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DO PRIVATE EQUITY OWNED COMPANIES OUTPERFORM? – A STUDY ON THE SWEDISH MARKET

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Abstract

In this paper, we first examine the private equity market in Sweden since its birth in the late 80s, and by gathering an extensive dataset of 368 transactions from 1988 to 2015, map how the industry has evolved over time. We conclude that not only has the number of companies held by private equity firms increased rapidly, but so has the breadth of industries targeted. To further understand the effect private equity has on the economy, we analyze the operating performance for a subset of 230 private equity owned companies acquired between 1999 and 2013, and find that they outperform companies in the same industry, especially regarding growth, but also in terms of improvements to the EBITDA margin. This is achieved at the same time as the number of employees and wages increase more than for comparable companies, in contrast to common arguments from critics of private equity. Moreover, by distinguishing between local and international private equity funds, we can see that the international funds' share of the market have increased rapidly, but we do not find any differences in terms of operating performance among companies held by local or international funds. Furthermore, we find that companies that previously were a subsidiary of a larger company within the same industry, have the most profitability improvements during private equity ownership, while companies acquired from private owners, have the least improvements. Finally, we find that companies that have improved the most during private equity ownership, tend to be sold to other private equity funds, rather than to other types of buyers.

Keywords: Private Equity, Leveraged Buyout, Operating Performance

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1 INTRODUCTION

Private equity as a form of ownership is a relatively new phenomena in the corporate world. Although the first private equity funds were set up already after World War II, it was not until the 1980s private equity became a relevant aspect of the US economy. In Europe, private equity played a smaller role in the economy until the late 1990s, but in the last 15 years the market has evolved rapidly, and private equity is now a significant and ever increasing part of the economy. In 2014, European private equity owned companies employed over seven million people through 25,000 companies (EVCA, 2014).

In short, a private equity firm ("PE-firm") raises capital from external investors, e.g. pension funds, and sets up a private equity fund ("PE-fund") with a limited lifetime, usually 10 years. The PE-fund then acquire companies, using a high amount of debt, develop the companies and sell ("exit") them after a few years. The PE-firm that sets up the fund is exclusive advisor to, and control the PE-fund, and a PE-firm can control multiple PE-funds. When all companies are sold, the PE-fund closes down and the profit is allocated between the PE-firm and the investors. Although it is hard to find reliable data, most research indicates that the return achieved by PE-funds are higher than the return on the stock market.

An interesting topic is how PE-funds could achieve superior returns. Broadly this could be the result of either improvements in operating performance in the companies that the PE-fund acquires, or other factors, such as financial engineering and market timing. In this study, we aim to focus on the first aspect; operational improvement in private equity owned companies, i.e. how private equity owned companies ("PE-holdings" or "portfolio companies") perform compared to other companies. Several studies have examined operational improvements in PE-holdings, however, most studies have been limited by the private nature of the data. Therefore, we will focus on Swedish companies in this study, primarily because the Swedish corporate law requires all companies to submit annual reports, regardless if they are private or public. Our sample is therefore free from the selection bias that occurs in studies in e.g. US or UK, where only companies that are exited through an IPO can be examined. Furthermore, Sweden is one of the most concentrated private equity markets in Europe. PE-holdings currently employs around 200,000 people in Sweden. (SVCA, 2015). In addition, the high presence of private equity in Sweden has resulted in increased attention in media in recent years.

We first examine the private equity market in Sweden by analyzing 368 private equity transactions that have taken place between 1988 and 2015. We can see that there is a rapid growth in the number of companies held by PE-funds; the number of PE-holdings has increased every year from 1995 to 2014, with a CAGR of 12%. We can also see that between the years 2000 and 2007, the percent of companies held by funds advised by international PE-firms rose from 20 to 40 percent.

Next, we examine a subset consisting of 230 PE-holdings acquired during 1999-2013. The sample is larger than in almost any other study on the subject. This is mainly because we choose to include both exited and current holdings, in contrast to most previous studies that only include exited holdings. We show that PE-holdings outperform similar companies in the same industry ("peers"), especially with regards to revenue growth, which is in line with previous studies.

Our study however differs from, and builds on previous studies in several aspects. First, we have manually gathered a comprehensive and unique dataset including the previous and latter owner of all PE-holdings in Sweden, as well as the type of PE-fund. For previous owner, we find (1) that companies that previously were a subsidiary of a larger company have more improvements during private equity ownership ("PE-ownership") than other PE-holdings, and (2) that companies acquired from families or a few individuals, have lower profitability improvements than companies bought from other type of owners. Second, we find that companies that have had the most improvements during PE-ownership are at exit sold to another PE-fund, hence entering a second period of PE-ownership. Finally, since we examine a long period of time (17 years), we are able to compare different time periods, and we show that while revenue growth for PE-holdings have increased in recent years, profitability improvements have declined, especially after the financial crisis in 2008.

2 LITERATURE REVIEW

Already in the mid-80s, Jensen (1986) argued that companies that experienced a leveraged buyout transaction had several benefits over the public corporation, mainly because of the increased possibility to reduce the agency cost of free cash flow. These advantages led to a new organizational form to emerge, one that was successfully competing with the public corporation. A few years later, Jensen (1989) even went as far as saying that publicly held corporations had outlived their usefulness in many sectors of the economy.

At the time of Jensen's study, no clear definition of private equity existed, but today the phenomena is well-known and defined. In general, A PE-firm is a partnership of professionals that sets up a fund, where the PE-firm is general partner ("GP") and the investors are limited partners ("LP"). Investors are generally pension funds, insurance companies, university endowment funds or other types of investors that have a longer investment horizon. The LPs contribute most of the capital, but the GP takes responsibility for managing the capital, i.e. making the investments and developing the companies. A fund generally has a lifetime of 10 years, where the first five years are used for investments, and the PE-firm generally raises a new fund every three to five years, when most of the capital from the latest fund is invested (Metrick and Yasuda, 2010). Investments are generally made by taking majority stakes in mature companies, as opposed to venture capital that takes minority stakes in emerging companies (Kaplan and Strömberg, 2009). Companies are acquired by a mix of equity (from the PE-fund) and debt (from external sources). These type of transactions are also described as "buyouts", "leveraged buyouts" or "management buyouts" in the literature. The goal is to improve the value of the companies over the limited holding period and then sell the company at a higher price than it was acquired for. When all companies are sold, the fund closes down and the resulting capital is allocated between the PE-firm (GP) and the investors (LP). A typical agreement is that GPs get 2% of the total capital each year in management fee, and the profit from the fund is divided so that GPs get 20% and LPs 80% (Metric and Yasuda, 2010).

Since Jensen's study in 1986, several studies have examined the returns PE-funds deliver to its investors, with mixed conclusions. Groh and Gottschalg (2006) concluded based on a US sample of buyout fund investments, that these investments had a higher gross IRR than public market investments with an equal risk profile. Guo, Hotchkiss and Song (2008) arrived at a similar conclusion when they examined a sample of 90 buyouts during 1990-2006 and found that investors' returns were 78% better than the S&P 500 during the total buyout period.

However, Kaplan and Schoar (2005) differentiated between venture funds and buyout funds and concluded that although gross returns for buyout firms and venture funds outperform the S&P 500, only venture funds outperformed net of fees. Furthermore, David F. Swensen, who has been the head of the Yale Endowment Fund since 1985, and is considered to be one of the most prominent and successful endowment fund managers, argues in his book Pioneering Portfolio Management that the average PE-fund perform poorly net of fees, while the top quartile funds have consistent over performance (Swensen, 2009).

It should be noted that since PE-funds do not have to make their results public, all of the above studies suffer from a selection bias, since they either are based on voluntary reporting by PE-firms or based on deals that were public both before and after PE-ownership. However, based on the available research today, the findings seems to lean more towards private equity funds having positive market adjusted returns.

There are several possible factors explaining these returns. As discussed earlier, the factor we focus on in this study is improvements in the operating performance of the companies that the PE-funds acquire. This is broadly defined as increases in operating results in the portfolio companies. Different theories and aspects on how private equity ownership contributes to such operating improvements are described in section 2.1, and in section 2.2, we briefly go through other sources of value creation.

2.1 Value Created by Improving Operating Performance

As discussed above, our focus in this study will be on operating performance, where we will examine if private equity owned companies perform better than companies owned by other type of owners. To understand if PE-ownership really improves a company, we aim to study the accounting data of PE-holdings and compare the performance against a peer group in the same industry. There are several theories explaining why PE-holdings should outperform, which is divided into six broad categories and discussed below.

2.1.1 The Disciplinary Effect of Debt

In addition to the effect debt has on return, risk and tax, it can also affect efficiency in a company. Jensen (1986) was among the first to discuss the leveraged buyout phenomena, and argued in the context of agency cost. Agency cost, a theory developed by Jensen and Meckling (1976), is the indirect costs that occur when ownership and control are separated in a corporation. Jensen (1986) argues that this cost is especially high in firms that generate a substantial cash flow, since managers may have incentives to use the cash to take on

investments with a negative net present value, instead of distributing the cash to shareholders. This risk is mitigated in private equity owned companies, since a large amount of debt is added, which requires the company to make interest and amortization payments every year, hence forcing management to have more discipline in using the cash. Studies that specifically look at if higher leverage leads to higher operating performance show different results. Guo, Hotchkiss and Song (2008) show that the amount of leverage is related to the performance, while Acharya et al. (2012) do not find any such effects.

A disadvantage with the high increase in debt, is that it can lead to reduced investment incentives (Myers, 1977). However, reduced investment does not necessarily mean that the innovative capabilities of a company declines. Lerner, Sorensen and Strömberg (2011), examine the patenting behavior of private equity owned companies and come to the conclusion that private equity owned companies tend to focus their efforts on core technologies, which lead to patents in these core areas to have a greater impact. This implies that while PE-holdings may invest less, they make more useful and well-directed investments.

2.1.2 Management Incentives

Continuing on the agency cost theme, according to Wright, Gilligan and Amess (2009), the most important factor affecting the alignment of shareholders and management is the size of the management ownership in the company. Several studies (e.g. Phan and Hill, 1995) have concluded that it is far more relevant for the performance than the disciplinary effect of debt. Private equity firms started early on focusing on increasing management shareholdings. Kaplan (1989b) shows that CEOs on average increased their shareholdings with four times after a buyout. Creating different share classes, where management receive sweet equity[1] is another way of enabling management to have the possibility of making a substantial return if the value of the company increases. Acharaya et al. (2012) find that management on average make 13 times the money invested if the initial plan is successful. According to Kaplan and Strömberg (2009), an important distinction to public companies, where managers usually get stock options, is that managers in private equity owned firms often have to invest their own money in the company, hence not only taking part of the upside, but also losing money if the investment is unsuccessful. Furthermore, since equity holdings in private companies are illiquid, and thus

[1] Sweet equity is created in the following scenario: At purchase, equity is divided between preference shares and ordinary shares. The preference shares generate a fixed return of e.g. 8% annually, while the rest of the value goes to the ordinary shareholders. If the PE-fund owns a mix of preference shares and ordinary shares, but management only own ordinary shares, management could make a substantial return on their investment.

generally cannot be realized prior to an exit, management have few incentives to focus on short-term performance over long-term performance. While studies such as Nikoskelainen and Wright (2005) confirmed a positive effect on the value of a company by increasing management ownership, Bergström, Grubb and Jonsson (2007) did not find any relation between management ownership and improvements in operating performance on Swedish data. However, data for management shareholdings and share structures are often hard to find, and in general, previous studies agree that it is an important factor for improving operating performance.

2.1.3 Concentrated Ownership Leading to Better Governance

With a dispersed shareholder base, such as in a public corporation, most owners do not have the ability to monitor the management, and there are incentives to free ride on each other when it comes to monitoring (Berle and Means, 1932; Shleifer and Vishny, 1986). Therefore, when PE-funds acquire companies that previously were publicly held, the free-riding problem is reduced, as the ownership base becomes more concentrated.

Another advantage with concentrated ownership is the more convenient decision making that occur in private equity owned companies. By doing an extensive survey among PE-firms, Archaya et al. (2012) found that boards in PE-holdings met more often than boards in public companies, and focused more on strategic issues, since they did not have to spend as much time on compliance issues as boards in public companies. Another finding was that board members in PE-holdings were more incentivized to improve the value of the company, compared to board members of public companies. Finally, they found that boards in PE-holdings tend to replace management more frequently than boards in public companies. On average, one third of CEOs and CFOs were replaced during the first 100 days, with another third being replaced during the holding period. This indicates that PE-firms are not afraid to change the management, or to take explicit action if the company underperforms.

2.1.4 Skills, Expertise and Network of the PE-Firm

In the first private equity wave in the 1980s, most of the focus was on creating value with financial engineering, and the professionals in the PE-firms mainly consisted of people with a background from investment banking (Kaplan and Strömberg, 2009). As the industry matured, more of the focus shifted towards operational improvements in the portfolio companies, leading PE-firms to increase hiring from other industries. For example, in 2016, the former CEO of two of the largest Swedish industrial companies SSAB and Sandvik, Olof Faxander, joined the

Swedish PE-firm Nordic Capital. The operational and industrial expertise the PE-firms brings in is used to create strategies that include cost-cutting, productivity improvements, strategic changes, exploring acquisition opportunities, management changes and similar. This is also referred to as operational engineering. According to Wright, Gilligan and Amess (2009), active involvement of private equity professionals is a key factor, especially if the PE-firm has industrial expertise, and Cressy, Munari and Malipiero (2007) show that industry specialist funds are especially successful at improving operating performance. Furthermore, Gomper, Kaplan and Mukharlyamov (2015) aimed to understand how PE-funds actually add value and completed a survey among 75 PE-funds in Europe. They found that in around a third of all buyouts, the private equity professionals redefine or change the strategy of the acquired company. However, skills add most value when added to a company with less experienced management, i.e. more applicable to smaller and former privately held companies than former public companies.

2.1.5 Increased Access to Capital

Another natural contribution of private equity funds is that they provide capital to finance further growth. According to Boucly, Sraer and Thesmar (2011), who completed a study on the French market, private equity add substantial value by relaxing credit constraints for their portfolio companies, and thus enable them to take advantage of growth opportunities. This is particularly important for companies that were previously held by a few owners with limited access to capital markets. PE-funds can finance growth opportunities either by using additional fund capital, or through using its network and reputation to obtain further debt on the company level. This is particularly important when adopting high growth strategies, such as aiming to grow rapidly through add-on acquisitions. Furthermore, PE-firms tend to successfully leverage their financial industry network to achieve better financing terms than the company could have achieved on its own (Kaufman and Englander, 1993).

2.1.6 Employee Layoffs and Wage Cutting

Among the criticism private equity receives, one of the most common arguments is that private equity funds transfer wealth from the firm's employees to its owners by laying off employees and cutting wages. Several studies have sought to explain if this statement holds, and some early studies (Shleifer and Summers, 1988; Lichtenberg and Siegel, 1989) concluded that buyouts were followed by a restructuring where wages were cut and employees laid off. Later studies have shown more mixed results. Boucly, Sraer and Thesmar (2011) showed that there

was a larger increase in employment in private equity owned companies than in similar non-private equity owned companies. In the Swedish market, Bergström, Grubb and Jonsson (2007) did not see any reductions in wages or the number of employees. However, the study was performed during years when the Swedish economy experienced a positive development, and they suggest that it would be interesting to look at these factors during crisis years, which we aim to do in this study.

2.2 Other Sources of Value Creation

There are several ways in which private equity funds can generate value without improving the operating results of the portfolio companies. Whilst this is not the focus of our study, it is important to discuss these sources of value creation to better understand how PE-funds generate returns. One such important part of value creation occur at the acquisition and the divestment. In simple terms, this is achieved by buying cheap and selling expensive, also referred to as multiple arbitrage in the private equity industry. The valuation multiple of a company at the acquisition and the divestment depend on several factors, such as the value of similar companies, although the ultimate value is decided in a negotiation between the buyer and the seller (Berg and Gottschalg, 2003). PE-funds could be able to achieve financial arbitrage through a combination of several factors. First, value could be achieved by timing the market. Second, professionals in PE-firms could have superior information about a company or an industry. It has been argued that PE-firms may receive inside (illegal) information from managements of public companies, but Kaplan (1989b) found no such effect. Instead, superior information relates to unique skills that either the private equity professionals or their network have. Third, professionals in PE-firms could have superior deal making capabilities. At acquisition, this relates to the ability to identify targets, limit competition and manage the negotiation. At the divestment, it relates to using the network to find a suitable buyer to achieve the highest possible price.

Another way of creating value is to split up a company and sell the sum of all parts for a higher price than the company was acquired for as a single entity. This is possible due to the conglomerate discount that often appears in businesses that are present in a wide range of industries. This type of deals were common in the early days of private equity (Berg and Gottschalg, 2003).

A term generally associated with private equity is financial engineering. In association with the buyout, a high amount of debt is usually taken on to finance the transaction (Axelson, Strömberg, and Weisbach, 2009). Kaplan and Strömberg (2008) described debt levels of 60%

to 90% to be common in a typical buyout. We expect that these high debt levels have been harder to achieve after the financial crisis, and while this is not the focus of our study, it is certainly an interesting topic for future research.

Although some of the returns of PE-funds could be attributed to high leverage, increased leverage also leads to higher risk, and should thus not improve the risk-adjusted return (Swensen, 2009). This is in line with the classical theory developed by Modigliani and Miller (1958), that the capital structure should not affect the value of the firm, under the assumption of perfect capital markets. However, with market imperfections such as tax, higher debt levels can be used to create tax shields, and ultimately increase the value of a company. Kaplan (1989a) concludes that tax benefits in management buyouts are indeed an important source of returns. Moreover, according to Kaplan and Strömberg (2009), another factor regarding debt that could explain the return in PE-funds, is that PE-funds take advantage of a potential mispricing of debt relative to the cost of equity, i.e. that debt is priced to low in relation to the actual risk. Furthermore, they test the relationship between credit availability and private equity transactions and find that more transactions occur at times when credit availability is good, which indicates that debt is an important driver of value for PE-funds.

3 RESEARCH QUESTIONS

To build on the current literature, we aim to do a comprehensive study over Swedish private equity owned companies, and their performance over time compared to non-private equity owned companies. One of the main reasons studies on private equity have been difficult to conduct is the private nature of the data. Studies in countries that have a high amount of private equity transactions such as the US or UK have been delimited to companies exited through an IPO, which introduces a selection bias. In Sweden, all companies have to file their annual accounts, which allows for a complete study of the market, regardless of the type of exit or entry. However, due to the limited number of transactions in Sweden, most of these studies have been conducted on few transactions. Bergström, Grubb and Jonsson (2007) who was one of the first to examine the Swedish market, had a sample of 73 transactions. Since then, several studies have been conducted on Swedish data, however, most of the papers we could find still had less than 120 transactions. The one exception, a master thesis from 2013 by Svanberg and Wanzelius had a sample of 161 transactions between 2002 and 2008. The reason for the higher amount of transactions is that they include private equity transactions that have not yet been exited, which we also intend to do in this study, for which the reasoning will be elaborated on in the data chapter.

By evaluating financial data from 1998 to 2014, we will have a unique dataset, not only in size, but also regarding the extent of the time period. With this unique dataset we aim to build on current studies by first examining operating performance in three different ways; growth, profitability and cash flow efficiency. Therefore, our first hypotheses are:

H_{1a}: The growth of private equity owned companies, is higher than the growth of their respective peer group, over the holding period.

H_{1b}: The profitability of private equity owned companies is improved, relative to their respective peer group, over the holding period.

H_{1c}: The cash flow efficiency of private equity owned companies is improved, relative to their respective peer group, over the holding period.

In addition, as private equity has grown over time in Sweden, so has the discussion in popular media about the effect of private equity ownership. Critics tend to bring up reduction in employment and wages as potential issues. Therefore, we will also try to answer the below hypothesis:

H_{1d}: Employment and wages are negatively affected as a result of private equity ownership, over the holding period.

Over the last 20 years, the number of PE-firms active in Sweden has increased rapidly. When competition for buyout targets increases, and industries move towards maturity, the availability of firms with large potential operating performance improvements will decline. We thus expect to see less improvements in PE-holdings over the most recent years compared to earlier years. In addition, Kaplan and Strömberg (2009) hypothesize that buyouts entered in the private equity boom of 2005 to mid-2007 were less driven by operating and governance improvements, and rather driven by the availability of debt. Thus, companies acquired in these years will likely see less improvements in operating performance. While a few studies have attempted to examine how the effects of private equity have changed after the financial crisis, they have all been limited by the number of transactions available (e.g. Bogdanov and Teye, 2009). By also including PE-holdings that have not yet been exited, but have been held for a minimum period, our sample will not suffer from the same limitations. Therefore, our next hypothesis is:

H_2: Companies that were acquired by private equity funds in more recent years have experienced less positive change in operating performance, as a result of private equity ownership, than companies that were acquired in earlier years.

What improvements and what kind of capabilities the PE-firm can contribute to a company is highly dependent on who the previous owner was. Since most studies have been conducted on data from countries where private companies do not have to file annual accounts, these studies have revolved around transactions that have been entered through buying out a public company and exited through an IPO[2]. The topic of how private equity has affected companies dependent

[2] To complete an event study on operating performance, financials need to be available both at the entry and the exit of the study. This generally requires that a firm was entered into when it was public and exited by a sale to the public (IPO). However, an exception occurs when a company is marketed for an IPO and include enough historical financials to obtain entry values.

on previous ownership, has thus been relatively unexplored. One interesting topic is if operating performance could be improved further if the company were acquired from another private equity fund. However, since a few master theses (e.g. Green and Kindblom, 2007; Chaubert and Studer, 2013) already have examined this, we mainly focus on other types of previous owners in this study.

We expect that a company that previously were a subsidiary of another company, which we define as having a "strategic" ownership, will have more potential for improvements since it pre-buyout did not receive the full focus of top management. If a company instead previously were held by a family or a few individuals, which we define as having "private" ownership, the company already had tight ownership and hence low agency costs. In such cases, private equity professionals could instead improve operations by its network and by better access to credit markets (Boucly, Sraer, and Thesmar, 2011). We therefore expect former privately held companies to experience higher growth and less profitability improvements than companies bought from other type of owners. Therefore, our next two hypotheses are:

H_{3a}: Companies that are acquired by private equity funds from strategic owners show higher operating improvements over the holding period, compared with companies acquired from other owners, after adjusting for peers.

H_{3b}: Companies that are acquired by private equity funds from private owners show higher growth over the holding period, compared with companies acquired from other owners, after adjusting for peers.

While most transactions in the beginning were conducted by Swedish PE-firms, international PE-firms interest in the Swedish market emanated early. The current largest European private equity firm, CVC Capital Partners, made its first buyout in Sweden already in 1994, and after the first private equity wave in the 90's, the interest from international PE-firm to do transactions in Sweden grew.

Although several of these international PE-firms have established offices in Sweden in recent years, they naturally do not have the same presence on average as local firms. Furthermore, the investment committee[3] of PE-firms, tend to consist of professionals mainly

[3] Private equity firms are usually set up with an investment committee that has to approve acquisitions before they are pursued.

based at the same location as the headquarters. Although having less local knowledge on average than a local firm, international firms tend to have a larger potential investment market, and can thus theoretically pass up on investments in Sweden in favor for better opportunities in other countries. As the largest PE-firms in Sweden also operate on an international level, we do however expect that the effect of local presence will benefit the operating performance to a larger extent. Hence, we expect companies owned by local funds to outperform those owned by international funds. To our knowledge, the only study that has examined this earlier on the Swedish market (Norman and Riboe, 2011), was limited to Scandinavian PE-firms. Expanding the study to include PE-firms from outside of Scandinavia, the differences between local and international firms may be enhanced. Thus, our next hypothesis is:

H_4: Companies that are acquired by Swedish private equity funds, show more improvement in operating performance, than companies acquired by international private equity funds, after adjusting for peers.

Finally, we intend to study how PE-funds exit companies depending on how the operating performance has developed over the holding period. As far as we know, there is no previous study with this particular focus. Guo, Hotchkiss and Song (2008) broke down transactions based on the latter owner, and reported result per type of owner. They did not however test the subsets against each other, which we intend to do in this study. Our final hypothesis is thus:

H_5: The type of exit differs depending on how successful a private equity owned company has been in improving operating performance over the holding period, after adjusting for peers.

4 DATA

To answer the research questions listed in the previous chapter, we have constructed a unique dataset of private equity transactions from 1988 to 2015. This dataset will first be used to describe how the private equity market has developed over time in Sweden. Secondly, the dataset will be limited to only include transactions for which we have reliable financial information, and this dataset will later be used to answer our hypotheses.

To find private equity transactions in Sweden we first use the database Capital IQ, were we download a dataset of more than 800 private equity transactions. The modifications to the Capital IQ database performed to arrive at the final dataset used in our study is summarized in Table 4.1 and further explained below.

Table 4.1: Data Selection

		#	Comment
	Capital IQ Database	**851**	Search criterias used: (1) Private equity transaction, (2) Swedish company
(1)	Non-PE transactions	-385	Excluding venture capital, investment companies etc.
(2)	Bergström et al. (2007)	12	Searched for missing transactions in Bergström et al (2007)
(3)	Matching entry/exits	13	Added transactions if previous or latter owner in our sample was PE
(4)	PE-websites	18	Searched for missing transactions on major private equity firms websites
	Total PE-transactions	**509**	
(5)	Minority investments	-106	Excluded transactions if the acquisition consisted of <50% of the shares
(6)	Value <50m	-19	Excluded transactions if the transaction value was less than SEK 50mn
(7)	Other	-16	Excluded other non-relevant transaction (not Swedish etc.)
	Descriptives	**368**	**Full sample used in Descriptives**
(8)	Before 1999	-49	Due to lack of accounting data, we excluded transactions before 1999
(9)	Holding <24 months	-62	Excluded firms held less than 2 years, hence excluding acq. made after 2013
(10)	Revenue <50mn	-7	Excluded transactions were revenue at entry were less than SEK 50mn
(11)	Banks	-5	We excluded financial companies due to different accounting systems
(12)	Missing data	-15	For some transactions, it was not possible to find accounting data
	Final sample	**230**	**Final sample used in statistical analyses**

(1) Since Capital IQ do not fully distinguish among private equity, venture capital and investment companies, we start by excluding all transactions where the buyer is not considered to be a PE-fund. Venture capital funds have another focus and a different business model, and although their effect on company performance would be interesting to study, it is out of the scope for this study. We also choose to exclude investment companies (e.g. the Swedish company Investor AB) since they tend to have a much longer investment horizon than PE-funds.

Defining if the buyers are private equity is first done by using the Swedish Venture Capital Association's ("SVCA")[4] definition. If the PE-firm is not registered with SVCA, and thus does not have a definition, we use the PE-firms' own definition obtained from their website. If there is still no definition available on the website, we use other third party resources such as Bloomberg to determine the definition. Furthermore, we also remove companies that do not clearly fulfil the private equity structure as defined by Kaplan & Strömberg (2009), namely limited lifetime of funds and a GP-LP partnership. As an example, the Swedish listed company Ratos, which at SVCA is defined as buyout, is not classified as private equity firm in our study since it does not have such structures.

Furthermore, to achieve a more complete dataset, we complement the dataset with (2) transactions from Bergström, Grubb and Jonsson (2007) that was not in our sample, (3) matching acquisitions and divestments between PE-funds in our sample[5] and (4) information from major private equity firms' websites. (5) In addition, in line with previous studies, we exclude all transactions where the buyer acquired less than 50% of the shares[6], since we in those cases cannot conclude that the PE-fund is in control. Another reason why minority investments are excluded, is that it would be hard to define when the entry and exit occur in minority investments, since several PE-funds can buy, sell or change the stake they have in the company at different time periods. Since we only include majority investments, we have a clear definition of when the entry and exit occur, namely when the ownership goes over or below 50%. (6) We also exclude transactions where the confirmed acquisition price at the time was less than SEK 50mn and (7) transactions where the company headquarter was located outside of Sweden. This resulted in a sample of 368 transactions, which is further described in Chapter 5. Having in mind that there is no mandatory reporting of private equity transactions, we may miss some transactions that not are listed in the sources we have explored. However, by using several different sources, we do not bias our results with a particular source, and should capture a large part of the Swedish private equity market.

[4] The Swedish Venture Capital Association is a voluntary organization for investment firms that are active in Sweden. Thus international firms can also be registered with SVCA. Although most PE-firms active in Sweden are members, it is still voluntary. SVCA provides a list of all its members, defining them as either buyout or venture capital.

[5] If a private equity owned company is sold to another private equity fund, two different transactions should be in our sample. If we found that such a transactions were missing in our initial dataset, we added it manually.

[6] Ideally, we want to capture transactions where 50% of the votes are acquired. However, due to the private nature of the data, this is not always possible to determine. Nevertheless, for private companies, there is generally no difference between the number of shares and number of votes, i.e. no A- and B-shares exist.

(8) To be able to complete our final analysis, we need accounting data for both the private equity owned companies and their respective peer groups. By using the database Serrano, provided by the Swedish House of Finance, the accounting data was limited back to 1998, and we therefore have to exclude transactions before that date. Next, (9) we exclude companies that have been held for less than 24 months, both exited and current holdings, hence we exclude all acquisitions made 2014 or later. Finally, we excluded (10) companies with revenue at entry below SEK 50m, (11) financial companies, and (12) companies that lacked accounting data. This led to our final sample of 230 transactions, which will be used for analyzing our hypotheses. Despite all the aforementioned exclusions, the resulting sample is still larger than any other study we could find, that was conducted on the Swedish market.

An important distinction to most previous studies, is that we include companies in our sample that have not yet been exited. This approach is uncommon in other studies for mainly two reasons. The first is that it is arguable if the private equity fund has had time to implement all changes it intends to implement over the holding period, and that it can be misleading to include these investments. Therefore, we will also to examine exited investment separately. The second reason is that this data is not available in most countries, as it requires the availability of financial reports for companies that are still held by PE-funds. We believe it is important to include these transactions when examining a relatively short period of time; if a company performs badly, a private equity fund can choose not to liquidate the investment until it has to close the fund. This means that PE-holdings that perform less well can be held for a longer period of time. In some cases, if a fund has several holdings that have not performed well, and thus is not able to raise a new fund, it can hold off selling assets to continue to collect management fees, a phenomena also known as Zombie Funds (Bollen, 2015). Since our sample period is 15 years, we believe it is important to include these to avoid having a bias in performance. Our view is supported by Kaplan and Strömberg (2009), who argue that since the number of PE-holdings has increased rapidly in recent years, analyses of performance that only include exited holdings are biased.

For the total sample of 368 transactions, we manually gather information about previous owner, type of PE-firm, holding period, and type of exit. For both the entry and exit date, we use the announced date of the transaction, as opposed to the completion date, since the announcement date is easier to obtain. The information is retrieved from several sources including Mergermarket, news articles, press releases, and company websites.

Previous owners are divided into the following categories: Strategic, Private, Private Equity, Listed, Investment Company and Government. These categories are further explained in Table 4.2 below. Furthermore, a distinction is made between a Swedish private equity transaction and an international private equity transaction. If the buyer, or at least one of the buyers, are headquartered in Sweden, we define the buyer in the transaction as a Swedish PE-fund. The definition is based on the location of the PE-firm's headquarter, as opposed to the incorporation of the PE-fund, as the funds tend to be incorporated abroad for tax purposes. Moreover, we also note if the international PE-firms currently have a local office in Sweden. Finally, if the company has been exited, information of the exit date and buyer are gathered. Type of exit is divided into: Strategic, Private, Private Equity, IPO, Investment Company and Bankruptcy, and is further described in Table 4.2.

Table 4.2: Definition of Seller and Buyer

Type of seller	Description
Strategic	Acquisition of a subsidiary, generally from a larger company within the same industry, but it could also be from an industrial conglomerate. One example of a strategic seller is the food chain ICA, that is the seller of a total of five companies in our sample, e.g. the sale of Kjell & Company to FSN in 2014.
Private	Acquisition from a private owner. The most common example is an acquisition from the founding family of a company, but it could also be from several individual owners.
PE	Acquisition from another PE-fund. The definition of PE is the same as how we define PE in our sample. However, if it is a PE-holding that sells of one of its divisions, we define it as a strategic seller.
Listed	Acquisition through a public buyout. If the company is acquired in several steps, we define it as a transaction when 50% control is achieved.
Investment company	Acquisition from a financial owner that are not classified as private equity. This for example include acquisitions from listed investment companies (e.g. Industrivärden) and venture capital funds (e.g. Creandum).
Government	Companies acquired from the Swedish Government. Examples are the pharmacy chain Apotek Hjärtat (previously monopoly) and Max Mathiessen (previously taken over by the state due to insolvency).
Other	This refers to four transactions (one in our final sample) that did not fit in any of the categories above or were we did not find any information.
General comments	If it is a mix of owners, we define it according to the majority owner or the largest owner.

Type of Exit	Description
Strategic	Sale to a larger company within the same industry, also known as a trade sale.
Private	Sale to one or several individuals. The most common example is when previous owners or current management buys back the company.
PE	Sale to another PE-fund. The definition of PE is the same as the definition of PE in our sample. However, if it is a PE-holding that makes an add-on acquisition, we define it as a strategic buyer.
IPO	Sale through an Initial Public Offering (IPO). If the company is sold in several steps, we define it as a transaction when the PE-firm no longer has 50% ownership.
Investment company	Sale to a financial owner that not are classified as Private Equity, mostly referring to exits to listed investment companies (e.g. Investor AB).
Bankruptcy	This refers to when the company either goes bankrupt or is taken over by the financing banks.
General comments	If it is a mix of buyers, we define it according to the majority owner or the largest owner.

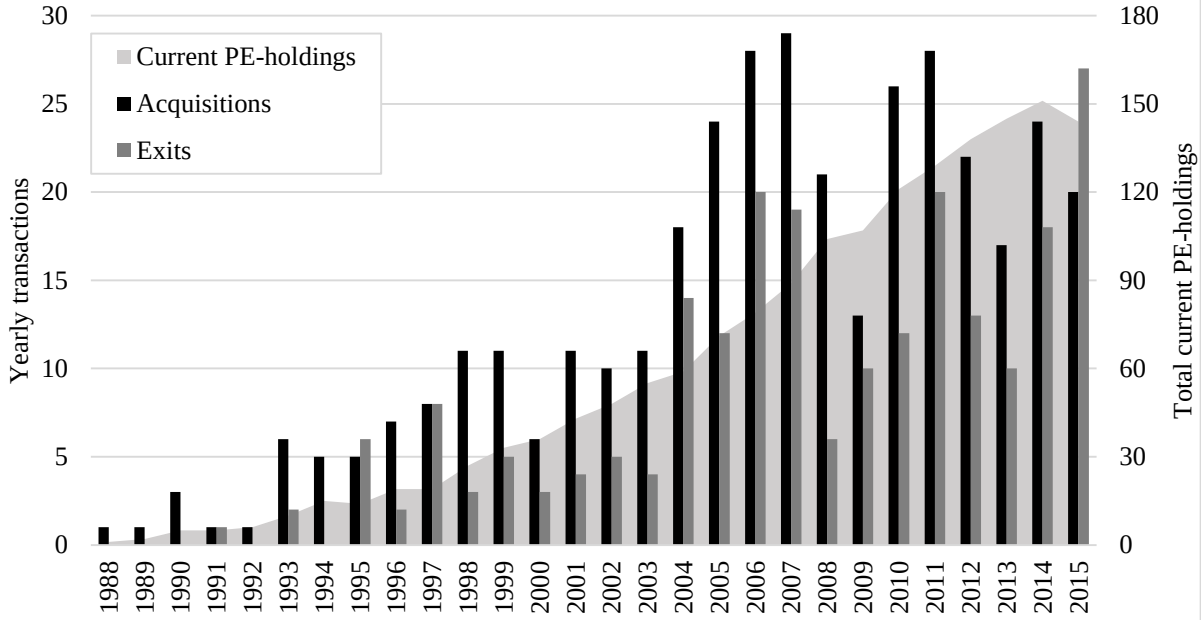
As described earlier, we use the database Serrano to gather accounting data and industry code for the final sample of 230 PE-holdings. Serrano contains a complete list of all Swedish companies and their financial data since 1998. Therefore, this database will also be used to collect information on companies that will act as peers to the private equity owned companies.

5 Descriptive Statistics

5.1 Private Equity in Sweden During 30 Years

Before examining operating performance in private equity owned companies, we will present descriptive statistics for the full dataset of 368 transactions. As we have gathered an extensive and novel dataset consisting of almost all majority private equity transactions in Sweden, since the first transaction in 1988, we are able to map and analyze the private equity market in Sweden for the last 30 years. The findings are presented below.

5.1.1 The Number of PE-Holdings has Increased Rapidly



The columns show the number of acquisitions (black) and the number of exits (dark grey) for each year, both scaled on the left Y-axis. The plotted area in light grey, scaled on the right Y-axis, shows how many companies that was owned by PE-funds in each year. This is calculated by adding acquisitions and deduct exits each year.

Figure 5.1: Number of Transactions and Current PE-Holdings 1988-2015

Since private equity emerged in Sweden in the late 80's there has been a steady increase in the number of transactions. Since 1997, the number of current private equity owned companies has increased every year, with a CAGR of 12%. The trend was only disrupted in 2015, when the number of exits were larger than the number of entries, which can be seen in Figure 5.1. The figure also clearly illustrates the large buyout wave that occurred between 2005 and 2007, which is discussed in Kaplan and Strömberg (2009). One could also see that the global financial

crisis (2008-2009) as well as the Euro crisis (2012-2013) affected the number of transactions. The period we will use to analyze operating performance is marked in dotted grey.

Table 5.1: Holding Period for Exited and Current Holdings

Years	Exited Holdings	Cumulative Exits	Current Holdings
0-1 years	7	3%	20
1-2 years	22	13%	24
2-3 years	39	30%	14
3-4 years	38	47%	16
4-5 years	35	63%	22
5-6 years	27	75%	15
6-7 years	25	86%	2
7-8 years	11	91%	11
8-9 years	10	96%	13
9-10 years	6	98%	3
> 10 years	4	100%	4
Total	**224**		**144**
Median years	**4,2**		**3,9**

"Exited holdings" shows during which year of the holding period the company was exited, for all exited holdings in our sample. "Cumulative exits" shows how many of the companies that have been exited after a certain period of time. "Current holdings" shows the current holding period as of december 2015 for PE-holdings not exited.

In Table 5.1, we can see how many years the PE-holdings in our sample have been held by PE-funds. For our sample, we can see that around 50% of all PE-holdings have been exited after four years, and slightly over 60% after five years. Furthermore, we can see that 30% of all transactions are exited already within three years. Kaplan and Strömberg (2009) find a median holding period of roughly six years over their whole sample of worldwide buyouts. From our sample, we can see that the holding period for Swedish PE-holdings has been shorter, with a median of 4.2 years. For transactions that was entered during the buyout wave between 2005 and 2007, the median holding period is 5.9 years, which is almost two years longer than the median holding period over the whole sample. Out of those transactions, 23% have still not been exited, and thus currently have a holding period of over eight years.

5.1.2 Most Companies are Acquired from Strategic Owners

Table 5.2: Type of Seller and Type of Exit

Type of Seller	#	%
Private	101	27%
Strategic	140	38%
PE	64	17%
Investment company	34	9%
Public Buyout	20	5%
Government	5	1%
Other	4	1%
Total	**368**	**100%**

Type of Exit	#	%
Private	7	3%
Strategic	99	44%
PE	65	29%
Investment company	15	7%
IPO	27	12%
Bankruptcy	11	5%
Total	**224**	**100%**
Current holdings	144	
Total	**368**	

In our sample, the most common type of seller is strategic, i.e. when the PE-fund is buying a subsidiary, generally from a larger company within the same industry. This type of seller corresponds to more than a third of all transactions. As can be seen in Figure 5.2, these types of transactions evolved early on and have been quite stable over time.

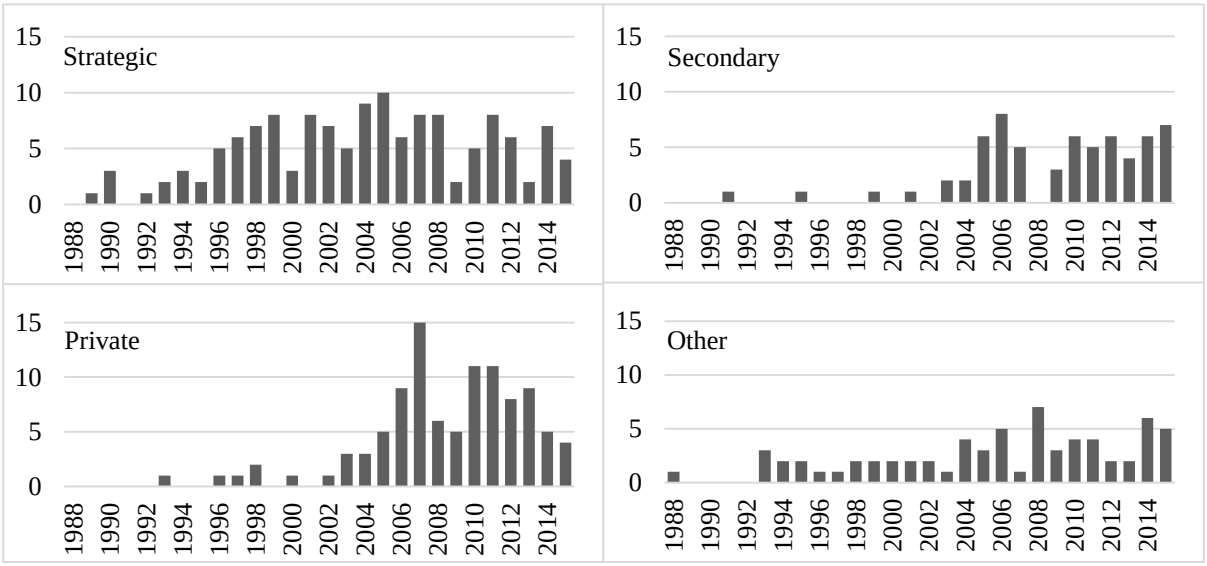


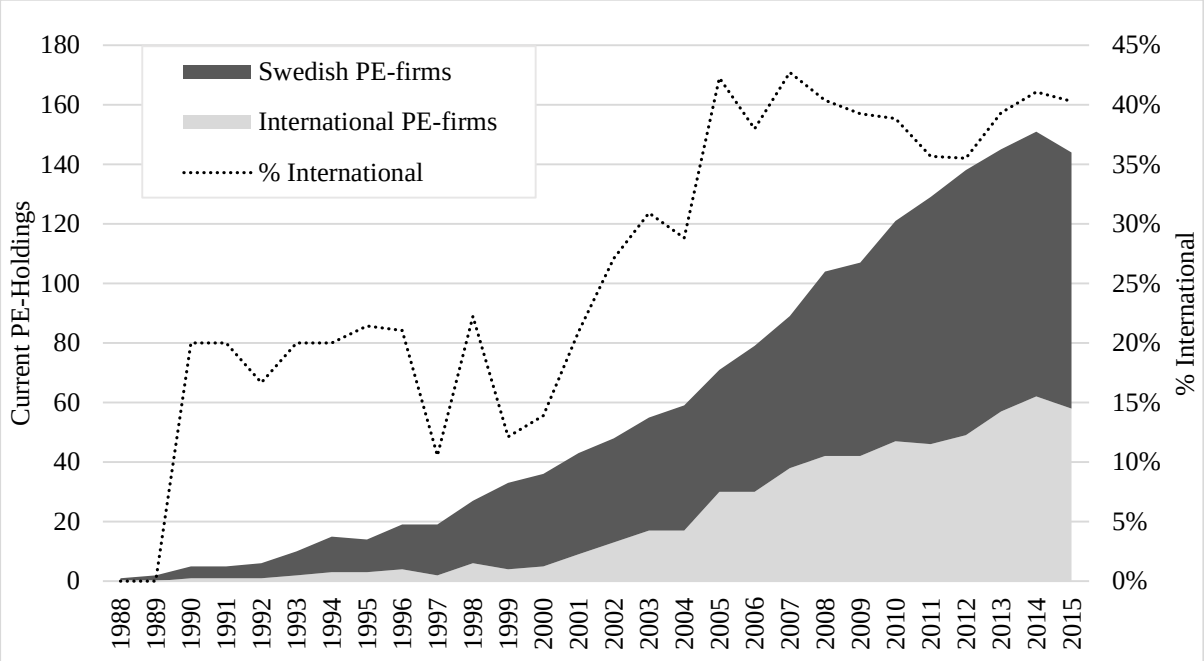
Figure 5.2: Type of Seller over Time

The second most common transaction is when a PE-fund acquires a company from a private owner, in most cases relating to the founding family of a company. Interestingly, these kind of transactions did not evolve until the beginning of 2000s. The same holds for secondary buyouts, i.e. acquisitions from other PE-funds, which have increased in importance in recent years. This is probably due to the establishment of several types of PE-funds with different focus in size and scope. Public to private transactions constitute a very small portion of the Swedish private equity market, with approximately 5% of the companies in our samples being purchased through a public buyout.

The most common type of exit is to sell to a strategic buyer, which is also called a trade sale. In our sample, 44% of the exits have been made to a strategic buyer. This is similar to the number in Kaplan and Strömberg (2009), who showed that 43% of all exits were to a strategic buyer, based on a sample of 17,000 transactions globally. While most of the strategic sellers are larger Swedish companies, strategic buyers of PE-holdings are actually more often non-Swedish companies. This could be explained to some extent by strategic sellers selling subsidiaries that are not within their core industry, but strategic buyers adding companies that fit their core industry. For many niche industries, there are only a few larger global companies active today, which results in many of the strategic buyers to be located abroad. As an example, the company Semper AB that produces baby food, were previously a subsidiary of the large Swedish food conglomerate Arla, but were acquired by a PE-fund advised by Triton, and later sold to a Swiss manufacturer of baby food.

The second most common exit is to sell the company to another PE-fund, which as discussed earlier, has become a more common way of exit in the 2000s. 29% of the exits in our sample are secondary buyouts, compared to 24% in Kaplan and Strömberg (2009). Finally, exiting through an initial public offering (IPO) is a relatively small portion of the Swedish private equity market, only constituting 12% of our sample. The relatively small number of IPOs emphasizes the importance of access to private data to be able to draw conclusions about the private equity market as a whole. The number of exits done through an IPO in our sample (12%) is similar to that found in Kaplan and Strömberg (2009) on a global scale (14%).

5.1.3 International PE-Firms have Increased Presence



The plotted area show the number of current PE-holdings each year for Swedish funds (black) and international funds (grey), both scaled on the left Y-axis. The dotted line shows the share of current PE-holdings that are owned by international firms each year, scaled on the right Y-axis.

Figure 5.3: Current PE-Holdings Divided by Local and International Firms

During the early years of private equity in Sweden, the buyout arena was largely dominated by the Swedish PE-firms EQT, Nordic Capital and IK. Before 2000, they alone were responsible for more than 50% of the buyouts in our sample. In the late 1990s, several new Swedish PE-firms were founded and more international PE-firms became active in the Swedish market. As can be seen in Figure 5.3 above, the international share of PE-holdings has increased from around 20% before 2000 to around 40% in the most recent years. This could partly be explained by the general trend of increased capital flows across national borders. Swedish PE-funds also acquire companies abroad to a larger extent now than they did twenty years ago.

5.1.4 PE-Holdings per Industry

Table 5.3: PE-holdings per Industry

	In Total		Over Time		
Industry	**#**	**%**	1988-2000	2001-2007	2008-2015
Consumer Discretionary	104	28%	35%	29%	25%
Consumer Staples	24	7%	9%	6%	6%
Financials	9	2%	0%	2%	4%
Healthcare	33	9%	8%	12%	7%
Industrials	133	36%	33%	37%	37%
Information Technology	37	10%	3%	10%	13%
Materials	22	6%	11%	5%	5%
Telecommunication	3	1%	2%	0%	1%
Utilities	3	1%	0%	0%	2%
Total Number of Transaction	**368**		**66**	**131**	**171**

In Table 5.3 above, we can see all transactions in our sample divided by industry. Clearly, industrial companies are the most common, constituting more than one third of all transactions. In line with Kaplan and Strömberg (2009), who look at transactions globally, we find that also in Sweden, industrial and retail (consumer discretionary and staples) were most common in the beginning of the private equity era, while other industries such as financials and healthcare have gained more of the PE-funds attention in the last years. In 2005, six transactions were completed in the healthcare sector, making it the second common industry with 25% of the total transactions that year.

6 METHODOLOGY

6.1 Determining Company Performance

To answer our hypotheses, we first need to determine how to measure operating performance. In line with Barber and Lyon (1996), we aim to look at changes, in contrast to actual levels, for the accounting metrics. Thus, instead of comparing the actual margin in a PE-holding with its peers, we compare the margin improvement in the PE-holding during private equity ownership with the margin improvement in peers during the same period. In line with the same study, we also look at absolute changes instead of relative changes[7], since relative changes can become skewed if the starting value is very small and even nonsensical if the starting value is negative.

There are several issues with using accounting data in private companies, as different accounting rules and smoothing of numbers may apply. Because of that, it is important to choose metrics carefully to minimize such issues. A general rule is to look as far up as possible in the income statement, e.g. too look at EBITDA instead of net income, since it generally includes less accounting adjustments. Another issue is that PE-firms often add one or several holding companies in relation to the acquisition, and thus create a new holding structure. Therefore, we manually examine the new holding structure for each transaction and ultimately aim to examine the numbers of the entity that reports the full group financials, both at entry and exit. Thus, we always use group financials if available.

To answer our first hypothesis; if private equity owned companies grow more than its peers, we look at the compounded annual growth in revenue during the period. We also discuss growth in terms of investments and number of employees. To examine profitability, we first look at the EBITDA-margin. We use EBITDA as main proxy for earnings, since it does not vary depending on capital structure, depreciation method or taxes. Also, EBITDA is a very important metric in the private equity industry when deciding what to pay for a company. Next, to account for additions to the asset base in form of investments and add-on acquisitions, we look at return on assets (ROA). We also gather information on cash flow metrics (capital expenditure, net working capital and operating free cash flow), to measure cash flow efficiency. Finally, we gather information of employment metrics (number of employees and cost per employee). We choose to annualize all our measures to increase comparability among our transactions, and to increase comparability with other studies. Our choice of metrics, especially

[7] This means that if a company's margin has increased from 10% to 12%, we calculate it as a 2% change, not a 20% change.

that we not look below EBITDA in the income statement, leads us to not capture the effect of tax shields or the effect of the cost of debt, as discussed in section 2.2. This is done on purpose, as the direct effect of debt is not the focus of this study. The metrics used, and how they are calculated, are described in Table 6.1.

Table 6.1: Description of Accounting Metrics

Metrics	Description
Revenue	The compounded annual growth rate of revenue.
EBITDA/Revenue	The difference in percent of Earnings Before Interest Tax and Deprecation ("EBITDA") over revenue at exit vs. entry, divided by the number of years of the holding period.
ROA	The difference in percent of EBITDA over total assets at exit vs. entry, divided by the number of years of the holding period.
Capex/Revenue	Since Capital Expenditure ("Capex") generally is not reported in private companies, we calculated a proxy by using fixed assets and depreciation: (Fixed assets at end of year – Fixed assets at beginning of year + This years depreciation). Capex is measured as a % of revenue at exit and compared to the same ratio at entry. The figure is divided by the number of years to arrive at the annual change.
NWC/Revenue	Net Working Capital ("NWC") is estimated by taking: Account receivables + Other receivables + Inventory – Trade payables – Other short-term payables. The NWC over Revenue at exit is compared to NWC over Revenue at entry, and the change is divided by the number of years to arrive at the annual change.
OFCF/Revenue	Operating Free Cash Flow ("OFCF") is estimated by deducting the change in NWC from EBITDA. It is calculated as a % of revenue at exit and entry. The change is divided by the number of years to arrive at the annual change.
No Employees	The compounded annual growth rate of the number of employees.
Cost of Employees	The compounded annual growth rate of the cost per employee which is calculated as the total cost of employment over the number of employees.

For revenue, EBITDA, ROA and NWC, we were able to gather data for all 230 transactions in our sample. However, for capital expenditure and operating free cash flow, we were not able to retrieve data for all transactions. Since these metrics are not provided by the database Serrano, we have to calculate them manually. Thus, since the calculation is performed by examining the change between two years, the year before both the entry and exit year is required, and these years were not always available. Also, employee figures were not retrieved for the full sample.

In addition to the operating metrics, one or two industry codes are determined for each company that is part of our set of private equity transactions. The codes collected are the Swedish SNI-codes, which are based on the European NACE-code system. The difference between SNI and NACE is that while NACE is a four-digit code, the SNI-system adds a fifth number, hence making the industry even more specific. First, the company's own reported SNI-codes are collected from the Serrano database. However, we go through all SNI-codes manually to examine if they appropriately represent the main operations of the company, and adjust where necessary. The main issue we encounter and adjust for, is that the parent company in a group

often have the codes 64.202 “Activities of holding companies” or 70.100 “Activities of head offices”, instead of the relevant industry codes. In these cases, we examine the codes reported for the main subsidiary in the group, and adjust the holding company. Another issue was that many companies in addition to their main code also had the general code 70.220 “Business and other management consultancy activities”. If the company’s core business was not consultancy services, this code is removed. Several companies also have codes describing services representing very small parts of their business, and these are also removed.

Private equity transactions rarely coincides with the end of a company’s fiscal year. Therefore, annual financial reports at the acquisition and exit years are often a mix of performance during both private equity ownership and non-private equity ownership. For exited transactions, we use the last year prior to the PE-funds exit and compare it to the year prior to the acquisition. Thus, the last year when the PE-fund held the company in its entirety, is compared to the last year it was held in its entirety by the previous owner. For transactions that have not been exited, we use the last reported financials, which in most cases is 2014, and compare them to financials for the year prior to the acquisition. The main reason why we use financials for the year before the transaction year, is that the financial report for the year of the transaction often includes a lot of noise. This could be due to a change of group structure, change of fiscal year or incurred transaction costs. One disadvantage with our method is that we in the beginning of the period may include improvements that did not occur during private equity ownership, and at the end of the period may exclude some improvements that occurred during private equity ownership. However, based on a subset of the sample we examined, this creates less bias than looking at the transaction year.

In certain cases, no financial report exists for the year before the acquisition year. Most of these cases are due to the creation of a new entity that is fundamentally different from the entity it was part of before the acquisition, e.g. if a division is acquired from a larger company, and that division was not a separate legal entity. Furthermore, in a few cases, financial reports do not exists for the last year before the exit. For example, when a company is acquired, it is common to set up a new holding company. The holding company has the obligation to report group financials, and if the entity is set up abroad, no group financials will be available in Sweden. However, if the company is sold back to a Swedish holding company, group financials can be available again at the end of the exit year. All in all, 24 companies have a modified entry year, and in 5 cases, the exit year is modified.

Furthermore, to complement our main results where we look at group financials, we also examine the financials for the main operating legal entity in the group. This is due to the high occurrence of acquisitions in the PE-holdings, which may explain some of the growth and profitability improvements. Previous studies (e.g. Bergström, Grubb and Jonsson, 2007) have argued that add-on acquisitions are an important part of PE-firms' strategies, and that it therefore not should be adjusted for. We agree that it is part of the overall strategy, but we also think that it is debatable if growth through add-on acquisitions is a correct measure of operating performance, especially when comparing with peers that not engage in add-on acquisitions to the same extent. Also, it is difficult to say whether add-ons generate value, as the investment cost of the add-on is not specified in our data. Although, neither organic growth nor growth by acquisitions necessarily creates value for investors (it depends on the cost of that growth), organic growth is usually more comparable to the median peer for most industries. By looking at financials for the main subsidiary in the group, we can to some extent distinguish between organic growth and growth through acquisitions, since most add-ons are operated as separate legal entities also after they are acquired.[8]

To gather data for this test, we manually go through all transactions were we previously had used group financials, and determine the main operating company, as well as collect financial information. Our criteria for using a subsidiary is that the main subsidiary should be a Swedish company and account for at least 50% of the total group revenue at acquisition. In 52 of the cases it was not possible to choose any subsidiary, if e.g. a large part of the sales were in a subsidiary that was located abroad, so our final sample in this test consist of 178 PE-holdings.

6.2 Determining Peers

To be able to separate the effect of private equity ownership and general development in the economy and in specific industries, we assign each transaction with a peer group. The peer group is firstly limited to only include limited liability companies (Swedish: Aktiebolag) and then determined based on industry and size. For size, we first apply a revenue limit of 50mn SEK to remove small companies that may be heavily affected by factors that not necessarily affects the industry as a whole. For example, a company with only one store is heavily

[8] This analysis does not completely distinguish organic growth. For example, in some cases, acquired entities are merged with entities already in the group, and in some other cases, operations are moved from one legal entity to another. However, in most cases, the acquired company continues to operate through a separate legal entity, so only examining the main subsidiary should act as a good proxy for organic growth.

correlated with the local market it is present in, which is not necessarily related to the industry as a whole. Secondly, we set an upper limit of 10 times the revenue of the PE-holding at entry to remove companies that due to their size, may be fundamentally different to the PE-holding for which we are trying to find comparable peers.

To find peers in the same industry, the SNI-codes are used. In contrast to the PE-holdings in our sample, we do not adjust the self-reported SNI-codes for the more than 29,000 potential peers[9]. Therefore, if the companies have reported an SNI-code that does not represent their business, it will introduce an error to our peer group. In addition, companies that have SNI-codes only describing themselves as holding companies, will be automatically excluded. In addition, all companies that have been owned by a PE-fund are excluded as peers, as well as companies that merges with another entity during the holding period. This is to make sure that PE-holdings are only compared to non PE-holdings, and to remove extreme outliers.

If there are less than 10 peers that fulfil the criteria using the five-digit SNI-code, the four-digit code is used, and if there are still less than 10 peers, the three-digit code is used. In three cases, this approach still leads to the total number of peers being less than 10. These cases are still included in the sample, with the minimum number of peers being 8. In total, the average peer group consists of 109 peers with 518 being the maximum. Another approach, which is used in several studies (e.g. Bergström, Grubb, and Jonsson, 2007) would have been to choose only a certain number of peers, i.e. the largest 20 companies in the industry, or manually choose the peers with the best fit. However, in line with Desbrières and Schatt (2002), we apply a more extensive approach and include all peers that fulfill our criteria. We argue that since the purpose of comparing against peers is to control for industry effects, having almost the whole industry in the peer group is a better approach. Also, since no further manual selection is made, there is less risk for selection biases to occur. Another possible approach, which is discussed by Barber and Lyon (1996), would have been to base the selection of peers on past performance. They recommend that peers should be chosen based on the company's performance three years prior to the event (in our case, the buyout), to account for the mean-reversion effect. We do not follow this approach for mainly two reasons. First, in line with the reasoning in Desbrières and Schatt (2002), it would have resulted in very few peers for many of our transaction. Secondly, since we only have accounting data back to 1998, we would have to remove three more years of transactions from our sample.

[9] This refers to the number of unique company registration numbers in our final dataset for peers, when all companies that never have had revenue above SEK 50mn are excluded.

All peers are chosen at the time when the specific private equity transaction took place. The advantage to this approach is that the survivorship bias that would be present if peers were selected based on a certain criteria today, is avoided, since peers that had defaulted would be automatically excluded. Furthermore, instead of using group financials for peers, we choose to look at company financials. This is because it is relatively common that a new holding company is added to the top of the group, leading to a new entity reporting group financials. If we were to look at group numbers in such a case, it would incorrectly appear as if the company have had declining sales. For the PE-holdings in our sample, we go through every transaction manually and chose to source financials from the company that currently report group numbers. This exercise is however not completed for the more than 29,000 potential peers.

6.3 Statistical Methods

To test our hypotheses that there are differences in development over the holding period for a private equity owned company compared to a non-private equity owned company, we will utilize both the parametric Student's T-test and the non-parametric Wilcoxon test.

Since we compare each PE-holding with a group of peers, we calculate the "abnormal" performance by deducting the median performance in the corresponding peer group from each transaction. The one sample Student's T-test is used to test if the average abnormal performance has a statistically significant difference from zero. While the T-test provide high statistical power, it is reliant on samples being normally distributed, that there are no extreme outliers and that the data is independent and continuous. First, since we measure growth and changes in certain accounting measures, such as EBITDA-margin, our data fulfill the continuous criteria. Second, when choosing peers to a PE-holding, we exclude all private equity owned companies from the sample to be able to fulfill the independent criteria. Third, it certainly exists some outliers in our data. This is because several of the companies in our data are small, and thus also have relatively volatile earnings. This is especially true when PE-funds acquire a company that is in the early stage of its development, and particularly if it is making large losses and turns positive during the PE-ownership. For example, in one of the PE-holdings in our sample, the company had a negative EBITDA margin of 62% before the buyout, but had improved to a 16% positive EBITDA margin at exit, resulting in an annual improvement of 11%. To adjust for such extreme outliers, we winsorize the data at the 5^{th} and 95^{th} percentiles before conducting the t-tests. As such, the eleven transactions with highest, and the eleven transactions with the lowest numbers, are adjusted. We argue that winsorizing is a better method than excluding outliers, since the data points still remains in the sample, although having less extreme values.

This maintains the distribution of performance, except for the tails that are cut of at the percentiles mentioned above. The winsorizing is done separately for all variables. Finally, regarding normality, we test our data using the Shapiro-Wilk test on the non-winsorized data. Razali and Wah (2001), conclude that it is a more powerful normality test than the Anderson-Darling test, Lilliefors test, as well as the Kolmogorov-Smirnov test. From the test, we can reject the hypothesis that our data is normally distributed on the 1% significance level. However, in line with Barber and Lyon (1996), we argue that it is an empirical question if this is a well-defined test statistic. According to the central limit theorem, a large number of independent random variables with well-defined expected values and variance, will move towards a normal distribution, regardless of the underlying distribution. However, the central limit theorem relies on variables to be independent and identically distributed, which may well be violated in our sample due to PE-funds selecting firms with certain characteristics. Therefore we include the student t-test for robustness and comparability, and focus on the Wilcoxon test as described below.

The Wilcoxon test is used to test if the median of abnormal performance differs from another sample, or in our case, where we only use one sample, to test if it is different from zero. Although it provides less statistical power compared to the Student T-test it does not rely on the sample following a normal distribution. Furthermore, Barber and Lyon (1996), conclude that the Wilcoxon test is better when conducting tests on accounting based data. This is due to the common occurrence of extreme data points in such data.

Furthermore, since every private equity owned company is matched to a specific group of peers, we do not have two independent samples that can be compared. Therefore we will not conduct a difference in difference regression. Finally, to compare subsets of PE-holding against each other, we use the independent sample T-test to test difference in averages, and the non-parametric Mann-Whitney test to test for difference in median.

7 RESULTS

In this chapter, we will present and discuss our results. In section 7.1 we will go through our main results and have a corresponding discussion for each variable we use in the tests. In sections 7.1-7.5 we will present results for several different subsets of our sample.

7.1 Main Results

Table 7.1: PE-holdings Performance Compared to Peers, Full Sample

		Growth	Profitability		Cash flow			Employees	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Group Financials									
Entry Median		456mn	9.9%	15.1%	2.6%	6.5%	9.3%	237	420k
Wilcoxon	Median	5.5%***	0.2%*	0.0%	0.2%**	0.0%	0.3%	4.6%***	0.4%
T-test	Average	8.0%***	0.3%**	-0.4%*	0.6%***	0.0%	0.3%	7.3%***	0.9%**
N		*230*	*230*	*230*	*194*	*230*	*197*	*227*	*173*
Company financials									
Entry Median		299mn	10.2%	17.8%	1.9%	4.8%	9.6%	122	476k
Wilcoxon	Median	3.4%***	0.2%	-0.2%	0.1%	0.2%	0.3%	1.9%***	0.4%**
T-test	Average	5,9%***	0.0%	-0,7%**	0,2%	0,1%	0.0%	4,5%***	0,8%***
N		*178*	*178*	*178*	*161*	*178*	*170*	*176*	*174*

*"Entry Median" shows the median of actual financials and ratios for the PE-holdings at the time of acquisition, revenues in SEKmn and Cost/Employee in SEKk. The Wilcoxon test shows the median annual abnormal returns compared to peers for the total group, and the T-test shows the average annual abnormal returns compared to peers. "Group financials" refer to our main test where we look at group financials if such exists, and "Company Financials" refer to an alternative test where we look at the main subsidiary. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively. Please refer to Appendix for p-values.*

7.1.1 Growth

Our main results, which are presented in Table 7.1, show that companies that are owned by PE-funds have outperformed their peers substantially with regards to revenue growth, with a median of 5.5% and an average of 8% when compared to peers. The fact that PE-holdings grow faster than others is in line with similar studies, however, our number is higher than for most studies. Acharya et al. (2012) show an abnormal growth of 3.2% for UK based companies, while Bergström, Grubb and Jonsson (2007) show an abnormal growth of 3.5% on companies in Sweden. Svanberg and Wanzelius (2013) who also conduct a study on the Swedish market and examine both exited and non-exited transactions between 2002 and 2008, finds an annual abnormal revenue growth of 3.5%. The main reason explaining why we have substantially

higher abnormal growth than the above mentioned studies on the Swedish market, is the choice of peers. The average growth for the PE-holdings in all our samples, without adjusting for peers, is around 10%. However, while the average growth for the peer group in our sample is around 2%, the implied average annual growth for the peer groups in their studies is around 7%. The main difference in determining peers is that we choose all peers within a narrow industry, while the other studies choose the 20 largest companies, using a broad industry definition. We argue that our approach captures more similar companies, and better capture the development in the particular industry. Also, we choose peers at the time of acquisition, instead of at the exit, to avoid a selection bias. Choosing the largest companies at exit introduces two biases; (1) that defaulted companies are excluded from the peer group, and (2) that companies with high growth during the measurement period may end up in the peer group, while companies with declining growth may have fallen out of the 20 largest companies during the measurement period.

Explanations to the substantial revenue growth for PE-holdings could according to previous studies be related to several aspects, one being management incentives. As discussed in the literature review, management are usually highly incentivized by specific share structures, making them quite wealthy if the plan goes as presented, but they also end up losing money if the performance is flat (Kaplan and Strömberg, 2009). Another factor that contributes to growth is the network and the expertise of the private equity professionals, which is discussed by Wright, Gilligan and Amess (2009). When examining growth, we can also see that there is a statistically significant growth in the number of employees, as well as an increase in capital expenditures.

When examining financials at a group level, the growth measures are affected by both organic growth and add-on acquisitions. While previous studies have argued that this not should be adjusted for since it is part of PE-firms strategy, we argue that it could bias the comparison with peers. Also, it is debatable if growth through add-on acquisitions is a good measure of operating performance. As described in more detail in section 6.1, we therefore conduct a separate test were we look at the largest separate legal entity the group. Although this does not remove all add-on acquisitions, it removes all add-ons that are still operated as legal entities. The results are presented below the group financials in Table 4.1. As can be seen in the table, even if we look at the company level, PE-holdings still grow substantially more (with a median of 3.4% yearly) than their peers. The same is true for employees, which increases by a median of 1.9% more than peers. Although we cannot entirely distinguish organic from add-on growth, this indicates that a substantial part of the growth is organic.

In conclusion, we find strong support for our hypothesis that private equity owned companies experience stronger growth than other companies.

7.1.2 Profitability

Our results show a median annual improvement in the EBITDA margin of 0.2% over peers. Increased profitability in PE-holdings is in line with most previous studies, e.g. Kaplan (1989b) who show that PE-holdings had an abnormal increase in profitability. Our results are however a bit lower than certain recent studies, e.g. Bergström, Grubb and Jonsson (2007) found that PE-holdings increase margins by 3.1% over their peers during the holding period (corresponding to around 0.6%-0.8% per year) and Acharya et al. (2012) show an annual improvement of 0.7%. One reason our results show a smaller improvement could be that we include both exited and current holding in our sample, while several other studies only include exited holdings. We argue that such distinction creates a selection bias when looking at a short time horizon, since companies that do not perform well may be hard to sell, and therefore remain in PE-ownership for a longer time period. If we only include exited holdings, we see an annual median increase over peers of 0.4% (See Appendix 6).

In contrast to previous studies, e.g. Wright, Wilson and Robbie (1996) we do not find any positive development in ROA compared to peers. The argument to look at ROA is generally that it is a good measure for examining the development in earnings in relation to capital expenditure and add-on acquisitions. However, we argue that since ROA is based on the book value of assets, it is not fully reliable when examining private companies. This is because private companies do not have to follow IFRS accounting rules, were assets in general are valued at market value. Instead, assets are valued at historical cost less cumulative depreciation ("historical cost") and the total value of assets therefore depends on when assets are acquired and which depreciation method the company has chosen. Thus, if an acquisition is made, the market value (what the company pays for the add-on) is added to the asset base, and if the asset base previously consisted of assets valued at historical cost, the asset base grows substantially when add-on acquisitions are made, with a declining ROA as a result. Therefore, the negative development in ROA at both a group and company level[10] could be due to PE-holdings completing more add-on acquisitions than their peers.

10 This problem also arises if looking at company data, because if the company we look at is also the parent company, it adds the purchase price for the add-on to its asset base, but do not increase sales or EBITDA.

In conclusion, we cannot support the hypothesis that PE-holdings increase profitability more than their peers. However, if we only include exited holdings, as most previous studies do, we do find support for the hypothesis.

7.1.3 Cash Flow Metrics

Since PE-funds tend to use a substantial amount of leverage when acquiring companies, they also have a clear focus on cash flow, and one thing that affects the cash flow is the company's net working capital ("NWC"). Smith (1990) showed already in 1990 that PE-holdings saw a decrease in NWC. However, we do not find any results indicating that firms owned by a PE-fund experience a decrease in NWC/Sales when compared to peers. Furthermore, we test for improvements in operating free cash flow (OFCF) as a percent of sales and do not find any statistically significant results. Therefore, we find no support for our hypothesis that companies experience an increase in cash flow efficiency as a result of private equity ownership. Finally, our results indicate an abnormal increase in capital expenditure, both on the group and the company level, although higher and only statistically significant at the group level. This indicates that capital expenditures refer more to add-on acquisitions than investments in fixed assets for PE-holdings.

7.1.4 Employee Measures

As discussed in the literature review, one of the main critiques private equity receives is that they extract value from other stakeholders, mainly employees. This is also claimed by several studies; Shleifer and Summers (1988) and Lichtenberg and Siegel (1989) shows that a buyout is followed by layoffs and wage cuts. However, more recent studies such as Boucly, Sraer and Thesmar (2011) show that PE-ownership leads to increases in employment for the acquired firm. Our results are more in line with Boucly, Sraer and Thesmar (2011), with a statistically significant increase in the number of employees. This is seen both when examining the group data (which includes add-ons) and when only examining the company data (which generally not includes add-ons). In addition, the median employment cost per employee rises more than for peers on a company level in PE-holdings. The average is also higher on both a group and company level. Therefore we find no support for our hypothesis that companies experience a negative effect on employment or wages as a result of private equity ownership.

7.2 Different Time Periods

As discussed in Chapter 5, the private equity industry has evolved rapidly during the past twenty years. Since we have transactions over 15 years, we split our sample over three equally sized time periods, to examine how the performance of private equity owned companies has changed over time. The results are seen in Table 7.2, where PE-holdings in each time period is compared to its respective peer group and to each other, after adjusting for peers.

Table 7.2: PE-holdings Performance in Different Time Periods

		Growth	**Profitability**		**Cash flow**			**Employees**	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
1999-2003 (First)									
Wilcoxon	Median	5.8%***	0.4%*	1.1%**	0.2%	-0.1%	0.9%**	3.1%***	0.7%**
T-test	Average	7.9%***	0.6%*	0.8%*	0.2%	-0.4%	1.3%**	7.2%***	1.9%
N		*42*	*42*	*42*	*29*	*42*	*29*	*42*	*23*
2004-2008 (Middle)									
Wilcoxon	Median	4.6%***	0.3%***	0.1%	0.2%*	0.1%	0.3%	4.7%***	0.3%
T-test	Average	7.6%***	0.5%***	-0.1%	0.5%*	0.0%	0.2%	7.3%***	0.5%
N		*101*	*101*	*101*	*87*	*101*	*90*	*99*	*77*
2009-2013 (Last)									
Wilcoxon	Median	6.6%***	-0.2%	-1.1%***	0.2%	0.1%	-0.1%	6.0%***	0.6%
T-test	Average	8.5%***	-0.1%	-1.2%***	0.7%*	0.1%	0.0%	7.3%***	0.9%
N		*87*	*87*	*87*	*78*	*87*	*78*	*86*	*73*
First vs Middle									
M-W	Diff	1.2%	0.1%	1.1%**	0.0%	-0.2%	0.6%*	-1.5%	0.4%
T-test	Diff	0,3%	0,1%	1.0%*	-0,3%	-0,4%	1,1%*	-0,2%	1,4%
First vs Last									
M-W	Diff	-0.8%	0.6%**	2.2%***	0.0%	-0.2%	0.9%**	-2.8%	0.1%
T-test	Diff	-0.6%	0.7%**	2.1%***	-0.4%	-0.4%	1.2%*	-0.2%	1.0%
Middle vs Last									
M-W	Diff	-2.0%	0.5%***	1.2%**	0.1%	0.0%	0.3%	-1.3%	-0.3%
T-test	Diff	-0,9%	0,6%**	1,1%**	-0,1%	0.0%	0,2%	0.0%	-0,3%

*The data is in this test divided into subsets according to the entry year of the PE-holdings. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively. Please refer to appendix for p-values.*

Over time, revenue growth has been statistically significantly higher than peers for all time periods, indicating that the focus on growth has been a consistent strategy across the whole sample period. Development in EBITDA margin was however clearly better in the past. For the transactions made between 1999 and 2003, PE-holdings outperformed their peers with a median

of 0.4% higher annual improvement in EBITDA margin. Results for PE-holdings made during the most recent time period imply zero improvements in EBITDA margin compared to peers, and the difference between the two periods are significant on the 5% level. Also, the ROA improvement is statistically significantly higher for both the first and middle period than for the last period. The higher improvement in profitability supports our hypothesis that operating performance improvements were higher in earlier time periods. Furthermore, this may explain why Bergström, Grubb and Jonsson (2007) show higher EBITDA improvements in their study, which was made on holdings exited before 2007. Furthermore, Bogdanov and Teye (2011), find that EBITDA-margins for private equity owned firms decreased by 0.6% on average between 2008 and 2010 on Swedish data. This indicates that the last periods could be heavily affected by the financial crisis.

There could be several reasons explaining why margin improvements have declined in the recent years, one of them being the buyout wave in 2005-2007 where the increased access to liquidity may have led to an extensive number of buyouts with less operating performance improvements available. Kaplan and Strömberg's (2009) prediction that firms acquired in this period would experience less improvements thus seem to be correct. As discussed in the research questions, this could also be a result of many industries reaching a more mature profitability level, making continued margin improvements hard to achieve. Therefore, PE-firms focus for portfolio companies may have shifted towards increasing revenues, rather than attempting to improve EBITDA-margins. Although not statistically significant, the results indicates that revenue growth has increased in recent years.

A final remark on these test is that the employment figures do not differ among the different time periods, all three subsets indicate growth in the number of employees and in wages. Bergström, Grubb and Jonsson (2007), who also not find any results that indicate employee layoffs or wage reductions, suggest as a topic for future research to examine how employees in PE-holdings are affected in an economic downturn. The results in our study, which includes PE-holdings during the global financial crisis in 2008-2009, indicates that also during crisis years, PE-holdings do not engage in layoffs or wage cuts more than comparable companies.

7.3 Previous Ownership of PE-Holdings

The three main categories of previous owners in our sample are private, strategic and private equity. There were very few public to private transactions during the time period, so we do not test these and other small categories separately. Therefore, the results in Table 7.3 below shows the three categories that make out the majority of transactions.

Table 7.3: PE-holdings Performance, Divided according to Previous Owner

		Growth	Profitability		Cash flow			Employees	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Strategic									
Wilcoxon	Median	5.1%***	0.4%**	0.4%*	0.2%	-0.4%	0.4%	2.4%***	0.4%
T-test	Average	7.1%***	0.6%**	0.3%	0.5%	-0.4%	0.6%	6.4%***	1.0%
N		*80*	*80*	*80*	*65*	*80*	*65*	*79*	*58*
Private									
Wilcoxon	Median	6.3%***	-0.3%	-1.3%***	0.2%*	0.4%	-0.1%	7.9%***	1.0%**
T-test	Average	9.3%***	-0.2%	-1.4%***	0.4%	0.4%	-0.6%	8.8%***	1.3%**
N		*70*	*70*	*70*	*59*	*70*	*62*	*68*	*59*
PE									
Wilcoxon	Median	4.5%***	0.2%	-0.3%	0.1%	0.1%	0.5%***	4.9%***	0.0%
T-test	Average	7.0%***	0.3%	-0.3%	0.7%**	0.2%	0.8%***	6.4%***	0.8%
N		*45*	*45*	*45*	*42*	*45*	*42*	*45*	*31*
Strategic vs Other									
M-W	Diff	-0.5%	0.3%*	0.9%***	0.0%	-0.6%	0.2%	-3.5%	0.0%
T-test	Diff	-1,4%	0,5%*	1,1%**	-0,1%	-0,5%	0,4%	-1,4%	0,2%
Private vs Other									
M-W	Diff	1.3%	-0.6%**	-1.5%***	0.0%	0.5%*	-0.6%**	4.2%	0.9%
T-test	Diff	1,9%	-0,7%***	-1,5%***	-0,2%	0,6%*	-1,2%***	2,2%	0,7%
PE vs Other									
M-W	Diff	-1.2%	0.0%	-0.3%	-0.1%	0.1%	0.3%	0.5%	-0.5%
T-test	Diff	-1,3%	0.0%	0,1%	0,2%	0,3%	0,7%	-1,1%	-0,1%

*The data is in this test divided into subsets according to type of seller. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test. "Other" refer to all other transactions, i.e. Strategic vs Other compares the 80 PE-holdings with a strategic seller with the 150 other PE-holdings. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively. Please refer to appendix for p-values.*

Although revenue growth is highest for previously privately held companies, revenue growth is consistently higher and significant independent on who the previous owner was. In line with our hypotheses, improvement in profitability is higher for firms acquired from strategic owners, and lower for firms acquired from private owners, both statistically significant. Companies that

previously had strategic owners, have the greatest development in EBITDA, with a 0.3% higher median and a 0.5% higher average than PE-holdings acquired from other types of owners. This is in line with the findings by Desbrières and Schatt (2002), who argue that it is explained by former subsidiaries previously receiving less attention from top management, which results in constraints on capital expenditure and insufficient cost controls. In addition, previous subsidiaries experience a statistically significantly higher ROA improvement compared to other PE-holdings. However, it is only with regard to profitability we find that previously strategic companies outperform, no significant results are seen on growth or cash flow.

Furthermore, previously privately held companies show the worst performance in EBITDA margin, which is also in line with the findings by Desbrières and Schatt (2002). They argue that this is due to the firm already having a concentrated ownership, and that if the founder leaves the company, this has a negative effect. In fact, these results seems to indicate that previously family owned companies become less effective after being acquired by a PE-fund. Several studies (e.g. James, 1999 and Chami, 2001) argue that companies that are run by its founding family outperform other companies due to commitment, specific expertise, culture and long-term strategies. Another factor explaining the lack of improvement in EBITDA could be that PE-firms mainly focus on growth when acquiring previously privately held firms. Firms held by families may focus more on being cost efficient, and private owners have a stronger need for paying themselves a regular dividend instead of investing in further growth. Although we do not find support for our hypothesis that previously privately held firms grow more than other PE-holdings, previously privately held firms had the most growth compared to peers.

In addition, we can also see that companies acquired from other PE-funds, so called secondary buyouts, have slight, although not statistically significant, improvements over peers when it comes to profitability. Green and Kindblom (2008), find that the second private equity buyer tend to be less engaged in operational developments, which could explain why these transactions show no statistically significantly higher improvements when compared to other PE-holdings.

7.4 Local vs. International PE-Firms

Table 7.4: PE-Holdings Performance, Divided According to National Incorporation of the PE-Firm

		Growth	Profitability		Cash flow			Employees	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Swedish PE-firms									
Wilcoxon	Median	4.8%***	0.2%	0.2%	0.1%	-0.1%	0.3%	3.8%***	0.2%
T-test	Average	7.3%***	0.2%	-0.4%	0.3%	-0.2%	0.2%	6.6%***	0.9%*
N		*148*	*148*	*148*	*125*	*148*	*126*	*147*	*113*
International PE-firms									
Wilcoxon	Median	7.2%***	0.2%	-0.2%	0.3%***	0.2%	0.6%	5.7%***	1.0%
T-test	Average	9.4%***	0.5%**	-0.4%	1.0%***	0.2%	0.4%	8.5%***	0.8%
N		*82*	*82*	*82*	*69*	*82*	*71*	*80*	*60*
Swedish vs International									
M-W	Diff	-2.4%	-0.1%	0.3%	-0.3%*	-0.3%	-0.3%	-1.9%	-0.8%
T-test	Diff	-2.1%	-0.3%	0.0%	-0.7%*	-0.4%	-0.2%	-1.9%	0.1%

*The data is in this test divided into subsets according to national incorporation of the PE-firm. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively. Please refer to appendix for p-values.*

As discussed earlier, international PE-firms have increased presence on the Swedish market in recent years, and it is therefore interesting to compare how companies owned by local and international funds differ. The results, which are shown in Table 7.4, somewhat surprised us. We had expected that local funds would outperform due to local knowledge and presence, but our results indicate the opposite, although not statistically significant. We therefore do not find support for our hypothesis that local PE-firms improve the operating performance of their holdings more than international PE-firms. Norman and Riboe (2011), find similar results on a study limited to Scandinavian PE-funds, and conclude that non-local firms outperform local firms in particular when it comes to growth. Although we find lower median and average growth for local PE-funds when compared to international PE-funds, we do not find any statistically significant differences. We had also expected that the employment figures would look more favorable for local funds, since we expected local funds to be more careful with its reputation when it comes to layoffs and wage cuts, but we find no such results. With regards to investments, capital expenditure increases are statistically significant at the 1% level for companies owned by international PE-funds, while not significant for companies owned by local PE-funds.

While local funds have the advantage of local knowledge, international funds comes with several other advantages, such as international network and expertise. Furthermore, since international funds do not have to do transactions in Sweden, one can expect them to be more selective and only complete transactions if they find really attractive opportunities, while local funds may have to invest their money in Sweden and therefore cannot be as selective. Finally, for the last 10-15 years, international funds have started to build local presence by opening office in Stockholm and hiring Swedish professionals, hence taking advantage of the local knowledge as well. We tried to control for this by also distinguishing international funds between those that have local offices and those who do not have (see Appendix 7). In total, 34 out of the 82 international transactions were done by firms that today have an office in Sweden. However, it was difficult to find when exactly the local presence was established, and we did not find any statistically significant results.

7.5 Type of Exit

Table 7.5: PE-Holdings Performance, Divided According to Buyer at Exit

		Growth	Profitability		Cash flow			Employees	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Strategic									
Wilcoxon	Median	4.2%***	0.4%	0.3%	0.3%*	0.4%	0.0%	2.0%***	0.3%
T-test	Average	8.2%***	0.4%	0.2%	0.7%	0.2%	0.1%	6.2%***	0.6%
N		*52*	*52*	*52*	*41*	*52*	*41*	*52*	*39*
PE									
Wilcoxon	Median	8.4%***	0.9%***	0.6%*	0.2%	0.0%	0.4%*	9.1%***	0.1%
T-test	Average	10.6%***	1.1%***	0.7%*	0.2%	0.0%	0.7%*	10.2%***	0.6%
N		*53*	*53*	*53*	*46*	*53*	*48*	*52*	*37*
IPO									
Wilcoxon	Median	6.6%**	0.3%*	0.2%	0.9%*	-0.1%	0.4%	5.6%**	-1.3%
T-test	Average	8.1%***	0.7%*	-0.5%	1.9%*	-0.4%	0.8%	7.1%**	0.8%
N		*14*	*14*	*14*	*11*	*14*	*12*	*13*	*7*
PE vs Other Exited									
M-W	Diff	5.4%**	0.7%***	0.5%	0.0%	0.2%	0.0%	6.1%**	-0.3%
T-test	Diff	4.0%**	0.9%***	1.0%*	-0.7%	0.2%	0.4%	5.1%**	-0.4%

*The data is in this test divided into subsets according to type of exit. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the exits to PE are compared with all other exits by the non-parametric Mann-Whitney test and by a T-test. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively. Please refer to appendix for p-values.*

As a final way of examining our data, we evaluate how companies are exited in relation to their previous performance. Interestingly, as can been seen in Table 7.5, the companies that have improved the most during PE-ownership seems to be sold to another PE-fund at exit. Companies that are acquired in secondary buyouts have had 5.4% higher median growth and 0.7% higher median improvements in EBITDA margin than other exited PE-holdings in our sample, statistically significant at the 5% and 1% level respectively. Although they use slightly different categories, these results are similar to those presented in Guo, Hotchkiss and Song (2008), who find that the companies that have performed the best are exited through a secondary buyout or an IPO. Possible explanations to this could be either (1) that PE-funds only does secondary buyouts if it is a really promising company, or (2) that PE-funds are able to pay the most for high-performing companies.

From this data, although not shown in the table, we can also see that the worst performers are sold to private owners, which according to our sample is explained by

management or previous owners buying back the company if the private equity investments turned out to be unsuccessful.

Finally, this test emphasizes the importance of access to private data to be able to perform correct analyzes on the performance in private equity owned companies. A small share of all PE-holdings are exited through an IPO, and the results for the companies that exited through an IPO in our sample have had higher improvements than the average of other types of exits. For example, the average EBITDA margin for IPO-exits are 0.7%, compared to 0.3% in the total sample. Although we find no significant results when comparing companies exited through an IPO with other exited PE-holdings, this indicates that studies that only include such transactions, can be biased.

8 CONCLUSION

Private equity as an ownership structure has grown tremendously over the last decades. Therefore, our study aims to shine a light on the contribution private equity as an ownership form brings to the economy, and specifically the effect private equity funds have on the operating performance of the companies they acquire.

By first examining a sample of 368 private equity transactions in Sweden from 1988 to 2015, we map the private equity market in Sweden and identify key trends. One such trend is the growth in terms of number of companies held by private equity funds, which has increased every year from 1995 to 2014, with a CAGR of 12%. This trend was only disrupted in 2015, when more companies were exited than acquired. We can also see that the number of transactions completed by non-Swedish private equity funds rose rapidly between 2000 and 2007, when companies owned by international private equity funds grew from constituting 20% to 40% of the market.

Secondly, for a subset consisting of 230 private equity transactions completed between 1999 and 2013, we examine how the operating performance of companies held by private equity funds have developed over time. Our results show that private equity owned companies achieve a significantly higher growth than peers in the same industry. This is not only seen by increases in revenue, but also through significant increases in the number of employees and capital expenditure that follows a private equity acquisition. We do however not find the same increases in profitability measures such as EBITDA margin as Bergström, Grubb and Jonsson (2007). This is mainly explained by higher peer adjusted improvements in profitability for transactions completed between 1998 and 2008, compared with transaction completed between 2008 and 2013. We also find strong support for our hypothesis that private equity firms are able to improve operating profitability, measured by EBITDA and ROA for companies acquired from strategic owners, compared to companies acquired from other owners.

In addition, we find that companies sold to other private equity funds have experienced a higher improvement in profitability, as well as a higher revenue growth, compared to companies that are exited through other channels. Why the best performing firms are sold to other private equity firms can have many explanations, for example that they are able to pay a higher price than other type of potential buyers, which certainly would be an interesting topic for further research.

Furthermore, although we conclude that companies owned by PE-funds have a significantly higher growth, without any detriment to profitability, it would be an interesting topic for future research to look at to what extent these improvements leads to increased value for the investors in the PE-fund. One limitation of our study, is that we cannot distinguish between if PE-firms contribute to improvement in the companies they acquire, or if they acquire companies that would have had such improvements regardless if they were acquired by PE-funds or not. If PE-funds acquire companies that with a large probability will have substantial improvements, they probably need to pay a high price for such companies, which will affect the future return of the PE-fund. We believe that examining this issue is an interesting topic for future research. One way of doing this, would be to gather data over price paid for both acquisitions and exits and regress the value increase on operating improvements. In that way, it would also be possible to distinguish the return due to multiple arbitrage from return due to operational improvements. Although this data is difficult to obtain for deals not acquired through a public buyout, or sold through an IPO, it would be possible to obtain data from most deals that are acquired from, or sold to, listed companies, since such information is generally stated in annual reports. As we have presented in our study, a large portion of private equity transactions are conducted with both investment companies as well as industrial companies, for which a large portion are listed.

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10 APPENDICES

APPENDIX 1: COMPANY AND GROUP FINANCIALS (P-VALUES)

		Growth	**Profitability**		**Cash flow**			**Employees**	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Group Financials									
Entry Median		456mn	9.9%	15.1%	2.6%	6.5%	9.3%	237	420k
Wilcoxon	Median	5.5%***	0.2%*	0.0%	0.2%**	0.0%	0.3%	4.6%***	0.4%
	P-Value	*(0.00)*	*(0.08)*	*(0.43)*	*(0.02)*	*(0.72)*	*(0.15)*	*(0.00)*	*(0.15)*
T-test	Average	8.0%***	0.3%**	-0.4%*	0.6%***	0.0%	0.3%	7.3%***	0.9%**
	P-Value	*(0.00)*	*(0.03)*	*(0.07)*	*(0.01)*	*(0.83)*	*(0.16)*	*(0.00)*	*(0.03)*
N		*230*	*230*	*230*	*194*	*230*	*197*	*227*	*173*
Company financials									
Entry Median		299mn	10.2%	17.8%	1.9%	4.8%	9.6%	122	476k
Wilcoxon	Median	3.4%***	0.2%	-0.2%	0.1%	0.2%	0.3%	1.9%***	0.4%**
	P-Value	*(0.00)*	*(0.41)*	*(0.29)*	*(0.29)*	*(0.55)*	*(0.35)*	*(0.00)*	*(0.02)*
T-test	Average	5,9%***	0.0%	-0,7%**	0,2%	0,1%	0.0%	4,5%***	0,8%***
	P-Value	*(0.00)*	*(0.87)*	*(0.02)*	*(0.15)*	*(0.53)*	*(0.95)*	*(0.00)*	*(0.01)*
N		*178*	*178*	*178*	*161*	*178*	*170*	*176*	*174*

*"Entry Median" shows the median of actual financials and ratios for the PE-holdings at the time of acquisition, revenues in SEKmn and Cost/Employee in SEKk. The Wilcoxon test shows the median annual abnormal returns compared to peers for the total group, and the T-test shows the average annual abnormal returns compared to peers. "Group financials" refer to our main test where we look at group financials if such exists, and "Company Financials" refer to an alternative test where we look at company financials. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively.*

APPENDIX 2: PERFORMANCE OVER TIME (P-VALUES)

		Growth	**Profitability**		**Cash flow**			**Employees**	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
1999-2003 (First)									
Wilcoxon	Median	5.8%***	0.4%*	1.1%**	0.2%	-0.1%	0.9%**	3.1%***	0.7%**
	P-Value	*(0.00)*	*(0.06)*	*(0.02)*	*(0.58)*	*(0.42)*	*(0.01)*	*(0.00)*	*(0.04)*
T-test	Average	7.9%***	0.6%*	0.8%*	0.2%	-0.4%	1.3%**	7.2%***	1.9%
	P-Value	*(0.00)*	*(0.07)*	*(0.07)*	*(0.64)*	*(0.30)*	*(0.02)*	*(0.00)*	*(0.17)*
N		*42*	*42*	*42*	*29*	*42*	*29*	*42*	*23*
2004-2008 (Middle)									
Wilcoxon	Median	4.6%***	0.3%***	0.1%	0.2%*	0.1%	0.3%	4.7%***	0.3%
	P-Value	*(0.00)*	*(0.01)*	*(1.00)*	*(0.06)*	*(0.79)*	*(0.33)*	*(0.00)*	*(0.74)*
T-test	Average	7.6%***	0.5%***	-0.1%	0.5%*	0.0%	0.2%	7.3%***	0.5%
	P-Value	*(0.00)*	*(0.01)*	*(0.61)*	*(0.07)*	*(0.86)*	*(0.46)*	*(0.00)*	*(0.37)*
N		*101*	*101*	*101*	*87*	*101*	*90*	*99*	*77*
2009-2013 (Last)									
Wilcoxon	Median	6.6%***	-0.2%	-1.1%***	0.2%	0.1%	-0.1%	6.0%***	0.6%
	P-Value	*(0.00)*	*(0.30)*	*(0.01)*	*(0.14)*	*(0.84)*	*(0.87)*	*(0.00)*	*(0.31)*
T-test	Average	8.5%***	-0.1%	-1.2%***	0.7%*	0.1%	0.0%	7.3%***	0.9%
	P-Value	*(0.00)*	*(0.49)*	*(0.00)*	*(0.06)*	*(0.85)*	*(0.96)*	*(0.00)*	*(0.14)*
N		*87*	*87*	*87*	*78*	*87*	*78*	*86*	*73*
First vs Middle									
M-W	Diff	1.2%	0.1%	1.1%**	0.0%	-0.2%	0.6%*	-1.5%	0.4%
Whitney	*P-Value*	*(0.70)*	*(0.91)*	*(0.04)*	*(0.96)*	*(0.55)*	*(0.06)*	*(0.71)*	*(0.24)*
T-test	Diff	0,3%	0,1%	1.0%*	-0,3%	-0,4%	1,1%*	-0,2%	1,4%
	P-Value	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
First vs Last									
M-W	Diff	-0.8%	0.6%**	2.2%***	0.0%	-0.2%	0.9%**	-2.8%	0.1%
Whitney	*P-Value*	*(0.82)*	*(0.04)*	*(0.00)*	*(0.86)*	*(0.41)*	*(0.04)*	*(0.60)*	*(0.56)*
T-test	Diff	-0.6%	0.7%**	2.1%***	-0.4%	-0.4%	1.2%*	-0.2%	1.0%
	P-Value	*(0.80)*	*(0.00)*	*(0.00)*	*(0.50)*	*(0.30)*	*(0.10)*	*(0.90)*	*(0.40)*
Middle vs Last									
M-W	Diff	-2.0%	0.5%***	1.2%**	0.1%	0.0%	0.3%	-1.3%	-0.3%
Whitney	*P-Value*	*(0.58)*	*(0.01)*	*(0.03)*	*(0.92)*	*(0.77)*	*(0.50)*	*(0.76)*	*(0.59)*
T-test	Diff	-0,9%	0,6%**	1,1%**	-0,1%	0.0%	0,2%	0.0%	-0,3%
	P-Value	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*

The data is in this test divided into subsets according to the entry year of the PE-transaction. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test., **, and *** refers to significance on the 10%, 5% and 1% level, respectively.*

APPENDIX 3: PERFORMANCE BASED ON SELLER (P-VALUES)

		Growth	Profitability		Cash flow			Employees	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Strategic									
Wilcoxon	Median	5.1%***	0.4%**	0.4%*	0.2%	-0.4%	0.4%	2.4%***	0.4%
	P-Value	*(0.00)*	*(0.02)*	*(0.05)*	*(0.45)*	*(0.16)*	*(0.23)*	*(0.00)*	*(0.57)*
T-test	Average	7.1%***	0.6%**	0.3%	0.5%	-0.4%	0.6%	6.4%***	1.0%
	P-Value	*(0.00)*	*(0.01)*	*(0.33)*	*(0.25)*	*(0.26)*	*(0.16)*	*(0.00)*	*(0.23)*
N		*80*	*80*	*80*	*65*	*80*	*65*	*79*	*58*
Private									
Wilcoxon	Median	6.3%***	-0.3%	-1.3%***	0.2%*	0.4%	-0.1%	7.9%***	1.0%**
	P-Value	*(0.00)*	*(0.23)*	*(0.01)*	*(0.07)*	*(0.13)*	*(0.14)*	*(0.00)*	*(0.04)*
T-test	Average	9.3%***	-0.2%	-1.4%***	0.4%	0.4%	-0.6%	8.8%***	1.3%**
	P-Value	*(0.00)*	*(0.28)*	*(0.00)*	*(0.23)*	*(0.13)*	*(0.10)*	*(0.00)*	*(0.03)*
N		*70*	*70*	*70*	*59*	*70*	*62*	*68*	*59*
PE									
Wilcoxon	Median	4.5%***	0.2%	-0.3%	0.1%	0.1%	0.5%***	4.9%***	0.0%
	P-Value	*(0.00)*	*(0.25)*	*(0.45)*	*(0.10)*	*(0.45)*	*(0.00)*	*(0.00)*	*(0.94)*
T-test	Average	7.0%***	0.3%	-0.3%	0.7%**	0.2%	0.8%***	6.4%***	0.8%
	P-Value	*(0.00)*	*(0.20)*	*(0.35)*	*(0.02)*	*(0.37)*	*(0.01)*	*(0.00)*	*(0.42)*
N		*45*	*45*	*45*	*42*	*45*	*42*	*45*	*31*
Strategic vs Other									
M-W	Diff	-0.5%	0.3%*	0.9%***	0.0%	-0.6%	0.2%	-3.5%	0.0%
Whitney	P-Value	*(0.35)*	*(0.08)*	*(0.00)*	*(0.68)*	*(0.12)*	*(0.46)*	*(0.14)*	*(0.72)*
T-test	Diff	-1,4%	0,5%*	1,1%**	-0,1%	-0,5%	0,4%	-1,4%	0,2%
	P-Value	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Private vs Other									
M-W	Diff	1.3%	-0.6%**	-1.5%***	0.0%	0.5%*	-0.6%**	4.2%	0.9%
Whitney	P-Value	*(0.39)*	*(0.01)*	*(0.00)*	*(0.88)*	*(0.05)*	*(0.01)*	*(0.12)*	*(0.11)*
T-test	Diff	1,9%	-0,7%***	-1,5%***	-0,2%	0,6%*	-1,2%***	2,2%	0,7%
	P-Value	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
PE vs Other									
M-W	Diff	-1.2%	0.0%	-0.3%	-0.1%	0.1%	0.3%	0.5%	-0.5%
Whitney	P-Value	*(0.71)*	*(0.93)*	*(0.79)*	*(0.76)*	*(0.46)*	*(0.18)*	*(0.83)*	*(0.55)*
T-test	Diff	-1,3%	0.0%	0,1%	0,2%	0,3%	0,7%	-1,1%	-0,1%
	P-Value	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*

*The data is in this test divided into subsets according to type of seller. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test. "Other" refer to all other transactions, i.e. Strategic vs Other compares the 80 Strategic transactions with the 150 other PE-holdings. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively.*

APPENDIX 4: PERFORMANCE BASED ON HEAD OFFICE LOCATION (P-VALUES)

		Growth	**Profitability**		**Cash flow**			**Employees**	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Swedish PE-firms									
Wilcoxon	Median	4.8%***	0.2%	0.2%	0.1%	-0.1%	0.3%	3.8%***	0.2%
	P-Value	*(0.00)*	*(0.28)*	*(0.69)*	*(0.37)*	*(0.38)*	*(0.52)*	*(0.00)*	*(0.28)*
T-test	Average	7.3%***	0.2%	-0.4%	0.3%	-0.2%	0.2%	6.6%***	0.9%*
	P-Value	*(0.00)*	*(0.29)*	*(0.15)*	*(0.26)*	*(0.36)*	*(0.44)*	*(0.00)*	*(0.08)*
N		*148*	*148*	*148*	*125*	*148*	*126*	*147*	*113*
International PE-firms									
Wilcoxon	Median	7.2%***	0.2%	-0.2%	0.3%***	0.2%	0.6%	5.7%***	1.0%
	P-Value	*(0.00)*	*(0.14)*	*(0.42)*	*(0.01)*	*(0.59)*	*(0.14)*	*(0.00)*	*(0.34)*
T-test	Average	9.4%***	0.5%**	-0.4%	1.0%***	0.2%	0.4%	8.5%***	0.8%
	P-Value	*(0.00)*	*(0.04)*	*(0.28)*	*(0.00)*	*(0.46)*	*(0.19)*	*(0.00)*	*(0.25)*
N		*82*	*82*	*82*	*69*	*82*	*71*	*80*	*60*
Swedish vs International									
M-W	Diff	-2.4%	-0.1%	0.3%	-0.3%*	-0.3%	-0.3%	-1.9%	-0.8%
Whitney	P-Value	*(0.17)*	*(0.64)*	*(0.63)*	*(0.06)*	*(0.33)*	*(0.34)*	*(0.28)*	*(0.85)*
T-test	Diff	-2.1%	-0.3%	0.0%	-0.7%*	-0.4%	-0.2%	-1.9%	0.1%
	P-Value	*(0.20)*	*(0.30)*	*(0.90)*	*(0.10)*	*(0.20)*	*(0.60)*	*(0.30)*	*(0.90)*

*The data is in this test divided into subsets according to national incorporation of the PE-firm. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively.*

APPENDIX 5: PERFORMANCE BASED ON EXIT (P-VALUES)

		Growth	**Profitability**		**Cash flow**			**Employees**	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Strategic									
Wilcoxon	Median	4.2%***	0.4%	0.3%	0.3%*	0.4%	0.0%	2.0%***	0.3%
	P-Value	*(0.00)*	*(0.27)*	*(0.29)*	*(0.06)*	*(0.61)*	*(0.90)*	*(0.01)*	*(0.68)*
T-test	Average	8.2%***	0.4%	0.2%	0.7%	0.2%	0.1%	6.2%***	0.6%
	P-Value	*(0.00)*	*(0.20)*	*(0.62)*	*(0.11)*	*(0.55)*	*(0.86)*	*(0.00)*	*(0.45)*
N		*52*	*52*	*52*	*41*	*52*	*41*	*52*	*39*
PE									
Wilcoxon	Median	8.4%***	0.9%***	0.6%*	0.2%	0.0%	0.4%*	9.1%***	0.1%
	P-Value	*(0.00)*	*(0.00)*	*(0.07)*	*(0.26)*	*(0.99)*	*(0.07)*	*(0.00)*	*(0.86)*
T-test	Average	10.6%***	1.1%***	0.7%*	0.2%	0.0%	0.7%*	10.2%***	0.6%
	P-Value	*(0.00)*	*(0.00)*	*(0.05)*	*(0.47)*	*(0.98)*	*(0.07)*	*(0.00)*	*(0.56)*
N		*53*	*53*	*53*	*46*	*53*	*48*	*52*	*37*
IPO									
Wilcoxon	Median	6.6%**	0.3%*	0.2%	0.9%*	-0.1%	0.4%	5.6%**	-1.3%
	P-Value	*(0.02)*	*(0.10)*	*(0.73)*	*(0.06)*	*(0.16)*	*(0.14)*	*(0.02)*	*(1.00)*
T-test	Average	8.1%***	0.7%*	-0.5%	1.9%*	-0.4%	0.8%	7.1%**	0.8%
	P-Value	*(0.01)*	*(0.06)*	*(0.50)*	*(0.06)*	*(0.10)*	*(0.26)*	*(0.02)*	*(0.71)*
N		*14*	*14*	*14*	*11*	*14*	*12*	*13*	*7*
Private									
Wilcoxon	Median	6.7%	-0.3%	0.4%	0.0%	-1.3%	-22.5%	1.4%	-2.8%
	P-Value	*(0.17)*	*(0.46)*	*(0.92)*	*(1.00)*	*(0.25)*	*(0.29)*	*(0.23)*	*(0.92)*
T-test	Average	7.9%	-0.6%	0.3%	-0.5%	-1.2%	-2.6%	3.1%	0.6%
	P-Value	*(0.18)*	*(0.50)*	*(0.84)*	*(0.46)*	*(0.31)*	*(0.47)*	*(0.16)*	*(0.89)*
N		*6*	*6*	*6*	*3*	*6*	*3*	*6*	*6*
PE vs Other Exited									
M-W	Diff	5.4%**	0.7%***	0.5%	0.0%	0.2%	0.0%	6.1%**	-0.3%
Whitney	P-Value	*(0.01)*	*(0.00)*	*(0.17)*	*(0.39)*	*(0.67)*	*(0.44)*	*(0.02)*	*(0.77)*
T-test	Diff	4.0%**	0.9%***	1.0%*	-0.7%	0.2%	0.4%	5.1%**	-0.4%
	P-Value	*(0.00)*	*(0.00)*	*(0.10)*	*(0.20)*	*(0.70)*	*(0.40)*	*(0.00)*	*(0.80)*

*The data is in this test divided into subsets according to type of exit. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the exits to PE are compared with all other exits by the non-parametric Mann-Whitney test and by a T-test. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively.*

APPENDIX 6: PERFORMANCE FOR EXITED AND CURRENT HOLDINGS (P-VALUES)

		Growth	**Profitability**		**Cash flow**			**Employees**	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Exited Investments									
Wilcoxon	Median	5.1%***	0.4%***	0.2%	0.2%***	-0.1%	0.4%*	3.8%***	0.2%
	P-Value	*(0.00)*	*(0.00)*	*(0.29)*	*(0.01)*	*(0.51)*	*(0.10)*	*(0.00)*	*(0.54)*
T-test	Average	8.0%***	0.5%***	0.1%	0.7%***	-0.1%	0.4%	7.0%***	0.8%
	P-Value	*(0.00)*	*(0.00)*	*(0.78)*	*(0.01)*	*(0.66)*	*(0.12)*	*(0.00)*	*(0.16)*
N		*147*	*147*	*147*	*120*	*147*	*123*	*145*	*104*
Current Holdings									
Wilcoxon	Median	5.5%***	-0.2%*	-0.7%***	0.0%	0.3%	0.0%	5.5%***	0.8%
	P-Value	*(0.00)*	*(0.08)*	*(0.01)*	*(0.53)*	*(0.79)*	*(0.79)*	*(0.00)*	*(0.11)*
T-test	Average	8.1%***	-0.2%	-1.2%***	0.4%	0.1%	0.1%	7.8%***	0.9%*
	P-Value	*(0.00)*	*(0.22)*	*(0.00)*	*(0.29)*	*(0.81)*	*(0.74)*	*(0.00)*	*(0.09)*
N		*83*	*83*	*83*	*74*	*83*	*74*	*82*	*69*
Exited vs Current									
M-W	Diff	-0.4%	0.7%***	1.0%***	0.2%	-0.3%	0.4%	-1.8%	-0.5%
Whitney	P-Value	*(0.96)*	*(0.00)*	*(0.00)*	*(0.33)*	*(0.52)*	*(0.45)*	*(0.43)*	*(0.35)*
T-test	Diff	-0.1%	0.8%***	1.2%***	0.2%	-0.2%	0.3%	-0.9%	-0.1%
	P-Value	*(0.90)*	*(0.00)*	*(0.00)*	*(0.60)*	*(0.60)*	*(0.50)*	*(0.60)*	*(0.90)*

*The data is in this test divided into subsets according to if the company is exited or not. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively.*

APPENDIX 7: PERFORMANCE BASED ON OFFICE LOCATION (P-VALUES)

		Growth	**Profitability**		**Cash flow**			**Employees**	
		Revenue	EBITDA	ROA	CAPEX	NWC	OFCF	Empl.	Cost/Em
Funds with Swedish office									
Wilcoxon	Median	5.2%***	0.2%	0.1%	0.1%	0.0%	0.3%	4.3%***	0.4%
	P-Value	*(0.00)*	*(0.12)*	*(0.61)*	*(0.13)*	*(0.61)*	*(0.25)*	*(0.00)*	*(0.21)*
T-test	Average	7.9%***	0.2%	-0.4%*	0.4%*	-0.1%	0.2%	7.5%***	0.9%*
	P-Value	*(0.00)*	*(0.12)*	*(0.09)*	*(0.09)*	*(0.53)*	*(0.25)*	*(0.00)*	*(0.06)*
N		*182*	*182*	*182*	*155*	*182*	*157*	*180*	*136*
Funds without Swedish office									
Wilcoxon	Median	5.9%***	0.1%	-0.6%	0.6%**	0.1%	0.4%	5.7%***	0.4%
	P-Value	*(0.00)*	*(0.33)*	*(0.50)*	*(0.02)*	*(0.74)*	*(0.39)*	*(0.00)*	*(0.41)*
T-test	Average	8.4%***	0.5%	-0.3%	1.2%**	0.2%	0.4%	6.4%***	0.8%
	P-Value	*(0.00)*	*(0.13)*	*(0.53)*	*(0.01)*	*(0.53)*	*(0.42)*	*(0.00)*	*(0.36)*
N		*48*	*48*	*48*	*39*	*48*	*40*	*47*	*37*
Office vs NotOffice									
M-W	Diff	-0.7%	0.1%	0.8%	-0.5%	-0.1%	-0.1%	-1.4%	0.0%
Whitney	P-Value	*(0.59)*	*(0.81)*	*(0.66)*	*(0.14)*	*(0.63)*	*(0.65)*	*(0.87)*	*(0.86)*
T-test	Diff	-0.5%	-0.3%	-0.1%	-0.8%	-0.4%	-0.2%	1.1%	0.0%
	P-Value	*(0.80)*	*(0.30)*	*(0.80)*	*(0.10)*	*(0.40)*	*(0.70)*	*(0.60)*	*(1.00)*

*The data is in this test divided into subsets according if the PE-firm has a Swedish office or not. The Wilcoxon test shows the median annual abnormal returns compared to peers for the different subsets, and the T-test shows the average annual abnormal returns compared to peers. In the bottom of the table, the subsets are compared with each other by the non-parametric Mann-Whitney test and by a T-test. *, **, and *** refers to significance on the 10%, 5% and 1% level, respectively.*