV-multiple	Ratio	Enterprise value per EBITDA	
	Log EV-multiple	Percent	Logarithm of EV-multiple	
	Operational measures for selected sector peers	MEUR / Ratio	Calculated the same way as the operational measures for the deals	DataStream
Control variables	Duration	Year	The number of years a PE house holds the portfolio company	Zephyr, Mergermarket, PE website
	Log Value	MEUR	Log Enterprise value, controlling for size on each deal.	
	Entry Period	binary	Dummy-variable, controlling for recession and booms between periods. Four periods: 1997-2000, 2001-2003, 2004-2006 and 2007-2009	
	Strategy: Organic vs Inorganic	binary	Dummies was used to separate the strategies. Organic=1, Inorganic=0	Zephyr, Mergermarket
Survey	Background Operational	binary	Dummies - Operational Background =1, No Operational Experience =0	122/334 survey answers
	Background Finance	binary	Dummies - Finance background - if the Investment Managers previous work was within investment banking/ consulting or other finance related jobs and for those working in both finance and operational – for instance consultants working with strategy projects and due diligence = 1 Managers with no finance background = 0	

Survey continuing	Background Operational*Organic	binary	Dummies - Investment Managers with operational background using an organic strategy = 1. Operational background with Inorganic or finance background Organic/inorganic = 0	
	Education	binary	Dummies - Bachelor/Master and MBA degree = 1. Bachelor solely or both Bachelor and Master Degree = 0	
	Experience PE	binary	Dummies – Managers with “More than 10 years and “between 7-10 years of experience” = 1. Managers with “less than 7 years” within the business = 0	
	Background Finance*Organic	binary	Dummies - Manager with background in Finance working with Organic Deals = .1 Other backgrounds and strategies = 0	
	Experience*Organic	binary	Dummies - Managers with more than 7 years’ experience within PE and working with Organic deals =1. Other backgrounds and strategies = 0	
	International	binary	Dummies - Manager with international experience = 1. Managers without = 0	
Survey - Employment	Delta Employment	Percent	Annual change in Employment rate between entry and exit period.	122/334 survey answers
	Time Spend	binary	Dummies – Time spend on Employees/Employment over course of a month if between 2-3 days, 4-5 days and more than 5 days = 1. If between 1 hours and 1 day and 1 hour or less = 0	
	Training	binary	Dummies – If PE house <i>always</i> or <i>often</i> offer employees in the portfolio company training/education = 1. If they sometimes, never or hard to answer = 0	
	Delta Executive	binary	Dummies – If the PE house have done any changes regarding the employees in the holding companies and this changes regards the Executive management = 1. If not = 0.	
	Delta BOD	binary	Dummies – If the PE house have done any changes regarding the employees in the holding companies and this changes regards the Board of Directors = 1. If not = 0.	

Appendix D – Search criteria for Sector peers

The main search criteria's valid from DataStream were:

1. **Chosen Countries:** Sweden, Denmark, Finland and Norway
2. **Currency:** Euro
3. **Net Sales Or Revenues**

What type of industries included in each Sector peer were chosen manually, this to be sure that each Peer group were as accurate to every deal in our sample as possible. The industries for our five different sectors were:

- **Retail/Consumer:** Food and Drug retail, General retail and Leisure Goods
- **IT:** Software and Computer services
- **Medical:** Pharmaceuticals
- **Manufacture:** General Industries
- **Service:** Support Service, Health Care Equipment and services

Appendix E – Results from the survey

Table 1: The functions below ranked from most important (1) to least important (9)

#	Answer	1	2	3	4	5	6	7	8	9	Mean
1	Operational improvements	24	27	22	3	1	0	1	0	0	2.15
2	Improvements in sales and turnover	23	26	12	11	4	1	0	1	0	2.42
3	Investment related decisions for the holding company (M&A's)	19	11	19	10	12	4	2	1	0	3.13
4	Corporate governance issues	7	8	6	13	8	18	15	2	1	4.76
5	Working capital management	0	3	9	20	19	22	3	2	0	4.83
6	Questions regarding employees/employment	5	2	7	11	15	7	6	8	17	5.77
7	Capital structure changes	0	1	1	6	6	19	34	9	2	6.42
8	Changes in cash holdings	0	0	2	3	4	4	6	40	19	7.63
9	Changes in amortization and depreciation	0	0	0	1	9	3	11	15	39	7.88
Total		78	78	78	78	78	78	78	78	78	

Table 2 : How much time the investment managers spend on each function over the course of a month

#	Question	1h or less	Between 1h - 1 day	Between 2-3 days	Between 4-5 days	More than 5 days	Responses	Mean
1	Investment related decisions for the holding company (M&A's)	4	28	34	9	6	81	2.81
2	Corporate governance issues	14	35	25	6	1	81	2.32
3	Operational improvements	4	20	35	16	7	82	3.02
4	Improvements in sales and turnover	9	22	30	11	7	79	2.81
5	Changes in amortization and depreciation	65	16	0	0	0	81	1.20
6	Working capital management	15	46	17	2	1	81	2.11
7	Capital structure changes	23	39	15	4	1	82	2.04
8	Changes in cash holdings	52	21	5	1	1	80	1.48
9	Employment regarding questions	23	33	21	3	1	81	2.09

Table 3: Reporting whether the managers think they should devote more, less or the same amount of resources to the following functions.

#	Question	Much Less	Less	The Same	More	Much More	Responses	Mean
1	Investment related decisions for the holding company (M&A's)	1	2	69	10	0	82	3.07
2	Corporate governance issues	1	5	69	6	1	82	3.01
3	Operational improvements	0	0	43	34	5	82	3.54
4	Improvements in sales and turnover	0	2	39	33	7	81	3.56
5	Changes in amortization and depreciation	4	10	65	1	2	82	2.84
6	Working capital management	0	2	58	18	3	81	3.27
7	Capital structure changes	4	7	69	2	0	82	2.84
8	Changes in cash holdings	2	11	60	5	2	80	2.93
9	Questions regarding employees/employment	2	2	61	14	3	82	3.17

Table 4: What kind of changes regarding the employees in the portfolio company the PE houses do.

#	Answer		Response	%
1	Changes in the board of directors		72	94%
2	Changes in the executive management		74	96%
3	Changes in employment rate		23	30%
4	Changes in the employees responsibilities areas		24	31%
5	Other kind of changes. If chosen, what kind of changes?		7	9%

Table 5: If the PE houses offer training/education to the employees in the portfolio company

#	Answer		Response	%
1	Always		16	21%
2	Often		20	27%
3	Sometimes		24	32%
4	Never		4	5%
5	Hard to answer		11	15%
	Total		75	100%

Table 6: If “Always” or “Often”, at what level the training/education are offered to.

#	Answer		Response	%
1	Board of directors		18	43%
2	Executives management		40	95%
3	At middle management level		14	33%
4	At operational level		7	17%
5	Other		0	0%

Appendix F - Private Equity Survey

Below, the questions in the survey sent out to 334 investment managers working at the selected Swedish PE houses is represented. Note that after question 22 they only answered one question more, the one regarding what deals they been involved in.

Q1 For how long have you been working within Private Equity?

- ☐ Less than 1 year (1)
- ☐ 1-3 years (2)
- ☐ 3-7 years (3)
- ☐ 7-10 years (4)
- ☐ More than 10 years (5)

Q2 For how long have you been working for other employees with task closely related to what you are doing now before you started at your current Private Equity-firm?

- ☐ Not applicable (1)
- ☐ Less than 1 year (2)
- ☐ 1-3 years (3)
- ☐ 3-7 years (4)
- ☐ 7-10 years (5)
- ☐ More than 10 years (6)

Q3 What is your highest level of education?

- ☐ Bachelor degree (1)
- ☐ Master degree (2)
- ☐ MBA degree (3)

Q4 Have you been working with finance before you started at your current PE-firm?

- ☐ Yes, Investment banking (1)
- ☐ Yes, Consulting (2)
- ☐ Yes, other (3)
- ☐ No (4)

Q5 Did you have any operational background before you started at your current PE-firm? (Check all that apply)

- ☐ Yes, in the manufacturing/industrial industry (1)
- ☐ Yes, in the retail/consumer goods industry (2)
- ☐ Yes, in the service industry (3)
- ☐ Yes, in the biotech or medical industry (4)
- ☐ Yes, but within another industry (5)
- ☐ No, operational experience (6)

Q6 Do you have international work experience?

- ☐ Yes, more than 5 years abroad (1)
- ☐ Yes, between 1-5 years abroad (2)
- ☐ No (3)

Q7 Concerning the portfolio companies you are responsible for, is operational growth (organic) a common strategy during the holding period?

- ☐ Always (1)
- ☐ Often (2)
- ☐ Sometimes (3)
- ☐ Never (4)
- ☐ Hard to answer (5)

Q8 Concerning the portfolio company/companies you is/are responsible for, is growth through M&A (inorganic) a common strategy during the holding period?

- ☐ Always (1)
- ☐ Often (2)
- ☐ Sometimes (3)
- ☐ Never (4)
- ☐ Hard to answer (5)

Q9 How much time do you spend on each of the following functions in the portfolio company/companies over the course of a month?

	1 hour or less (1)	Between 1 hours - 1 day (2)	Between 2-3 days (3)	Between 4-5 days (4)	More than 5 days (5)
Investment related decisions for the holding company (M&A's) (1)	☐	☐	☐	☐	☐
Corporate governance issues (2)	☐	☐	☐	☐	☐
Operational improvements (3)	☐	☐	☐	☐	☐
Improvements in sales and turnover (4)	☐	☐	☐	☐	☐
Changes in amortization and depreciation (5)	☐	☐	☐	☐	☐
Working capital management (6)	☐	☐	☐	☐	☐
Capital structure changes (7)	☐	☐	☐	☐	☐
Changes in cash holdings (8)	☐	☐	☐	☐	☐
Questions regarding employees/employment (9)	☐	☐	☐	☐	☐

Q10 Do you think your company should devote more, less or about the same resources to the following functions in the portfolio company/companies?

	Much Less (1)	Less (2)	The Same (3)	More (4)	Much More (5)
Investment related decisions for the holding company (M&A's) (1)	☐	☐	☐	☐	☐
Corporate governance issues (2)	☐	☐	☐	☐	☐
Operational improvements (3)	☐	☐	☐	☐	☐
Improvements in sales and turnover (4)	☐	☐	☐	☐	☐
Changes in amortization and depreciation (5)	☐	☐	☐	☐	☐
Working capital management (6)	☐	☐	☐	☐	☐
Capital structure changes (7)	☐	☐	☐	☐	☐
Changes in cash holdings (8)	☐	☐	☐	☐	☐
Questions regarding employees/employment (9)	☐	☐	☐	☐	☐

Q11 Please try to rank the above mentioned functions from most important to least important.

- _____ Investment related decisions for the holding company (M&A's) (1)
- _____ Corporate governance issues (2)
- _____ Operational improvements (3)
- _____ Improvements in sales and turnover (4)
- _____ Changes in amortization and depreciation (5)
- _____ Working capital management (6)
- _____ Capital structure changes (7)
- _____ Changes in cash holdings (8)
- _____ Questions regarding employees/employment (9)

Q12 Would you say that the time spend on each function differs a great deal between industries?

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q13 How much time do you spend on employment related questions in the portfolio company/companies over the course of a month?

- ☐ Less than 1 day (1)
- ☐ Between 1 hour and 1 day (2)
- ☐ Between 1-3 days (3)
- ☐ Between 4-5 days (4)
- ☐ More than 1 week (5)

Q14 If your firm have done any changes regarding the employees in your holding companies, what kind of changes could that be? (Check all that apply)

- ☐ Changes in the board of directors (1)
- ☐ Changes in the executive management (2)
- ☐ Changes in employment rate (3)
- ☐ Changes in the employees responsibilities areas (4)
- ☐ Other kind of changes. If chosen, what kind of changes? (5) _____

Q15 If "Changes in the board of directors", do you use either your own employees or people within your firms professional network as representatives in the board of directors?

- ☐ Always (1)
- ☐ Often (2)
- ☐ Sometimes (3)
- ☐ Never (4)

Q16 If "Always" or "Often" at what positions? (Check all that apply)

- ☐ Chairman of the board (1)
- ☐ Representative (2)

Q17 How common is it that you have your own employees or people within your firms professional network in the executive management?

- ☐ Always (1)
- ☐ Often (2)
- ☐ Sometimes (3)
- ☐ Never (4)

Q18 If "Always" or "Often", at what positions? (Check all that apply)

- ☐ CEO (1)
- ☐ COO (2)
- ☐ CFO (3)
- ☐ Other. If so, at what positions? (4) _____

Q19 How common is it that you have your own employees or people within your firms professional network in operational positions?

- ☐ Always (1)
- ☐ Often (2)
- ☐ Sometimes (3)
- ☐ Never (4)

Q20 Have you offer the employees in the portfolio company some kind of training/education during your holding period?

- ☐ Always (1)
- ☐ Often (2)
- ☐ Sometimes (3)
- ☐ Never (4)
- ☐ Hard to answer (5)

Q21 If “Always” or “Often” at what level do you offer the employees training/education? (Check all that apply)

- ☐ Board of directors (1)
- ☐ Executive management (2)
- ☐ Middle management level (3)
- ☐ Operational level (4)
- ☐ Other (5)

Q22 Can you estimate the changes done in employment rate on the portfolio companies during your PE-firms holding period?

- ☐ No change (1)
- ☐ Decrease more than 10% (2)
- ☐ Decrease between 5-10% (3)
- ☐ Decrease between 5-0% (4)
- ☐ Increase between 0-5% (5)
- ☐ Increase between 5-10% (6)
- ☐ Increase more than 10% (7)
- ☐ Hard to answer (8)

Q23 Where do you work?

- ☐ Altor Equity Partners (1)
- ☐ 3i Group PLC (2)
- ☐ Accent Equity Partners (3)
- ☐ CapMan (4)
- ☐ EQT Partners AB (5)
- ☐ Ferd Group PE (6)
- ☐ FSN Capital Partners (7)
- ☐ Industri Kapital (8)
- ☐ Litorina Kapital (9)
- ☐ Medcap AB (10)
- ☐ Montagu Private Equity (11)
- ☐ Nordic Capital (12)
- ☐ Nordic Growth (13)
- ☐ Norvestor Equity AS (14)
- ☐ Permira (15)
- ☐ Pod Holding AB (16)
- ☐ Polaris Equity (17)
- ☐ Priveq Partners AB (18)
- ☐ Procuritas AB (19)
- ☐ Ratos (20)
- ☐ Riverside Europe Partners (21)
- ☐ Scope Capital Advisory AB (22)
- ☐ Segulah (23)
- ☐ SEB Venture Capital (24)
- ☐ Triton (25)

Answer If Where do you work? - 3i Group PLC Is Selected

Q24 Have you been involved in this/these deal/s with 3i Group PLC? (Check all that apply)

- ☐ Revus Energy AS (1)
- ☐ Gant Company (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Altor Equity Partners Is Selected

Q25 Have you been involved in this/these deal/s with Altor Equity Partners? (Check all that apply)

- ☐ Ferrosan (1)
- ☐ Palodex Group (2)
- ☐ Dynapac AB (3)
- ☐ Do not want to answer (4)

Answer If Where do you work? Accent Equity Partners Is Selected

Q26 Have you been involved in this/these deal/s with Accent Equity Partners? (Check all that apply)

- ☐ Grycksbo (1)
- ☐ Paroc (2)
- ☐ Semantix AB (3)
- ☐ Do not want to answer (4)

Answer If Where do you work? CapMan Is Selected

Q27 Have you been involved in this/these deal/s with CapMan? (Check all that apply)

- ☐ Pretax Oy (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? EQT Partners AB Is Selected

Q28 Have you been involved in this/these deal/s with EQT Partners AB? (Check all that apply)

- ☐ Tognum (1)
- ☐ Domestic International AB (2)
- ☐ Flexlinks System AB (3)
- ☐ Thule AB (4)
- ☐ Tradex AB (5)
- ☐ Symrise AG (6)
- ☐ Com hem AB (7)
- ☐ Dahl International AB (8)
- ☐ Findus AB (9)
- ☐ Securitas Direct (10)
- ☐ Do not want to answer (11)

Answer If Where do you work? Ferd Group PE Is Selected

Q29 Have you been involved in this/these deal/s with Ferd Group PE? (Check all that apply)

- ☐ Pronova Biopharma ASA (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? FSN Capital Partners Is Selected

Q30 Have you been involved in this/these deal/s with FSN Capital Partners? (Check all that apply)

- ☐ Kongsberg Automotive (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Industri Kapital Is Selected

Q31 Have you been involved in this/these deal/s with IndustriKapital? (Check all that apply)

- ☐ Alfa Laval (1)
- ☐ Myresjöhus AB (2)
- ☐ CPS Color Group (3)
- ☐ Dyno Nobel ASA (4)
- ☐ Enermet Oy (5)
- ☐ Paroc Group Oy (6)
- ☐ Kongsberg Automotive (7)
- ☐ Sydsvenska Kemi AB (8)
- ☐ Oriflame Cosmetic SA (9)
- ☐ Alfa AB (10)
- ☐ Do not want to answer (11)

Answer If Where do you work? Litiorina Kapital Is Selected

Q32 Have you been involved in this/these deal/s with Litiorina Kapital? (Check all that apply)

- ☐ Coromatic Group (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Medcap AB Is Selected

Q33 Have you been involved in this/these deal/s with Medcap? (Check all that apply)

- ☐ Handitek AB (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Montagu Private Equity Is Selected

Q34 Have you been involved in this/these deal/s with Montagu Private Equity? (Check all that apply)

- ☐ Survitec Group (1)
- ☐ Sebia AS (2)
- ☐ Cory Environmental (3)
- ☐ Click to write Choice 4 (4)

Answer If Where do you work? Nordic Capital Is Selected

Q35 Have you been involved in this/these deal/s with Nordic Capital? (Check all that apply)

- ☐ Biovitrum AB (1)
- ☐ Dynal Biotech (2)
- ☐ Guide Konsult (3)
- ☐ Marioff (4)
- ☐ Atos Medical AB (5)
- ☐ Nycomed (6)
- ☐ KappAhl (7)
- ☐ C More Group (8)
- ☐ Falck (9)
- ☐ Do not want to answer (10)

Answer If Where do you work? Nordic Growth Is Selected

Q36 Have you been involved in this/these deal/s with Nordic Growth? (Check all that apply)

- ☐ Tpack AS (1)
- ☐ Zaper.com AS (2)
- ☐ Other (3)
- ☐ Do not want to answer (4)

Answer If Where do you work? Norvestor Equity AS Is Selected

Q37 Have you been involved in this/these deal/s with Norvestor Equity AS? (Check all that apply)

- ☐ Component Software (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Permira Is Selected

Q38 Have you been involved in this/these deal/s with Permira? (Check all that apply)

- ☐ Grammar AG (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Pod Holding AB Is Selected

Q39 Have you been involved in this/these deal/s with Pod Holding AB? (Check all that apply)

- ☐ Inion Oy (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Polaris Equity Is Selected

Q40 Have you been involved in this/these deal/s with Polaris Equity? (Check all that apply)

- ☐ Emotron AB (1)
- ☐ Louis Poulsen Lighting A/S (2)
- ☐ Other (3)
- ☐ Do not want to answer (4)

Answer If Where do you work? Priveq Partners AB Is Selected

Q41 Have you been involved in this/these deal/s with Priveq Partners AB? (Check all that apply)

- ☐ Hemtex AB (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Procuritas AB Is Selected

Q42 Have you been involved in this/these deal/s with Procuritas AB? (Check all that apply)

- ☐ Expan AS (1)
- ☐ Disa Holding A/S (2)
- ☐ Lekolar AB (3)
- ☐ Do not want to answer (4)

Answer If Where do you work? Ratios Is Selected

Q43 Have you been involved in this/these deal/s with Ratios? (Check all that apply)

- ☐ Dynal Biotech ASA (1)
- ☐ Martinsson Gruppen AB (2)
- ☐ Camfil AA (3)
- ☐ Hägglunds Drives AB (4)
- ☐ Alimak Hek Group AB (5)
- ☐ Medisize Medical (6)
- ☐ Haglöfs (7)
- ☐ Dahl (8)
- ☐ Blugarden AS (9)
- ☐ Do not want to answer (10)

Answer If Where do you work? Riverside Europe Partners Is Selected

Q44 Have you been involved in this/these deal/s with Riverside Europe Partners? (Check all that apply)

- ☐ Welltec A/S (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? Scope Capital Advisory AB Is Selected

Q45 Have you been involved in this/these deal/s with Scope Capital Advisory AB? (Check all that apply)

- ☐ MySQL (1)
- ☐ Other (2)
- ☐ Do not want to answer (3)

Answer If Where do you work? SEB Venture Capital Is Selected

Q46 Have you been involved in this deal with SEB Venture Capital? (Check all that apply)

- ☐ Interpeak AB (1)
- ☐ Kreatel Communications AB (2)
- ☐ Arexis AB (3)
- ☐ Do not want to answer (4)

Answer If Where do you work? Segulah Is Selected

Q47 Have you been involved in this/these deal/s with Segulah? (Check all that apply)

- ☐ NEA-gruppen AB (1)
- ☐ NVS Installation AB (2)
- ☐ Other (3)
- ☐ Do not want to answer (4)

Answer If Where do you work? Triton Is Selected

Q48 Have you been involved in this/these deal/s with Triton? (Check all that apply)

- ☐ Phadia (1)
- ☐ Tetra holding GmbH (2)
- ☐ Lehnkering GmbH (3)
- ☐ Do not want to answer (4)