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THE OPERATING PERFORMANCE OF SCANDINAVIAN PRIVATE EQUITY COMPANIES

Written by

Arne-Vetle P. H. Gulliksen
Kenneth Audestad Wara
OIe Falk Hansen

PART 1 EXECUTIVE SUMMARY

This master's thesis investigates the performance of PE target companies covering the entire Scandinavian market. The thesis aims at answering *whether the operational performance of the PE portfolio company is significantly improved compared to its peers, relative to both pre- and post-holding periods.* We have gathered the largest data set to date, consisting of complete financial data over a period of ten years for 349 companies that have been subject to PE ownership. In addition to this, we have performed a comprehensive survey among the 85 largest PE funds in the region, with a reply rate of close to 45 per cent. In respect to this, we claim to have analysed the entire Swedish, Norwegian and Danish PE market, thereby presenting an up-to-date performance analysis of the PE industry.

Our findings leave no doubt that companies subject to PE ownership significantly out-perform relative to their representative industry peer group in measures of EBITDA-levels, ROA-levels and growth. We find that that the used levels of debt are much lower than what is commonly believed. Interestingly, we find an extremely high discrepancy between fund managers' spoken beliefs about the target company's development after exit, and how it actually performs. The managers clearly and without doubt proclaim their belief in sustained growth, while our findings prove clear signs of "dressing the bride" in the PE industry. Alarmingly, the PE targets perform significantly worse after the exit than both before and during the holding period, as well as relative to the industry trend and the company's own trend level. This supports the hypothesis of an existing helix pattern within the industry, which does not necessarily contribute to economic growth or sustained healthy management of the long-term shareholders' assets. Our analysis also proves that there are major differences between the three Scandinavian countries, in respect to both performance and the general development of the industry.

We have formulated a total of over 20 hypotheses, which we test by use of the t-test, focusing on operating performance measures. We find great support in earlier research regarding the use of these measures. Our thesis moves along with a theory presentation and a detailed discussion of our results in combination with a full robustness check of our material.

The ability of the thesis to match empirical findings with managers' subjective expressions, in addition to the freshness of the data set itself, makes it an important contribution to the increasing research material around the PE industry.

Bergen 10 June 2008

Arne-Vetle P. H. Gulliksen Kenneth Audestad Wara Ole Falk Hansen

PART 2 OUTLINE OF THESIS

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PART 2: Outline of thesis

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PART 4: Introduction & motivation

PART 5: Industry presentation

In this section, we briefly give an overview of the PE industry, with an explanation of what PE is, different types of PE, the structure of the industry and finally a look at current trends and future development patterns.

PART 6: Previous research and studies

We look into some of the main articles and most important studies performed in the field. We focus on two main articles, Kaplan (1989) and Cao and Lerner (2006), and briefly highlight findings from other important articles. Finally, we highlight differences, similarities and limitations between earlier studies and our own study.

PART 7: Theory

Part 7 presents some well-known theories for wealth creation and wealth transfer - important aspects of what the PE funds try to implement. Furthermore, this section gives us clear indications of possible explanations for our findings, hence giving us a basis for reasoning.

PART 8: Performance measurement

This section takes a closer look at the distinction between absolute and relative measures (margins and ratios), while implementing some of our indicative findings from the survey. Furthermore, it describes how we treat development over time and discusses the use of level vs. change measurements, before concluding with our choice of measurement variables.

PART 9: Data

Here, we provide a description of the data set and how it is gathered and organized. We draw parallels to data sets used in similar research, and explain the differences and advantages/disadvantages. Our empirical analysis is based on this data.

PART 10: Methodology

Here, we present the methods being used as background for our thesis. The section seeks to enable other researchers to understand the underlying methods for our tests.

PART 11: Hypothesis

In this section, we will present our main research question, together with our construction and methodology used when constructing our hypotheses. The hypotheses are grouped into different main categories, highlighting different aspects in accordance with our main problem definition.

PART 12: Results and testing

In this section, we present our main findings and present arguments for them. We have performed t-tests to evaluate the performance of the portfolio companies, while the performance itself is measured by looking at EBITDA, ROA and CAGR.

PART 13: Robustness

In this section, we perform certain robustness checks and argumentations, outlining potential strengths and weaknesses of our data material and handling of the empirical testing.

PART 14: Survey

In this section, we present the main findings in our survey sent to Scandinavian fund managers. This section will first address the rationale behind private equity investments; it will then attend to issues regarding financing, returns and performance, and lastly exit strategies and possibilities.

PART 15: Suggestions for further research

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PART 16: Conclusions

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PART 3 TABLE OF CONTENTS

3.1. List of tables

PART 4 INTRODUCTION AND MOTIVATION

This thesis is written by Ole Falk Hansen, Arne-Vetle P.H. Gulliksen and Kenneth Audestad Wara. The three authors met during their studies at the Norwegian School of Economics and Business Administration. Mr Wara currently holds a position as shipbroker in a company situated in Bergen, and during his studies he had a half-year visit to Fudan Management School (FDMS) in Shanghai. Mr Hansen chose a career as a consultant in one of the largest and most respected consultant companies in the world. He also had a visit to the National University of Singapore. Mr Gulliksen did a career in the Norwegian Naval Army prior to his studies at NHH, and currently holds a position in a large Scandinavian financial services group.[1]

The Private Equity (PE) industry has seen an enormous growth over the last decade, especially in the US and Central Europe. The total value of firms acquired in leverage buyouts is estimated to be USD 3.6 trillion from 1970 to 2007, of which USD 2.7 trillion occurred between 2001 and 2007. [2] The deals grew even bigger, and the old record from the LBO of RJR Nabisco was beaten several times during 2007, for instance by KKR`s bid for TXU.[3] In Sweden, the PE industry has surpassed 4.3 per cent of the GDP, and has reached 0.9 per cent in Norway – proving that PE has grown to be one of the larger alternative investment asset classes. Even though these rates have grown substantially over the last five years, the PE industry is still young in all the Scandinavian countries compared to United Kingdom or the United States.

We agreed early on that PE would be the industry studied in our thesis, and we have discussed the specific topic in the industry upon which we would focus. There were many interesting topics, mainly because most papers focus on Europe, the UK or the US. When measuring performance, earlier studies are divided between returns and risks on the one side, and operating performance on the other. Most of these papers focus on the pre-buyout and holding phase. However, less research has looked into the phase after the exit of the PE fund. We actually decided to investigate the whole phase, from pre-investment to post-investment,

[1] A special thanks to our advisor Carsten Bienz for valuable comments and thoughts during the process
[2] World economic forum (2008)
[3] Financial Times 06.11.2007

where the active ownership is less present, in order to see whether the companies carry on with their growth and margins or fall back to earlier levels.

We will adopt a "PE fund – target company" perspective, which has been given less notice in prior research, as many articles only investigate the "investor – PE fund" relationship.

The schematic below illustrates the outline of the thesis and roughly indicates how we have been working. The focal point is on the entire period, ranging from three years prior to the investment to three years after the PE fund makes its exit. We have collected data originally consisting of 600 Scandinavian PE exits, and also collected peers for every one of these companies. The peer groups consist of 20 companies in the same industry located in Europe, sorted by size of total assets by the time of entry of the PE fund. After revising, we ended up with a data set with complete financial data for approximately 350 PE exits. We have also conducted a survey in which we were in direct contact with the largest PE funds in Scandinavia. Roughly 40 per cent of the funds responded, and these funds had an average capital base of roughly EUR 1 billion under management.

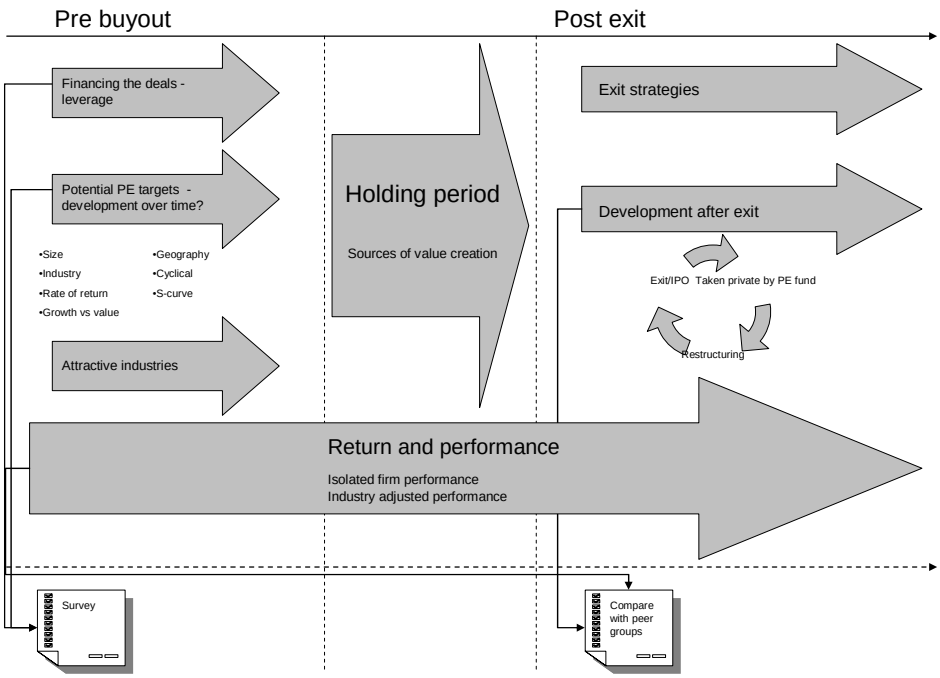


Table 1 Preliminary working model

4.1. Definitions

“Portfolio company” and “target company” are used interchangeably to describe the companies being bought by the PE fund. We use both terms simply to enrich our language. PE firm and PE fund are also used interchangeably. Since we have a PE fund-target perspective, it is also feasible to define the phases of the investment stage; the pre-buyout refers to the years prior to the PE fund’s investment, and the buyout year is the year the PE fund acquires the target company. The holding period is the period in which the PE fund actually owns the company, hence performing its active ownership. After the holding period, the PE fund decides to sell the target company, and the exit year is the actual year the target company is sold. The post-buyout period is the period after the PE fund has exited. We will look at the Scandinavian market, by which we mean Norway, Sweden and Denmark.

PART 5 INDUSTRY PRESENTATION

In this section, we will briefly give an overview of the PE industry, starting with an explanation of what PE is, different types of PE, the structure of the industry and finally a look at current trends and future development patterns.

5.1. What is PE?

PE provides equity capital to companies that are not listed on any stock market, in contrast to public equity, where financing is based on the public market through stock exchanges. In addition to financing, and by far the most important aspect of the PE industry, is the exercising of active ownership in the target firm. The PE fund distributes expertise in key areas such as organization, strategy and financial structure. As a result, ownership through PE is contingent upon a majority stake in the business, since the exercise of active ownership demands a high degree of decision-making, which could be stressful for several minority owners. To summarize, PE funds supply both capital and expertise.

5.2. Private equity types

”Private equity” is often used as a generic term for both venture capital- and buyout investments. Early stage businesses are often referred to as venture capital and include seed, start-up, expansion and replacement companies. The last group not mentioned is the buyout category, which refers to acquisitions of mature companies that have been in the business for several years. The buyout segment is often referred to as leveraged buyout (LBO) and defined as “acquisitions of public companies by private investors who finance a large fraction of the purchase price with debt” (Brealey and Myers (2003)). In addition, management buyout (MBO) refers to a transaction under the buyout segment where the management themselves acquire the company.

The two different subcategories noted are characterized by different rationales for the PE funds acquiring the businesses. The companies acquired in the venture category are often acquired as a result of the need for capital, which could be difficult to obtain through debt because of high risks and low asset size. For the buyout segment, the ownership is

characterized by value creation through external factors such as expansion and consolidating the industry, together with internal factors such as improvements of operating performance.

As mentioned, the focus for this thesis will be on the buyout category, for which the term private equity (PE) will be used.

Venture capital				Buyout
Seed	**Start up**	**Expansion**	**Replacement**	
• Need for capital for research and development of new technologies	• Raise capital for development of product and SG&A • Products not in sale	• Products in sale • Funding used for expanding existing businesses	• Funding for changes in the ownership or financing structure	

Table 2 Classification of different types of portfolio companies, EVCA (2007)

5.3. Organization of the PE fund: general partnership and limited partnership

The PE fund organization is usually divided into a limited partnership (LP) and a general partnership (GP). The investors who participate in the PE funds represent the LPs, who provide capital. Capital is paid either all at once or continuously as the fund makes investments in portfolio companies. The representative LP investor has a large capital base and is often an institutional investor such as a mutual fund, bank or pension fund, which normally compromises over 60 percent of the capital raised. Private individuals and private companies contribute with only 15 per cent of total fund collected, and usually consist of wealthy private investors. The remaining percentage is divided between government sovereign funds and other asset institutions. [4]

The professional managers of the PE funds take part as GPs, who have the responsibility of managing the funds and the investments. They are usually people with expertise of both the

[4] EVCA Yearbook 2005

industry and the strategic situation that the target firm represents, as for instance former management consultants, engineers or investment bankers. The GPs often manage several funds of different scope and perspective at the same time, or establish new funds as their previous ones reach their exit point. For instance, both HitecVision Private Equity and Reiten & Co have recently established new funds in addition to their previously established ones.[5]

As compensation for their work, the GPs receive a duplex fee consisting of an advisory fee and a carried interest. The advisory fee is an annual fee of normally two per cent, which is based on the amount of committed capital. As for the carried interest, they receive a performance-based bonus, normally 20 per cent of profits above a hurdle rate between two and ten per cent.[6]

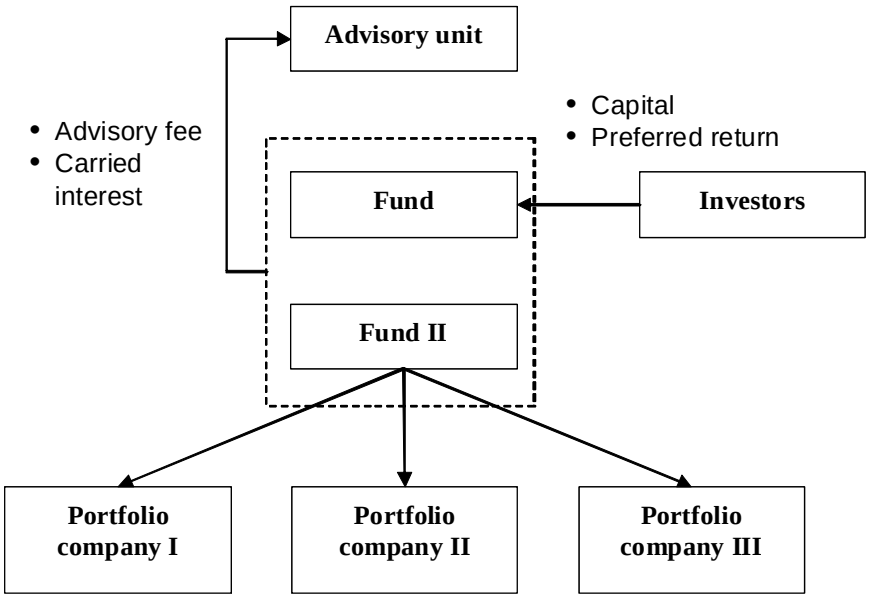


Table 3 Organizational setup for PE funds, NVCA (2005)

As an alternative to direct capital allocation into a single fund from investors, investments through a fund-of-fund structure are commonly used, for instance by the Norwegian government-owned investment company Argentum and mutual funds such as Storebrand Alternative Investments. This investment type is characterized by the entry of another party between the investor and the portfolio companies. The fund-of-fund is established for investing in different PE funds as a pool of funds instead of a single one. Advantages such as

[5] Dagens Næringsliv 29.02.2008
[6] Argentum Guest Lecture in FIE 436 Fall 2007 NHH

lower risk and lower screening costs come along with the disadvantage of an extra layer of management fees.

5.4. Managing the buyout – from screening to exit

In the PE funds, the GPs have responsibilities ranging from screening potential target companies to making the exit at the end. After the fund is raised, every target portfolio company that ends up with an investment is based on a screening of about 150 to 200 companies.[7] Again, the screening is based on the fund's target characteristics, as for instance size, industry and stage of development, which will be later explored in the Survey part. Potential targets are both private and public listed companies where the target could eventually be delisted from the stock exchange.

The most important part of the PE ownership is the active ownership phase, where the company is exposed to restructuring, improvements and growth. The free cash flow problem is prevented by bonus schemes and stringing of cash flow through high leverage and subsequent large interest payments. The typical portfolio company has a duration of seven to ten years, where the target companies are exited either through trade sale, initial public offering or other divestment strategies.[8]

5.5. The Scandinavian market

The Swedish fund Procuritas Partners was the first fund to establish itself in Scandinavia in 1986, whereas the first Norwegian fund was established in 1993 by Norvestor (formerly Norsk Vekst).

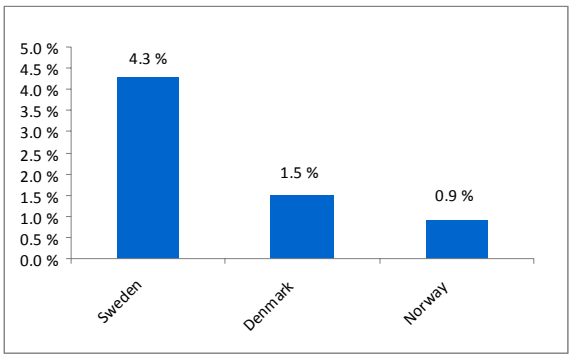
On an overall basis, the Scandinavian PE industry has seen a positive trend over the years. Committed capital is increasing together with the number of acquired companies. In an Apax Partners (2006) study of the environmental ranking of countries for PE funds, Denmark ends up in fifth place, followed by Sweden and Norway in seventh and thirteenth place, respectively. Denmark is almost top ranked in the European countries, surpassed only by the UK, because of Denmark's market opportunities based on an evenly spread income

[7] Finn Kinserdahl Lecture BUS 425 Spring 2007 NHH
[8] Argentum Guest Lecture in FIE 436 Fall 2007 NHH

distribution and generally high levels of income. Sweden and Norway are somewhat lower ranked, mainly because of high tax rates in Sweden and a smaller stock exchange together with restrictions on pension funds' investment into PE in Norway.

Sweden is the largest of the three countries in terms of both capital under management and number of investments. In the past few years, we have seen the appearance of multinational Scandinavian funds, whereas the PE funds operate from all three countries; this is illustrated for instance by the Swedish fund EQT, with branches in Stockholm, Oslo and Copenhagen.

On a relative basis, in per cent of GDP, Sweden is the largest player in the region. The buyout segment composes an exceptionally large part of the total PE industry in both Denmark and Norway compared to the European average.



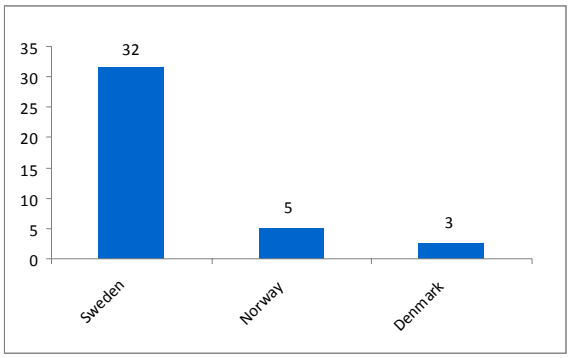


Table 4 PE investments as percentage of GDP 2006 (left)[9]

Table 5 Capital under management MEURO (right)[10]

5.6. *Future trends and development*

Over the last six months, we have witnessed an increasing credit crisis in the world economy, which has so far hit the US market hardest. In the US, we have witnessed a marked decline in deal flows, and it is possible that the future trends of the PE industry will in general experience less growth. The recent credit crisis almost entirely dried up the possibility for debt financing. In November, for example, Cerberus Capital Management had to pull out of its USD 7 billion deal to buy United Rentals. The United Rentals deal joins a growing list of

[9] NVCA yearbook 2008
[10] Nordic Private Equity - an industry analysis Nov 2006

PE bids which were arranged at rosier times but are now collapsing. There were in total 76 abandoned deals worth USD 202.3 billion in 2007.[11]

So far, the Scandinavian market has been shielded from this declining trend, with over NOK 8.6 billion in spare equity capital in Norway for buyouts (before the effects of potential gearing of the equity). However, statistics from the magazine Nordic Unquote show a declining trend in the value of the transactions undertaken in 2007 vs. 2006 in the region.[12] Some of the funds are already starting to prepare for a declining trend in Scandinavia, such as Industri Kapital, which sold investments for over NOK 14 billion in 2007. As their key management player Kim Wahl expresses: "The macroeconomic factors are important for the private equity industry, which are contingent on investing in stable branches. Already in 2006 and 2007 we started preparing for a potential decline in the market conditions. The consumption in America is going to fall, and Europe will be affected by this."[13]

[11] Financial Times 06.11.2007
[12] Dagens Næringsliv 31.01.2008
[13] Dagens Næringsliv 25.01.2008

PART 6 PREVIOUS RESEARCH AND STUDIES

In the following section, we will look into some of the most important articles and studies performed in this field. We will focus on two main articles, Kaplan (1989) and Cao and Lerner (2006), and briefly highlight findings from other important articles. Finally, we will highlight differences, similarities and limitations between earlier studies and our own study.

Ever since the PE industry gained momentum during the 1990s, many researchers have put extensive focus on returns from investments into the industry. The literature has gone about this measuring in two different ways, on the one hand focusing on the entire cash flow to and from the funds and the investors, while on the other hand focusing on and documenting returns on individual investments. The fund-performance approach is highly represented in the existing literature. However, in accordance with our main research question, we will emphasise the individual returns from the different buyout targets, which was earlier described as our target-performance approach.

As one of the most comprehensive studies, Kaplan (1989) complements previous work on sources of wealth gains in management buyouts (MBOs). Kaplan's study is especially interesting because it is among the few studies actually taking a fund-target perspective, focusing on data from single company details/accounting information. In his study, Kaplan investigates changes in operating measures for a sample of 76 management buyouts completed between 1980 and 1989, including holding period information in addition to the pre-buyout information used in earlier studies of this field. By applying statistical methods, Kaplan is able to prove that the buyout firms experience an increase in operating income and net cash flow, as well as a reduction in capital expenditures over the following three years after the buyout. (The firms also experience increases in operating cash flow to operating assets as well as decreases in capital expenditures to sales.) The paper then tries to establish whether the documented accounting changes represent valuable economic changes.

Kaplan focuses on changes in three accounting measures, and then links these three measures to three main hypotheses about the causes of the operating changes and value increase. The employee-wealth transfer hypothesis is discarded and Kaplan is not able to find evidence that a large numbers of employees are fired after buyouts. Furthermore, he investigates the

shareholdings of informed parties, takes a closer look at management buyouts that were never completed, and finally compares the pre-buyout financial projections managers give to the shareholders with actual post-buyout realizations. None of his findings support the information advantage/underpricing hypothesis, and he therefore discards this as well. He eventually examines indirect evidence concerning the new incentive hypothesis by looking at equity holdings of the management team and the top officers. He finds that the increase is larger for managers in general than for the two top managers, which supports the hypothesis. Kaplan also proves that the argument of Schleifer and Summers (1988) – that "hostile takeovers can transfer value to shareholders from employees by breaking implicit contracts with those employees" – is wrong. On the contrary, employment increases in 50 per cent of the companies. Furthermore, he finds proof that the debt burden, the equity incentives and the monitoring associated with the buyout significantly reduce agency costs within the company.

According to Kaplan (1989, p. 220), "the results in this paper favour the reduced agency-cost or new-incentive hypothesis over the employee-wealth transfer and information advantage hypotheses as explanations for post-buyout operating changes and wealth increases."

The article by Cao and Lerner (2006) describes a reverse leveraged buyout (RLBO) as an initial public offering (IPO) of a firm that has previously been bought out by professional later-stage PE investors. The authors take a systematic look at the long-run performance of RLBOs, and seek to highlight the causes of cross sectional differences in RLBO performance. They also seek to answer interesting questions regarding changes in certain patterns since the 1980s - such as the amount of capital employed and the degree of competitiveness of these transactions, and how they characterise the industry today.

In their paper, the authors examine a total of 526 RLBOs between 1981 and 2003 by focusing on transactions where the financing was undertaken by a buyout group, and where the investment was characterised by the use of leverage. Further on, they focus on both the pre- and post-period relative to the RLBO.

The authors use four earlier studies as the basis for their main hypothesis: Degeorge and Zeckhauser (1993), Holthausen and Larcker (1996), Chou, Gombola and Liu (2006) and Mian and Rosenfeld (1993). With basic assumptions stemming from these studies, Cao and Lerner seem to prove that the RLBOs (on average) are much larger in size, have more leverage, are

more profitable, and are backed by more reputable underwriters, relative to their respective industry peers. The funds' stake decreases to 40 per cent immediately after the offering, largely due to the effect of dilution from new share issues. Cao and Lerner also find evidence that the buyout groups not only have large stakes in the RLBOs, but also actively monitor the managers of the company. The authors conclude that in cross-sectional analyses, the monthly average and buy-and-hold returns of RLBOs at least weakly (on a one per cent and ten per cent significant-level) outperform portfolios of other IPOs, the market, and the peer companies.

Following up on their questions regarding industry development, the two researchers find that the superior performance appears to have deteriorated over time, and there is evidence that IPOs with a higher degree of underpricing perform poorly. As their final finding, Cao and Lerner note that "greater secondary sales and higher leverage after the IPO – two frequently criticized patterns of RLBOs – do not lead to poorer performance" (p. 22).

Degeorge and Zeckhauser (1993) take a closer look at the transition from private to public ownership by investigating 62 reverse LBOs between 1983 and 1987, with performance data collected both before and after the IPOs. Their hypothesis falls into two categories: asymmetric information and pure selection. Their paper proves that buyout-target firms substantially outperform peer firms in terms of operating income in the year prior to the exit of the PE fund. During the first year following the exit, the authors find that operating income in the buyout target firms falls by ten per cent relative to the pre-exit year, and by four per cent relative to the respective industry peer firms. It also appears that the market anticipates this pattern, where the information asymmetry problem together with debt overhang and the effects of managerial behaviour produces a pattern in which superior performance before an offering should be expected, with subsequently negative performance in the period after exit.

The findings of Holthausen and Larcker (1996) are largely consistent with earlier research in this area. By investigating a sample of 90 LBOs that went public between 1983 and 1988, they find that operating performance in the target firm is significantly better than the median firm in the year prior to the IPO, and in the four years following. However, the paper finds signs of declining performance, though they are relatively insignificant. The authors also find that levels of working capital increased following the exit of the buyout investor, indicating a lower level of productivity. Holthausen & Larcker also conclude that LBOs are not consistent

with managers exploiting an information advantage. This is based on findings proving either zero or excess returns, which are contrary to their expectations of negative stock market performance for RLBOs if managers had been able to issue shares at temporarily inflated values.

In their master's thesis, Lundgren and Norberg (2006) take a closer look at the Swedish buyout market by collecting the performance and accounting information of 67 Swedish LBOs between 1988 and 2003. Interestingly, Lundgren and Nordberg find no significant industry adjusted improvements in operating performance the first three years following the buyout. The authors focus on and analyse performance for pre-buyout, holding and eventually also post-exit. They also find a significant decrease in investment activity following the buyout. Even though they find no clear signs of increased operating performance, as they claim, "We believe that the extensive data collection behind this thesis will be a valuable platform for further studies on the Swedish buyout market" (p. 38).

The thesis by Grubb and Jonsson (2007) has been chosen for publication in the *Journal of Private Equity*, 2008. Grubb and Jonsson also look deep into the Swedish buyout market, studying the operating performance during the holding period for all PE-sponsored exits in the period 1998 to 2006, yielding a total of 73 unique deals. The authors use three different performance measures on the buyouts, the EBITDA margin, ROIC and growth (as compounded annual growth in operating turnover), and finally find significant support for three of their nine formulated hypotheses. Their results support the notion that the operating impact on the buyout company is significantly positive, measured in terms of the EBITDA margin and ROIC. They do not find corresponding results with regard to growth, but note that both employment and wage levels develop in line with the peer groups. However, here the measures have very limited explanatory power. As they note, "most surprising is the insignificance of management ownership, which in several studies has been pointed out as the key determinant of improved corporate governance" (p. 39).

The findings of Heel and Kehoe (2004) are published in *McKinsey Quarterly* 2005. The authors look at factors that determine why some PE funds perform better than others. They study eleven of the leading industry PE firms, all performing above average, who then submitted five or six of their recent deals for closer investigation. The authors seek to find out how much of the performance gain can be attributed to active ownership and build a model to

measure this. They conclude that the main source of value creation in two-thirds of the deals was company outperformance. Further on, they interview leading CEOs to establish how PE firms go about achieving this. They model the five following steps: (1) successful deal partners seek out expertise before committing themselves, before (2) they institute substantial and focused performance incentives. Following this, (3) successful deal partners craft better value creation plans – and to execute them better, they simply (4) devote more hours to the initial stages of the deal. Finally, (5), if they want to implement management changes, they do so at a very early stage in the deal. By looking at these five steps, the authors claim to have solved one of the key elements of outperformance in the PE industry.

Looking at the earlier research in this field, there are several aspects worth mentioning, the most interesting of which is perhaps the lack of studies performed on the European and Scandinavian/Nordic market. In our paper, we both expand earlier studies and include new elements in the Scandinavian market, using information from Norwegian, Swedish and Danish-backed buyouts. In addition to this expansion, we look at not only two, but three periods of performance (pre-buyout, holding period and post-buyout). We also include all forms of buyouts, not limiting the material to only LBOs or MBOs. In this respect, and to the best of our knowledge, we believe our study is among the first of its kind implemented on the Scandinavian PE market, where we look at both performance and profitability measures.

PART 7 THEORY

In the following section, we will present some well-known theories for wealth creation and wealth transfer. Many of these theories describe important aspects of what the PE firms try to implement, and give us intuitive indications of possible explanations for our hypothesis and/or findings.

7.1. Principal-agent theory

According to Kaplan (1989), the reorganization that is commonly observed in the post-buyout firm tends to involve measures that reduce the agency problem in several ways. This "agency problem" is best explained by looking at principal-agent theory. The theory is based on the impact of separation of ownership and control over a firm, was first noted by Berle and Means (1932), and is today a well-known theory. The theory uses information asymmetry as its basic foundation, which occurs when one party in a transaction has more or better information than the other party. Having different information than the counterparty can lead to a more favourable position for the better informed.

When owners of a corporation hire professionals to manage their firm, a potential problem of different incentives arises. Managers, on the one hand, are interested in enjoying benefits such as control rights, prestige and other perquisites while, on the other hand, shareholders are purely interested in the security and good handling of their shareholdings. The managers' desire for power and other benefits can create situations where they might not have the incentive to act purely in shareholders' interests. These differences in objectives can result in moral hazard situations, and are particularly pronounced when internal control mechanisms fail to provide the proper incentives and/or monitoring of the management. Many firms have a large amount of dispersed owners, and the coordination and communication among them are consequently more difficult. This leads to a cost bias, which again creates the problem of free-riding to an extent where the owners are willing to spend neither time nor money on improving the situation.

7.2. Leverage

The Modigliani-Miller (MM) basic theorem states that in an efficient market with no transaction costs, taxes, bankruptcy costs, or asymmetric information, the value of a firm is independent of how it is financed. This means that if the capital structure has no impact on the cash flow generated by the firm, the decision will have no effect on the total value of the company. The theorem therefore states that it does not matter whether the firm's capital is raised by issuing stocks or selling debt, and the only true effect of debt will be as a lever of the return. This argument is supported by Grinblatt and Titman (2002).

It is well known that the theorem is based on a number of unrealistic assumptions, the most obvious being that of no taxes. The presence of taxes strongly influences the cash flows of the firm and thereby the value of debt and equity. Since corporations can deduct interest payments, increased debt financing lowers tax payments and thereby increases the value of the firm. Hence, the value increase of the levered firm, compared to an all-equity financed firm, is equal to the value of the tax shield of the debt.

Summed up, the positive effects from the use of leverage are associated with the gains as a lever of the return and from the tax shield. However, the effects are not that straightforward in the real world. If we further relax Modigliani-Miller's underlying assumptions, the gain from debt financing will decrease or even in certain situations erase the gain from the tax shield.

Leverage, or debt, is believed to be an important aspect of the value creation process – at least, we see this often when we hear about the high levels of debt imposed on an acquired target. In an LBO, debt is the main financing form, and much of this debt is again secured against the company's own assets. The cash flows generated by the target company are then used to service this debt.

Apart from potential effects such as the ones mentioned above, leverage is also an important factor when it comes to reducing the problems associated with asymmetric information, as earlier noted. According to Holthausen and Larcker (1996), by committing to high levels of debt, the management will be forced to secure enough free cash flow to service the recurring debt payments. This is supported by Jensen (1989), who claims that this increased

"discipline" required to service large amounts of debt can function as another way of dealing with possible agency problems.

7.3. Wealth transfer hypothesis

There are several aspects of wealth transfer worth noting. The wealth transfer from bondholders to stockholders is probably the most common effect in buyout transactions. This transfer can come to pass through three mechanisms: unexpected increased risk in investment projects, large increased dividend payments, or an unexpected issue of debt of higher or equal seniority as the existing debt. The importance of this transfer is limited by the amount of transactions finding place in the marketplace under study.

Further on, we have the wealth transfer effect from employees to shareholders. Some argue that value is often created in these transactions, because of high levels of layoffs and wage cuts. However, newer research (e.g. Jensen [1989]) concludes that the total number of employees in buyout target firms is not necessarily cut, and there is a wage increase as a result of new, incentive-based compensation schemes.

7.4. Parenting advantage

In their interview with Näs, Grubb and Jonsson (2007) note that PE sponsors can differ from other owners in several ways, which could be critical when it comes to value generation. Grubb and Jonsson (2007) introduce the force of parenting advantage, meaning that some PE funds and managers can provide resources to the target that others are not in possession of. This line of thought is also supported by empirical studies that prove that the top quartile of PE funds generally outperform the other funds. Buyout specialists can shield the target firm from media exposure and at the same time implement well-functioning incentive schemes. They also have a time horizon which enables them to initiate severe changes while having the energy to actually carry through these changes.

7.5. Market timing

In their 2007 paper, Grubb and Jonsson also underline that active ownership is considerably more important than sector or market appreciation in terms of value generation. Beroutsos et

al. (2007) claim that the most important source of returns for the PE sponsors is the governance model they apply on their portfolio companies. This means that it is not very likely that the PE funds hold a "magic" timing ability, but rather that their model of corporate governance holds specific factors which contribute positively for the development of the company during the holding period.

7.6. Other interesting aspects

Lundberg and Nordberg (2006) note in their thesis that "essentially three different sources of value creation in leveraged buyout transactions emanate from the basics of agency theory and reduction of agency costs: (i) the incentives realignment hypothesis, (ii) the control hypothesis and (iii) the free cash flow hypothesis."

According to the incentives realignment hypothesis, value can be created by ensuring that the management has the right set of incentives to make decisions which will maximize shareholders' wealth. Often this is done by giving management a substantial equity stake - creating closer links between the agent and the principal. Increased operational efficiency and restructuring of corporate assets can be among the other positive effects, while the pitfalls are characterized by the danger of underinvestment (risk aversion) and inefficiently high control over the company.

The control hypothesis stresses that with less dispersed ownership, the shareholders' incentives to actively monitor the company are strengthened. When a company is taken private, the remaining owners have limited possibilities of shifting the investment, and are hence more or less stuck with the stocks. This will lead to an incentive to contribute positively to the continued growth of the company, so that later on they will be able to free their investment and earn a decent return.

The free cash flow hypothesis aims at ensuring that the company's assets are healthily spent. By exchanging equity for debt, managers are constrained to secure free cash flow to handle the debt burden (interests and down payments). This reduces the danger of empire-building and a pileup of personal benefits to the managers. The danger of default, measured by increasing bankruptcy cost, is in itself a very disciplinary mechanism.

PART 8 PERFORMANCE MEASUREMENT

In an academic study such as this, one of the most important issues to clarify is how we have chosen to measure and determine the performance of the PE investments under study. Here we find great support in earlier research and studies, and will therefore base our final selection on established experience with different measures, together with our own reasoning about them.

This section looks closer at the distinction between absolute and relative measures (margins and ratios) together with implementing some of our indicative findings from the survey. We will also describe how we treat development over time, discuss the usage of level vs. change measurements, and conclude in regard to our choice of measurement variables.

8.1. Descriptive, absolute performance measures

Annual turnover/earnings measures the amount of business a company conducts during a year, usually through income or sales. Annual turnover is probably the best-known measure in regard to measuring whether a company is upscaling or downscaling its business on a year-to-year basis. Gjerland (2007) notes that turnover/annual sales is one out of several financial figures which will give an indication of the performance of the company.

Earnings before interests and taxes (EBIT/operating profit) measures a company's earning power from ongoing operations, equal to earnings before deduction of interest payments and income taxes. EBIT excludes income and expenditure from unusual, non-recurring or discontinued activities. In the case of a company with minimal depreciation and amortization activities, EBIT is watched closely by creditors, since it represents the amount of cash that such a company will be able to use to pay off creditors.

Earnings before interest, taxes, depreciation and amortization (EBITDA/operational cash flow) is an measure of a company's operating cash, calculated by looking at earnings before the deduction of interest expenses, taxes, depreciation and amortization.

The measure is of particular interest where companies have large amounts of fixed assets, or where a company has large amounts of acquired intangible assets. Large amounts of fixed assets will be subject to heavy depreciation charges – again creating a large difference between the cash flow measures. Since the distortionary accounting and financing effects on company earnings do not factor into EBITDA, it is a good way of comparing companies within and across industries – which will be of most importance in this study.

To find out what measures were actually used by fund managers, we addressed this question in our survey of the Scandinavian market. As most important, the managers suggested EBITDA, which was ticked once by 69.7 per cent of the fund managers, while more than 30 per cent noted EBIT. It comes as no surprise that EBITDA targets are important, and it only underlines our argument above.

Net income (NI) shows what remains after subtracting all the costs from a company's revenues. Net income is also called earnings or net profit.

Cash flow (CF) shows the amount of cash generated and used by a company in a given period. It is calculated by adding depreciation to net income after taxes. Cash flow can be used as an indication of a company's financial strength.

Assets is the sum of current and long-term assets in the company, and gives clear indications of the size of the company under study. On this basis, the measure is often used for comparing companies by size. There is a distinction between book values and market values, which will have to be taken into consideration when using this measure.

Liabilities show the company’s financial obligations, debts, claims, or potential losses.
Current liabilities represents the companys short term obligations – equalling the sum of the liabilities which are due within one year, while non-current liabilities indicates the part of the debt not due to be paid within the next year.

8.2. Relative performance measures

According to Barber and Lyon (1996), operating performance measures should be based on accounting numbers, and are furthermore generally evaluated relative to an industry

benchmark. Most researchers agree to this, and conclude that ratios are a much better way of determining the performance of targets, especially since these measures are not affected by the absolute size of the target under study.

Kaplan (1989) focuses on changes in three accounting variables: ***operating income before depreciation***, ***capital expenditures*** including capitalized leases and ***net operating cash flow***. Operating income measures the cash generated from buyout company operations before depreciation, interest, or taxes. Capital expenditures measure new investments by the buyout company. Based on the reduced agency cost hypothesis (free cash flow), Kaplan implements this measure, and claims that reductions in capital expenditures increase company profitability and value. Further on, Kaplan argues that net cash flow would be the primary component of the numerator in a net present value analysis, and a permanent increase in this measure should therefore lead to an increase in value. Kaplan's analyses measure the percentage differences or changes in the cash flow variables in the first three full years after the buyout.

Two ratios for measuring performance are used in the study by Holthausen and Larkcer (1996): the ratio of ***operating earnings before depreciation, interest and taxes deflated by total assets***, and ***the ratio of operating cash flow before interest and taxes deflated by total assets***. Both of these ratios measure flows on a before-tax and before-interest basis, basically in order to avoid the mechanical effect of leverage on the results. The two researchers also look at ***changes*** in key variables, such as change in working capital, change in capital expenditures, change in leverage and change in equity owned.

Grubb and Jonsson, as earlier described, base their performance measures on the ***EBITDA margin*** and the ***ROIC ratio***, as well as on growth. Growth is measured as compounded annual growth in operating turnover (***CAGR***). The EBITDA margin is calculated by looking at earnings before interest, taxes and depreciation of tangible assets and amortization of intangible assets divided by sales. Barber and Lyon (1996) note that it would be more preferable to use a measure of operating profit rather than earnings in a context like this, because operating income measures the productivity of operating assets more appropriately than earnings. Furthermore, they note that after a buyout, it is very likely that the capital structure is changed, which again will have a clear effect on interest expenses, hence affecting earnings but not operating income as a measure. This argument is also supported by Kaplan.

Return on invested capital is a well-known key ratio, and although affected by different accounting practices across industries, ROIC should theoretically give the most neutral cross-industry comparison of operating profitability. ROIC is theoretically "used to assess a company's potential to be a quality investment by determining how well the management is able to allocate capital into its operations. Comparing a company's ROIC with its cost of capital (WACC) reveals whether invested capital has been used effectively or not".[14]

Barber and Lyon (1995), who are supported by Glasfors and Malmros (2000), implement ***Return on Assets (ROA)*** as a measurement in their paper, together with variations of this measure (return on book value of assets, return on book value of assets adjusted for cash balances, return on sales, return on market value of assets, cash flow-based measure of return on assets). They define ROA as operating income divided by the average of beginning and end period book value of total assets. Optimally, the current value of the firm's assets would be used, but this is rarely achievable with accounting information. Return on assets is a much used indicator of how profitable a company is relative to its total assets. ROA as performance measurement is also supported by Cao and Lerner (2006).

Return on equity (ROE) measures "how well a company uses reinvested earnings to generate additional earnings, equal to a fiscal year's after-tax income (after preferred stock dividends but before common stock dividends) divided by book value, expressed as a percentage. It is used as a general indication of the company's efficiency; in other words, how much profit it is able to generate given the resources provided by its stockholders".[15] It is perceived to be an important performance measure, even though little reference is given to it in earlier research of the PE industry.

Leverage measurements are also much used in respect to performance. By exchanging equity for debt, managers are constrained to secure free cash flow to handle the burden. The danger of default, measured by increasing bankruptcy cost and the probability of default, is in itself a strong disciplinary factor – highly affecting the management of the company. Lowenstein (1985) looks closer at MBOs, and concludes that MBOs take on substantial debt, whereas most of the gain from the deal comes from tax benefits. Leverage measurements can be

[14] http://www.investopedia.com/terms/r/returnoninvestmentcapital.asp
[15] http://www.fxwords.com/r/return-on-equity.html

introduced both with respect to available cash flow in the company or by looking at long term debt to total assets together with debt as a multiple of EBITDA.

There are several other measurements mentioned in earlier studies, but many of these are focused towards fund performance measurement, which will fall outside the scope of our paper. However, it is worth mentioning that Copeland et al. (2005), Grinblatt and Titman (2002), and Kaplan and Schoar (2005) among others, note ***profitability index (PI), internal rate of return (IRR)*** and ***multiples such as TVPI (total value to paid in capital)*** as potential performance measurements.

Holthausen and Larcker (1996) use the ***level of working capital*** as a productivity measure. Envall, Hielte and Nordling (2001) measure the same by looking at ***working capital to sales***, but their results lack statistical significance. However, Lundgren and Nordberg (2006) measure growth by analysing ***sales growth*** and ***growth in total assets***, and finally also look at profitability through the use of the cash flow variables ***change in operating income*** and ***change in net working capital***.

When it comes to development over time, most researchers focus on change from one period to another in terms of relative measures. Furthermore, it is very important to clarify differences between looking at levels vs. looking at change. Earlier literature approaches this problem in two ways, either by comparing the percentage change in e.g. operating income from one year to another, or by looking at the percentage change in a relative measure such as ROA (based on the actual value given by the measure).[16] There are some problems worth mentioning in regard to the percentage change measure. First, if the measure under study is negative from one period to another, the result will yield misspecified values. If we are forced to discard a year because of this, we will invite a potential bias in our data material. Second, as Barber and Lyon (1996) note, "Using the percentage change metric, changes in operating performance are implicitly assumed to be proportional to the level of pre-event ROA."(p.394) The two researchers further test the statistics under the two methods. They find different results, but finally note, "Though we object to the use of the percentage change metric for the two reasons cited, the general tenor of the results applies to the percentage change metric." (p.395)

[16] Kaplan (1989), Lehn, Netter & Poulsen (1990)

After a thorough investigation of previously used measurements, in combination with our discussions reflected above, we have chosen to base our main performance measure analyses on ***EBITDA margins***, ***ROA*** and ***CAGR,*** while also including different change levels as a measurement.

PART 9 DATA

The data set and how it is gathered are of great importance for an empirical paper. In what follows, we will describe the data set and how it is gathered and organized. We will also show parallels to data sets used in similar research and explain the differences and advantages and/or disadvantages.

We will start out by explaining how the data are collected, first presenting how the buyout companies are identified and further how the financial information for these buyout companies is extracted. Reasons for the lack of financial data will also be introduced. The final section gives us an overview of the empirical data material in addition to the data for the survey part of this thesis.

9.1. Identifying the PE funds and the buyout companies

In order to identify the individual companies that have gone through a buyout process, we have started by collecting all buyout funds which are based in the Scandinavian countries. They have been identified by their respective membership in the NVCA, SVCA and DVCA. In addition, the homepage of Argentum has been used for Norway.[17] Since the focus of this paper concerns the buyout part of the PE industry, venture capital firms are excluded. Funds listed in both segments were originally included, and later controlled for and excluded based on venture investments.

With all PE funds available, buyout companies were identified by searching through the funds' websites and press releases. Usually, the funds list a portfolio of investments on their website, where a subcategory of exited/past investments is presented. For a few of the funds, no such listings were available and we had to rely on other sources such as press releases and media coverage.

Since most listings are based on voluntary reporting from the funds, this could potentially lead to a biased selection, as the funds may not want to publish unsuccessful projects or bankrupt companies on their website (survivorship bias). To reduce this problem, we have

[17]Downloaded from Argentum's webpage www.argentum.no, January 2008

complemented the list of buyout companies by using databases such as Zephyr, VentureExpert and Mergermarket for identifying transactions.[18]

In addition, our contact with Menon and head of research Leo Grünfeld has given us an all-inclusive listing of the Norwegian buyout transactions, which Menon receives from the members of NVCA through the NVCA office, based on organisation number. For Denmark and Sweden, no such relationship was established, but previous research on the topic, isolated for these two countries, was used for cross checking.[19]

As highlighted earlier, we have chosen to focus on buyout companies supported by funds represented in Scandinavia, with either headquarters or a branch office located there. This means that there is a chance that we could have excluded some buyouts which have been sponsored by foreign funds with no presence in the three countries. This is partly controlled for by searching through the databases mentioned above. In addition, Scandinavian funds investing outside the three countries have been excluded.

Based on the presented method, we have identified the buyout companies which are the basis for our empirical study. The next section will look into how the financial data for these buyout companies are gathered.

9.2. Data gathering

Under Norwegian, Swedish and Danish law, all stock companies (AS, AB, A/S) and financial institutions are obligated to hand in financial information and annual reports through the countries' respective government agencies. The regulations for the three countries differ slightly. All Norwegian firms have data posted for the past ten years if structurally available. For Sweden and Denmark, the years are limited to five. Based on this legislation, we had the opportunity to avoid relying only on private information, in contrast to previous studies from the US (e.g. Kaplan [1989]). Also worth noting is that previous research in the US has only looked at buyouts with IPOs as an exit, basically since publicly listed companies are obligated to report financial data through the SEC.

[18] Venture Expert, Mergermarket and Zephyr are all based on voluntarily listing .
[19] Sweden: Grubb and Jonsson (2007), Denmark: Vinten (2007)

The time period is defined to include companies with a buyout year between 1993 and 2006, with an exit during 2007 at the latest. This time period is desirable since it includes the most recent exits along with earlier deals, and hence is long enough to provide enough deals in order to perform our empirical analysis based on all three periods/business stages. This means that we have an unbalanced data set, where it is not a criterion that we have data for the entire 1993-2006 period.[20] By implementing this time frame, we potentially end up with a data set where the number of companies, and therefore financial data, in the three periods will differ. To analyse any effects of this, see the robustness discussion in part 13.

We have excluded companies that are not exited as of this day, ensuring that the restructuring phase is completed from the funds' perspective. To locate the predefined buyout and exit year, we used the companies' web pages, together with internet search and press releases through for instance Factiva. In addition, Menon provided us with realisation years for some of the Norwegian companies that we were missing.

Databases for obtaining financial information differ between the three countries, with one exception being Amadeus, the large database containing information on all companies in the European countries. To supply any missing information from Amadeus, we have used national databases for the three respective countries. For Norway, we have used Ravn Foretaksinformasjon, which is supported by the government agency Brønnøysundregistrene. For Sweden and Denmark, the respective databases were Affärsdata and NN Markedsdata. Affärsdata and NN Markedsdata give annual reports for the companies five years back in time, whereas each report includes comparable data for an additional two to five years before that, i.e. a maximum of ten years of financial data could be extracted. The data has been extracted in the period from 25 January to 28 February 2008.

On the other hand, the peer group data was gathered entirely through the Amadeus database, where it was possible to construct individual peer groups for each target firm. This simplified the matching process to some extent, since once the matching criteria were settled, this info could be directly extracted from Amadeus. When the databases did not provide a complete set of information, company websites and annual reports were used as sources.

[20] This is in line with Vinten (2007).

For bankrupt companies, we have assigned the value zero to the year subsequent to the bankruptcy date. This means that the survivorship bias should be reduced, since the bankrupt companies tend to have a negative impact on the total material. For a few of the companies, we found financial data with financial years divergent to the normal annual reporting (1 January to 31 December). The Amadeus database accounts for this by averaging the values based on half-annualised reversion.

Since the numbers reported to databases could contain typos and/or other errors, a quality check was performed for a random selection of companies by comparing the numbers from the database with the original annual report.[21] No differences were found during this check.

9.3. Reasons for the lack of financial information

Pre-buyout data

Pre-buyout data is analysed three years prior to the buyout year. Omitted data is due to several possible reasons. First, the buyout company had to be excluded because of a lack of financial data before the buyout took place. For instance, a division of a larger corporation was acquired by a PE firm; hence, standalone data is missing before the presence of the buyout. Second, the buyout process includes the merging of several companies or divisions into a newly established company, where prior data is missing or difficult to obtain. Lastly, data could be missing because the pre-buyout period is situated before 1997.

Holding period data

Buyouts with holding periods for less than one year are omitted, since we need data for at least one fiscal year in order to perform the analysis. Also, companies with holding periods prior to 1997 are not present because of the ten-year data perspective.

Post-exit data

The reasons for missing post-exit data could be due to the fact that *i)* the exit has taken place in 2006, and the data for 2007 is not yet filed, *ii)* the buyout company was merged into a new corporation after exit and the extraction of trailing data was difficult due to complex structures, or *iii)* the acquirer has changed the nationality of the company to a country outside

[21] The following companies were checked: APL ASA, Finuds, Grenland Group, Hemtex and Icopal

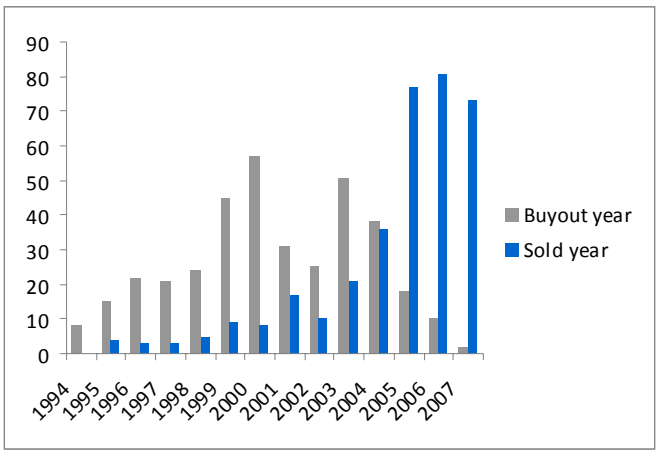
Europe, where the regulations for filing data could be different from the Scandinavian countries.

In general, we were unable to find any financial data at all for some of the companies that were identified during the screening process, that is, the companies simply couldn't be found in the database.[22] The reasons for this could be unclear. Even though we included bankrupt companies in the databases, there could be misspecifications here. In addition, the search engines allowed for changes in company names. Furthermore, there is a possibility that the name of the company listed on the funds' website is different from the one that is filed with their financial data. The funds do not list the organisation numbers of their exited firms, only the names of the companies. This could also create a potential bias. Because of the complex firm structures of a few of the companies, it was difficult to locate the actual part of the company that was acquired.[23] In addition, in instances where the buyout year or exit year was missing, we were not able to sort the respective years into periods, and the company had to be excluded.

9.4. Sample distribution

In total, our data set consists of 349 companies. As seen from the graph below, a large part of our buyout companies went through acquisition in 1999 and 2000, with 2000 as an all-time high. It is interesting to view the drop in the number of acquisitions in parallel with the economic downturn in 2000 and 2001 that came with the dot-com bubble and the 11 September attacks in the US. For the exit year, we find the highest numbers in 2005-2007, which is consistent with a peak around 1999 and a normal holding period of five to seven years.

[22] This adds up to 103 companies.
[23] For instance, Norvestor's acquisition of Elkjøp, where Elkjøp is a multinational company with subsidiaries in each country.



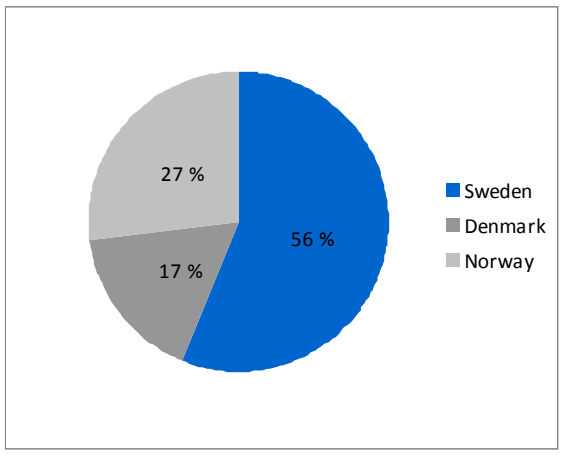


Table 6 Overview of data sample – number of deals in each year (left)

Table 7 Data sample divided by country (right)

Sweden is the dominant country in the sample, representing over 50 per cent of the buyout companies. This could be seen in relation to the earlier industry presentation, where we saw that Sweden had the largest capital under management as well as the highest investment as percentage of GDP. In addition, in 2005 Sweden had approximately twice as many investments as Norway, and even more than that for Denmark.[24] This strengthens our belief of a representative data material for the whole of Scandinavia.

9.5. *Survey data*

Our survey was conducted over a period of three weeks, from 1 February to 18 February, and was distributed to a total of 85 fund managers in Scandinavia (Norway, Sweden and Denmark). To locate the fund managers, we used the respective countries' Venture Capital Associations (NVCA, SVCA and DVCA), limited to buyout funds. We finally had a list of 85 managers who were targeted. We were able to speak personally with approximately 85 per cent of the managers, and contacted the remaining 15 per cent by email only. Our survey yielded 35 unique respondents out of 85 possible – a hit rate in excess of 40 per cent. For our data collection, we used the online survey tool Questback (www.questback.com).

[24] Investments in 2005: Sweden 633, Norway 311 and Denmark 216. Sørheim, Roger, Lars Øystein Widding and Kjetil Havn (2006)

PART 10 METHODOLOGY

In this section, we present the methods used in our thesis. This section seeks to clarify for other researchers the underlying methods for our test, enabling them to replicate the methods in new analyses.

We will start out by describing the chosen method, where the different time periods and specific years will also be explained. The peer group composition is important, since a large part of the hypothesis is based on an industry-adjusted performance measure, where the performance of the industry is extracted. Therefore, a deep analysis of how we have chosen to assign the peer groups is presented. Further on, the handling of potential goodwill in the balance sheet and currency problems will be described. Finally, the method of controlling for add-ons and divestitures is introduced.

10.1. Describing the method

The empirical analysis covers a total maximum of 16 periods of data for each company. Three periods prior to the buyout year are defined as the pre-buyout period, followed by eight periods subsequent to the buyout year, the holding period. Finally, three periods after the exit year are the foundation for the post-buyout period. The buyout and exit years are excluded from the three periods because we have no information on the exact time during the year the company was acquired and/or exited. In addition, the practical effects of a new ownership need some time to be incorporated in the target firm.

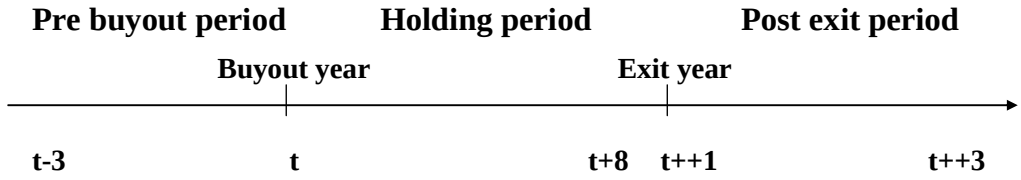


Table 8 Overview of methodology

10.2. Assigning peer groups

In order to match the buyout companies with their industry peers and give an industry-adjusted measurement, we have assigned one specific peer group for each buyout firm. Based on previous research by Kaplan (1989) and Cao and Lerner (2006), we have used the industry codes as major classification variables. The specific industry code method is the NACE REC 1.1 (Nomenclature Generales des Activities Economiques dans I'Union Europeenne), which is adapted to the European industry groups. The NACE is equivalent to the code system used in previous research where the American SIC (Standard Industrial Classification) was employed. The four first digits are used since these are the same for all European countries.[25]

Our target for choosing the correct buyout companies has been the holding company or the consolidated parent company group accounts. The organizational structure changes over time, since in some cases a holding company is created by the PE fund. In that sense, some of the selected companies are classified with the industry code 7415, *Management Activities of Holding Companies*. Since our aims are to capture the underlying characteristics for the specific industry, to use this code would present a misleading outcome. For those cases having code 7415, we have instead used the industry code for the main subsidiary unit of the company.

This leads us to the next issue, the geographical restriction of the companies, which is limited to the European countries. Instead of using only nationally comparable firms, we argue that a broad European target would be better because of the presence of competition beyond national borders. This could be illustrated by a few examples from our data material, where companies like Icopal, Callenberg and Gant compete on a cross-national basis.

The remaining sample, consisting of same industry codes and limited to the European countries, is then reduced to a selection of 20 companies based on comparison of total asset size. The underlying reason is that companies of same size should have approximately the same premises for further development based on the balance sheet. Barber and Lyon (1996) use four different methods for peer groups to check the impact on the results by changing the matching method. The two relevant methods for this thesis would be matching on industry code and similar size, or using industry code and some pre-event performance similar to

[25] http://ec.europa.eu/environment/emas/documents/nace_en.htm

return on assets (ROA). Barber and Lyon argue that performance matching is important when the company has performed either well or poorly in the past. However, the explanatory power of both methods is approximately similar.

The medians for total asset size are collected for the peer groups, since medians control for outliers in the sample of matching companies. In addition, there is no possibility for trimming data in Amadeus for peer groups, since means were excluded in preference for medians. Analogous methods are used by Kaplan (1989), Degeorge and Zeckhauser (1993) and Cao and Lerner (2006).

The next critical issue is when the method of matching should be implemented for composing the peer group. We have selected the year prior to the buyout year as our matching year. Previously mentioned research by Kaplan (1989), Holthausen and Larcker (1996) and Cao and Lerner (2006) uses the same method. The reason for using the year prior to the buyout year is that we then reduce the biases, as mentioned in Barber and Lyon (1996). Pre-event performance is adjusted for the mean reversion in accounting data, where a firm that performs extremely well before an event will lead the researcher to conclude that the company underperforms after the event because of poor performance. Since our matching criteria are total asset size instead of a clearly listed performance measure, this could potentially lead to a bias. However, other researchers use the same method, and an additional study by Barber and Lyon (1996) shows low explanatory power between firm size and company performance.[26] Selecting on asset size should therefore not bias the sample relative to company performance. Research by Fama and French (1995) shows that small firms in this respect have lower earnings as a percentage of book value than larger firms. Matching on size and industry group implies that we expect to see different operating performances in different industry groups and different firm sizes.

The Amadeus database allows us to use this method ten years back in time. For companies that have an earlier buyout year then 1998, we have used 1997 as the matching year. It could be argued that when we look only one year prior to the buyout, the portfolio firm has just entered into a phase with changes in operating performance, and ideally we should have looked at two or three years prior to the buyout year. However, this will imply that more of

[26] R^2 = 1.5 per cent

the companies must have been matched by the year 1997, since our supply of data is limited back to this year.

Based on the previously mentioned matching method, several biases could tend to occur. When choosing the right buyout firm to investigate, we are using the consolidated group company, or the top holding company. If the subsidiaries of this company are similar in size and have the same industry code, there could be a risk that the subsidiary company is being included in the peer group of the parent company. We avoid this bias by manually checking the relevant peer group for each individual company.

In addition, the industry matching firms could potentially be owned by another PE fund, and thereby should be excluded from the sample. The same method as above is being used to control for this problem. By matching on year t-1, we also control for the survivorship bias in the peer group, especially since companies going bankrupt during the following period remain in the peer group.

An alternative method to matching on asset size would have been to use the twenty largest companies in each industry to capture the main underlying industry developments, as implied by Grubb and Jonsson (2007). Such companies could be seen as being in a steady-state position.[27] However, we argue that this method introduces more biases than matching around the same size. This could be due to the higher degree of diversification of larger companies and the different structural outlook.

10.3. Goodwill

For most of the buyouts, buyout accounting leads to a change (usually an increase) in the book value of the assets, representing the difference between the market value of equity (the purchase price) and the book value. The effect of goodwill recognition is a downward biased estimate of ROIC in the holding and post-buyout period, since goodwill tends to be positive.[28]

To make intertemporal comparisons meaningful, Kaplan (1989) adjusts pre-buyout assets according to the size of the buyout-induced accounting change in assets. However, our data is

[27] Finn Kinserdahl Lecture BUS 425 Spring 2007 NHH
[28] Finn Kinserdahl Lecture BUS 425 Spring 2007 NHH: Seldom do we observe badwill in balance sheets.

not adjusted for this phenomenon since the same problem is present for the matching companies that undergo a change in their balance sheet structure. We argue that the biases cancel each other out. In addition, add-ons and divestitures to the buyout firm that were acquired or sold after the buyout year would have to be adjusted in the same way. However, this is not possible because of the complexity and the lack of sufficient data.

10.4. Currency

Since we will be looking at both levels and changes in measurements, it is important to have the material in the same currency, and for this we have chosen the euro (EUR). The Amadeus database initially provides financial data in EUR, but for the local databases the data is only available in local currency.[29] The data is converted to EUR using Norges Bank's annual exchange rates for the respective years. Having the same currency for all companies, independent of nationality, excludes problems with different inflation in the three countries, based on interest parity conditions. However, changes in exchange rates can affect the performance of a company if, for instance, operating numbers in local currency are stable but the exchange rate to the euro has changed. This could potentially lead to an increase/decrease of performance in euros, whereas the actual performance has remained stable.

A cross check was performed to analyze whether the exchange rates in Amadeus were similar to the ones in Norges Bank, and we did observe them as similar.

10.5. Add-ons/divestitures

Management skills in buying and selling units or companies can be seen as highly valuable. Important value is created through this process and should therefore not be excluded. The PE fund's management has high expertise in this area, as many of the employees have a background in management consulting or corporate finance. However, since our main goal is to unveil the underlying differences in operating performance through the pre-, holding, and post-period, we should optimally control for this phenomenon.

Our data material is given for the buyout companies on a consolidated basis. As described earlier, the main factor of value creation from the PE company's point of view is the active

[29] See the appendix for currencies.

ownership phase. During this phase, where new mergers and acquisitions together with divestitures of non-core operations are normal procedures, the company restructures and improves the bought-out companies. The same factor is true for the organizational restructuring of the target firm in-house, where new subsidiaries are established and sales and profit are relocated from the initial unit.

We argue that if the buyout companies pursue the same acquisitions and divestiture strategy as that of the peer group, using an industry-adjusted measure will cancel out this effect. However, if the buyout companies tend to do more add-ons and divestitures, changes in operating performance will tend to outperform the actual underlying improvements, and vice versa. In reality, acquisition and divestiture activity in the PE-owned firms tends to be higher than for non-PE-owned firms. [30]

Kaplan (1989) partially controls for add-ons and divestitures when post-buyout financial data presents restructured pre-financial data for the buyout company.[31] The EVCA paper (2005) makes no adjustments for add-ons and notes that, for employees, this would result in an upward bias since more companies are added than divested.[32] Grünfeld and Jacobsen (2006) make no adjustment due to a lack of data and information on the matter.

Much like Kaplan, we were not able to find restated financial data for the whole sample, and an approximation method was used for excluding growth other than organic. We started out by trimming the data set at a 99 per cent confidence interval. This means that the 0.5 per cent extreme values at both the lower and higher end were excluded. Furthermore, alternative thresholds were established and used for trimming the data set. This prevents the inclusion of outliers in the data sample that have not been excluded from the 99 per cent trimming. Thresholds for change in variables were chosen at +- 200 per cent, and absolute variables were settled at +- 100 per cent.

The trimming methods also enabled us to control for potential venture firms that were in the sample. As earlier noted, the focus of this paper is on the buyout segment of the PE industry. Since we have included funds that were listed in both buyout and venture capital segments,

[30] EVCA (2005)
[31] Kaplan (1989) controls for 5 out of 48 buyout companies.
[32] 63 per cent of buyout companies increase their number of employees, and there is an annual 2.4 per cent growth rate in employees between 1997 and 2004 in these companies.

we potentially could have included venture firms. Since venture capital is characterized by an early stage involvement, the revenues and asset sizes are usually significantly lower than for the more mature buyout industry. By trimming at a 99 per cent confidence interval together with thresholds, the majority of the venture firms should be excluded and the remaining sample will consist of the later stage buyout firms.

We did not go through the same steps for the peer group, arguing that since all individual groups consist of 20 matching firms, these effects will cancel each other out.

In addition, we partially control for add-ons and divestitures by looking at ratios as a fraction of total assets (ROA, ROCE etc) instead of stylistic individual accounting numbers. If the add-on or the divested unit has the same ratio as the initial part of the firm, this will not have an impact on the results.

10.6. Statistical method

Since our empirical study will be looking at many performance variables over different time periods, we can describe our material as a panel data set. Since our data material consists of 349 individual companies, we have used t-statistics as the testing method for the hypotheses. On the other hand, we could have used a non-parametric method like the Wilcoxen signed rank test. Barber and Lyon (1996) highlight the fact that the non-parametric test is superior to the alternative t-test; however, this is only under the assumption that extreme observations exist in the material. However, when trimming and implementing thresholds for the sample, these outliers should be excluded. The parametric t-test then yields the same power as the non-parametric Wilcoxen test.

After we have finally described the statistical method, the most important aspects of the methodology should now be covered and give the most insightful background information of our study. The final paragraph on methodology covers the survey part.

10.7. Survey

As mentioned, we also conducted a survey divided into the sections of rationale, financing, returns and exit strategy, which again were divided into 33 questions. The questions were

based on topics and factors that could be interesting to compare with the findings from the empirical analysis. In addition, the formula was given to selected contacts in the PE industry before the official publication, so as to gain input and valuable comments before publishing.

PART 11 HYPOTHESES

In this section, we will present our main research question, together with our methodology used in constructing the relevant hypotheses. These hypotheses are again grouped into main categories, highlighting different aspects in accordance with our overall problem definition. We will not go into details, nor show all the hypotheses constructed, but roughly illustrate them in a more general way. A complete breakdown of the actual hypotheses used for testing can be found in the appendix, part 18.l.

We believe that Scandinavian PE-owned companies will outperform their industry during the PE ownership, as measured by several financial key numbers. This outperformance is sustainable, and will therefore continue after the PE fund has exited its initial investment. Our main research question is therefore as follows:

Is the operational performance of the PE fund's portfolio company significantly improved compared to its peers, relative to both pre- and post-holding period?

11.1. Method

To answer our research question, we have broken the question down into testable hypotheses supported by previous research and constructed on the basis of economic theory and our own reflections. Each hypothesis is constructed so that the null hypothesis claims the performance to be equal, and the alternative not equal. If the null hypothesis is rejected, we continue to test the alternative hypothesis, i.e. implementing a stepwise process focusing on levels both greater than and smaller than our baseline.

The three periods consist of three, eight and three years of data, respectively. Since a part of our goal is to compare the differences over time for a set of variables, we have to use a specific period year for each of the three categories. We have used the two years prior to buyout for the pre-buyout period as testing range, and the three years after the buyout for the holding period. The method is chosen based on a tradeoff between the actual time it takes to notice and record effects of active ownership, and the number of observations in the specific year. The latter declines as the holding period rises because of a larger amount of deals with a

holding period shorter than eight years. For the post-period, all three years are used, giving the data set as much potential as possible in regard to discovering changes after exit.

We start out by testing hypotheses on performance measurements for the isolated target company before moving on with testing relative to its peers. An isolated perspective will give us valuable insight into the changes that the target company undergoes over different time periods. However, these results will only be valuable and quantifiable for conclusions if the company is directly compared to its peers. Effects on leverage, employment, holding time, country, cash flow and working capital are also tested in due course.

11.2. Isolated performance over periods: Hypothesis category 1

As noted in our performance measurement section, we focus on measures such as the EBITDA margin, ROA and CAGR. Kaplan (1989) has studied the impact of management buyouts on the operating performance measured by operating income before depreciation, net cash flow and capital expenditure. We will conduct a similar test, where we calculate the EBITDA margin for the portfolio company and the EBITDA margin for the peer group. Like Kaplan, we also perform an analysis on the remaining performance measures. Barber and Lyon (1995) have tested five different measures of operating performance, and conclude that ROA is a significantly good measure. They also say that the best measure is based on operating income rather than earnings, because operating income better measures the productivity of the operating assets, and because operating income does not take financial expenses into account. The ROA measure is defined by Barber and Lyon (1995) as operating income divided by the average of beginning- and end period book value of total assets, and will be compared to its peers and to itself as stated above.

CAGR measures growth in revenue, and is used because we believe that a PE-owned company will try to improve its earnings and margins. The earnings are improved by scaling up sales, and margins are improved by lowering the costs (or of course some combination of the two). Growth in revenue gives us a good estimate of the increase in sales that are not fully covered by other key figures.

According to our theories, principal-agent theory is commonly used to explain why companies are potential targets for PE funds. There are reasons to believe that the target

company has substantial free cash flow right before the buyout, and that the managers lack the right incentives to have the company perform at its best. Because of this, the operating performance has a clear potential of being improved during the holding period, and can possibly remain high after the PE fund has divested the company. The pre-buyout performance should therefore be lower than the holding period, and the post-exit performance should be higher than the holding period performance.

We will use change in the three respective variables as the relevant measuring observation, arguing that changes represent the improvements from one year to another and at the same time minimize the effects a level measurement can represent. This can be present for both the isolated company performance and our industry-adjusted method.[33] Where it is adequate, we also conduct hypotheses testing for levels.

*H_1: The change in **operating measures** of the portfolio companies is improved during the holding period of the PE fund, relative to the pre-buyout and post-exit operating measures.*

11.3. Industry adjusted over periods: Hypothesis category 2

Some of the change in performance is due to the industry or the cycle, and to account for this, we want to perform a similar test to where we calculate the peer performance measurement and then rerun the tests. We have to subtract the peer parameter from the company parameter, e.g. EBITDA margin-company minus EBITDA margin-peer, which gives us the new test operator.

(Operating measure $_t$ – Operating measure-peer$_t$) = Operating measure-industry-adjusted $_t$

*H_2: The change in **operating measure-industry-adjusted** is higher during the holding period, relative to the pre-buyout and post-exit periods' operating measure-industry-adjusted.*

[33] Change in period 1 is therefore excluded, since observations from the period one year before are missing.

11.4. Leverage and cash flow: Hypothesis category 3

By exchanging equity for debt, managers are constrained to secure free cash flow to handle the debt burden. This reduces the danger of empire-building and a pileup of personal benefits to the managers. The danger of default, measured by increasing bankruptcy cost, is in itself a very disciplinary factor. Lowenstein (1985) looks closer at MBOs and concludes that they take on substantial debt, whereas most of the gain from the deal comes from tax benefits. We want to investigate whether the debt level in Scandinavian deals follows this pattern, and subsequently retrieve an estimate on how much debt is actually taken on by the company.

We believe that the portfolio companies will take on debt when they are being bought by the PE funds, and furthermore that the debt level will decline during the holding period, finally reaching a stable level after the funds' exit. As explained and argued, we believe there is a high level of free cash flow in the target company when it is being bought, making it reasonable to assume that the debt level is lower than its peers. When the company is exited, we assume that it again has normal debt levels together with a normal cash flow level. The debt level is measured by long term debt to total assets, and debt as a multiple of EBITDA.

H_3: The debt level and cash flow level in the target company change over the three periods, both measured against its industry peers and on a relative basis.

11.5. Working capital: Hypothesis category 4

The PE fund performs active ownership. The funds try to lower the costs and increase the revenues of their portfolio company, and are basically improving the margins. Along with this thought, there will be a reduction in working capital due to such reasons as inventory management and claims settlement. This leads us to the assumption that the working capital will decline during the ownership period. These improvements lead to better performance than their peers, and should be sustained after the exit since both routines and experience are being built up in the organization.

H_4: The working capital declines from pre-holding to holding period, is lower in the targets relative to its peers during holding, and remains low after the exit.

11.6. Employment: Hypothesis category 5

EVCA (2005) performed a survey where they specifically asked about the contribution to employment. The report shows – contrary to common belief – that the buyout companies increase their employment on average by more than 2.4 per cent per year above their peers ("Dow Jones STOXX 600 companies"). Often, media sources and union organizations tend to describe PE ownership as a capitalistic search for profits and short-term gains, followed by massive layoffs. We wish to test whether this is correct or not for the Scandinavian countries.

H_5: PE-owned companies hire more people than their peers during the holding period.

11.7. Countries and geography: Hypothesis category 6

As earlier pointed out, Sweden is a more mature PE country than Denmark or Norway. More mature countries have longer experience with PE, and it is natural to assume that PE funds from these countries are better and more developed when it comes to performing active ownership, eventually yielding better performance. We will try to capture these effects by checking whether there are significant differences between countries.

H_6: The operating performance is better in the more mature PE countries.

11.8. Holding time: Hypothesis category 7

Most PE funds have an active exit strategy, meaning that they have already planned the potential exit at the time of buyout, which is to some extent consistent with our survey. The exit is normally either an IPO or a trade sale. It is natural to assume that every fund that receives a good offer in accordance with their exit strategy will choose to exit. A short holding period could therefore imply a good offer at an early stage in the holding period – leaving limited time to induce performance improvements. Nonetheless, these companies could already have achieved high performance, which again will be tested for.

H_7: Companies with a short holding period have a weaker performance.

PART 12 RESULTS AND TESTING

In this section, we present our main findings and further argue in regard to these results. We have performed t-tests to evaluate the performance of the portfolio companies, both isolated and industry-adjusted. The performance itself is measured by looking at EBITDA, ROA and CAGR, while measures like debt levels and cash flow targets are introduced as we move along. We report findings on ten, five and one per cent significance levels. The breakdown of the findings is structured based on periods and performance measurement, and eventually summed up by looking at some graphical interpretations of main findings and results.

Hypothesis categories six and seven will be analysed under part 13, "Robustness test."

12.1. Descriptive statistics

Table 9 shows an outline for the key descriptive statistics of buyout firm and peer group being used in the empirical analyses. The table presents statistics for size, growth, ratios and financing measurements, including the pre-buyout and holding period.

*** 1 per cent level	Pre buyout period: t-1								
** 5 per cent level	Holding period: t+1								
* 10 per cent level	Post buyout period: t++2								
	Pre buyout			***Holding period***			***Post exit***		
	Buyout firm	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*
A. Size									
Revenue	65096	32527		85910	38921		119334	63722	
EBITDA	4181	2458		5992	2814		9050	4802	
Total Assets	48462	36730		64205	42398		113233	64010	
Equity book	15191	10497		17103	13302		22563	19369	
Employees	291	171		467	187		765	306	
B. Growth									
Revenue growth - CAGR	0.215	0.128	0.087 **	0.211	0.124	0.087 ***	0.070	0.081	-0.010
EBITDA margin growth	0.068	0.035	0.032	0.138	0.022	0.115 **	-0.106	0.047	-0.153 **
ROA growth	0.133	0.048	0.084	0.163	-0.002	0.165 ***	-0.163	0.060	-0.223 ***
Employee growth	0.152	0.045	0.106 ***	0.076	0.048	0.027	0.052	0.031	0.020
Cash flow/Total assets growth	0.088	0.068	0.019	0.164	0.057	0.107 **	-0.181	-0.002	-0.179 **
C. Key measurements									
EBITDA margin	0.027	0.083	-0.055 **	0.035	0.085	-0.049 ***	0.085	0.077	0.007
ROA	0.099	0.090	0.009	0.088	0.087	0.001	0.090	0.087	0.003
Cash flow/Total assets	0.054	0.069	-0.014 **	-0.006	0.066	-0.072	0.068	0.066	0.002
Working capital/Revenue	0.179	0.152	0.026 *	0.173	0.158	0.015	0.145	0.158	-0.012
D. Financing									
Leverage as of EBITDA	1.623	1.390	0.232	2.789	1.352	1.437 ***	2.448	1.560	0.888 ***
Long term debt/Total assets	0.243	0.092	0.151 ***	0.289	0.095	0.194 ***	0.227	0.099	0.127 ***

Table 9 Descriptive statistics

12.2. Isolated performance over periods: Hypothesis category 1

As an introduction, we start by checking whether the change in operating measures of the portfolio company is improved during the holding period of the PE fund, relative to the pre-buyout and post-exit operating measures.

- *When looking at the companies over the course of the periods, we find clear signs of over-performance during the holding period, followed by a marked drop in performance after the exit of the PE firm.*

*** 1 per cent level	Pre buyout period: t-2
** 5 per cent level	Holding period: t+1
* 10 per cent level	Post buyout period: t++2

	Holding to pre buyout			***Post to holding***			***Post to pre buyout***		
	Holding	*Pre*	*Difference*	*Post*	*Holding*	*Difference*	*Post*	*Pre*	*Difference*
Operating mesures									
Change in EBITDA margin	0.138	-0.033	0.171 **	-0.106	0.138	-0.244 ***	-0.106	0.068	-0.174 **
Change in ROA	0.163	0.085	0.078	-0.163	0.163	-0.326 ***	-0.163	0.133	-0.296 ***
CAGR	0.211	0.209	0.001	0.070	0.211	-0.140 ***	0.070	0.211	-0.144 ***

Table 10 Isolated operating performance

Holding to Pre-buyout

Our main finding concludes that the EBITDA margin is significantly higher during the holding period relative to the pre-period, on a five per cent significance level. We also find higher levels of both ROA-measure and CAGR, although not enough to be statistically significant.

We believe the most important reason for this finding is the exercise of active ownership. As underlined earlier, it is a well known fact that the PE companies provide their target with high levels of direct and active ownership – meaning that the traditional principal-agent problem is reduced. In addition, the management often receives an ownership stake in the company together with other moves which contribute to the reduction and potential removal of moral hazard situations. Together with this, the direct operational improvement caused by streamlining the company's business will affect the EBITDA margin positively.

Linking this to our survey, we find direct support for the above assertions. Managers note that among the most important aspects in regard to active ownership is the contribution of knowledge and expertise. However, we are a bit surprised that the increase in the EBITDA

margin is not followed by significant increases in ROA and/or CAGR levels. One reason for not being able to track significant changes in CAGR is probably that the increase in the EBTIDA margin could be caused by a general reduction in the cost levels, not necessarily an increase in sales.

It is difficult to explain the lack of significant change levels in the ROA margin. A potential explanation could be that the PE companies equip the target companies with new asset bases, e.g. by add-ons or other acquisitions that are not controlled for in our methodology. Doing this will quickly increase the asset base, while on the other hand the direct results from acquisitions such as these can work with a time lag. It can be that the increases in e.g. profits stemming from such moves are subject to time lags, which again would explain our observations without reducing the power of our findings of the increased EBITDA margins.

Our findings of significant increase in the EBITDA margin during the holding period are equivalent to what Grubb and Jonsson (2007) find in their thesis. However, we do not find the same in regards to CAGR, where they report significant support for growth.

Post to Holding

When examining the period after exit relative to the holding period, we find absolute significant (one per cent) negative changes in all measures - meaning that the EBITDA margin, ROA and CAGR show a marked reduction after exit of the PE fund.

This is partly in line with our earlier argument, knowing that the active ownership disappears and the original challenges based on principal-agent theory suddenly reappear. This could indicate that the disciplinary mechanism of the PE ownership disappears after the exit, and that there is little sustained improvement in the fundamentals of the company. However, we are a bit surprised that the change is so remarkable and significant. Some might argue that the findings could be influenced by business cycle fluctuations. We would like to point out that our data set is partially adjusted for potential business cycles since the material is spread over a time period of ten years in total. Furthermore, all exits are done irrelevant of timing, creating a fairly cycle-adjusted data material which leaves little support for questioning the above.

Another important point worth noting is the possibility of “dressing up the bride” during the pre-exit of the PE fund. This could explain the marked decrease in the performance measures,

but would also indicate that the PE industry exercises bad morals in its business dealings. However, the fall in performance could support our assumption that some PE targets are acquired again and again over longer periods of time, creating helix patterns.

Comparing our findings with the survey, we find contradictions. Our empirical study shows a marked decrease in performance, while none of the interviewed fund managers believe in underperformance relative to holding period. On the contrary, 87 per cent of the managers actually note that they believe the company will perform in line with earlier levels, or even better.

Post to Pre

The growth in all performance measurements proves to be significantly different when comparing post- with pre-performance. This indicates that we have strong pre-buyout growth, while we note a strong decline after buyout – which can be different from what we would expect. It is reasonable to assume that a company follows a traditional growth cycle over time, equalling for example an S-shaped growth curve. However, our proven growth levels in all measures are significantly higher pre-performance relative to post.

It is important to note that we are looking at change levels here, meaning that the results do not tell us anything about the absolute performance of the companies – which for all we know could be in line with reasonable assumptions. Another reason for our findings could be that we have only ten years of data, meaning that many of the companies cannot be compared based on pre- and post-periods. This is also supported by the fact that there are probably different companies that are being investigated in the two periods, an issue which we will come back to during our robustness test.

12.3. Industry-adjusted performance: Hypothesis category 2

Moving along to our main findings from the most interesting part of our results, we check whether the change in operating measures – industry-adjusted – improves during the holding period, relative to the pre-buyout and post-exit periods.

- *When comparing our PE targets with their peers, we find support for a significant overperformance, coupled with a lack of clear signs indicating a potential "target"*

prior to buyout. Surprisingly, we find significant levels of underperformance relative to both the company's own trend and the industry as a whole after exit of the PE fund.

*** 1 per cent level	Pre buyout period: t-1
** 5 per cent level	Holding period: t+1
* 10 per cent level	Post buyout period: t++2

	Pre buyout			Holding period			Post exit		
	Buyout firm	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*
Operating mesures									
Change in EBITDA margin	0.068	0.035	0.032	0.138	0.022	0.115 **	-0.106	0.047	-0.153 **
Change in ROA	0.133	0.048	0.084	0.163	-0.002	0.165 ***	-0.163	0.060	-0.223 ***
CAGR	0.215	0.128	0.086 **	0.211	0.124	0.087 ***	0.070	0.081	-0.010

Table 11 Industry-adjusted operating performance

Pre-buyout

When analysing the performance relative to peers, we note that the only measure of significance is the change in CAGR, which indicates that the PE firms overperform. In our survey, we note that managers claim to search for "market leaders" when locating potential candidates. This is quite interesting, as we know that there are no direct links between growth rate and the state of market leadership of the company. We would actually argue against the managers; market leaders are probably more mature and established and experience lower levels of growth, directly contradicting what the findings in our survey support.

It would also be reasonable to suspect that some of the PE targets were typical underperformers – which we would easily see by looking at the growth in the operating measures. Underperformers usually hold an unused potential which the PE firms could be able to nourish and develop, but we find no signs of this pattern in our material.

Holding

During the holding period, our findings support significantly higher levels of all the performance measures. The levels are positive for both the PE targets and the peers, but significantly higher for the PE targets. The EBITDA margin indicates strong significance, while ROA and CAGR are absolute significant – all in line with base assumptions of overperformance by PE targets.

Concerning the above, we are able to confirm our main assumptions, that the PE target outperforms relative to its peers, which is in line with and confirmed by Grubb and Jonsson

(2007), Kaplan (1989), Cao and Lerner (2006), Holthausen and Larcker (1996) and Degeorge and Zechauser (1993). However, our findings are much more significant, and the outperformance is larger than any of the earlier studies indicate.

Our findings are highly supported by theory. The PE approach induces discipline over the management, facilitates management ownership, and thereby reduces the potential agency problems/presence of asymmetric information – all of which are believed to increase the long-run profitability of the company. In addition, the PE firm will contribute with resources, competence and other value increasing factors, so that parenting advantages are clearly coming into place.

As noted earlier, according to the survey, managers list "growth potential" as the most important factor for acquiring targets. This is also supported by these findings, and we note that we track an absolute significant higher growth in CAGR for the acquired companies (more than twice the levels of the peers). The survey also highlights that 62 per cent of the gains associated with the PE investments are associated with company outperformance, which is clearly supported by our findings in the empirical material.

Post-buyout

Again, it is interesting to note that PE targets significantly underperform relative to their peers in the post-buyout period. This is a remarkable finding, and poses challenges in regard to our argument. However, as earlier noted, we find it reasonable to believe that this is connected to potential cases of "dressing the bride". This assumption is supported by several facts, such as the findings highlighting that the PE target falls significantly below both its old trendline and below the industry average.

In our survey, more than 80 per cent of the respondents claim that they believe the target will perform above the industry average relative to its peers after the exit, which is clearly a direct contradiction of what we have found. 18 per cent note that they believe the company will develop in line with the industry average while, clearly, no one expects it to perform below that average. We have to conclude that the statements given in the survey are clearly marked by subjective elements, and it is reasonable to believe that a potential seller will not highlight anything negative with the object. Furthermore, it is interesting to question why managers claim that they retain ownership in exited companies. In this study, we have actually gathered

data from the ventures the managers have been involved with – indirectly proving that they have been holding investments after exiting that fall greatly below earlier levels. Since the managers themselves know this track record, it is very interesting to question why they answer as they do. Either they are acting irrationally or they are obligated to hold a position as part of a sales agreement.

Furthermore, in table 12 we investigate performance over the different periods (holding to pre, post to holding, and post to pre) relative to each other. Here we find the exact same results as under hypothesis category 1, i.e. better under the holding period relative to pre-buyout, and negative development after exit.

*** 1 per cent level	Pre buyout period: t-2								
** 5 per cent level	Holding period: t+3								
* 10 per cent level	Post buyout period: t++2								
	Holding to pre buyout			***Post to holding***			***Post to pre buyout***		
	Holding	*Pre*	*Differnce*	*Post*	*Holding*	*Differnce*	*Post*	*Pre*	*Differnce*
Operating mesures									
Change in EBITDA margin	0.090	-0.106	0.197 **	-0.099	0.090	-0.190 **	-0.099	-0.106	0.007 *
Change in ROA	-0.017	0.001	-0.018	-0.201	-0.170	-0.031 **	-0.201	0.001	-0.203 **
CAGR	0.070	0.065	0.005	-0.011	0.070	-0.081 **	-0.011	0.065	-0.076 *

Table 12 Industry-adjusted operating performance

Our findings are very interesting because they prove that the PE firms significantly outperform their industry peers, and thus we conclude that the "PE phase" is quite extraordinary in regard to performance. It seems as though PE firms are able to locate interesting targets based on their growth potential and/or former growth path, develop even more potential, and eventually, more importantly, take advantage and develop this potential into real, measurable performance. When the PE firm exits, it clearly leaves the company vulnerable, with a renewed growth potential which the new owner can continue working with. This gives support to our original assumption that the PE targets could be moving through a helix – with several individual periods of PE ownership. Clearly, our data material has not allowed us to investigate this any further, but we do believe that this is not a sustainable pattern in the long run since companies eventually adapt and grow out of their former patterns.

12.4. Leverage and cash flow: Hypothesis category 3

We further investigate whether the debt levels and the cash flow levels in the target company change over the three periods, both measured against its industry peers and on a relative basis.

- *Our empirical study proves that PE targets are relatively more leveraged than their peers. There are few significant differences prior to the buyout phase, indicating that the companies' financial structure is not of most importance to the PE firms when picking targets. The levels of leverage are lower than first assumed, but at any rate are high enough to drastically reduce the target companies' free cash flow - inducing discipline and efficiency in the running of the business.*

*** 1 per cent level	Pre buyout period: t-1								
** 5 per cent level	Holding period: t+1								
* 10 per cent level	Post buyout period: t++2								
	Pre buyout			***Holding period***			***Post exit***		
	Buyout firm	*Peer group*	*Ind. Adj.*	*Buyout f*	*Peer group*	*Ind. Adj.*	*Buyout fi*	*Peer gr*	*Ind. Adj.*
Operating mesures									
Leverage as of EBITDA	1.623	1.390	0.232	2.789	1.352	1.437 ***	2.448	1.560	0.888 ***
Change in Total debt/Total assets	0.064	0.011	0.052	0.037	0.073	-0.035	0.045	0.054	-0.009
Cash flow/Total assets	0.054	0.069	-0.014 **	-0.006	0.066	-0.072	0.068	0.066	0.002

Table 13 Industry-adjusted financing

Pre-buyout

When examining the pre-buyout performance in regard to leverage measures, we find limited support for significant conclusions. We do note that the levels of leverage as well as the change levels of debt to assets are larger in the PE target compared to its peers, but these findings are not significant. However, we find a negative performance relative to its peers when looking at our cash flow measure, which is highly significant. This is a bit contrary to our cash flow hypothesis, which reasons that companies with high levels of cash flow are typical targets for PE firms. However, it is important to remember that we are not able to say anything about whether it is the size of the cash flow itself or the asset base which affects this.

One explanation could then be that the typical target has reduced its levels of free cash flow, caused by the fact that the management is actually acting in line with what the principal-agent theory postulates; they use the company's free cash flow to enrich themselves – increasing the asset base and/or at the same time reducing the free cash flow for distribution.

Holding

In line with our basic assumptions, we find absolute significant support, proving that the levels of leverage are increased during the holding period. It is a well known belief that the PE firms highly leverage their targets in order to restrain misuse of free cash flows, enforce discipline on the management and increase operational efficiency. We can note that the change levels are roughly twice that of peers, which is actually not in line with what the managers note in our survey. Whereas 35 per cent of the respondents indicate a debt level of roughly three to four times EBITDA, our findings indicate approximately 2.8 times EBITDA. We believe an explanation can be that we haven't correctly captured all sorts of debt financing/financing structures, whereas we do believe that some of the debt financing can be given from the holding/parent company or through other schemes.

Interestingly, we find negative changes in our cash flow measure, and even though they are not significant, they support our reasoning that the PE firm places more restraints on the available cash flow in the company.

Post-buyout

We find more or less the same results after exit as during holding, even though the leverage levels seem to be slightly lower, but still absolute significantly stronger relative to peers. The cash flow seems to increase to some extent, but not significantly.

12.5. Working capital: Hypothesis category 4

Further on, we investigate whether the working capital declines from the pre-holding to holding period, whether it is lower in the targets relative to its peers, and whether it remains low after exit.

- *We find signs of significant reduction in working capital levels over the lifetime of the PE target, even though the firms show no clear and significant differences from developments in their peer groups.*

*** 1 per cent level	Pre buyout period: t-1
** 5 per cent level	Holding period: t+1
* 10 per cent level	Post buyout period: t++2

	Pre buyout			***Holding period***			***Post exit***		
	Buyout firm	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*
Operating mesures									
Working capital/Revenue	0.179	0.152	0.026 *	0.173	0.158	0.015	0.165	0.156	0.008

Table 14 Industry-adjusted working capital/revenues

While looking at the industry match, we find that PE firms have higher levels of working capital over all periods, though only significantly different in the pre-buyout phase. This is in direct contradiction to our base hypothesis postulating that PE firms have lower levels of working capital. Other researchers have encountered similar or opposite findings. Envall, Hielte and Nordling (2001) measure by looking at working capital to sales, but their results lack statistical significance, and hence neither support nor refute our results. According to some researchers, reduced levels of working capital indicate a more effective use of the company's assets and resources, and hence it would be reasonable to expect signs of these patterns in our study. With respect to this, our findings indicate either that PE firms actually do not automatically enhance efficiency, or that our measure does not correctly answer what we are investigating. Since our measure is a ratio between working capital and revenue, our findings do not tell us anything about which of these two measures actually change. Lundgren and Nordberg (2006) take a look at change in net working capital in their study, but find no clear signs of improved operating performance – meaning no significant changes in the levels of working capital.

Turning towards the periods relative to each other, we find more support for our original assumptions; comparing levels during holding relative to pre-buyout, we see that the ratio is decreasing, though the finding is not significant.

*** 1 per cent level	Pre buyout period: t-1
** 5 per cent level	Holding period: t+3
* 10 per cent level	Post buyout period: t++3

	Holding to pre buyout			***Post to holding***			***Post to pre buyout***		
	Holding	*Pre*	*Difference*	*Post*	*Holding*	*Difference*	*Post*	*Pre*	*Difference*
Operating mesures									
Working capital/Revenue	0.006	0.019	-0.013	-0.017	0.013	-0.030 **	-0.017	0.019	-0.037 *

Table 15 Industry-adjusted working capital/revenues – periods relative

Comparing post-buyout to holding, we find a similar pattern, but this time it is strongly significant. Looking at post-buyout relative to pre-buyout, we find significant support for a reduction over the whole period. Clearly, there seems to be a tendency towards reduction in working capital for the PE firms. However, the difference is not remarkable compared to peers. Interestingly, the levels seem to remain low after exit, indicating that an improvement actually takes place which is sustainable.

12.6. Employment: Hypothesis category 5

Eventually, we checked whether or not PE-owned companies hire more people than their peers during the holding period.

- *Our findings are in direct opposition to the common belief that PE firms streamline their targets by removing human capital. We find that the PE firms actually have a 2.8 per cent higher growth rate (EVCA finds a 2.4 per cent higher rate) in the number of employees during their holding period than in the peer group of companies.*

*** 1 per cent level	Pre buyout period: t-1								
** 5 per cent level	Holding period: t+1								
* 10 per cent level	Post buyout period: t++2								
	Pre buyout			***Holding period***			***Post exit***		
	Buyout firm	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*
Operating mesures									
Growth in employment	0.152	0.045	0.107 **	0.076	0.048	0.028	-0.001	0.025	-0.026

Table 16 Industry-adjusted growth in employment

Looking at the growth in employment, we find higher growth levels both in the pre-buyout phase and during the holding period relative to peers. Interestingly, our findings are absolute significant for the pre-buyout phase, while not significant for the holding period. It is interesting to note that while the employment growth rate remains rather constant over the pre-buyout and holding period for the peer group companies, it is lower in the holding period relative to the pre-period for the PE firms. This indicates that the PE targets reduce the growth in employment relative to the periods when they enter the venture. On the other hand, compared to peers, it still remains higher. If we further compare this to the CAGR measure we find proofs that increase in revenue is followed by increase in employment. This is in line with assumptions that change in revenue will be followed by growth in employment.

After exit, the growth level turns negative for the former PE targets, even though these findings are not significant. This is both surprising and difficult to explain, but could be caused by a state of "vacuum" after losing the restraints the PE ownership has imposed on the company earlier.

PART 13 ROBUSTNESS TEST

As a valuable addition to our findings, the robustness test covers the strengths and weaknesses of our results. The findings could potentially be influenced by our assumptions or the matching criteria. To control for this bias, we will perform different adjustments to those measures to see whether the conclusions change. We will use the significant results from the previous section as our starting point and look deep into the assumptions underlying the answers.

13.1. Country specific: Hypothesis category 6

As previously mentioned, the empirical analysis of the operating performance is from a Scandinavian perspective, consisting of Denmark, Norway and Sweden. It would be both meaningful and interesting to analyse whether there are differences in performance between the three countries. In our sample, Sweden is the dominant country, representing about 60 per cent of the buyout companies, while Norway and Denmark have approximately 25 and 15 per cent, respectively. This is in line with the size of capital under management in the three countries (see section 5.5).

Moving along, it would then be interesting to see whether the results are influenced by the large Swedish sample, and we have therefore performed independent national analyses.

*** 1 Pre buyout period: t-1
** 5 Holding period: t+1
* 10 Post buyout period: t++2

	Pre buyout			Holding period			Post exit		
	Buyout firm	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*
Operating mesures									
Change in EBITDA margin	0.068	0.035	0.032	0.138	0.022	0.115 **	-0.106	0.047	-0.153 **
Denmark	*0.066*	*0.093*	*-0.027*	*-0.210*	*-0.156*	*-0.054*	*-0.390*	*-0.057*	*-0.333* ***
Norway	*-0.030*	*0.144*	*-0.174*	*0.325*	*0.073*	*0.252* ***	*-0.222*	*0.090*	*-0.312* **
Sweden	*0.096*	*-0.038*	*0.134* **	*0.120*	*0.050*	*0.070*	*-0.028*	*0.048*	*-0.076*
Change in ROA	0.133	0.048	0.084	0.163	-0.002	0.165 ***	-0.163	0.060	-0.223 ***
Denmark	0.177	0.128	0.049	-0.148	-0.104	-0.044	-0.434	-0.051	-0.383 ***
Norway	0.184	0.159	0.025	0.274	0.065	0.209 **	-0.325	0.115	-0.440 **
Sweden	0.112	-0.031	0.143 *	0.171	-0.006	0.177 **	-0.073	0.059	-0.132 *
CAGR	0.215	0.128	0.086 **	0.211	0.124	0.087 ***	0.070	0.081	-0.010
Denmark	*0.217*	*0.080*	0.137 *	*0.181*	*0.150*	0.031	*0.087*	*0.032*	0.055
Norway	*0.135*	*0.155*	-0.020	*0.327*	*0.131*	0.196 ***	*0.006*	*0.043*	-0.037
Sweden	*0.231*	*0.128*	0.103 **	*0.176*	*0.113*	0.063 *	*0.083*	*0.103*	-0.020

Table 17 Industry-adjusted operating performance, country specific

This reveals several interesting aspects. The change in EBITDA margin for the holding period is, as already shown, on an overall basis significantly greater for the buyout firms than for the peer groups. However, on a national basis, only Norway overperforms respective to their industry. The industry-adjusted difference amounts to over 25 per cent, which is significant on a one per cent level. On the other hand, Denmark has a negative industry performance, though not significant. The same is true for the changes in ROA and CAGR, which are significant for both Norway and Sweden, but not for Denmark.

A possible explanation for the phenomena could be that Denmark is the least developed country in respect of capital under management. The stage of the PE industry could be defined as still in an early phase, whereas underperformance is evident compared to the neighbouring countries. In the Apax Partners study (2006), Denmark actually ends up with the highest ranking of the Scandinavian countries when compared on their environmental competitiveness. This could be seen as quite contrary to our findings, but it is important to clarify the differences between historical research (such as this thesis) and the Apax article, which also includes aspects of future development.

Another possible explanation could be the size of the Danish sample. The sample has the fewest deals compared to the other two countries, whereas the sample does not cover what we might intuit as a representative sample for the country. However, if we look at the Danish peer group, this also has a negative performance, meaning it could be that the target industry for Danish PE investments has a lower performance than for the other two countries.

In the pre- and post-exit periods, the results are not very contradictory. Sweden is the only country overperforming for all three performance measures in the pre-buyout period. To summarize, Denmark is actually underperforming in all three periods when we look at change in EBITDA.

13.2. Holding time: Hypothesis category 7

The data material naturally consists of deals with different ownership times, ranging from one year to 23 years, with a mean of 4.8 years. To look closer into the implication of differences in ownership time, we have performed an analysis where we have divided the sample into two

parts, deals with an ownership time below five years and those with a holding period above five.

*** Pre buyout period: t-1
** 5 Holding period: t+1
* 10 Post buyout period: t++2

	Pre buyout				Holding period				Post exit			
	Buyout firm	*Peer group*	*Ind. Adj.*		*Buyout firm*	*Peer group*	*Ind. Adj.*		*Buyout firm*	*Peer group*	*Ind. Adj.*	
Operating mesures												
Change in EBITDA margin	0.068	0.035	0.032		0.138	0.022	0.115	**	-0.106	0.047	-0.153	**
Above 5	*0.462*	*0.012*	*0.450*	***	*0.319*	*-0.031*	*0.350*	***	*-0.050*	*0.058*	*-0.108*	
Below 5	*-0.033*	*0.047*	*-0.080*		*0.053*	*0.057*	*-0.004*		*-0.150*	*0.040*	*-0.190*	**
Change in ROA	0.133	0.048	0.084		0.163	-0.002	0.165	***	-0.163	0.060	-0.223	***
Above 5	*0.419*	*0.051*	*0.368*	**	*0.299*	*-0.019*	*0.318*	***	*-0.071*	*0.068*	*-0.139*	
Below 5	*0.067*	*0.047*	*0.020*		0.103	0.008	*0.095*	*	-0.237	0.056	*-0.293*	***
CAGR	0.215	0.128	0.086	**	0.211	0.124	0.087	***	0.070	0.081	-0.010	
Above 5	*0.218*	*0.128*	*0.090*		*0.291*	*0.162*	*0.129*	**	*0.049*	*0.077*	*-0.028*	
Below 5	*0.214*	*0.128*	*0.086*	**	*0.167*	*0.099*	*0.068*	**	*0.084*	*0.083*	*0.001*	

Table 18 Industry-adjusted operating performance, ownership time

The results are quite consistent for both EBITDA and ROA, where companies with a holding period above five years consistently have better performance for both pre-buyout and the holding period. In comparison to the overall results for the whole sample, transactions with an ownership time above five years overperform. In the post-exit period, deals with ownership time below five years significantly underperform relative to their peer groups, whereas no such results could be found for the above five years sample.

Another interesting aspect is the superior performance of change in EBITDA pre-buyout. Companies above five years of holding time have a superior performance relative to their peers, and this could be seen as a reason for why the holding time is longer.

As we have seen earlier in this paper, PE funds generate value through active ownership and such mechanisms as reducing agency costs and the parenting advantage. All these aspects are dependent on being introduced and implemented over time, whereas an ownership time below five years could be seen as too short for gaining any true advantages of PE ownership.

13.3. Paired companies

The empirical part is based on the criteria that all buyout companies and peer groups in the sample are included in the respective periods where we have collected data. This assumption

is used since the data material consists of approximately 350 companies and single company specifics should be excluded due to normal distribution. A problem can arise in two cases. First, if data are missing for the buyout company or the peer group, the link between the two variables is broken. Second, where buyout companies have a long holding period, our data set is limited to only ten years of data due to availability of information. The table below shows how we have performed a similar test as in hypothesis 2, but restricted the data material to only include paired variables, i.e. variables where we have data for both peer groups and buyout companies.

*** 1 per cent level	Pre buyout period: t-1
** 5 per cent level	Holding period: t+1
* 10 per cent level	Post buyout period: t++2

	Pre buyout			***Holding period***			***Post exit***		
	Buyout firm	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*	*Buyout firm*	*Peer group*	*Ind. Adj.*
Operating mesures									
Change in EBITDA margin	0.098	0.031	0.067	0.117	0.082	0.035	-0.103	-0.003	-0.100 *
Change in ROA	0.125	0.025	0.100	0.138	0.031	0.107 *	-0.157	0.044	-0.201 **
CAGR	0.212	0.119	0.093 **	0.209	0.116	0.093 ***	0.070	0.081	-0.011

Table 19 Industry-adjusted operating performance, paired

The paired results from the table above are in line with our previous findings for hypothesis group 2, though on a slightly lower significance level. It is interesting to see that the significant value for change in EBITDA margin for the holding period disappears, though it is still overperforming. When pairing the observations, the number of observations is reduced due to the fact that only companies with both buyout- and peer group information for the specific periods are included, and for the change in the EBITDA margin variable, the included data is reduced by approximately 100 observations.

PART 14 SURVEY

In the following, we will present the main findings in our survey sent to Scandinavian fund managers. This chapter will first address the rationale behind PE investments, before attending to issues in regard to financing, returns and performance, and exit strategies and possibilities.

Our survey yielded 35 unique respondents out of 85 possible –a hit rate of 41 per cent. The investors that participated had a total capital of EUR 24 billion under administration, with the average of each fund equaling approximately EUR 1 billion. We noted a 75/25 allocation between buyout and venture funds, whereas some of these were represented in both categories. Five of the funds were established before 1980, three between 1980 and 1990, 12 between 1990 and 2000, and the remaining 15 were established afterwards – showing that our respondent material reflects a rather young industry. Regardless of age, our respondents in total have conducted more than 400 exits, and currently have more than 350 ongoing investments.

14.1. Rationale

By using a traditional 1-5 scale where 1 is of most importance, we asked the respondents to rank different rationales for PE investments. Looking at the material gathered, we see no signs of extreme values.

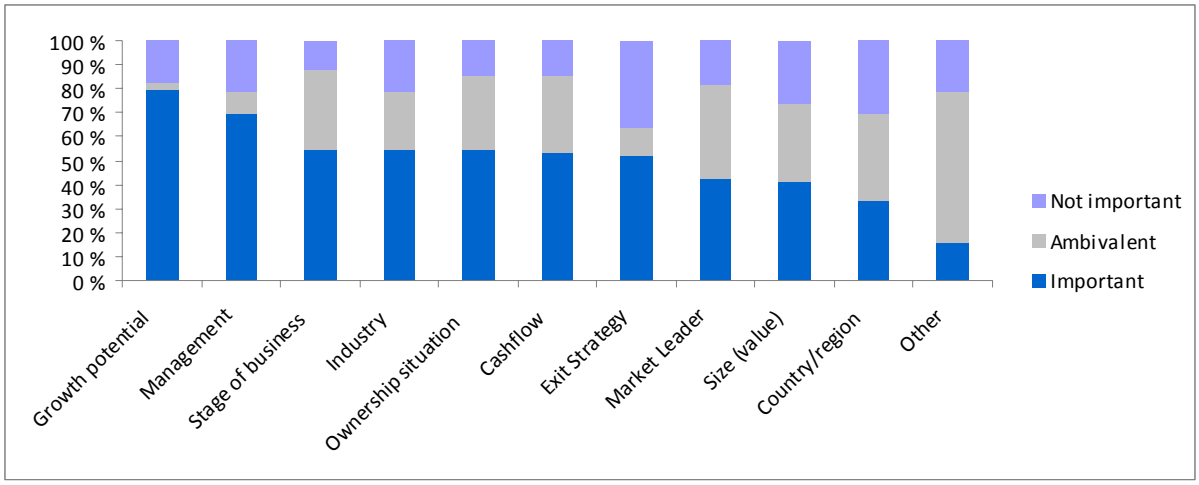


Table 20 Rationale for investments

Most of the rationale criteria receive responses within 1-3, meaning that the respondents have placed some emphasis on these criteria. We note that the target company's growth potential and management situation are of most importance when looking at a target, together with the actual stage of business and cash flow of the company. This comes as little surprise to us. The growth potential is a basis for potential high returns, especially if the management is able to take advantage of, craft and make use of this growth potential. Therefore, the growth potential is closely linked to the management's expertise and skills in using the potential the growth possibility provides. Of least importance, we note the exit possibility stemming from the investments and the country/region they are located in.

Some of the participants noted criteria such as the possibility of developing leadership positions, possible add-ons/bolt-ons, and the uniqueness of the target or the business concept. Based on the gathered information, several point out that there is a clear judgmental approach to this matter, where the funds need to have a clear understanding of the target valuation vs. the financeability vs. the business risks associated with acquiring the target. It is worth mentioning that we only focused on parts of this three-fold approach in our survey, and hence cannot elucidate these issues further.

Looking the industries the funds invest in, we note that shipping is clearly not an attractive industry for the PE firms.

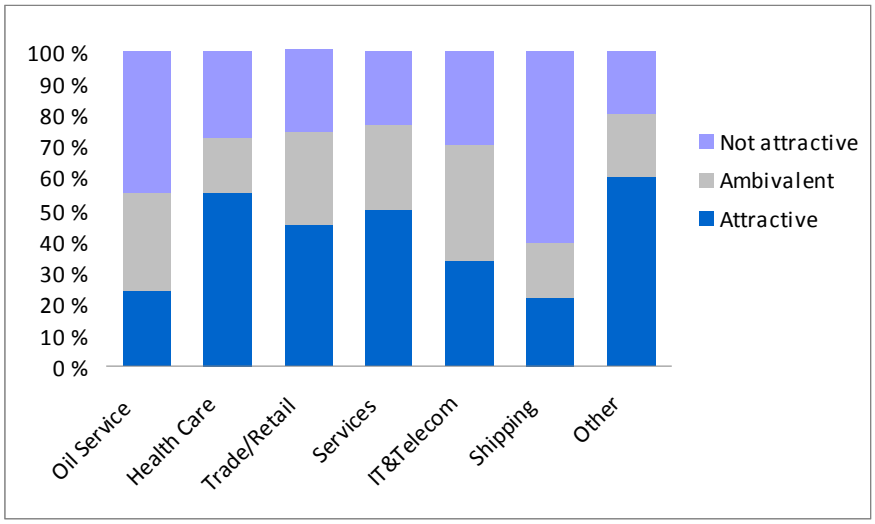


Table 21 Industry attractiveness

It is difficult to say clearly why this is, but it is reasonable to believe that this is associated with the enormous volatility in shipping, which according to Martin Stopford (1996) can reach annual levels of up to 70 per cent. The oil and offshore sector is also less interesting, which could be explained by the fact that these industries are all mature and to some extent old, with large established players and hence less growth potential for newcomers. However, it is worth mentioning that these findings come as a bit of a surprise, quite contrary to regular market views. The industry itself is old, but it is also an extremely specialized industry with many newly discovered business areas such as deep well technology, the use of smaller, remaining reservoirs, etc. Nonetheless, the industry is extremely capital intensive, with a high degree of expertise needs, which can pose a challenge to PE funds.

Health care and services are both perceived to be important industries, together with manufacturing and the cleantech industry (environment). In addition, trade/retail is among the most interesting industries as well.

Our ranking above was based on areas of industry taken from the largest funds' homepages. It is therefore quite interesting to note that so many of the participants have ticked "other".
An important comment noted under this category was that several of the PE funds are specialized PE funds focusing on e.g. turnarounds, whereby in some cases they are contra-cyclical. As such, the most attractive industries for these companies could be those in a declining market and with large turnaround issues.

Turning towards the funds' expertise of the industry of the target, we found, surprisingly, that only 54.5 per cent of the fund managers claim this knowledge to be important or of great importance. Intuitively, we would expect this to be more important, but the findings suggest that fund managers perceive it possible to easily learn about the industry under consideration – hence they emphasize learning by doing.

We note that most fund managers claim to participate in club deals, and our previous assumptions are supported by the fact that more than 50 per cent of the managers note that transferring of expertise is an important aspect and reason for participating in club deals. Of course, this transfer of expertise is not entirely linked only to industry expertise, but among other variables, it is reasonable to presume that this is one of them. No matter how we look at this, we feel it is important to bear in mind the extensive use of consultants in the PE industry.

The fund managers are consultants themselves, but also use other consultants in matters where they do not themselves hold the appropriate key knowledge of specialized focus.

14.2. Financing

To establish how the funds usually finance their deals, we asked the fund managers to illustrate how they financed their last two deals.

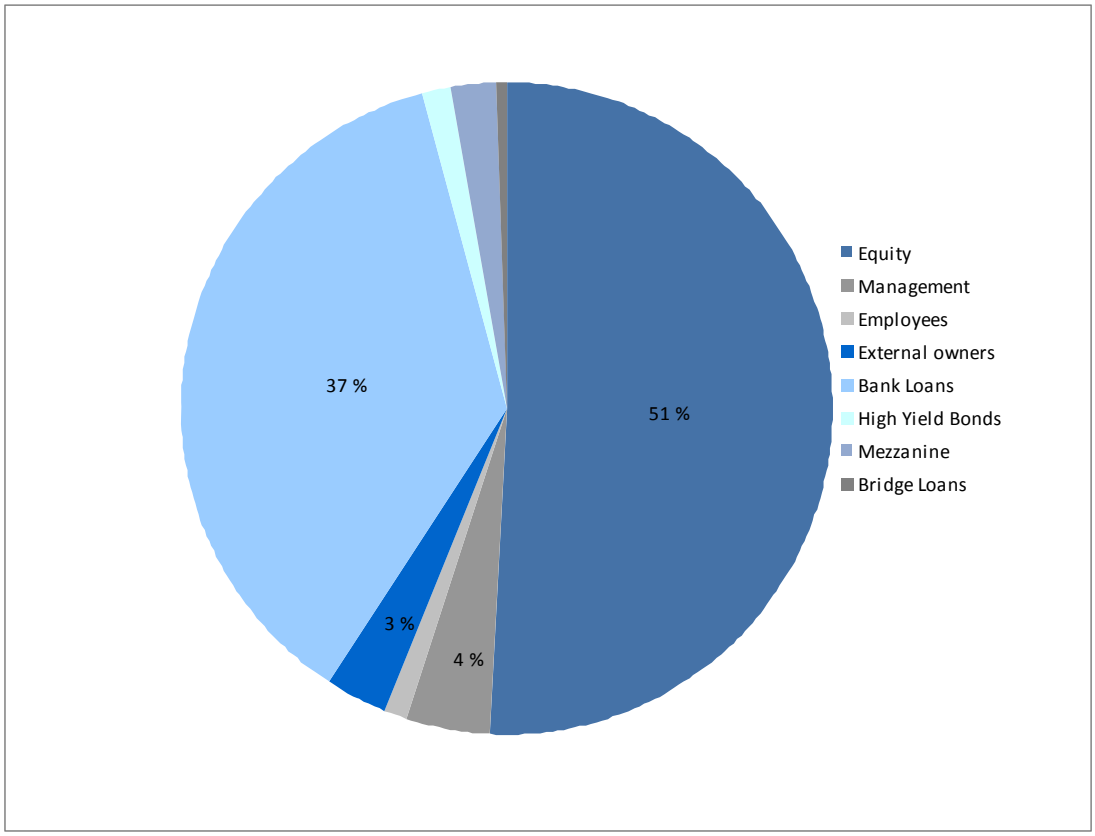


Table 22 Financing of PE deals

If these results can be generalized, we note that the overall division between equity and debt financing is roughly 60/40. The debt financing is divided between traditional bank loans (36.6 per cent), high yield bonds (1.4 per cent), mezzanine (2.4 per cent) and bridge loans (0.6 per cent). Equity is divided between traditional equity (51 per cent), management equity (four per cent), employees' equity (one per cent) and external owners' equity (three per cent).

At first sight, the high levels of equity financing are quite surprising, especially taking into account the high level of leverage most international studies note.[34] However, it is important to keep in mind that we have asked about the financing of a specific deal, not how the total allocation of money through the fund is structured, which we believe would be highly leveraged compared to the single target company. Another matter to note is that it is possible that the company is geared up afterwards, and that the 60/40 financing is only how it will appear in the fund's balance sheets initially at the time of takeover.

As noted earlier, the more or less usual belief today is that the PE targets are highly leveraged. 75 per cent of our managers proclaim that they use approximately three to five times EBITDA in terms of leverage when they finance their investments. The highest leverage as a multiple of EBITDA noted in the survey was six to seven times EBITDA (3.6 per cent of the respondents), which we actually find surprisingly low. We compared the findings with country of origin of the fund, but could not find any significant differences or consistency between countries. The Scandinavian market seems to be quite similar in this respect.

To see whether the statements given by the fund managers represent the reality, we randomly chose three deals from our sample, and compared real debt vs. EBITDA over the holding period of the fund. The random sample gave results ranging from debt levels of 1.5 times EBITDA to 3.5 times EBITDA (excluding some extreme values) – indicating that the survey represents quite reliable information.

14.3. Returns

We started by looking at returns post-buyout. It seems quite clear that the managers in general have very high belief in their targets, with 81.8 per cent of the respondents reporting that they believe the target company will perform above industry average after the PE funds exit. Not surprisingly, none of the respondents believe they will underperform, which is also quite understandable given the fact that the funds often invest in companies believed to be market leaders.

[34] Pål Stampe, Guest lecture FIE 402N Autumn 2006 NHH.

The next step is looking at post- vs. holding period. More interesting to note here is that 12.1 per cent of the respondents believe that the company will perform worse once the company is exited, compared with the performance under the ownership phase.

Also interesting to note is the fact that 33.3 per cent believe that the company will perform better than under the ownership phase. Could this indicate that the PE ownership is a restraint on the company's performance? Or does it simply imply that the company is "tuned" under the ownership phase, and therefore will be better suited to compete or function in the market once the PE fund is "done" with it?

Whatever the case, if they believe the firm will perform better at a later stage, it would not intuitively be reasonable for the fund to exit. It could for instance do a partial exit or transfer of control rights, and that way earn an even greater excess return on an investment they did not need to hold active ownership over. An interesting question is how the funds price in this excess return, and furthermore why firms are willing to purchase when there is a chance that there is less of a potential to extract in next round. No matter what, secondary buyouts prove that this is a viable and much used way of reasoning.

When we turn towards the main sources of value creation in the target company, we find a remarkable resemblance with earlier studies, e.g. Heel and Keohe (2005).

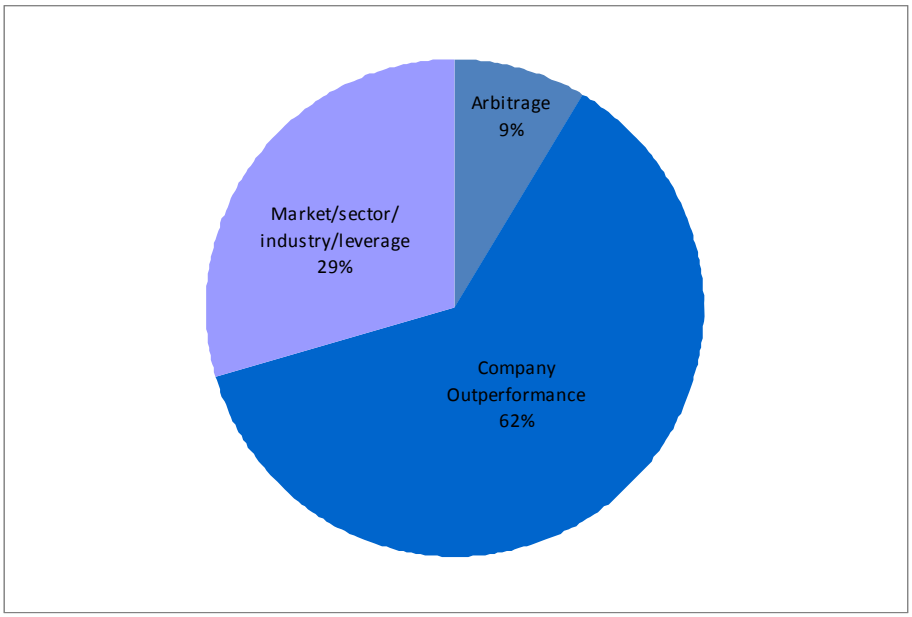


Table 23 Main sources for value creation

62 per cent conclude that company outperformance is the main source of value creation, while 9 per cent attribute it to arbitrage opportunities. The remaining factors are grouped together in the same way as in Heel and Keohe. The main source of value in nearly two-thirds of the deals in the McKinsey sample was company outperformance. Market or sector increases accounted for the rest. These results, which again are strongly backed by our findings, show that outperformance by companies is clearly the heart of the way the PE firms create value.

A further interesting question is to speculate how the top investors make this happen, a question Heel and Kehoe actually answer in their work – as we have noted earlier in this study.

Furthermore, our findings show that investment opportunities, operational improvements, expansionary opportunities and management of target are important underlying factors for value creation, whereas we also underline that these factors are all linked to the division above.

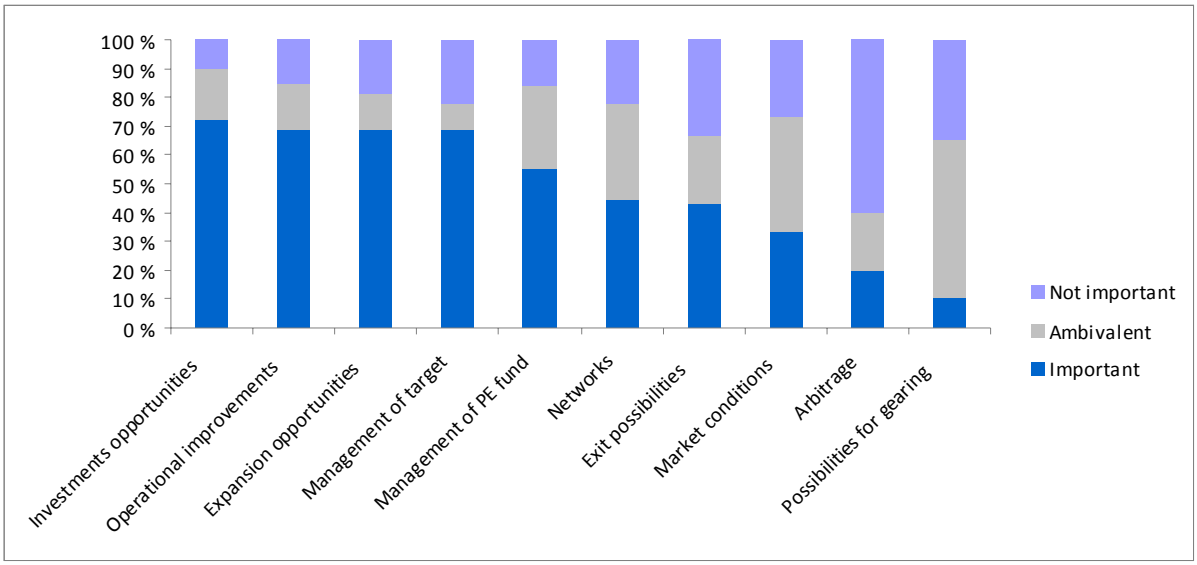


Table 24 Underlying factors for value creation

This is quite consistent with our previous findings in regard to main sources of value creation. However, we note that arbitrage is listed as rather unimportant, and that the possibility for gearing and the exit possibilities are less important – in consistency with earlier findings and assumptions.

If we cross tabulate the importance of the management of the target with the industry expertise of the fund, we find clear signs that support our earlier conclusion; it seems as though the funds that put less emphasis on their own industry knowledge in regard to the target company, put more emphasis on the abilities of the management team of the target company. To be more precise, when cross tabulated, 40 per cent of those who place industry expertise in the category "not important/less important", weigh the management of the target as the most important factor for underlying performance. This could support the assumption that the PE funds consider themselves "general specialists".

Management of the target is also important, and it could seem like the management of the company the fund buys is more important than their own management and their own knowledge of the industry – supporting earlier findings and in line with traditional agency-cost theory and free cash flow theory.

As reported by Holthausen and Larcker (1996), cross sectional regressions between accounting performance, leverage, and ownership assume that accounting performance measures are useful indicators of firm performance. The authors further note that evidence of the importance of accounting performance measures has been thoroughly documented in random samples by examining the association between changes in prices and changes in accounting performance measures. Based on this and earlier research, we asked our managers how they measured the performance of their targets. As most important, the managers suggested EBITDA, which has been ticked once by 69.7 per cent of the fund managers. 48.5 per cent also note cash flow targets, 39.4 per cent mention multiples, 30.3 per cent note revenue and EBITDA and 24.2 per cent tick IRR. It comes as no surprise that EBITDA targets are important. In many larger studies, we note that EBITDA margins are extensively used.

14.4. Exit

The most used exit strategy is clearly trade sales, at 68 per cent. After that, we note IPOs/floatation at 20 per cent, repurchase at two per cent and, finally, under the category "other" at ten per cent, secondaries were the most mentioned. It should also be noted that some of the firms actually have a strategy that does not involve exiting the target companies.

Looking at the EVCA Yearbook 2007, we find quite surprising comparable results. Record divestments are reported in 2007, primarily via trade sale (23 per cent), followed by repayment of loans (17 per cent), secondary buyouts (17 per cent) and public offerings (16 per cent). This is quite different from what we have noted, and we have no clear explanation of these findings.

We then seek to find out whether the funds have a clear exit strategy or not. We start out by asking what factors actually decide what exit strategy to choose for the company:

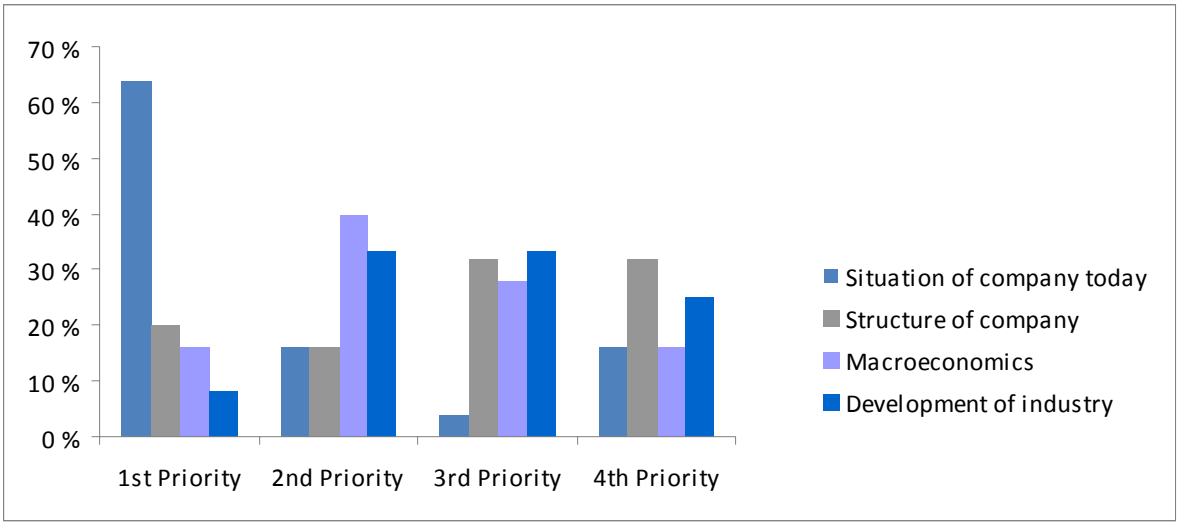


Table 25 Factors deciding which exit strategy to use

As a clear first priority, the fund managers report the current situation of the company at the time of exit in determining which exit strategy to use. This is no surprising insight, and basically confirms our intuitive assumptions. As a clear second priority, we find macroeconomic factors - quite reasonable, knowing that macroeconomic conditions highly influence the valuation of companies, growth prospects, financial possibilities and the capital availability. For example, it is generally known that the numbers and amount of successful IPOs are highly reduced when the financial markets and the stock markets hit a low run. Also worth noting is the fact the development of the industry as a whole has more or less no impact on what exit strategy to use.

The next natural step was to investigate exactly what factors influence the actual time of exit.

As the dominant first priority, the managers noted the potential realization from the target. The dominant second priority is being approached by potential buyers. Only as a third priority are we able to (slightly) track decisions made prior to the investment.

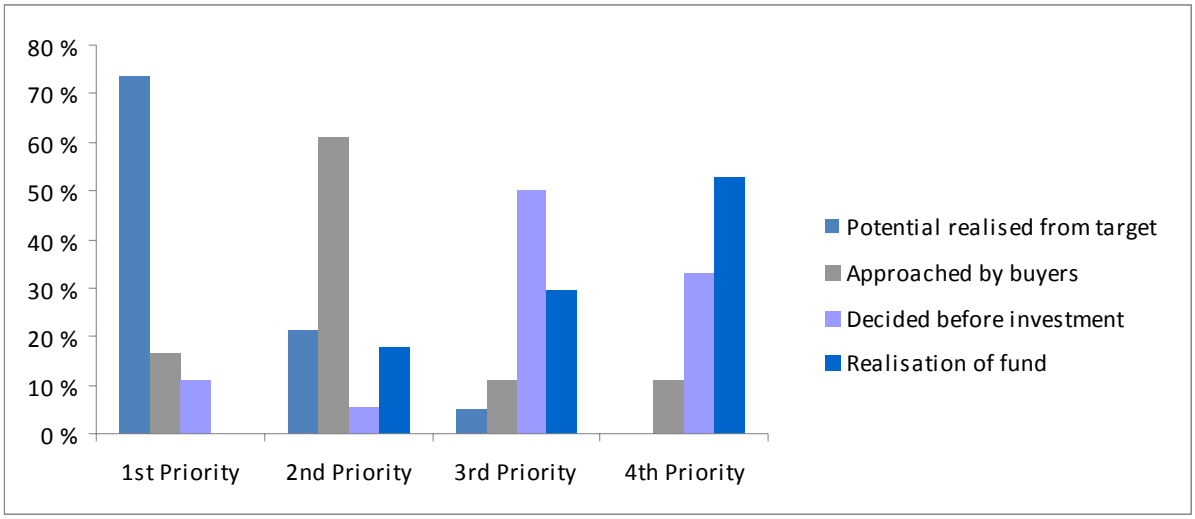


Table 26 Factors that influence the time of the exit

The above leads us to believe that the generalized investment horizon for the PE fund is not necessarily as strict as sometimes noted in articles – that the general five to seven years' time horizon will be subject to deviation based on what the managers have placed as first and second priority issues. It is interesting to note that none of the managers have mentioned the fund's closing year as a highly prioritized date of exit. The combination of the above could lead us to believe that there is not necessarily a pre-defined action plan in regard to when PE funds will choose to exit an ongoing investment.

When an IPO is successfully performed, more than 62 per cent of the funds have remained with more than a ten per cent ownership stake in the exited company after exit over two example deals they were asked to give us. In the same setting, 38 per cent have held less than ten per cent. The large amount of funds that retain ownership can be seen in connection with our earlier findings in the survey, where more than 33 per cent of the managers note that they believe the target company to perform better after the formal exit of the PE fund.

An interesting question is whether they remain in the company because they are obliged to do so, or if this is basically caused by their own belief in the company's overperformance compared to the industry average after the time of exit. The answer is probably two-fold; see,

for example, Nutripharma, where Ferd was obliged to retain an ownership stake for a given number of years after "exit".

A probable answer can be found when we ask the managers about the expected probability that the target once again will be acquired by a PE fund within the next ten years.

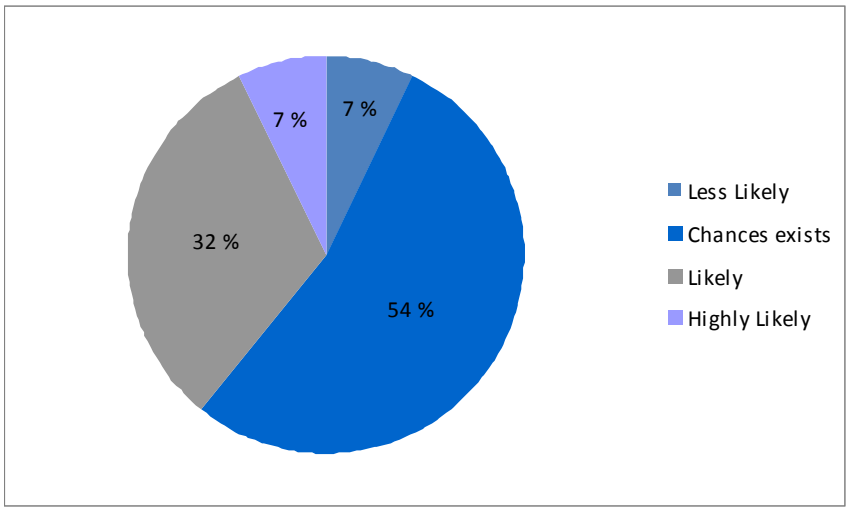


Table 27 Probability that the target will once again will be acquired by a PE fund

Clearly, the fund managers believe that the target company is likely to be bought again within ten years. Only 7.1 per cent report it to be less likely. The result partly explains why some firms decide to retain some ownership – they believe it will be purchased at a higher price later on.

On the other hand, the results are remarkable, considering that it could be claimed that the high chances for a new purchase by a PE fund mean that the current fund has not been able to extract all possible gains before the exit. Or could this be correlated with industry performance beliefs? There also seems to be some correlation between managers believing that the company will perform better after the exit than under the ownership, and the fact that it is highly likely a new fund will acquire the firm within ten years. This all raises an interesting question in regard to whether the cycle of a target firm takes the form of a helix, where the company will be bought and restructured again and again over a longer period of time. Taking the young age of the industry into account, this latter point has been studied little so far.

PART 15 SUGGESTIONS FOR FURTHER RESEARCH

Our thesis is one of the first to cover the entire Scandinavian PE market. There are limitations to the data material and the tests performed that leave plenty of room for further analyses. These limitations combined with our findings give good suggestions for further research.

One of the most interesting parts to study closer in a five to ten years' perspective is the post-exit performance, and whether the companies will regain the same levels of growth and margins as they had during the PE ownership. The reduced performance is by far one of the most interesting findings, and poses several interesting questions. In addition, a study of secondary buyouts would be interesting, as we claim that there is a possibility that the worst performing companies are being repurchased by the PE funds and that there exists a helix pattern. Our results could also be interesting to test against other, more mature PE countries such as the UK or the US, hence enabling a complete comparison of regional differences.

Our portfolio firms have gone through an ownership change. An interesting aspect would be to set a constraint for the peer group companies on the premise that they need to have gone through an ownership change. We would then be able to see whether the change in performance is due to the PE ownership or to an isolated ownership change.

The debt level in our thesis does not fully take into account that debt is often placed in a different company than the result unit, e.g. a holding company. This effect would have been interesting to account for, in order to see more clearly whether the debt level actually increases further than our results indicate when the company is bought, and declines during the ownership phase.

We have not found purchase and exit prices for the buyout companies, and we cannot actually say whether the PE funds have conducted a good deal or if the restructuring is shown in the sale price. A detailed study where the primary goal is to try to measure the pricing – and the element of "fairness" within this pricing – would probably be of extreme interest. However, we fear that this will be a very challenging task, with many weaknesses in the data set. Regardless of this, a study of these matters could potentially reveal whether the "bride is dressed" or not.

PART 16 CONCLUSIONS

In this paper, we show that companies bought by PE funds seem to perform substantially better than their peers during the holding period, measured in terms of several operational performance measures. We also find that the target firms underperform after the exit of the PE fund. With our data set of 349 PE targets entered into by different Scandinavian PE funds, combined with a detailed survey among the same fund managers, we present the largest and most comprehensive analysis of the market to date.

We believe the overperformance could be caused by a combination of the funds' skills, capital capabilities, network possibilities and the disciplinary mechanisms they are able to induce over the firm. We further find that there exists a strong contradiction between what fund managers believe about the further development of the target firm after exit, and what the reality shows. Most managers are certain that the target will overperform relative to the industry peers, while our findings prove the contrary; the targets underperform after being exited by the PE fund. The high discrepancy between managers' beliefs about the post-exit performance and the actual performance gives us reason to conclude that there might exist an unhealthy business practice in the industry of "dressing the bride" prior to exit.

This gives us reason to question the economic feasibility of the PE industry, and whether it actually creates added value for the community or business environment over time. Our findings support a potential "helix situation", where targets move through stages of being purchased, restructured, exited and then potentially repurchased. We have not investigated closer the potential for such secondary buyouts, but do believe this is an area which will demand further research and would probably attract much interest.

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PART 18 APPENDIX

18.1. Overview of all hypotheses and results

Description of hypothesis	***Result from empirical study***
1. HYPOTHESIS CATEGORY 1	*Yes, for EBITDA*
1.1. Ho: The change in operating measure of the portfolio companies is higher during the holding period, relative to the pre-buyout operating measure.	
1.2. Ho: The change in operating measure of the portfolio companies is higher for the post-period, relative to the pre-buyout operating measure.	*No*
1.3. Ho: The change in operating measure of the portfolio companies is at the same level for the post-period, relative to the holding period operating measure.	*No*
2. HYPOTHESIS CATEGORY 2	*No*
2.1. Ho: The change in operating measure industry-adjusted is higher for the post-period, relative to the pre-buyout operating measure industry-adjusted.	
2.2. Ho: The change in operating measure industry-adjusted is at the same level for the post-period, relative to the holding period operating measure industry-adjusted.	*No*
2.3. Ho: The change in operating measure industry-adjusted is improved during the holding period, relative to the pre-buyout operating measure industry-adjusted.	*Yes, for EBITDA*
3. HYPOTHESIS CATEGORY 3	*No*
3.1. Ho: The debt level in the target company increases when the company is bought by a PE fund.	
3.2. Ho: The debt level in the target company is smaller than its peers right before the PE fund buys the company.	*Yes, but not significant*
3.3. Ho: The debt level is higher than its peers the first year after	*Yes*

the buyout.	
3.4. Ho: The debt level is in line with peers when the target company is exited.	*No*
3.5. Ho: The free cash flow is higher in the target company than its peers the year before buyout.	*No*
3.6. Ho: The free cash flow is lower in the target company than its peers the year after the buyout.	*Yes, but not significant*
3.7. Ho: The free cash flow is lower in the target company after the exit.	*No*
4. HYPOTHESIS CATEGORY 4 *4.1. Ho: The working capital declines from pre-holding to holding period.*	*Yes, but not significant*
4.2. Ho: The working capital is lower in the target company than its peers during the holding period.	*No*
4.3. Ho: The working capital stays low also after the exit.	*Yes*
4.4. Ho: The working capital is lower in the target company than its peers after the exit of the PE fund.	*No*
5. HYPOTHESIS CATEGORY 5 *5.1. Ho: PE-owned companies hire more people than their peers during the holding period.*	*Yes, but not significant*
6. HYPOTHESIS CATEGORY 6 *6.1. Ho: The operating performance is better in the more mature PE countries.*	*No*
7. HYPOTHESIS CATEGORY 7 *7.1. Ho: Companies with a short holding period have a weaker performance than their peers.*	*Yes*

18.2. Analyzed PE target companies

AB ORWAK	CERBO GROUP AB	FASTIGHETS AB TORNET
AB PREVIA	CLEAN CHEMICAL SWEDEN AB	FINDUS
AB ÅNGPANNEFÖRENINGEN	COCHLEAR BONE ANCHORED SOLUTIONS	FINGERPRINT CARDS
ACO HUD	COFFEE CUP AB	FIRST FLEET SERVICES AS
ADIXEN SENSISTOR AB	COGEN AS	FLEXLINK
AHLSELL SVERIGE AB	COLLETT PHARMA (AXELLUS AS)	FRIGOSCANDIA DISTRIBUTION
ALFA LAVAL AB 5187	COLOR PRINT AS	FRITIDSRESOR
ANTICIMEX EUROPE AB	COM HEM AB	GCE HOLDING
APL ASA	COMPONENT SOFTWARE ASA	GET AS (FORMERLY UPC NORGE AS)
ARA	CONTEX HOLDING AS	GRENLAND GROUP ASA
ARCA SYSTEMS INTERNATIONAL AB	COOR SERVICE MANAGEMENT	GT PLASTMONTAGE AB
AURA INDUSTRIER AB (AURA LIGHT AB)	CRAMO	GUIDE KONSULT AB (PUBL)
AXENTI HOLDING AB (AXENTI PRESENT)	CYBERCITY A/S	GUNNEBO AB
AALBORG INDUSTRIES	CYGATE AB	GANT
AALESUNDFISK AS	DANGAARD TELECOM A/S	GISLAVED FOLIE
ACANDO CONSULTING	DIBS PAYMENT SERVICES AB	GLOBAL GARDEN PRODUCTS S.P.A.
ACANDO FRONTEC	DT GROUP A/S (DANSKE TRAELAST A/S)	GLOBAL REFUND AB
ADVETA	DYNO NOBEL HOLDING ASA	GLUD & MARSTRAND
ALIMAK HEK	DAVINCI	GRAPHX
AQUAFARMS	DAHL INTERNATIONAL	GREEN HOUSE OF SCANDINAVIA A/S
AREXIS	DALUM PAPIR AS	HALDEX AB
ARTLINK NORWAY AS	DAMCOS (DANFOSS MARINE SYSTEMS)	HMS INDUSTRIAL NETWORKS
ARTEMA	DANGAARD TELECOM A/S	HANDICARE
ARTIMPLANT	DANSK DROGE (AXELLUS)	HEIMSTADEN
ASCIO TECHNOLOGIES	DANTEC DYNAMICS A/S	HELLY HANSEN ASA
ATEA HOLDING AB	DENERCO OIL AS	HEMOCUE
ATTENDO AB	DEVI A/S	HEMTEX
AURA LIGHT	DOMETIC INTERNATIONAL	HJALTLAND SEAFARMS AS
AUTOADAPT	DROPZONE	HUGIN
AVITEC AB	DYNAL BIOTECH	HÖGLUNDS FLAK AB
AXXESSIT ASA	DYNAPAC AB	IBS AB
B2 BREDBAND	DÄCKIA AB	INFODATA AB
BERGSALA AB	EDB BUSINESS PARTNERS ASA	INPAC AB
BIOPHAUSIA AB	EFD AS	INTERPEAK AB
BIOVITRUM AB (PUBL)	EFG HOV + DOKKA AS	INTRUM JUSTITIA AB
BMH MARINE AB (MACGREGOR BULK)	ELEKTROKOPPAR SVENSKA AB	ISS PERSONALHUSET AS
BRAVIDA SVERIGE AB	ELTEL NETWORKS TE AB	IVT INDUSTRIER
BT INDUSTRIES	ENKOTEC A/S	IBISTIC
BALLINGSLÖW INTERNATIONAL	ENLIGHT INTERNATIONAL AB	ICOPAL
BEITOSTØLEN RESORT AS	EPIGRESS AB	IDE SKEIDAR (SKEIDAR)
BEKAERT HANDLING GROUP	EXPAN A/S	IDESTA 2922
BESAM AB	EDUCATION & ENTERTAINMENT	ILVA A/S
BEWATOR AB	EKMAN	INFOCARE ASA
BJØRGE ASA	ELDON (5143)	INNOVISION A/S
BJØRN GRUPPEN AS	ELITFÖNSTER	INTILITY
BREDBANDSBOLAGET (B2 BREDBAND AB)	ELKJØP NORGE AS	INTRA MEDIA
BUSSLINK	ELLOS	JAROWSKIJ ENTERPRISES AB
C MORE GROUP AB	ELMO LEATHER	JC AB
CC SYSTEM	END2END	JERNIA AS
CCS	ENVAC CENTRALSUG	JH TIDBECK
CERMAQ ASA	EPAX	JUN-AIR INTERNATIONAL A/S
COMPUTAS AS	EPCON OFFSHORE AS	JENS S. TRANSMISSIONER
CONSORTE NORGE AS	ESSELTE AB	JOTUL AS
CRESCO TI SYSTEMS AB	ESSEX	KAB KABELPREFEKTION
CALLENBERG GROUP AB	EUROFLORIST	KNOW IT AB
CAREMA	EUROSKILT AS	KONGSBERG AUTOMOTIVE AS
CARL BRO AS	F GROUP A/S	KREATEL COMMUNICATIONS AB
CARMEDA AB	FAC FLYGBUSSARNA	KAPPAHL
CARPARK	FALCK	KARLSHAMNS
CEFAR MEDICAL AB	FASTERHOLT HOLDING A/S	KILROY TRAVEL INTERNATIONAL

KIRUDAN AS	PLYMOVENT AB	SVEN-AXEL SVENSSON BIJOUTERIER
KONGSKILDE INDUSTRIES A/S	POINT INTERNATIONAL AS	SVENSKA FÖNSTER
KOSAN CRISPLANT	PSI GROUP	SYNERCO AB
KRONANS DROGHANDEL	PALSGAARD TRAE A/S	SYNNØVE FINDEN
KUNGSÖRS PLAST AB	PAN FISH (MARINE HARVEST ASA)	TA TELEADRESS INFORMATION AB
KWINTET AB	PARKS & RESORTS SCANDINAVIA AB	TAC
LEKOLAR AB	PAROC	TDC SONG
LIBER	PERGO AB	THALAMUS NETWORKS AB
LILLEHEDEN A/S	PHADIA AB	THERMIA VÄRME AB
LINDAB AB	PHARMADULE EMTUNGA AB	TICKET TRAVEL GROUP AB
LINDEX	PLANET HOLDING A/S	TEAMTEC AS
LIPID TECHNOLOGIES PROVIDER AB	PLANTASJEN	TELELOGIC AB
LOGITALL AB	PLASTAL SWEDEN	THERMIA VÄRME AB
LOGSTOR	POPIN	THUKA FURNITURE AS
LOUIS-POULSEN	POWEL	THULE
MACGREGOR (SWE) AB	PROFFICE	THYGESEN TEXTILE GROUP A/S
MAMUT	PROLINE AB	TOLERANS AB
MAXITECH ELEKTRONIK AB	PURE GROUP AS	TRADERA.COM
MMC TENDOS	Q-MATIC AB	TRADEX
MOSS MARITIME AS	QUALITY-LABORATORIES SWEDEN	TURNIT
MYRESJÖHUS AB	RGS 90 AS RÅSTOF	TUSENFRYD AS
MACTIVE	RAHBEKFISK AS	TVILUM-SCANBIRK
MARINE FARMS ASA	RATIONEL VINDUER	TYTEX GROUP A/S
MARRATECH AB	RAYSEARCH LABORATORIES	UTFORS
MEDA	RENHOLD-SKADE-SENTRALEN AS	VIA TRAVEL GROUP ASA
MEGACON	RESLINK	VSM GROUP AB
MELKA	REVUS ENERGY ASA	VALIDATION AB (IT OPERATIONS)
MICRONIC LASER SYSTEMS	ROSENMEIER ELECTRONICS HOLDING	VALINGE INNOVATION AB
MIPAC AB	ROXAR ASA	VASBY CENTRUM
MODUL-SYSTEM	SANDÅ MÅLERI AB	VEST-WOOD (JELD-WEN)
MONARFLEX	SATS HOLDING AB	VESTSTAR AS
MULTICOM SECURITY	SBL VACCIN	VETXX A/S
MÖLNLYCKE HEALTH CARE AB	SIGICOM AB	VICTOR HASSELBLAD
NEFAB	SILVA SWEDEN AB	VOICE
NEXTLINK AB	SOFTWARE INNOVATION ASA	VOLDEN GROUP AS
NOBIA AB	SONION A/S	VOSS OF NORWAY AS
NOPCO PAPER TECHNOLOGY AS	SWE-DISH SATELLITE SYSTEMS AB	WELLTEC A/S
NORCOOL AS	SWEDISH MATCH AB	WEBCENTER UNIQUE (VISMA UNIQUE)
NORDPEIS AS	SWEDISH TOOL AB	WEDINS
NSG LOGISTICS AB	SYSTEAM AB	WERMLAND PAPER
NVS INSTALLATION	SABRO REFRIGERATION	WERNERSSON OST
NEDERMAN	SCANDIC HOTELS AB	WEST FISH AARSÆTHER AS
NEOPHARMA	SCANDINAVIAN BEVERAGE GROUP	WONDERLAND
NETDESIGN A/S	SCANDINAVIAN GARMENT SERVICE A/S	XCOUNTER AB
NEURODAN A/S	SCANDINAVIAN PHOTO	BLUEGARDEN
NEXTGENTEL	SCANDPOWER PETROLEUM TECH. AS	SKIINFO
NORDISK RENTING	SCANVAN A/S	STEPSTONE
NORFOODS	SCRIBONA	TROLLTECH
NOVADAN	SEMPER	ÅKERSBERGA BYGG & TRÄ AB
NOVASOL-DANSOMMER	SENSE EDM AS	
NYBRON AB	SICOM AS	
NYGE AERO	SJØVIK AS	
O MALMKVIST AB	SKANSKA (SELMER)	
ORIFLAME COSMETICS AB	SONANS	
ODIM SEISMIC AS	SPAENCOM AS	
OPTIMERA	SPRING CONSULTING AS	
ORDNING & REDA PAPPER & DESIGN	STENQVIST	
ORREFORS KOSTA BODA	STERLING AIRLINES A/S	
ORWAK GROUP AB	STRUERS	
PAROC PANEL SYSTEM OY AB	SUPERFOS (PHARMA DIVISION)	

18.3. Fund managers

Fundmanager	Webpage	Fundmanager	Webpage
3i Nordic PLC	www.3i.se	ITP	www.itp-invest.se
3i Nordic PLC	www.3i.com/	Jysk-Fynsk Kapitalanlæg	www.jf-kapital.dk
AB Traction	www.traction.se	Karolinska Investment Fund	www.karolinskafund.com
Accent Equity	www.accentequity.se	LD Equity	www.ldequity.dk
Affärsstrategerna AB	www.astrateg.se	LinkMed AB	www.linkmed.se
Ahlström & Partners	ahlstrompartners.se	Litorina	www.litornia.se
Altaria	www.altaria.no	MVI	www.mvigroup.com
Altor	www.altor.com	Naxs Nordic Access Buyout Fund AB	www.naxs.se
Amplico Capital AB	www.amplico.se	Nordic Capital	www.nordiccapital.com
Amymone AB	www.amymone.se	Nordstjernan	www.nordstjernan.se
Anchor Capital Management Ltd	www.anchorcapital.co.uk	Nordstjernan Industriutveckling AB	www.nordstjernan.se
Axcel	www.axcel.dk	Norgesinvestor	www.norgesinvestor.no
BBE Business Developement AB	www.bbe.se	NorthCap Partners	www.northcappartners.com
Borea	www.borea.no	Northzone Ventures	www.northzone.com
Borevind AB	www.borevind.se	Norvestor	www.norvestor.com
BrainHearth Capital	www.brainheart.com	Permira Advisers KB	www.permira.com
Bridgepoint Capital AB	www.bridgepoint.se	Polaris Equity	www.polarisequity.dk
C.W. Obel AS	www.cwobel.dk	Priveq Investment	www.priveq.se
Capidea Management	www.capidea.dk	Procuritas Partners	www.procuritas.com
CapMan	www.capman.com	Progressus Management	www.progressus.no
Catella Investments	www.catellainvestments.se	Ratos AB	www.ratos.se
Credelity Capital AB	www.credelity.se	Reiten & co capital	www.reitenco.no
Credo Partners	www.credopartners.no	Scandinavian Financial Management AB	www.sfmab.com
Cubera Private Equity	www.cubera.no	Scope Capital Advisory AB	www.scope.se
Dania Capital	www.daniacapital.dk	SEB Venture Capital	www.seb.se/venturecapital
Dansk Kapitalanlæg AS	www.dankap.dk	Segulah	www.segulah.se
Danske Private Equity	www.danskeprivateequity.com/	Servisen Investment Management AB	www.servisen.se
Deltaq Management	www.deltaq.dk	Siem Capital AB	www.siem.se
Deva Group AB	www.deva.se	Småföretagsinvest AB	www.smafi.se
Doughty Hansen % Co AB	www.doughtyhanson.com	Spiltan, Investment AB	www.spiltan.se
EDP	www.edcapital.com	Spinn Invest AB	www.spinninvestment.se
EQT	www.eqt.se	SRK Svensk Restruktionskapital AB	www.rekonstruktionskapital.se
EQT Denmark	www.eqt.se	Start Invest AB	www.startinvest.se
Eqvitec Partners	www.eqvitec.com	Swedfund International AB	www.swedfund.se
Ferd	www.ferdpe.no	Sätila Holding AB	www.satilaholding.se
FSN	www.fsncapital.no	Söderlind & Co AB	www.soderlind.se
Hakon Invest AB	www.hakoninvest.se	True North Capital ASA	www.truenorth.no
Hitec Vision	www.hitechvision.com	Tutor Invest Oy	www.tutorinvest.com
Industri Kapital	www.industrikapital.com	Verdane Capital Advisors	www.verdanecapital.com
Industrifonden	www.industrifonden.se	Volati AB	www.volati.com
Investa Företagskapital AB	www.investa.se	Volvo Technology Transfer AB	www.volvo.com/venturetech
ITEKSA Venture AB	www.iteksa.se	Ålands Utvecklings AB	www.utvecklingsab.aland.fi

18.4. Currencies

Country	Denmark	European Union	Sweden
Valuta	Krone	Euro	Krone
100 NOK per:	100 DKK	1 EUR	100 SEK
2007	107.58	8.0153	86.67
2006	107.94	8.0510	87.02
2005	107.45	8.0073	86.30
2004	112.52	8.3715	91.74
2003	107.71	8.0039	87.74
2002	101.03	7.5073	81.96
2001	108.01	8.0492	87.02
2000	108.82	8.1109	96.04
1999	111.76	8.3101	94.40
1998	112.84	8.4771	94.91
1997	107.11	7.9927	92.69
1996	111.38	8.0872	96.29
1995	113.08	8.1923	88.95
1994	111.03	8.3518	91.40

18.5. Survey

SURVEY CONCERNING

THE SCANDINAVIAN PRIVATE EQUITY MARKET

The survey is part of an academic paper concerning the Scandinavian Private Equity Industry and is written as a part of a master's thesis at Norges Handelshøyskole (NHH). The topic is a new and innovative study that could generate information about the development of the industry in Scandinavia. The survey is totally anonymous and email addresses are independent from the answer results.

Thank you for your time.

1. General information

a. Which private equity fund do you represent:_____

b. Which countries do you operate/invest in (tick one or more):

□ Norway □ Sweden □ Denmark □ Others

c. Investment categories:

□ Buyout □ Venture □ Both

d. Investment target

□ Broad □ Specialized industries

e. Age of private equity company

f. Capital under administration _____ MEUR

g. Capital allocated to buyout _____ %

h. Capital allocated to venture _____ %

i. Total number of investments exited _____ (approximately)

j. Number of investments operating _____

k. Number of current employees _____

RATIONALE

2. Rationale for private equity investments in target companies

Rank the possible explanations for picking and investing in target companies from 1 to 5, where 1 is best:

	1	2	3	4	5
Stage of business	□	□	□	□	□
Country/region	□	□	□	□	□
Cash flow	□	□	□	□	□
Industry	□	□	□	□	□
Market leader	□	□	□	□	□
Growth potential	□	□	□	□	□
Size (value)	□	□	□	□	□
Ownership situation	□	□	□	□	□
Exit strategy	□	□	□	□	□
Management	□	□	□	□	□
Other _____	□	□	□	□	□

3. Which industries you find most attractive to invest in for Scandinavia

Rank the most attractive industries in which to invest from 1 to 5, where 1 is best:

	1	2	3	4	5
Oil service	□	□	□	□	□
Health care	□	□	□	□	□
Consumer	□	□	□	□	□
Trade/retail	□	□	□	□	□
Services	□	□	□	□	□
IT & telecom	□	□	□	□	□
Shipping	□	□	□	□	□
Other _____	□	□	□	□	□

4. How important is the fund's expertise of the industry of the target?

□ Not important

□ Less important

□ Important

□ Of great importance

5. Ranking of sources for deal flow

Rank from 1 to 2

_____ Auctions – public bidding

_____ Network

6. Does the company participate in club deals with other private equity companies?

□ Yes

□ No

If yes, what are the reasons for club deals?

□ Synergies

□ Larger deals available

□ Financing

□ Transfer of expertise

FINANCING

7. How the fund manages the financing of the acquisitions (per cent)

From the two latest or available deals:

Deal 1:		Deal 2:	
Date	_____	Date	_____
Size of deal	_____	Size of deal	_____
_____	Bank loans	_____	Bank loans
_____	High yield bonds	_____	High yield bonds
_____	Equity	_____	Equity
_____	Mezzanine	_____	Mezzanine
_____	Bridge loan	_____	Bridge loan
_____	Management	_____	Management
_____	Employees	_____	Employees
_____	External owners	_____	External owners
_____	Other	_____	Other
= 100 per cent		= 100 per cent	

8. Average size of leverage used in financing the investments, as a multiple of EBITDA

Total debt/EBITDA:

- ☐ 3-4 x EBITDA
- ☐ 4-5 x EBITDA
- ☐ 5-6 x EBITDA
- ☐ 6-7 x EBITDA
- ☐ 7-8 x EBITDA
- ☐ 8-9 x EBITDA
- ☐ 9-10 x EBITDA
- ☐ 10 and above

RETURN

9. How the fund expects the financial performance of the target to develop after exit compared to the industry

- ☐ Above industry average
- ☐ Below industry average
- ☐ Equal to industry average

10. How the fund expects the financial performance of the target to develop after exit compared to under the ownership phase

- ☐ Better than under the ownership
- ☐ Worse than under the ownership
- ☐ Equal to under ownership phase

11. Main sources of value creation in the target company

- _____ Arbitrage
- _____ Company outperformance/active ownership
- _____ Industry and overall stock market appreciation
- _____ Financial leverage

= 100 per cent

12. Underlying factors for value creation in the target company

Rank the criteria from 1 to 5, where 1 is best:

	1	2	3	4	5
Management of target	☐	☐	☐	☐	☐
Management of private equity fund	☐	☐	☐	☐	☐
Investment opportunities ☐	☐	☐	☐	☐	
Economic cycles/market conditions	☐	☐	☐	☐	☐
Arbitrage	☐	☐	☐	☐	☐
Exit possibilities	☐	☐	☐	☐	☐
Possibilities for gearing/leverage	☐	☐	☐	☐	☐
Operational improvements	☐	☐	☐	☐	☐
Expansion opportunities	☐	☐	☐	☐	☐
Networks	☐	☐	☐	☐	☐

13. Which financial performance targets are most used for evaluating a target's performance?

☐ EBITA
☐ EBITDA
☐ Profitability index (PI)
☐ IRR
☐ Multiples
☐ Net Income
☐ ROE
☐ Cash flow targets
☐ Revenue
☐ Others_____

EXIT STRATEGY

14. Most used exit strategy

☐ IPO/flotation
☐ Trade sales
☐ Repurchase by management or company
☐ Other

15. What factors decide which exit strategy to use?

☐ Macroeconomic factors such as stage of economic cycle, etc.
☐ Development of industry
☐ Structure of company
☐ Situation of company today

16. What influences the time of exit?

- □ Realisation of fund
- □ Potential realised from the target
- □ Decided before investment
- □ Approached by buyers

17. Ownership from private equity fund after exit through IPO

From the two latest or available deals:

Deal 1:	Deal 2:
Date: _____	Date: _____
Size of IPO: _____	Size of IPO: _____
□ 0-5 per cent	□ 0-5 per cent
□ 5-10 per cent	□ 5-10 per cent
□ 10-15 per cent	□ 10-15 per cent
□ 15-20 per cent	□ 15-20 per cent
□ Above 20 per cent	□ Above 20 per cent

18. What is the expected probability that the target will once again be acquired by a private equity firm within the next ten years?

- □ Less likely
- □ Chances exist
- □ Likely
- □ Highly likely