NORGES HANDELSHØYSKOLE
Bergen, Spring 2009

Value Creation in Private Equity

Have Norwegian Private Equity companies created value in their portfolio companies?

Martin Andresen and Even Sandnes

Advisor: Carsten Bienz

Major: Financial Economics

NORGES HANDELSHØYSKOLE

This thesis was written as a part of the Master of Science in Economics and Business Administration program - Major in International Business. Neither the institution, nor the advisor is responsible for the theories and methods used, or the results and conclusions drawn, through the approval of this thesis.

Table of Contents

List of figures

Abstract

This paper investigates value creation in 31 private equity-owned companies in Norway between 1993 and 2007. Its purpose is to find evidence on increased value capturing for these companies relative to non-private equity-owned companies. We have looked at the development of companies that have been engaged in a full leveraged buyout process with Norwegian private equity firms from entry to exit.

Value creation is made through several different drivers, which are thoroughly presented in this thesis. The empirical analysis in our thesis has been focusing on value creation through direct drivers since these drivers may easily be analyzed using publicly available data. By doing statistical tests on ratios that help explaining these drivers, we were able to present evidence on whether private equity-owned companies have been able to outperform their comparables during the private equity firms' holding period.

Our results suggest that private equity firms have been successful in obtaining significant revenue expansion and cost reductions/margin improvements for their portfolio companies on an isolated basis. In terms of improved asset utilization and financial engineering we are unable to provide any adequate significant results. In addition, it seems like buyout companies do not experience any significant changes in employment or changes in levels of wage expenditures.

The industry-adjusted results suggest that buyout companies do not significantly outperform their corresponding peers in regard to revenue expansion and cost reductions/margin improvements. Buyout companies seem to have a somewhat stronger improvement in capital productivity than their peers, implying an outperformance from the buyout companies. Moreover, our results do not support any significant changes in long-term debt share during the holding period of private equity firms or large differences in long-term debt levels relative to their peers at entry, exit and exit +1. Finally, industry-adjusted employment growth and changes in levels of wage expenditures do not support any categorical beliefs about massive lay-offs or drastically reduced wage expenditures during the holding period of a private equity firm.

1. Introduction

Private equity is not a new type of investment activity for the world's economists and businessmen. It has been well known in the US for decades and in Europe since the early 90s. Norway, however, has not had an active market for private equity until recently and has experienced an increased interest for this asset class during the last ten years. Our thesis will focus on the part of private equity called leveraged buyouts (LBO). We are interested in doing research on whether the Norwegian private equity players' impact on Norwegian companies has made these companies able to outperform the companies that have not been involved in an LBO. Hopefully, we will be able to give the reader an understanding of how value is created in a buyout process in general, how LBOs differ from the more common approaches, and if Norwegian companies involved in such a process the last 15 years have benefited from active ownership.

Our own interest for private equity was especially provoked in the course Asset Management, lectured by Thore Johnsen at NHH. As we found that there had been extensive international research on private equity, but little research on only the Norwegian market, we found it interesting to perform similar research as those done internationally limited to the Norwegian private equity market. The young market for private equity in Norway implied somewhat challenging work regarding number of observations, but nevertheless we believe that our study is able to indicate some interesting points of the growing private equity market in Norway. We would like to thank Carsten Bienz, our academic advisor, and Nicolai Nordstrand from PricewaterhouseCoopers, for useful advice and guiding throughout the working process of our thesis. We would also direct profound gratitude to Håvard Gjerde from HitecVision for giving us useful insights on how buyout transactions work in practice.

We have collected publicly available data for several buyout transactions completed in Norway for the last 15 years including data for their peer groups. From this information we will try to test different hypotheses in relation to value creation in buyout processes. Preferably, we wanted to find the total value created between entry and exit and split this into different drivers of value creation. The main topic would then have been to look at the value capturing for the private equity firm. Unfortunately, it is difficult to obtain the information we need to perform this test due to the private equity firms' lack of will to share

the information. Our method has therefore been to test some of the drivers separately, using publicly available data for the target companies and see if value has been created for the specific driver. We were not able to perform tests for every driver, as it is very difficult to quantify all of them. However, we have presented a detailed theoretical description for each of the drivers describing how the buyout process captures value for both private equity firms and their target companies.

2. Industry presentation

2.1 What is Private Equity?

Private Equity (PE) provides long-term, committed share capital, to help unquoted companies grow and succeed[1].

While there are many factors distinguishing PE from public equity, we may from the definition comment on what may be three of the most important factors. The most important difference is the role of committed share capital, also explained as active ownership. PE investors will not only contribute with capital to the target company. Contribution through experience and knowledge are also important factors in order to create value in the company. A second difference from public equity is the market in which the capital is raised. Equity can be raised either in public or private markets. Public equity is typically offered through the stock markets, while PE firms usually invest in unquoted companies[2]. The third difference between PE and public equity is the investment horizon. PE investments tend to have a much longer investment horizon than funds that hold publicly-traded securities. There are several reasons for this. First, an active ownership makes a PE company more committed to its investment as it takes quite some time to create value in the company targeted. Second, securities issued by private companies are highly illiquid, since they are not traded in public securities markets. In addition, the opportunities for resale to another party are highly limited.

2.2 Different types of Private Equity

PE is often used as a generic term for both venture capital and buyout investments. These classifications stem from the maturity of the target company in which the PE firms invest. In relation to this, a framework based on EVCA (2007) is presented in figure 2.1. Venture capital (VC) investments focus on the first four stages, while Buyout (BO) investments focus on mature companies.

[1] ”A Guide to Private Equity” – 2004 version by BVCA
[2] May also buy a listed company, but will then typically de-list the company.

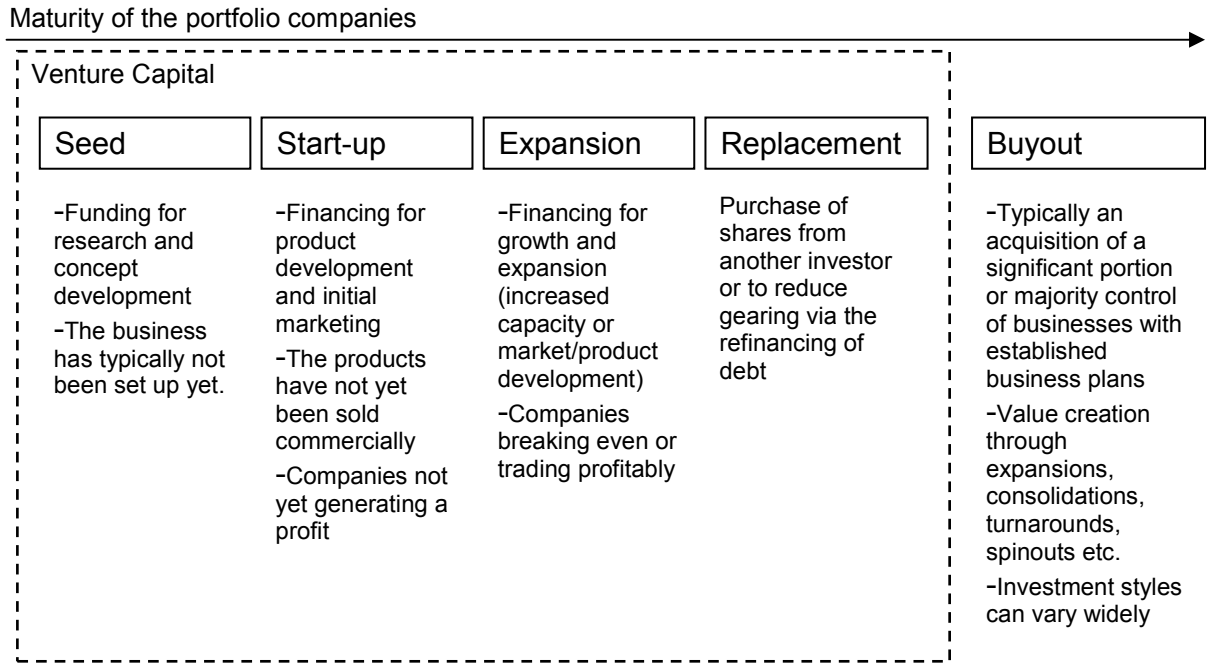

Figure 2.1 Classification of PE investments according to maturity of the target companies[3]

As we are focusing on buyouts we will try to discuss this in more detail: The buyout segment is often referred to as leveraged buyouts (LBO) and occurs when a financial sponsor acquires a controlling interest in a company's equity and where a significant percentage of the purchase price is financed through leverage. Leveraged buyouts can be further classified into Management Buyouts (MBO), in which the current management seeks support from outside providers of both debt and equity capital to take control of the equity of the company from its previous owners, and Management Buy-ins (MBI), in which an external management team funded by outside investors takes control of a given target company. In both cases, the investor typically acquires a significant portion or takes majority control in the target firm, which entails a change of ownership.

[3] EVCA 2007

2.3 Organization of the PE fund

A PE fund is typically organized as a limited partnership and is normally intended to have an investment horizon of 10 years. Limited partnerships have evolved because few companies have the staff or expertise to invest directly into the asset class, and many who tried were not able to invest efficiently. The institutional investors act as limited partners (LP), and the investments are made by the manager, who is the general partner (GP)[4]. The general partners specialize in finding, structuring, and managing equity investments in closely held private companies. Because they are among the largest and most active shareholders in their portfolio companies, partnerships have significant means of both formal and informal control; they are thus able to direct companies to serve the interests of the LPs. Contracts and organizational structures are established to align the interests of both the general and limited partners. The capital provided by the LPs is either paid all at once or continuously throughout the investment period until exit. In Norway, the LPs with the largest capital bases are personal investors and parent companies[5]. However, since the Norwegian market for private equity investments is fairly young there is reason to believe that the Norwegian market soon will follow a similar pattern as the European market, where pension funds, banks and insurance companies act as the largest sources of capital.

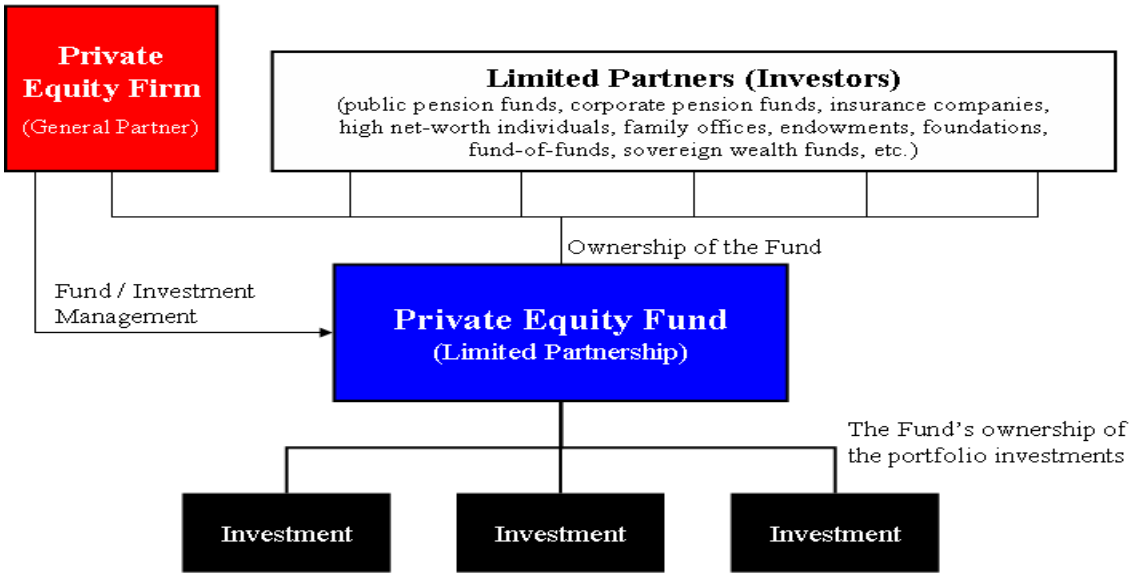

Figure 2.2 Overview of the structure of a generic private equity fund

[4] Ennis Knupp (2004). "Private Equity Overview"
[5] NVCA (2007). "Aktivitetsanalyse"

2.4 The Buyout Process

The buyout process begins with a target selection phase, in which the PE firm screens the market for potential investment opportunities meeting certain rigid criteria for a successful LBO candidate as well as offering scope for value creation to meet the high levels of internal rate of return (IRR) PE fund investors demand. The criteria from which PE firms choose are many and depend on the investment style PE firms follow. Investment styles can vary widely between PE firms, ranging from "growth to value" and "early to late stage" strategies. Another PE firm investment strategy is the "buy-and-build" strategy where the important factor is to make synergies. The rationale for this strategy is that the new entity may not only generate value by exploiting synergies and cut costs, but also gaining critical mass and thereby making the company more attractive for a trade buyer or to be floated through an initial public offering (IPO). Buyout funds tend to invest in more mature companies with established business plans to finance expansions, consolidations, turnarounds and sales. The ideal LBO candidate is characterized by strong, non-cyclical and stable cash flows with significant unused borrowing capacity (Waite and Fridson 1989; Hall 1990; Lehn and Poulsen 1990). The following table summarizes key characteristics of an ideal LBO candidate:

	Financial	**Business**
Criteria	▪ A history of demonstrated profitability and the ability to maintain above average profit margins ▪ Strong, predictable cash flows to service the financing costs related to the acquisition ▪ Readily separable assets or businesses which could be available for sale, if necessary	▪ A strong management team ▪ Products with well known brand names and strong market position ▪ Status as a low cost producer within an industry, thereby creating the competitive advantage ▪ Potential for real growth in the future ▪ Not subject to prolonged cyclical swings in profitability ▪ Products which are not subject to rapid technological change

Figure 2.3 Characteristics of the Ideal LBO Candidate[6]

As the majority of the transactions are privately negotiated, deals generally need to be treated highly confidentially in order to avoid the attention of competing buyers. As a

[6] Source: KKR (1989)

consequence, PE firms rely on superior contacts and industry knowledge to identify potential investment opportunities early.

The link between existing portfolio companies and potential takeover candidates is very unlike for PE firms and strategic acquirers, as PE firms do not put too much emphasis on aspects like resource relatedness or strategic fit between these (Baker and Montgomery, 1994). They would primarily rely on a set of generic criteria regarding industry-level dynamics and financial benchmarks. Even though many PE firms base their investments on the same basic criteria, there are a few of the firms that have successfully differentiated themselves from industry peers through a specification strategy. Such a specification may consist of factors like company size, geography, industry and level of acceptable technological risk.

The next step in the process is to find a suitable company to invest in, and once this is done the PE firm enters into the lengthy process of due diligence and deal structuring. During this process a detailed business plan for the proposed investment is being developed and the financial details of the transaction are negotiated with the current owner. Very often there are several PE firms trying to acquire the same company and the process may therefore look a lot like an auction where the PE firms submit their bid for the given takeover candidate. These bids do not only contain the actual proposed acquisition price, but also a detailed financial package. The package may outline level and conditions of the debt financing, details about debt service requirements and financial covenants as well as provisions regarding management co-ownership and incentive plans. It has been argued that the upfront agreed financial structure of a buyout investment determines a considerable part of the potential value creation by the PE firm (Baker and Montgomery, 1994).

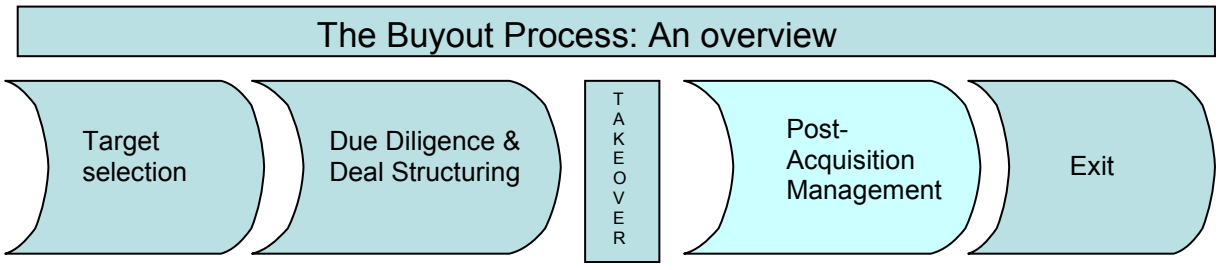

Figure 2.4 An overview of the buyout process

When the future owner of the target company has been decided, the company becomes a part of the PE company's portfolio. This is when the next phase starts, the post-acquisition management phase, in which the PE firm will start exercising its newly gained influence on managerial decisions of the target company. The post-acquisition phase is therefore considered as the most important phase for the value creation in the target company. During this phase the PE firm will determine the financial management of the target company going forward. This include things like introducing cost savings and active management of both sides of balance sheet, shifting the financial focus from earnings to cash flows, and supporting the target company's management in their negotiations with its lenders. It is this phase we will be focusing on later when we analyze the drivers of value creation in a buyout process.

The PE firm tries not to be too actively involved in the operational management of their portfolio companies. Instead, they widely rely on the top management in the portfolio company to implement the jointly decided value creation strategies. To succeed with this strategy the PE firm puts in control a top management team of its choice at the time of the acquisition, hiring dedicated professionals if necessary. If it turns out that the new management fails the PE firm will swiftly make the necessary replacements required.

Successful private equity firms stay in business by raising a new fund every 3 to 5 years. A study of 200 public-to-private chemical buyouts by Butler (2001) shows that less than one third of the purchasers exited within five years, with an average holding period of 5.3 years[7] between 1980 and 1995. If the current fund performs well, and LPs interpret the performance as a result of skill rather than luck, investors' demand curve for the new fund will shift out, with the equilibrium conditions requiring that LPs earn their cost-of-capital after payments to the GP. In response to this demand shift, GPs may alter the terms of the new fund to earn higher expected revenue for each dollar under management. Alternatively they may increase the size of their next fund. They may also do both. Raising the size of the fund may entail additional costs, depending on the production function for the underlying private equity activities[8].

[7] The average holding period decreases to 4.4 if we look at 1980-2000 instead.
[8] Chicago Booth Publication

The most common exit strategies for an LBO include an outright sale of the company (trade sales or sale to another private equity house), a public offering or a recapitalization. Table 1 describes these four common exit scenarios.[9]

Exit strategies	Comments
Trade Sale	Often the equity holders will seek an outright sale to a strategic buyer.
Sale to PE house	This is probably the most popular exit strategy at the moment and is very similar to trade sale, except that the buyer is another financial player.
Initial Public Offering	While an IPO is not likely to result in the sale of the entire entity, it does allow the buyer to realize a gain on its investment.
Recapitalization	The equity holders may recapitalize by re-leveraging the entity, replacing equity with more debt, in order to extract cash from the company.

Figure 2.5 Potential investment exit strategies for a PE fund.

2.5 The evolution of PE

Private equity started developing in the United States during the second half of the 20th century. The idea behind the first professionally managed private equity investment[10] was to create a counterpart to the financial institutions as the wealth distribution in the US at that time was only concentrated around these. The founders' intention was to create a private institution that attracted institutional investors and provided capital and managerial expertise to acquired businesses.

Through the 50s, 60s and 70s the private equity industry evolved into a more professional business and the US Government passed on several new legislations in order to boost the industry. During these decades, however, venture capital was the most common way of financing, but since the number of new start ups during the 70s was quite low it forced fund managers to develop strategies for non-venture Private Equity capital allocation.

[9] Center for private equity and entrepreneurship (2003). "Note on leveraged buyouts"
[10] American Research and Development (ARD) in 1946.

Consequently, large proportions of Private Equity capital were redirected to acquisitions of more established companies – the Leveraged Buyout was born.

The Private Equity industry experienced a substantial growth during the 1980s especially because of many important regulatory changes that gave the industry an increased access to capital.

In Europe, however, the development of the Private Equity industry traditionally lagged far behind the U.S. and only genuinely started making serious progress during the 1990s. The movement of assets from fixed income investments into equities and other products was accelerated in the late 1990s by the low inflation environment, with the creation of the Euro assuring free movement of capital. In addition, new capital gains tax legislation in European countries has been a recent catalyst for Private Equity investment in Europe.

3. The Norwegian PE market

The PE market in Norway is fairly small and relatively young compared to more developed European markets such as the UK and Sweden. The main reason for this is, according to Argentum, the lack of long-term institutional capital.[11] Nevertheless, we have seen indications that this is about to change. During the last few years the market has experienced a boom in terms of number of funds, capital available and investment activity and this is mainly driven by increased allocation to this market by institutional investors, such as insurance companies, banks and pension funds.

According to NVCA there are 53 management companies located in Norway and in total these PE houses managed 103 PE funds in the end of 2007. At that time these funds managed a total of €5.2 billion in capital. We know that capital under management in August-October was €6.7 billion[12], which represents a growth of 28.8% during the first 8-10 months in 2008. Out of these $6.7 billion, aggregated investments constituted €3 billion, while capital free for investment constituted €3.7 billion. However, the €6.7 billion managed by funds located in Norway is still only about 14% of the capital managed by funds located in Sweden. The portfolio companies of the PE funds employ over 40,000 people in Norway and generated €3.9 billion in value added in 2007. In other words, the portfolio companies to PE funds located in Norway currently accounts for 1.6% of the Norwegian GDP.

3.1 Fundraising

The Nordic countries in general accounted for 8.57% of the total fundraising to PE of €79.0 billion in Europe in 2007. The UK PE funds are by far the main contributors and hosted more than half of the 2007 fundraising by country of management. In terms of LP's we observe that pension funds (23.0%), banks (15.6%), fund of funds (14.7%) and insurance companies (9.9%) are the top four sources of funding in Europe over the last 5 years[13].

[11] Argentum webpage
[12] Menon Business Economics
[13] EVCA Private Equity Activity Survey 2008 - Europe

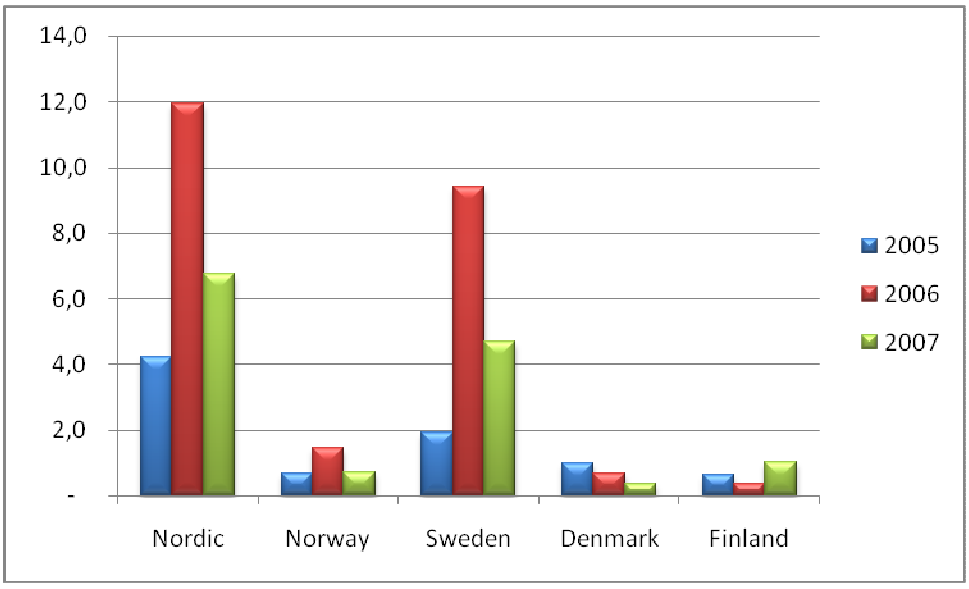

Figure 3.1 Fundraising (in € mill)

An important difference between Norway and the rest of Europe is that private and corporate investors contributed with 37.66% of the new funds raised in 2007 in Norway compared to only 7.2% for Europe in total.[14] Thus, even though the structure of sources of funding is about to change, the Norwegian PE market is still way much more dependent on private and corporate investors than elsewhere in Europe. As we can see from the figure above, Sweden is the main player in the Nordic region with Swedish PE funds accounting for roughly 69% of the fundraising in 2007. Norway, on the other hand accounts for 10.39% which is a lower contribution than in both 2005 and 2006.

3.2 Investments

On the investment side, we know that UK is the main platform for investments in Europe with UK PE funds accounting for 43.7% of the total investments in Europe in 2007. The fact that UK PE funds in addition are the only domestic funds that invest more abroad than home amplifies the position of UK in European PE. In Europe in general, 66.2% of the investments were made domestically in 2007, but only 40.3% of the fundraising was raised from domestic investors. The Nordic PE funds accounts for approximately 10% of the investments made in Europe in 2007 and Swedish PE funds completed 56.5% of these investments. Norway completed 13.1% of the Nordic investments in 2007, increasing from

[14] EVCA 2008 Nordic Report

8.6% in 2006. In Europe in general, 79% of the investments were done in the BO segment, while in Norway only 57.5% of the investments were done in the BO segment. This is the main difference between Norway and the rest of Europe on the investment side, but the proportion of BO is quickly catching up in Norway, increasing as much as 9.4% in 2007.

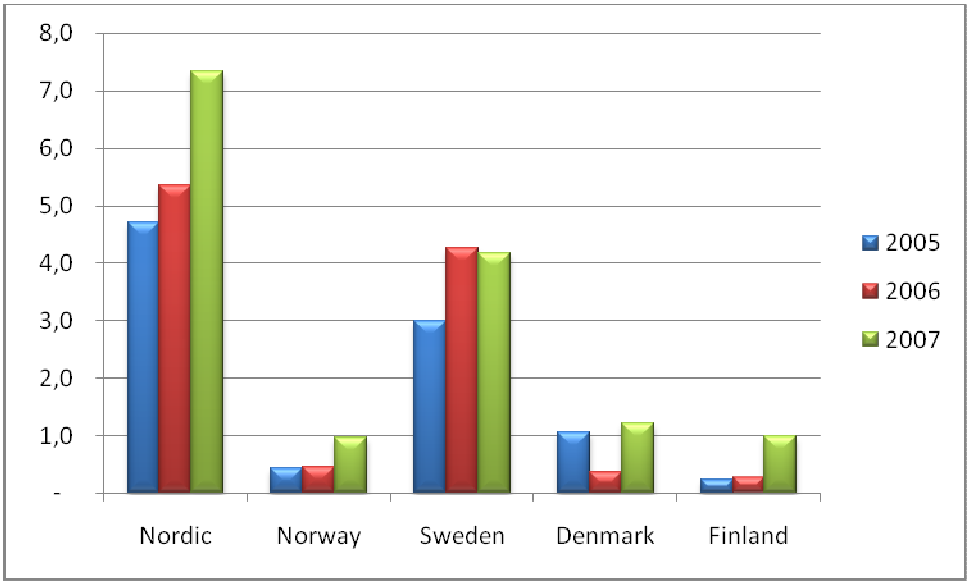

Figure 3.2 Investments (in € mill)

3.3 Divestments

2007 was the first year where the main exit route for PE funds in Europe was sales to other PE houses. Normally, trade sale has been the dominant one, but this exit route is now ranked second as exit channel. We observe that divestments by public offering were significantly reduced from 2006 to 2007 (from 16.2% to 9.9%) and dropped below the five-year European average. This decrease partly confirms the belief that public offering is a typically popular exit route when the market conditions are good and a less popular exit route when the market conditions are worse. Moreover, it gives us reason to believe that public offering as an exit route mostly was replaced with sales to other PE houses in 2007.

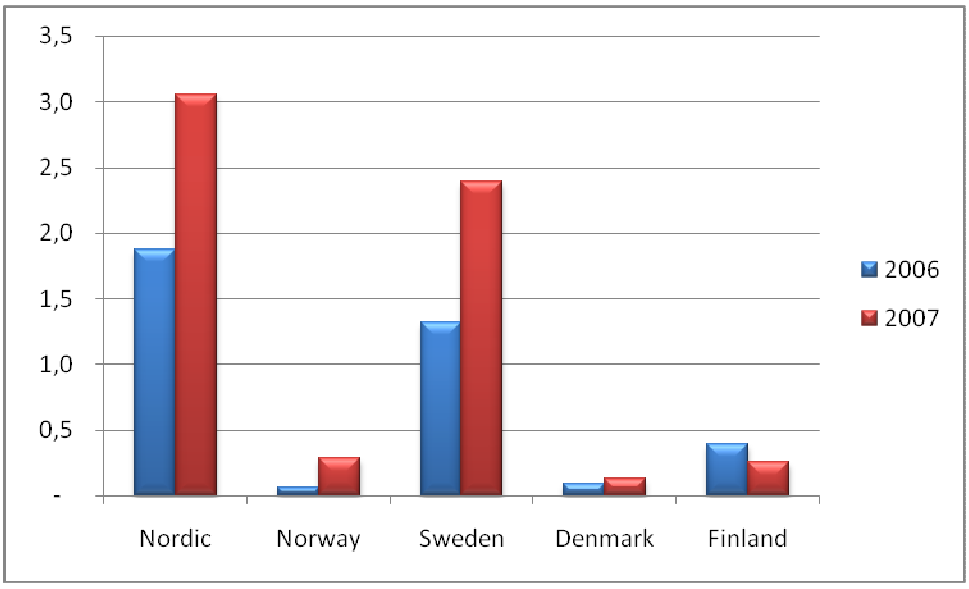

Figure 3.3 Divestments/Exits (in € mill)

For the Norwegian market however, we observed that public offering was the main exit route followed by trade sale in 2007. From the graph above we see that Norway contributed with 9.26% of the total divestments in the Nordic region.

3.4 The current situation and future trends/development

3.4.1 Europe in general

We observed a decline of 30% in total funds raised in Europe last year moving from €112.3 billion in 2006 to €79 billion in 2007. Even though this is still close to 10% above total funds raised in 2005, we have seen that the trend has continued in 2008 and further on in the beginning of 2009. While total value and volume of European Private Equity deals showed relative stability between Q4 2007 and Q3 2008, the decline only continued after the Lehman collapse in September 2008. According to the Unquote Q1 2009 barometer, total value of transactions fell by half against Q4 2008 to a shade over €4bn. Such levels have not been observed since Q3 1996, illustrating the seriousness of the situation. As we can see from figure 3.4, the picture is starkest for the buyout market and in terms of value the market is down by almost two thirds quarter-on-quarter to a little over €2.5bn.

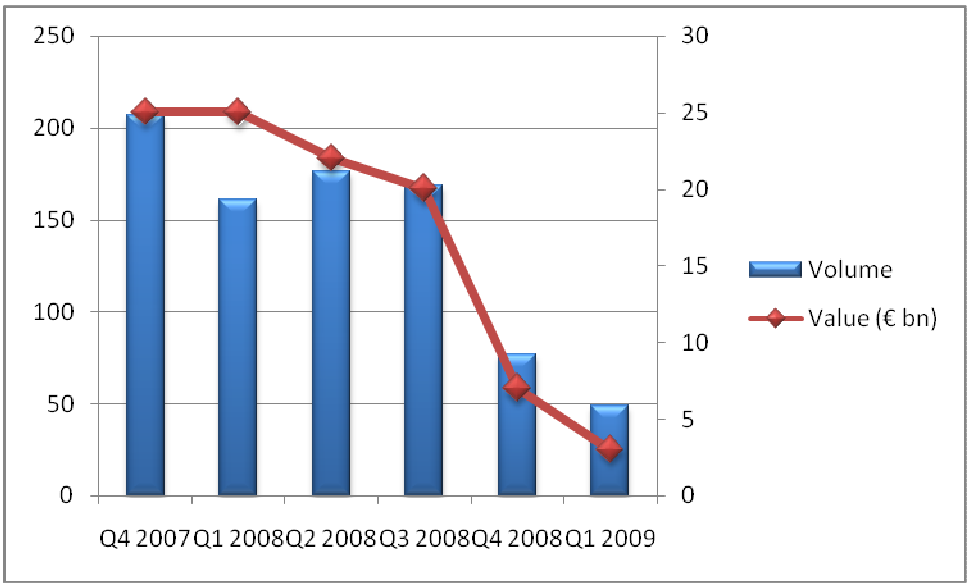

Figure 3.4 Volume and value of European Private Equity Backed Buyouts

These numbers have not been seen since 1995 and in terms of volume we are back on the levels of 1992. Fundraising has proven to be a difficult task, especially in the wake of the credit crisis and many LPs have applied a wait-and-see approach. It may take months before LPs reach a decision on whether or not to contribute to funds, and if they eventually decide to contribute, they contribute with far less than before. According to Kimberly Romaine[15] many LPs are contributing with just a fifth of their previous allocation.

The question is whether these horrific figures represent the bottom of the market. There is a predicted rise in attractive investment opportunities, coming from stressed or distressed organizations, private equity firms or public markets, which have not yet been materialized. The number of completed deals sourced from these vendor types have all dropped over the last three-month period, and the reason for this could have something to do with the uncertainty over pricing as well as leverage as there remains no visibility on trading and some vendors still have to adjust the new world order. When this begins to change, we should expect deal flow to pick up as there are still investors with cash to spend.[16] When eventually the private equity activity recovers however, the industry will be a very different one from that of recent years according to Josh Lerner, professor at Harvard Business School.

[15] Editor-in-chief of Unquote
[16] Ashley Wassal, editor of Unquote

3.4.2 Norway

Joachim Hoegh-Krohn, CEO of Argentum, stated in December 2008 that now is a good time to allocate capital to PE funds, even if risk management must be strengthened. One month later, Argentum received NOK2bn from the government in an attempt of getting others to contribute with fresh capital as well. Hoegh-Krohn said that the additional capital would go into "growth companies with the future ahead of themselves"[17]. However, Scandinavian PE firms have also struggled during the last exceptionally bad years. Swedish EQT is one of many PE firms which have invested in portfolio companies (Sanitec, Munksj and SPP) that have not been able to manage its debt[18]. The situation also applies for Nordic Capital through Thule and Plastal.

The PE firms are trying to negotiate improved conditions and write-offs of loans from their banks, but this constitutes a major problem for the banks. Many of the banks have the right to take control of the troubled portfolio companies if the situation gets too appalling, but the question is whether this is something that the banks want.[19] Nonetheless, some banks are certainly willing to take this step and in May 2009 DnBNOR reported that they are taking over Kid Interiør from IK Investment Partner as a consequence of defaults on the portfolio company's loans[20].

In terms of future development in the Norwegian PE industry we see that international investors such as banks, insurance companies and pension funds today only contribute with 25% of the capital raised by funds, which is a small share compared to the rest of Europe. Most likely they will account for more of the capital raised in the years to come and there has already been a tendency of a more international approach to capital raising activities among Norwegian funds over the last years. Furthermore, PE investments by Norwegian insurance companies and pension funds account for as little as 0.7% of their total capital under management and these numbers represent a large potential for profitable portfolio diversification over the coming years.

[17] "Argentum får to mrd" – Dagens Næringsliv Morgen 27.01.2009
[18] "Bakrus etter oppkjøpsfest" - Dagens Næringsliv Morgen 02.03.2009
[19] "Vurderer å svarteliste oppkjøpsfond" - Dagens Næringsliv Morgen 02.03.2009
[20] "Milliardgjeld i tekstil" - Dagens Næringsliv 08.05.2009

Another interesting topic for PE investors is the major challenges an aging population represents for the economy. As an increasing number of existing owners of businesses in Norway grows old, the number of firms seeking new owners will mushroom. More than 50% of all strategic private ownership shares in Norway are owned by people older than 50 years. According to statistics NVCA has obtained[21] more than 11,000 companies will search for new majority owners over the next 10 years due to aging. Many of the companies will be handed over to younger family members, but when the number of younger family members is reduced by an older population, the opportunity of out-of-family ownership change is increased. This will imply higher deal flows and potentially lower prices for PE investors, especially among more mature firms.

[21] Menon Business Economics

4. Value creation in buyout transactions

As mentioned earlier, our thesis will focus on value creation in the post-acquisition management phase (holding period). A further description of this phase will therefore be presented in this section. Furthermore, we will give a short presentation of value creation in the acquisition and negotiation phase.

Value creation in the holding period stems from various sources and has to be analyzed accordingly. Berg and Gottschalg (2003) differ between primary levers and secondary levers. Primary levers (direct drivers) refer to drivers which have a direct effect on the operating efficiency or relate to the utilization of assets in the target company. They are all easy to quantify since they directly affect and improve the free cash flow of the buyout company. Secondary levers (indirect drivers), on the other hand, refer to drivers which are non-operational and much more difficult to measure. Nevertheless, they will affect the overall value creation and moreover often be correlated with the primary levers. Thus, their importance should not be neglected.

In addition, PE firms may create value outside their holding period, through for instance superior acquisition and negotiation skills or information asymmetries and market inefficiencies. Berg and Gottschalg refer to this type of value creation as financial arbitrage. Financial arbitrage is mostly interesting for the PE company and not the target company, since the main purpose for the PE company basically is to push down the takeover price as low as possible. Financial arbitrage does not affect the underlying financial performance of the target company directly, but it does have a great impact on the total value creation from start to end for the PE company.

4.1 Direct drivers

We will first focus on direct drivers, which have a direct impact on the free cash flow and thus enhance the financial performance and causes real value creation for the acquired

company (Kitching 1989). A good illustration of how the enhancement of free cash flow causes value creation is the following formula[22]:

$$PV = \sum \frac{FCF}{(1+r)^n}$$

The value of a business is usually computed as the sum of the discounted value of future cash flows. N denotes the year of the anticipated cash flow. The direct drivers have in common that they all improve cash flow either through revenue expansion, cost-cutting and margin improvements, improved asset utilization or financial engineering.

4.1.1 Revenue expansion

Traditionally, buyouts have been viewed solely as a mean to address corporate inefficiencies (Wright 2001) and improving the operational effectiveness through the replacement of inefficient management teams (Anders 1992). However, this view has gone through a modification process along with the development of the PE industry the last decades. In order to achieve superior performance and value creation constant improvements in operational effectiveness are important, but usually not sufficient (Porter 1996). According to Singh (1990), buyout companies coming back to the capital market after a buyout phase, have experienced a significantly higher revenue growth than before the buyout. In addition, Butler (2001) emphasizes that a strong track record of either internal or external growth, significantly affects the valuation by future investors at the time of the exit through trade sale or an IPO. This implies that revenue expansion definitely should be considered as one of the drivers of value creation in buyouts. Much of the work of boosting revenue however, is related to an increase of the company's strategic distinctiveness and a corporate refocusing.

One way PE firms accomplish higher revenue growth for its target companies is by achieving internal growth for its target company. This could be achieved through decision-making with the managers in the target company in order to increase the strategic distinctiveness and improve the competitive positioning of the company. The main intention with this work is to restore strategic focus and reduce the overall complexity (Phan and Hill

[22] Brealy R., Myers S., Allen F. – Principles of Corporate Finance, 9th edition

1995). Divisions or activities that are outside the company's core business or do not represent a competitive advantage are often sold to another company that can utilize them in a better way. The decisions that are made range from decisions on which markets to compete in to which products to compete with and changes in pricing, product quality, customer service, customer mix and distribution channels are conducted if necessary (Muscarella and Vetsuypens 1990). This work is often done in conjunction with a strategy of increasing operational improvements and product cost awareness, so that even though revenues do not increase, each dollar of revenue that contribute to negative net income at least is eliminated (Gilbert and Strebel 1987).

Instead of boosting revenues internally, an alternative and quite common way of achieving revenue growth is to undertake add-on acquisitions of either new lines of business or to expand business scope in such areas in which distinctive competences and resources are strong compared to competition (Seth and Easterwood 1993). As stated in 2.4 many buyout transactions are intended to accomplish a "buy-and-build" strategy, in which a medium or large company with a strong management is bought and later, smaller ('add-on') targets in the market are bought and added to the existing platform. By doing so, the PE firm develop a large business with a significant market share and a strong position in the market place[23]. The rationale for these strategies is that synergies and economies of scales may be realized through consolidation and target companies may also reach the critical mass to be floated on a stock exchange, which could have been difficult, if not impossible, on a standalone basis.

4.1.2 Cost-cutting and margin improvements

Even though the traditional view of buyouts has been altered the last decades, the main drivers that have been associated with these transactions are still present today. According to Kaplan (1990) LBOs increase operating efficiency without massive layoffs or big cuts in R&D. Kaplan's findings show that average operating earnings increase by 42% from the year prior to the buyout to the third year after the buyout and that cash flows increase by 96% over the same period. Other studies by Smith (1990a) and Lichtenberg and Siegel (1990) prove significant improvements in profit margins, sales per employee, working capital, inventories and receivables as well. Smith (1990a) also proves reductions in capital

[23] Corporate and Finance in Europe

expenditures, advertising expenditures and R&D expenditures. Jensen (1989a) suggests that organizational changes play the most important role for these efficiency gains and claim that this is the primary source of value creation from buyouts. Jensen's view is partly supported by Smith (1990b), who shows a significant relationship between improvements in operating cash flows and buyout-induced changes in debt ratio and ownership structure. Typical organizational changes that are accomplished include tighten the control of corporate spending (Kaplan 1989b), initiation of cost reduction programs (Muscarella 1990) and reduction of corporate overhead costs through developing a less bureaucratic structure (Butler 2001).

4.1.3 Improved asset utilization

While the first two drivers focus on improvements in the P&L statement, the last two drivers are focusing on improvements directly in the balance sheet. It is quite common to increase capital productivity and reduce capital requirements in order to increase the overall operational effectiveness of the portfolio company. This is often achieved by making more efficient use of existing corporate assets, for example through an improved management of working capital, as the above mentioned research of Smith (1990a) proved. The PE firms are in many cases more capable of negotiating better terms with customers and suppliers and also implementing more efficient routines for their portfolio companies. Consequently, we would often see an acceleration of the collection of receivables, a reduction in inventory holding period and in some cases also an extension of payments to suppliers (Muscarella 1990). Simultaneously, the cash flows of the portfolio company are further enhanced through reduced capital expenditures, which lead to fewer unsound investment programs and divestments of unnecessary and underutilized assets (Phan and Hill 1995). In turn this results in a consolidation and reorganization of production facilities and an increase in operational performance and total factor productivity on one hand and additional cash flow to service debt on the other hand (Seth and Easterwood 1993).

According to the logic behind the market for control, inefficient management teams may cause companies to perform poorly[24]. Hence, companies that perform poorly because of inefficient management have been proposed as attractive takeover candidates, since

[24] Library of Economics and Liberty

replacing inefficient management teams with more efficient management teams could remove the cause of such underperformance (Jensen 1983). Buyout companies may thus benefit from the appreciation in company value due to the performance increase. Moreover, the presence of a PE firm could lead already inefficient management teams to become more efficient from the risk of losing their jobs. They know that the PE firm is capable and willing to replace them if they continue to be inefficient and, together with establishing appropriate incentive programs for the managers, this apprehension would lead managers to divest low-synergy assets and cease spending cash on poor investment decisions with unattractive returns.

4.1.4 Financial engineering

In short terms, financial engineering refers to the optimization of capital structure and minimization of after-tax cost of capital of the portfolio company. Financial engineering is one of the most recognized ways of creating value in a buyout transaction.

We know that capital structure is the firm's mix of debt and equity financing. There are many different flavors of debt, at least two flavors equity (common versus preferred), plus hybrids such as convertible bonds and the firm attempts to find the right combination of these to maximize its overall market value.

Modigliani and Miller (MM), who showed that payout policy does not matter in perfect capital markets, also showed that financing decisions do not matter in perfect markets (no transaction costs, taxes, bankruptcy costs, or asymmetric information). Their famous Proposition 1 states that a firm cannot change the total value of its securities just by splitting its cash flows into different streams: The firm's value is determined by its real assets, not by the securities it issues. Thus capital structure is irrelevant as long as the firm's investment decisions are taken as given.

Few financial managers, however, would accept this conclusion. The reason for this is that the MM theorem assumes perfect markets, and therefore, ignores things like taxes, bankruptcy costs, and potential conflicts between the firm's security holders. The theorem also ignores the information problems that favor debt over equity when cash must be raised

from new security issues, and ignores the incentive effects of financial leverage on management's investment and payout decisions. This knowledge may indicate that the mix of debt and equity financing actually do matter, and that a level of optimal debt for a company may exist. Kraus and Litzenberger's figure below perfectly illustrates this belief. A typical target company for a PE firm is assumed to be on the left side of the point of optimal amount of debt.

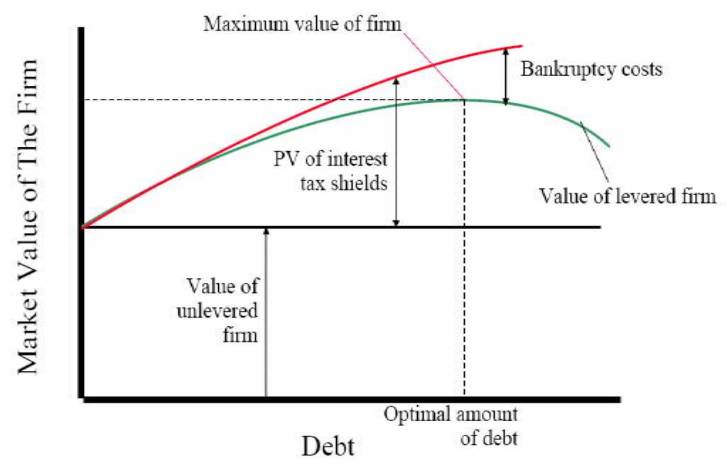

Figure 4.1 Kraus and Litzenberger's Tradeoff theory of Capital Structure

In addition, LBOs are normally carried out by borrowing a significant percentage of the purchase price from commercial banks, insurance companies and other financial institutions. The PE firm typically applies its knowledge of capital market mechanisms during the acquisition process and after the acquisition it shares its financial expertise with the target company (Anders 1992). Prior to the buyout, the PE firms are able to use their excellent contacts in order to negotiate the best available terms for the financing. After the buyout they continue to assist the target company in negotiating bank loans, bond underwritings, initial public offerings and subsequent stock sales and thus the portfolio company is able to negotiate terms which they would not have achieved on a standalone basis (Kaufman 1993). The PE firms are involved in these processes repeatedly and by being so, they gain a reputation as high profile clients and profitable borrowers at stake and lenders are more likely to deal at easier terms with them (Cotter and Peck 2001). The application of financial engineering skills helps the portfolio company to manage its balance sheet through an optimal use of capital markets and furthermore secures an optimal capital structure for the

company. Since this often implies an increase of debt for the portfolio company, buyout transactions are often referred to as leveraged buyouts.

A natural consequence of increased debt is large corporate tax savings and it has been argued that this should be identified as one of the main sources of value creation in buyout transactions. Kaplan (1989) argues that the increase in debt makes high-deductible interest payments necessary and provides a tax shield with a positive impact on cash flows, although the impact will vary across countries and time depending on tax regulations. The logical assumption however, is that the companies find themselves on the left side of the point of optimal amount of debt. If that is not the case, it is more likely that bankruptcy costs exceed the present value of interest tax shields.

4.2 Indirect Drivers of Value Creation

In addition to value creation from direct drivers, there are also other non-operational drivers of value creation which play an important role in the process. These drivers are called indirect drivers because they do not affect performance directly, but rather amplify the performance effects attributed to the direct drivers. Indirect drivers are related to the changes in the organizational, corporate governance and ownership structure. Research has shown that agency conflicts are highly relevant in the buyout context (Opler and Titman 1993), and buyouts are widely described as creating value through a reduction of agency costs (Jensen 1989a). By changing the organizational and ownership structure in a buyout transaction the PE firm becomes able to take advantage of the mechanisms around reduced agency costs, which in turn will lead to improved operating performance (Smith 1990a).

Agency conflicts may be explained by a well known theory called the Principal-agent theory[25]. The theory describes the problem that arises when a principal compensates an agent to perform certain duties which are useful to the principal and costly to the agent when experiencing information asymmetry, uncertainty and risk. Here, principals do not know enough about whether (or to what extent) a contract has been satisfied. The solution to the

[25] Encyclopedia of Business, 2nd edition

information problem is to ensure the provision of appropriate incentives so that agents act according to how the principal wants.

The primary agency relationships in business theory are those (1) between stockholders and managers and (2) between debt holders and stockholders. A corporation's managers may have personal goals that compete with the owner's goal of maximization of shareholder wealth. Since the shareholders authorize managers to administer the firm's assets, a potential conflict of interest exists between the two groups. Agency theory suggests that managers will seek to maximize their own utility at the expense of corporate shareholders. Agents have the ability to operate in their own self-interest rather than in the best interests of the firm because of asymmetry and uncertainty. Evidence of self-interested managerial behavior includes the consumption of some corporate resources in the form of perquisites and the avoidance of optimal risk positions, whereby risk-averse managers bypass profitable opportunities in which the firm's shareholders would prefer they invest. Managers may be encouraged to act in the stockholders' best interests through incentives, constraints, and punishments. These methods, however, are effective only if shareholders can observe all of the actions taken by managers.

We will clarify the mechanisms related to indirect drivers throughout section 4.2.

4.2.1 Management incentives

Buyouts increase the incentive alignment between shareholders and managers through a combination of a "carrot" and a "stick" mechanism (Cotter and Peck 2001). First, managers' share ownership significantly increases, giving them incentives to work harder (the "carrot"). Second, firms borrow heavily to finance the purchase of publicly held stock. The ensuing heavy debt burden forces managers to efficiently run the company to avoid default (the "stick"). Thus, a high debt level could provide benefits that outweigh the higher expected bankruptcy and agency costs normally associated with high debt levels[26]. In addition, third-party investors often acquire a large equity stake in the LBO, giving these investors incentives to motivate and monitor managers. Managers are encouraged (if not forced) to increase their share in equity ownership in the company to a significant level. It is expected

[26] As mentioned in 4.1.4

that this increase in the equity stake of the management directly increases the personal costs of inefficiency (Smith, 1990b) and reduces their incentives to shirk (Smith 1990a). Furthermore, the change in status, from manager to co-owner could increase financial performance because it gives managers a positive incentive to look for efficiency gains and smart strategic moves. Their equity participation gives them a greater stake in any value-increasing actions that are taken and thus leads to better operating and investment decisions. As the equity investment is un-diversifiable and the managers' human capital will be locked into the company by this construction it gives them a double-lock that should boost a strong motivation to safeguard their position (Wright, Thompson et al. 1992a).

A potential drawback for increased managerial ownership in equity can be that financial performance decreases due to managerial risk aversion and a potential under-diversification of managers' wealth (Fama and Jensen 1985). Furthermore, a concentrated managerial ownership of equity may lead to inefficient discipline mechanisms such as the market for corporate control and managerial labor markets, which then will result in a decline in performance as well (Demsetz 1983).

In addition to the change in managerial incentives, buyouts may increase the incentive alignment for employees as well through so-called pay-to-performance schemes. New incentive systems are being implemented and employee contracts are being adapted in order to step up motivation to achieve the key goals of the organization, including changes in the way employees get evaluated and compensated (Baker and Wruck 1989). These employee incentive schemes are not necessarily only restricted to upper and middle management, but they make the rewards to managers and employees highly sensitive to the performance of their particular business unit. The use of incentives is consistent with the view that they favor the owners and reduce managerial opportunism. This belief is supported by Wright and Robbie (1996), who empirically demonstrated that incentives were negatively related to MBO failure.

4.2.2 Change in Corporate Governance

The change of incentives in buyouts is usually closely linked to a transformation and improvement of corporate governance structures that increase the possibilities of reducing

agency conflicts through monitoring and controlling the company management (Singh 1990). The greater concentration of equity in the hands of active investors encourages closer monitoring and leads to a more active representation in the board of directors (Lowenstein 1985). An active investor may be described as a person or party who "monitors management, sits on boards, is sometimes involved in dismissing management, is often intimately involved in the strategic direction of the company and on occasion even manages" (Jensen 1989a). One advantage of monitoring and increasing involvement of the board would be the opportunity to obtain direct access to confidential information about the company. Another advantage is the possibility of regularly evaluate the portfolio company's management.

4.2.3 Reducing agency cost of free cash flow

The use of significant amounts of debt in a buyout transaction does not only represent an important factor for the financing structure of the transaction, but also limits managerial discretion. It has been emphasized that debt used to finance the buyouts helps to limit the waste of free cash flow by compelling managers to service debt payments rather than spend it inefficiently within the firm (Jensen 1989a and Jensen 1989b). It will also reduce managers' discretion over corporate expenditures[27] (Grossman and Hart 1982) and limit possible non-value maximizing behavior (Newbould and Chaffield 1992). Therefore, the debt burden forces managers to efficiently run the company in order to avoid default.

Bankruptcy is costly for managers, as they lose the benefits of control and reputation, including their jobs. Consequently, high leverage and increased default risk can create an incentive for managers to work harder, consume fewer perquisites and make better investment decisions, and such behavior reduces the probability of bankruptcy.

Another positive effect is the role of the financial lenders as they have strong incentives to monitor the managements' actions and make sure that the company is able to fulfill its duties. The debt covenants and repayment requirements serve as a sort of operating budget for the buyout company and provide clear constraints for the management (Baker and Wruck 1989; Baker and Montgomery 1994).

[27] A number of empirical studies have shown that expenditures decline following a leveraged buyout (Bull 1989; Kaplan 1989; Kitching 1989; Muscarella and Vetsuypens 1990; Smith 1990a).

However, it is worth mentioning that high leverage can have its downsides as well. One of the main arguments against high leverage is the increased exposure to external shocks (e.g., increase in interest rates, shortfall in demand) and financial distress (Singh 1990). As noted in 3.4.2, a number of portfolio companies to different PE firms have experienced serious difficulties due to the current economic downturn. However, even though the consequences are less severe, the increased financial leverage can make a firm short-term oriented because of its vulnerability to financial distress, leading to a decline in long-term competitiveness (Palepu 1990).

Moreover, significant financial leverage could lead to non-value maximizing project selection decisions by managers due to managerial risk aversion: high leverage could cause risk-averse managers to alter their investment decisions. For example, decrease the risk of the assets of the firm in order to reduce the likelihood of default (Myers 1984). Conversely, Jensen (1989a) argues that the risk of insolvency of buyout firms and the associated costs of financial distress are much lower than proclaimed, since financial innovations and the interest of all parties of a successful workout process reduces bankruptcy risk considerably (referred to as “privatization of bankruptcy”).

4.2.4 Restoring entrepreneurial spirit

Lack of entrepreneurial spirit is something that many acquired companies in buyout transactions suffer from. There are several reasons for this and some of them include cases where non-core units of large corporations do not receive the necessary attention or resources from corporate headquarters to pursue innovative strategies or where risk-aversion lead to an unfavorable climate for entrepreneurial activities. By giving the management of the portfolio companies sufficient freedom to develop and realize innovative ideas, the PE firm may contribute to the restoration of an entrepreneurial climate. The changed governance and new institutional structure make managers of post-buyout companies feel released from corporate bureaucracy and of central importance, as many PE companies reduce their interference with day-to-day operational issues to a minimum, as long as financial targets are met. Wright et al (2001) highlighted that managers of pre-buyout organizations were discouraged if their divisions provided profitable and innovative investment opportunities but were limited in their discretion because of the fact that the division was not regarded

central to the parent organization. According to Singh (1990) “buyouts provide the imagery as a creative way to reintroduce an entrepreneurial drive in the publicly held firm”, as management feels and acts as entrepreneurs under the new organization, relived from constraints of corporate headquarter and thus encouraged to make independent decisions (Jensen 1989a). Researchers describe this effect as “LBO fever” or “adrenalin”: energized and highly motivated management teams are willing to take nearly any action to make their buyout a success (Samdani *et al* 2001). This includes taking unpopular and difficult decisions like cutting jobs and disposing businesses.

4.2.5 Advising and enabling

Another important aspect relates to the constructive interaction between BO company managers and PE firm, which is often facilitated through direct and less bureaucratic communication channels (Kester and Luehrman 1995). In practice, decisions can be taken much more freely and independently by BO management as they are well aware of strategic direction and the responsible PE firm partner is just a phone call away from discussing and signing off more difficult decisions. While the investment managers in the PE firm typically stay free of day-to-day operations, they are still much closer to operations and management than conglomerate headquarters or the board of directors in traditional organizations (Bull 1989).

Furthermore, PE firms transfer substantial additional knowledge into the BO company, such as management expertise and industry experience acquired in previous transactions in which they have participated (Baker and Smith 1998). This cross-utilization of managerial talent may represent a valuable and not otherwise readily available resource to the target company. In addition, the PE firm frequently recruits outside advisors with industry expertise into the company. Their network with financial services and the investor community helps the company to get better access to financial markets and prepares it for an eventual exit through an IPO or trade sale.

4.3 Value Creation in the Acquisition and Negotiation Process

So far we have only discussed value creation related to the post-buyout period. However, value in leveraged buyout is often already created before signing the share purchase agreement, since a lot of value can be captured during the acquisition and negotiation process. These value drivers can be related to information asymmetries and capital market inefficiencies or superior negotiation skills. Haspeslagh and Jemison (1991) have put it this way: "A PE firm's ability to capture value through buyout acquisitions rests largely on the skills of a small but highly experienced cadre of legal and financial experts and operating managers with well-developed expertise in analysis and deal-making". These sources of value creation are rather indirect in nature, but from a direct perspective they mainly relate to the transaction multiple arbitrage between entry and exit multiple. The process prior to takeover usually creates more value for the PE investors than for the target company since this value creation relates to the price the PE firm has to pay and not to operational improvements for the target company.

4.3.1 Information Asymmetries and Market Inefficiency

Leveraged buyouts have been widely criticized for exploiting inside information to create value in the transactions. The reason for the apparent controversy is that managers are subject to severe conflicts of interest in buyout transactions, because they cannot simultaneously act as both buyer and agent for the seller (Jensen 1989a). It is therefore especially leveraged buyouts involving management buyouts that have been scrutinized by research. Lowenstein (1985) reports a range of insider techniques and options that pre-buyout management has available to depress the valuation of the company. Because the management is the essential source of the business plan for the acquired company, an opportunistic management team could take advantage of their insider information and misrepresent the future business and earnings development of the company. This will result in wealth being transferred from selling shareholders to management (acquirer) as a result of inside information. Effectively, management would buy a company for less than a similarly informed bidder would be willing to pay, and informed owners would be willing to accept.

However, there are various arguments to support the fact that information asymmetries are not a major source of value creation in buyouts, but rather contribute to managers' motivation to initiate a buyout (Lee 1992). A way of addressing the conflict of interests is through court decisions where open auctions and the use of independent committees on the board of directors as well as an independent external council are present (KKR 1989). Moreover, the use of limited auctions for the acquisition process regularly involves extensive disclosure requirements prepared by outside advisors, which lowers the opportunity for managers of buyout targets to systematically conceal information about business and earnings prospects from the acquiring party (Lowenstein 1985). If we assume somewhat efficient capital markets, the exploitation of inside information should be prevented by increasingly educated investors and the open auction's monitoring routines (Jensen 1989b). As a result of these counter-arguments to information asymmetry as source of value creation, Singh (1990) concludes that "the pure managerial opportunism argument implies a higher level of manipulation of superior information by management teams than is feasible in a competitive acquisition environment". This is also to some extent demonstrated by the decreasing returns for LBO transactions experienced over the recent years as competition for deals among PE firms has intensified (Reyes and Mendell 2004).

4.3.2 Acquisition and Negotiation Skills

Financial buyers have consistently paid less than the strategic buyers for their acquisitions during the 1990s (Butler 2001). This may be explained from the more dispassionate approach financial buyers have compared to strategic buyers, as they screen dozens of deals for every one they execute and strategic buyers are restricted to their respective industry and a few targets. Strategic buyers tend to overestimate synergies or get carried away in the auction of the prize of the asset (Butler 2001), so PE firms may therefore often choose to avoid too competitive auctions as they already know that the competitive bidders are going to pay too much. Another explanation for why PE firms pay less is that they have developed excellent deal negotiation skills. They are tough negotiators and tend to negotiate downward from prices which in principle had been accepted earlier during the due-diligence phase. Especially if they find themselves as the sole bidder, they are skilled at finding problems in

the seller's business offer. Typical problems they might focus on are off-balance sheet liabilities and outdated equipment that requires higher capital investment (Butler 2001).

Another source of value creation potential is the network the PE firm has created among corporate managers and the financial community. They have an ongoing interaction with the financial community about potential acquisition targets and their various approaches to top managers which allow the PE firms to build up considerable industry expertise (Anders 1992). In addition, PE firms should benefit from an acquisition learning curve, as most buyout professionals have executed dozen of deals. Even if the deal turns out to be unsuccessful, the process around the deals gives the investors valuable source of inside information and industry development (Anders 1992). Through their network PE firm professionals could have more direct and timely access to critical information and by that being able to interpret it faster than the average market participant, hence enabling them to make quick decisions regarding acquisitions (Fox and Marcus 1992). Therefore, attractive target companies can be identified and approached before other potential bidders are alerted about this specific acquisition opportunity.

4.3.3 Changes in market valuation

Returns to private equity investors may be influenced by changes in the public market valuation multiples for comparable companies. Investors may either benefit or suffer from this. In some cases, private equity investors are able to successfully earn arbitrage profits on these changes because they may more accurately predict the future evolution of public market valuation multiples than their counterparts in the valuation negotiation.

4.3.4 Optimization of scope

Sophisticated PE investors are able to identify and exploit the so-called conglomerate discount effect, taking advantage of the fact that a multi-unit company may be less valuable as a whole than divided into pieces. Through the sale of undervalued businesses ("asset stripping"), PE investors remove the conglomerate discount and benefit from the appreciation in the value of their assets (Magowan 1989).

5. Previous Research and Hypotheses

Empirical research on value creation and performance evaluation for LBOs has mainly been focusing on changes in direct drivers. The reason stems from the difficulties that arise when researchers try to measure the effects from indirect drivers. First, they are very difficult to quantify. Second, the information you need when studying these drivers in a buyout transaction is usually not publicly available and PE companies do not have the information readily available. The latter argument applies for measuring value creation from financial arbitrage as well. As we have encountered many of the same difficulties throughout the work with our thesis, we have chosen to focus our study on value creation in BO companies in relation to the direct drivers.

In the following section we will give a presentation of previous studies on performance evaluation and value creation in BO companies. The studies focus on slightly different approaches to the issue by using a wide range of different financial measures. In addition, they look at different time periods and geographical areas. We present their methods and results, and sum up by presenting our own approach for this thesis, which include several testable hypotheses similar to a few of those used in previous studies.

5.1 Previous research

The study on "The effects of Management Buyouts on operating performance and value" by Steven Kaplan from 1989 is one of the most comprehensive studies on performance measurement and value creation in the buyout industry. This study presents evidence on changes in operating results for a sample of 76 large management buyouts of public companies completed between 1980 and 1986. The distinguished feature of the analysis is the use of post-buyout information in addition to the pre-buyout information used in previous studies. The results from this study show increases in operating income and net cash flow as well as reductions in capital expenditures during the three first post-buyout years. To supplement these evidences, Kaplan tries to consider explanations for the operating changes and value increases.

When giving explanations for the causes of operating changes and value increases he considers three hypotheses. First, he examines the employee-wealth transfer hypothesis where the focus is on changes in employment after management buyouts. The results do not support the view that investors benefit from large employment cuts. He then examines the information-advantage or under pricing hypothesis. He looks at several indirect pieces like pre-buyout shareholdings of informed parties, management buyouts that were not completed and comparison between the pre-buyout financial projections managers give to shareholders with the actual post-buyout realizations. None of the results supported under pricing. Third, he tests the reduced-agency-cost or new-incentive hypothesis. This is tested by looking at the increase in equity holdings of the management team. He finds that the increase is larger for all managers except the top two officers, which have a lower increase, and concludes that these findings are consistent with new incentives having an important role in management buyouts.

Kaplan finishes his paper by suggesting that the evidence he presents, broadly supports the hypothesis that management buyouts experience post-buyout operating improvements and value increases. Moreover, the operating improvements and value increases appear to be generated by improved incentives rather than wealth transfers from employees or superior managerial information.

Guo, Hotchkiss and Song examined whether, and how, leveraged buyouts from the most recent wave of public to private transactions created value. They compare buyouts completed between 1990 and 2006 with their predecessors from the 1980s. For a sample of 192 buyouts they show that these deals are somewhat more conservatively priced and lower levered than the buyouts from the 1980s.

First, they show that the firms in their sample on average experience large increases in total value from the time of the buyout to the subsequent exit of a private equity firm’s portfolio, producing large returns to invested debt and equity capital. Something they find surprising is that gains in operating performance are substantially smaller than documented deals from the 1980s, and depending on the measure of performance, these are not always significantly different from the performance of benchmark firms matched on industry and pre-buyout characteristics.

The authors suggest several explanations for the relatively large returns observed for the buyouts. First, increases in firm value may result from firms specific improvements in operating performance and the improvements in performance may be related to improved profitability, restructuring of asset such as eliminating unproductive assets, using remaining assets more efficiently, or making value increasing acquisitions. Second, firms may benefit from rising market or industry sector valuation multiples while they are private. Third, substantial increases in leverage can produce large tax shields, increasing the cash flows available to the providers of capital.

When examining the potential explanations for the realized returns the authors do this in two ways. First, by comparing the realized returns to what they would have been if market and industry valuation multiples had remained at their pre-buyout levels, they find that industry valuation changes have a large effect. Second, they find that the impact of increasing tax shields is also large, but depends on their assumptions as to whether leverage will be maintained after the exit from the private equity firm's portfolio. By using cross sectional regression to examine the importance of these two factors relative to other firm specific factors such as the operating performance gains and deal pricing, they find that the impact of changes in industry valuation multiples and realized tax benefits from increased leverage are each at least as important as operating gains in explaining returns.

To sum up their analysis the authors question how the PE firms will cope with the current market conditions where we experience less favorable credit and general market conditions. They emphasize on the ability to understand the structure of these deals and how they have created value during the sample period, and by that, understand the prospects for these highly levered firms going forward.

Muscarella and Vetsuypens report performance measures for 72 firms that previously underwent a full or divisional LBO ("reverse LBOs"). The purpose of the paper is to discover whether changes in governance have occurred under private ownership and whether improvements in productivity and asset utilization took place after the LBO. In addition, they take a closer look at changes in leverage and equity value between the LBO and the IPO. The authors find that their sample firms experienced dramatic increases in leverage, as predicted, and that the leverage ratios were gradually reduced over time. When analyzing conventional accounting measures of performance they reveal that the BO firms have

experienced significant improvements in profitability when compared with random samples of publicly traded firms over similar time periods. These improvements are a result of reduced costs rather than increased revenues or improved asset turnover. Moreover, they found evidence for tax reasons being an important motivation for LBOs.

Tim Opler studied buyouts from the late 1980s where the LBO market had evolved to the point where the transactions that took place were pricier and riskier than the transactions from the early and mid-1980s, which is the time period in which Kaplan based his study on. Thus, real operating gains may have been more difficult to achieve for the deals analyzed by Opler. However, the results he obtains are broadly comparable with those of Kaplan.

A Swedish study by Lundgren and Norberg (2006) analyzes changes in operating performance for a sample of 67 Swedish LBOs between 1988 and 2003. They look at changes in firm's growth, operating margins, investment activity and management of working capital, as well as changes in leverage levels and employment. However, as opposed to previous studies they do not find any significant industry adjusted improvements for the first three years after the buyout.

Schleifer and Summers (1987) distinguish, partly as Kaplan (1989), between the value creating and value redistributing effects of hostile takeovers and argue that the latter is likely to be of dominant importance. They discuss the issue using three different scenarios of imaginary takeovers which yield equal private benefits to the shareholders in the target firms, but with different social consequences. These three examples make it clear that increases in share values in hostile takeovers in no way measure or demonstrate their social benefits. Then they move on and include real takeovers in their analysis. They find that transfers from stakeholders to shareholders could make up for a large part of the takeover premium. This includes decreased employment, change of management and tax savings from the government. In addition, if takeovers are motivated by stock market undervaluation of assets, then these transactions are rent redistribution from old shareholders to acquirer. However, the authors emphasize that measuring these effects is rather challenging.

Smith (1990a) investigates changes in operating performance after 58 MBOs of public companies completed during 1977-1986. She looks at operating returns and compares them from the year before entry with the year after entry and finds significant increase during the

period. Smith also tested changes in working capital turnover, operating cycle, days inventory, days receivable and days payable and found significant increases in working capital turnover from the year prior to buyout to the first year after buyout[28]. She also found significant industry-adjusted reductions in the BO companies' operating cycle, days inventory and days receivable[29]. However, she was not able to prove any significant changes for days payable for the same time period.

5.2 Hypotheses

The presentation of value creation in BO transactions introduced different drivers of value creation in the BO process. We believe that Norwegian PE houses through these drivers have created values in their portfolio companies. Since the indirect drivers are correlated with the direct drivers we will check for value creation by testing whether value is created through revenue expansion, cost reductions/margin improvements, improved asset utilization and financial engineering. In addition we will test Schleifer and Summers (1987) belief that the gains PE firms achieve in their portfolio companies is a redistribution of wealth between shareholders and employees and thus a value transfer rather than value creation. Value created in the acquisition and negotiation phase is practically impossible to measure without access to private information and since we only have access to publicly available information, potential value creation from this phase will not be analyzed here. Nevertheless, our main hypothesis will be:

Have Norwegian PE companies created value in their respective portfolio companies?

To answer this question, we will test a selection of different hypotheses, which hopefully will give us valuable insight to draw a conclusion to the above mentioned question. The hypotheses are based mainly on previous research and some economic theory and we will look at changes from the final fiscal year prior to buyout (Entry) to the first fiscal year after buyout (Exit). In addition, we will look at the changes from the final fiscal year prior to buyout to the second fiscal year after buyout (Exit+1). Since, general market conditions or specific developments in the industry may affect the BO company's performance significantly, the most appropriate tests would be to check whether the changes for PE-

[28] On a 1 percent significance level
[29] On a 1 percent, 10 percent and 5 percent significance level respectively

owned companies are better than their corresponding peers. As Kaplan (1989) and Smith (1990a), we will therefore adjust our data for industry changes to be sure that the improvements could be attributed the actions of the PE firm and not just the general development of the industry/market.

5.2.1 Hypothesis 1 (Revenue expansion)

As stated in 4.1.1, revenue increases in buyout transactions have gained more attention in the value generation debate. We have distinguished between internal revenue growth through increasing strategic distinctiveness and external revenue growth through add-on acquisitions. Revenue growth affects the size of EBITDA and in addition, it is of importance for the valuation by future investors. Moreover, higher revenues give a good base for obtaining higher earnings as long as costs remain the same. Thus, it makes sense to test whether BO companies have achieved a higher increase in revenues than their peers.

H1: Revenues to PE-owned companies have increased from entry to exit and exit +1.

5.2.2 Hypotheses 2 and 3 (Cost reductions/Margin improvements)

Increasing operational effectiveness is an important and common way of generating value in buyout transactions. By taking advantage of the competences that come with a PE firm, a company could successfully carry out cost reduction programs and increase the efficiency of the company and thus improve their margins. Kaplan (1989)[30] focused on three cash-flow variables when he proved the effects of MBOs on operating performance; operating income, capital expenditures and net cash flow, all of them relative to assets and sales. We will focus on changes in operating income relative to sales (EBITDA margin) and net income relative to assets (ROA) when testing for operational improvements. If the PE firm has been successful in improving operational performance, we should find a strengthening of the EBITDA and ROA margin from the year prior to buyout to the years after exit.

H2: EBITDA margin to PE-owned companies has improved from entry to exit and exit +1.

[30] Kaplan checked for percentage changes in EBITDA margins from t-2 to t-1, t-1 to t+1, t-1 to t+2 and t-1 to t+3. We will test from t-1 (entry) to t+1 (exit) and t-1 to t+2 (exit +1).

H3: ROA to PE-owned companies has improved from entry to exit and exit +1.

5.2.3 Hypotheses 4-7 (Improved asset utilization)

PE companies often focus on working capital management in their target companies. They are experienced in negotiating better terms for their target companies and often the target company itself has not paid any particular attention to this area. Smith (1990a) provided evidence of a significant reduction of working capital from the year prior to buyout to the first year after buyout. The reduction of working capital was mostly due to an acceleration of the collection of receivables, reduction in inventory holding period and an extension of payment to suppliers[31]. Our intention is to test whether this holds for the Norwegian PE market as well.

H4: Days receivables for PE-owned companies are reduced from entry to exit and exit +1.

H5: Days inventory for PE-owned companies are reduced from entry to exit and exit +1.

H6: Days payable outstanding PE-owned companies have increased from entry to exit and exit +1.

H7: Working capital turnover for PE-owned companies has increased from entry to exit and exit +1.

5.2.4 Hypotheses 8-11 (Financial engineering)

As noted in 4.2.3 a major cause of takeovers is the conflicts between managers and shareholders over the disposition of corporate free cash flow. Managers often prefer to retain control over the free cash flow and use the cash flow to invest in corporate assets producing a return below the cost of capital or waste it through organizational efficiencies. When the PE companies substitute debt for equity these agency costs are reduced since much of the free cash flow now is used to handle the increased debt burden leaving managers less opportunities for discretionary spending. According to this belief, we would expect companies that are acquired by the PE companies to have excess free cash flow and a low

[31] Increase in days payable not significant

debt share by entry (H8). After entry we would expect that the PE company add more debt to the target company and thus increase the debt share in order to reduce agency costs, save corporate tax and maximize return on equity. Eventually the increased debt will be paid off to a point where the capital structure is optimized and more similar to peers (H9), but still higher (H10) than prior to the buyout (Muscarella 1990).

H8: PE-owned companies have a lower debt share than non-PE-owned companies at entry.

H9: PE-owned companies will have the same debt share as non-PE-owned companies at exit and exit +1.

H10: PE-owned companies have a lower debt share at entry relative to exit and exit +1.

Muscarella and Vetsuypens (1990) found support in their studies for the tax savings argument first presented by Lowenstein (1985). The tax savings argument says that the real driving force in buyout transactions is post-buyout tax savings. By taking on high levels of debt the company needs to make substantial interest payments and these payments provide a tax shield which translates into considerable increase in cash flows. We want to test whether this holds for the Norwegian market through a reduced corporate tax rate.

H11: The corporate tax rate of PE-owned companies is higher at entry relative to exit and exit +1.

5.2.5 Hypotheses 12 and 13 (Employment)

There are several assertions about employment in relation to PE-owned companies. Schleifer and Summers (1987) emphasize the redistribution of wealth between employees and shareholders in buyout transactions[32] and claim that important sources of cash and increasing equity value in these transactions stem from reducing wages and laying off much of the labor force. Kaplan could not find any evidence for supporting this hypothesis in his findings. Thus, it could be interesting to see whether the same conclusion could be drawn by looking at the Norwegian PE market. The problem in terms of employment would be that a PE company often undertake add-on acquisitions or divest non-core operations, which would

[32] Schleifer and Summers emphasis is on hostile takeovers. Our sample is not classified into hostile or friendly takeovers.

increase/decrease number of employees without actually hiring or firing people. It is possible to assume that PE-owned companies pursue the same acquisition/divesture strategy as non-PE-owned companies and thus the problem will be eliminated when adjusting for peers.

H12: Employment for PE-owned companies has decreased from entry to exit and exit +1.

According to EVCA (2005) however, PE-owned companies tend to have a higher acquisition/divesture strategy than non-PE-owned companies and since more companies normally are added than divested, it is likely that the results will be biased upwards and thus present a better development in employment than what might be the case. We believe that a better way of controlling for acquisitions/divestures is to look at the changes in wage expenditures relative to sales. We will not be able to distinguish between the effects of changes in employment or reduction in wages, but it will give us a strong indication as to whether we observe a transfer of wealth from employees to shareholders.

H13: Wage expenditures relative to sales for PE-owned companies have decreased from entry to exit and exit +1.

The above mentioned hypotheses may be tested using accounting data from the target companies. To give the reader an overview of the ratios we use to test our hypotheses we will in the following section explain these more in detail.

6. Key ratios

This section focuses on the ratios we use to quantify performance for the BO company during the holding period and thus will be used for testing our hypotheses. In general, ratios are often used to determine operating performance and for comparisons between companies because they are not affected by the absolute size of the target company. Most of the numbers we need to calculate these ratios are found in the company's P&L statement, cash flow statement, and balance sheet. The following section will give a short introduction to each of the ratios and explain how they are calculated. The ratios are classified into five different groups[33].

6.1 Liquidity ratios

Liquidity[34] is the company's ability to meet its liabilities in the short term. Liquidity ratios are used to test hypotheses 4-7, and we will be focusing on the following ratios:

Days inventory indicates how long on average the inventory stays in the company. Lower is not necessarily best since if the ratio is too low there can be problems for the company to meet customer's orders. However, if days inventory is initially high, the company will normally prefer a reduction in days inventory.

$$Days\ inventory = \frac{Inventory \times 365}{COGS}$$

Days receivables indicates how many days, on average, sales remain in accounts receivable awaiting collection. Thus, it gives us information about how many days the company normally uses to collect its receivables.

$$Days\ receivable = \frac{Accounts\ receivable \times 365}{Revenues}$$

[33] "Ratio analysis" – Bocconi (2008)
[34] Also known as short-term solvency.

Days payable outstanding indicates how long, on average, a company is taking to pay its creditors.

$$Days\ payable\ outstanding = \frac{Accounts\ payable \times 365}{COGS}$$

Working capital turnover is used by Muscarella (1990) to analyze the relationship between the money used to fund operations and the sales generated from these operations. In general, the higher working capital turnover, the better because it means that the company is generating a lot of sales compared to the money it uses to fund sales.

$$Working\ capital\ turnover = \frac{Sales}{Working\ capital}$$

Working capital (WC) is a measure of both a company's efficiency and its short-term financial health. WC gives investors an idea of the company's underlying operational efficiency as an increase in its WC may show that the company is not operating in the most efficient manner.

$$Working\ capital = Current\ assets - Current\ liabilities$$

6.2 Solvency ratios

Solvency indicates the company's ability to pay its long-term debt. The solvency ratio we present in this section is used for testing hypotheses 8-10. The leverage ratio we use to test for financial engineering is calculated as:

$$Long - term\ debt\ share = \frac{Non - current\ liabilities}{Total\ assets}$$

We will call it the **long-term debt share**. The reason for using non-current liabilities rather than total debt is that we assume that most of the interest-bearing debt added by PE firms is long-term. As mentioned 5.2.4, the advantage of an increased leverage ratio is the tax advantages it gives to the company. In addition, increased leverage reduce agency costs

through a reduction of free cash flow. Testing for debt share will help us explain value creation through financial engineering.

6.3 Growth ratios

Growth analysis aims at giving an idea of how much or how fast the company is growing in size. Typical growth rates to measure this dimension are growth rates for revenues, assets and shareholders' equity and the first ratio presented here will be used for testing hypothesis 1. This ratio focuses on **revenue growth**, since this is one the direct drivers. In addition we will use the formula for compounded annual growth rate (CAGR) to compute the annual growth rate of revenues:

$$Annual\ revenue\ growth: \left[\frac{Revenues\ exit}{Revenues\ entry}\right]^{\frac{1}{n}} - 1$$

Moreover, we want to find the annual growth in employment for testing our hypothesis 12. **Employment growth** gives us an idea about whether the company has had an increase or reduction in number of employees. In order to find growth in employment, we will also use CAGR and thus the annual growth of employment is calculated as:

$$Annual\ employment\ growth: \left[\frac{Employment\ exit}{Employment\ entry}\right]^{\frac{1}{n}} - 1$$

6.4 Profitability and efficiency ratios

Profitability (and efficiency) is one of the most important dimensions in financial statement analysis. A company is supposed to produce enough profit for its owners and for the remuneration of people. We are focusing on two very common ratios in our analysis when testing for cost reductions and margin improvements in hypotheses 2-3.

EBITDA margin is calculated as EBITDA[35] divided by revenues. EBITDA is a measure of profits and reflects the company's earnings before interest and taxes together with depreciation and amortization. The earnings, tax and interest figures are found in the income statement, while the depreciation and amortization figures are normally found in the notes in the cash flow statement.

$$EBITDA\ margin = \frac{EBITDA}{Revenues}$$

Its proponents argue that that EBITDA offers a clearer reflection of operations by stripping out expenses that may be used to cover how the company is really performing. Interest, which is largely a function of management's choice of financing, is ignored. Taxes are left out because they can vary widely depending on acquisitions and losses in prior years, and also because of different tax regulations across countries. Finally, EBITDA removes the arbitrary and subjective judgments that can go into calculating depreciation and amortization, such as lifetime, residual values and various depreciation methods.

Return on assets (ROA) is an indicator of the profitability of the company independently from how it is financed, and from extraordinary gains and losses. ROA can be calculated by dividing net income on revenues. Net income is calculated by starting with a company's total revenue. From this, the cost of sales, along with any other expenses[36] that the company incurred during the period, is removed to reach earnings before tax. Tax is deducted from this amount to reach the net income number. As profit is susceptible for manipulation, it is important to review the quality of the numbers that were used to arrive at this value when basing investment decisions on this accounting measure.

$$ROA = \frac{Net\ income}{Revenues}$$

[35] Earnings before interests, taxes, depreciation, and amortization.
[36] Cost of employees, extraordinary gains/expenses, financial revenues/expenses, depreciations, write-offs, taxes.

6.5 Other ratios

The reduction in corporate taxes following an increase in debt tested in hypothesis 11, may be found from calculating the efficient **corporate tax rate** at different time periods. We calculate the corporate tax rate in the following way:

$$1 - \frac{Net\ income}{Income\ b.f.tax}$$

The last ratio we present is probably the best way of testing the redistribution of wealth hypothesis by Schleifer and Summers. This ratio will be used for testing hypothesis 13. By studying the difference between **wage expenditures relative to sales** at different time periods we will be able to check whether the company spends more or less on their employees independent of how the company has been growing:

$$Wage\ expenditures\ to\ sales: \frac{Wage\ expenditures}{Sales}$$

7. Data

This section will focus on how data for the ratios was collected. The number of buyout transactions in the Norwegian private equity market is fairly low and has given us a bit of a challenge through the data collection phase. We will in this part give the reader a presentation of how we have collected the data, an explanation of the assumptions we have made, and an overview of the final data set. In addition, we will try to discuss the problems we encountered while searching for information.

7.1 Identifying the PE Funds and the Buyout Transactions

As we are focusing on Norwegian PE firms we have used the membership list of the Norwegian Venture Capital Association (NVCA) to identify relevant PE firms. From NVCA's membership list we were able to find PE firms that specialize in the Norwegian buyout segment. After correcting for PE firms that did not have any realized deals we came up with a list of 12 PE firms. After exclusion of deals where we were not able to gather data our list was down to 9 PE firms[37]. These PE firms were initially supposed to be Norwegian, but we have included a few transactions by Nordic PE firms with offices in Norway as well because they had some realized transactions of Norwegian companies in the Norwegian buyout market.[38] Moreover, we included Whitecliff AS in our list, a Norwegian investment company, as this company was not listed as member at NVCA.

A summary of a PE firm's realized buyout transactions could in most cases be found through the firm's web page. However, if the PE firm had not included the information we needed on their web page we had to rely on other sources such as electronic databases (Zephyr[39] and Venture Expert[40]) and press releases. In addition, we contacted a few PE firms directly and asked for the information we needed.

[37] A list of the PE firms may be found in Appendix III.
[38] Dynal Biotech Holding ASA (Nordic Capital) and Dyno Nobel (IK Investment Partners).
[39] Contains information on M&A activity, IPOs, joint ventures and private equity deals. Published by Bureau van Dijk.
[40] The most comprehensive venture capital and private equity research tool available in the market today. Published by Thomson Financial.

Even though the Norwegian buyout market is quite small and has not experienced many realized transactions so far we had to fulfill certain criteria in order to ensure a certain degree of standardization and comparability between the data. During this process we had to consider a certain tradeoff between the use of quantitative data and qualitative data, so in order to obtain a larger data set we had to be somewhat flexible when classifying the different deals.

We have been somewhat flexible when considering the PE fund's share of ownership. Preferably, we wanted to focus on deals where the PE fund owned more than 50 percent of the acquired company. However, as this would give us significantly fewer deals to analyze, we had to ease this assumption[41].

The Norwegian buyout market is also quite young which means we will not find many deals realized during the 90s. However, we did find a few and have included every deal where financial information for the year before entry was possible to obtain. Consequently, our time period is 1993-2007.

7.2 Data Gathering

The buyout deals in our list that fulfilled the criteria above were further analyzed and we started gathering financial information for these deals. During this process we used two publicly available databases; Amadeus and Ravn Foretaksinformasjon. Since the information in these databases is limited to 10 years we were also dependent on the companies' annual reports to gather information for deals older than 10 years. A list of people we have been in touch with to collect these could be found in Appendix IV. We have excluded companies that had an exit after 2007 because we needed accounting information for at least one year after exit. To locate the entry and exit years we used the companies' web pages as well as press releases and databases[42]. A few of the PE firms were also willing to help us with confirming entry and exit dates for some of their deals.

[41] Ownership structure for many of the deals was difficult to obtain as well.
[42] Venture Expert and Zephyr.

7.3 Problems

The original list of realized buyout transactions we extracted consisted of 76 companies. All of these companies could not be included in the final list because they either did not meet the criteria we had chosen, or they lacked the financial information we needed. Many of the deals we had in the original list turned out to look more like venture capital investments instead of buyout investments and therefore had to be excluded.[43]

Another problem we encountered was the lack of financial information for acquired divisions of a corporation before entry as they did not have standalone data for that particular division. Furthermore, companies that became part of a "buy-and-build" strategy were hard to track after exit because they had become part of a completely new corporation or part of an already complex structure. Some companies also changed names after acquisition which differed from the one sited on the PE firms' web pages. Most of these companies were possible to locate by doing more extensive research. For the older deals, and especially for those older than 10 years, financial information was not available in the databases. However, by using the companies' annual reports we were able to extract the information we needed for most of these deals. Lastly, the number of observations for all our financial variables differs, as we were unable to obtain all necessary data for each company. For instance, if we were not able to identify the cost of sales to a company, we would not manage to calculate days inventory or days payable outstanding.

[43] We did, however, include a few deals that were in an expansion stage or a later stage because they already were large enough to give us credible data for our analysis.

7.4 Sample Distribution

In total, our final data set consist of 31 companies[44].

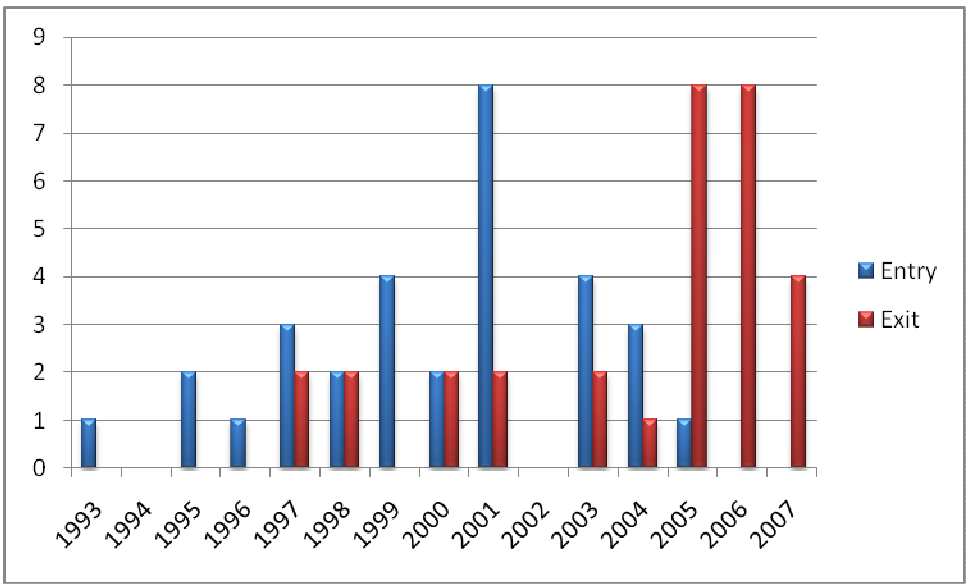

Figure 7.1 Sample distribution

The data set is too small to draw any significant conclusions from figure 7.1 but we notice that 2001 was the year with most entries and 2005/06 had the most exits. Average holding period was 3.84 years and minimum/maximum holding period was 1/9 year(s).

[44] A list of these companies may be found in Appendix II.

8. Preparation and Methodology

In this part we will describe the methods we used and the preparations we did for the analysis. The purpose is to give the reader a clarification of how we prepared for testing and the methods used for the testing, and also the opportunity to replicate our testing.

8.1 Time periods and financial information needed for testing

We have collected the necessary data from each company for a total of three time periods. These are one year before entry (Entry), one year after exit (Exit) and two years after exit (Exit +1). For companies that were exited in 2007 we only had available data for one year after exit.

There are several different figures from the companies' P&L statements and balance sheets we have used when testing our hypotheses and a list of these are provided in Appendix I. When comparing between BO companies and their respective peers the most appropriate figures for our peer groups proved to be the median observation rather than the mean observation since there were a few extreme observations that influenced the mean heavily. Thus the median from peer groups is used to match the ratios of the BO companies.

8.2 Peer Groups

The reason for comparing the buyout companies to other companies within the same industry is to capture the changes in general market conditions, but also to find out if BO companies were able to outperform non-PE-owned companies. Even if we observe changes in the financial test variables we will not be able to tell if these changes are attributed to the buyout company's tactical move or to exogenous factors affecting all companies. We have assigned a group of comparable companies to each target company. The peer group consists of five companies which are selected on the basis of the industry code of each target

company.[45] We have chosen to only include Norwegian companies in the peer groups because most of the target companies are Norwegian. However, it could be argued that some of the target companies are of such size that they also operate in the international market and that companies outside Norway should be included in the peer groups as well. As this thesis has its focus on Norwegian buyout transactions, we are of the opinion that the approach we have used, where only Norwegian companies are included, can be justified. We have also tried to pick companies that are as similar as possible to the target company regarding the size of their revenues. However, for some industries we found quite large differences between the sizes of the companies' revenue stream which do have some impact on the median results for our peer groups. For buyout companies with an entry earlier than 1998 we had to rely on Amadeus when gathering data for their peer companies because Ravn could only provide us with data ten years back in time.

8.3 Add-Ons and Divestitures

As mentioned earlier growth for buyout companies are often generated through add-on acquisitions and should be accounted for in the analysis. However, since it has proven to be difficult to obtain private data on add-on acquisitions, we are not able to track how much of the revenue growth that stems from add-on acquisitions and how much that stems from internal growth. Furthermore, if a company has divested parts of the company due to corporate refocusing for instance, we will not be able to say whether negative growth is a result of divestments or a general decline in revenues. Acquisition and divestiture activity tend to be higher for PE-owned firms than for non-PE-owned firms and more companies are normally added than divested[46], so by not correcting for this in the analysis it will give us somewhat biased results. However, by using ratios and looking at figures relative to revenue, cost of sales and assets we believe that most of the figures we come up with will be corrected for add-ons and divestitures, assuming that the units that are added or divested have the same ratios as the relevant portfolio company. It is worth noting however, that employment growth tested in H12 still will be biased upwards due to the above mentioned fact regarding acquisition and divestiture activity.

[45] The industry codes are the ones used in RAVN database (also Brønnøysundregisteret)
[46] EVCA (2005)

8.4 Statistical method

The statistical method we are going to use when testing our hypotheses is the Student's t-test for paired and unpaired samples. Since our data material is fairly small we could also argue that the Wilcoxon signed rank test and the Mann-Whitney-Wilcoxon test would be more appropriate statistical methods to use. We have however, ranked each list of observations and removed the most extreme observations in each sample since these will influence our test statistic too much due to the low number of observations. Besides, some of these observations that were removed resulted in a bypassing of the normality assumption. Thus we will still be using the Student's t-test assuming that our data after removal of these observations are close to normally distributed.

Our test material consists of paired and unpaired samples. The paired samples are drawn from a population of calculated differences in financial variables between BO companies and their peer group from each of the time periods (entry, exit and exit +1) and differences between BO companies compared at different time periods. Consequently, a paired test intended for testing a sample group twice, before and after an experiment or a treatment, seems appropriate. The treatment in our case is the involvement of a PE firm. The unpaired samples on the other hand are used to test the difference between BO companies and their peers at the same time period. Considering that each BO company is in the same industry as their chosen peers we would claim that it is reasonable to assume that the equal variance assumption should hold in this case.

The t statistic found for paired samples is:

$$t = \frac{\overline{X}_D - \mu_0}{S_D / \sqrt{N}}$$

$\overline{X}_D$ is the mean difference between for example EBITDA margin for BO companies at entry and exit (or exit +1), while S_D is the corresponding standard deviation of the EBITDA margin difference. N is the number of observations. Since we are interested in testing whether there is a systematic difference from entry to exit, μ becomes zero assuming from the null hypothesis that the difference is zero.

When we correct for peers, $\overline{X}_D$ would typically be the difference between the difference in EBITDA margin for BO companies and the median for their peers between entry and exit (or exit +1). Thus we may test whether the difference in EBITDA margin between BO companies and their peers has changed significantly from entry to exit (or exit +1).

The t statistic for the unpaired samples would be:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s_{X_1X_2} \times \sqrt{\frac{2}{n}}} \qquad \text{where} \qquad s_{X_1X_2} = \sqrt{\frac{s^2_{X_1} + s^2_{X_2}}{2}}$$

Here $\overline{X}_1$ would be, for example, the mean debt share for BO companies at entry, while $\overline{X}_2$ would be the mean debt share for their corresponding peers also at entry. $s_{X_1X_2}$ is the pooled standard deviation of the two samples and n is the number of observations.

9. Results and Testing

In this part we will present our findings and test results for our hypotheses. We have performed t-tests for both industry adjusted variables and isolated variables. The results are categorized into the five groups we presented in 5.2:

- Revenue expansion
- Cost reductions/Margin improvements
- Improved asset utilization
- Financial engineering
- Employment

We report findings on ten, five and one percent significance levels and present the mean level at entry for each test. The reason for observing different mean levels at entry for each test is that BO companies, for which we did not have data for exit +1, had to be excluded in the tests that are showed on the right-hand side of the tables. Obviously this led to fewer observations and small differences in mean levels at entry for each test. Furthermore, the changes in values from entry to exit and exit + 1 are presented, including the industry-adjusted change in values[47]. In addition, we present the number of observations (N) for each test.

[47] The industry-adjusted change is basically the mean difference between BO companies and their peer groups' median. A more detailed explanation for each industry-adjusted measure is included in Appendix V.

9.1 Revenue expansion

Figure 9.1 reports revenue expansion for the BO companies in our sample.

This table presents the revenue level at entry, growth in revenue (CAGR) and the industry-adjusted CAGR for BO companies. The first column reports the development in these variables from entry to exit, while the second column reports the development from entry to exit +1.

*** 1 percent ** 5 percent * 10 percent	From Entry to Exit	N	From Entry to Exit +1	N
Revenue Expansion				
H1 **Revenue**				
Mean level at entry	573762		657529	
Mean CAGR	0,135 ***	24	0,113 ***	12
Mean industry-adjusted CAGR	0,040 *	24	0,038	12

Figure 9.1 Revenue Expansion (H1)

We observe from figure 9.1 that BO companies have experienced a significant revenue growth during the phase of active ownership. From entry to exit, the typical annual growth in revenues was as much as 13.5 percent[48] for the BO companies and from entry to exit +1, revenues typically grew with 11.3 percent on an annual basis[49]. When correcting for peers, we see that revenue growth is substantially reduced, but still higher than their peers. More specifically, BO companies experienced a 4 percent higher revenue growth annually[50] than their peers between entry and exit, and an annual revenue growth of 3.8 percent between entry and exit +1.

These results are consistent with the hypothesis that PE-owned companies have a higher growth in revenues than non-PE-owned companies. We are not able to distinguish between the effects of internal and external revenue growth from our results. However, there is reason to believe that most of the outperformance of BO companies in regards to revenue growth stems from external revenue growth since BO companies, as mentioned earlier, tend to have an especially higher acquisition activity than their peers. Accordingly, we might suggest that the additional revenue growth for BO companies results from add-on investments that are undertaken.

[48] On a 1 percent significance level
[49] On a 1 percent significance level
[50] On a 10 percent significance level.

9.2 Cost reduction/Margin improvements

Figure 9.2 summarizes the changes in EBITDA margin and ROA. When testing the BO companies isolated from their peers we observe a significant[51] increase in EBITDA margin from entry to exit and exit + 1 of 4.9 and 3.2 percent. In other words, the PE firms have been successful in improving operating efficiency in their target companies. Our findings for the Norwegian PE market are thus consistent with Kaplan's findings on this area. However, Kaplan was able to find significant improvements even after adjusting for industry changes. Based on our findings, it is not possible to draw any conclusion as to whether BO companies have outperformed their peers. We find that BO companies had a weaker growth in EBITDA than their peers from entry to exit, but a higher growth from entry to exit +1. None of the findings are significant however.

This table presents the entry level for EBITDA margin and ROA for BO companies and how much they have both changed from entry to exit and entry to exit+1. In addition, it presents the change in industry-adjusted measures for both EBITDA margin and ROA.

*** 1 percent ** 5 percent * 10 percent	From Entry to Exit	N	From Entry to Exit +1	N
Cost Reductions/Margin Improvements				
H2 **EBITDA margin**				
Mean level at entry	0,043		0,045	
Mean change	0,049 **	24	0,032 **	14
Mean industry-adjusted change	-0,012	27	0,013	17
H3 **ROA**				
Mean level at entry	0,034		0,035	
Mean change	0,034 *	26	0,021	16
Mean industry-adjusted change	-0,014	25	-0,035 **	16

Figure 9.2 Cost reductions/Margin improvements (H2 and H3)

When looking at changes in ROA for BO companies, we also observe a strengthening from entry to exit (3.4 percent) and from entry to exit +1 (2.1 percent). While Kaplan found significant improvements[52] for operating income relative to sales we find somewhat significant improvements for net income relative to sales, at least from entry to exit[53]. However, when adjusting for industry changes our results show evidence of an underperformance from the BO companies of 3.5 percent compared to their peers between

[51] On a 5 percent significance level.
[52] On a 1 percent significance level
[53] On a 10 percent significance level

entry and exit +1[54], which is in strong contrast with the findings of Kaplan. On the other hand, Kaplan used operating income relative to assets in his measurements compared with our net income relative to assets. Thus, there might be aspects such as higher interest expenses due to a presumably higher debt share and also other expenses that have forced net income in the BO companies down. This argument, together with a low number of observations indicates that the industry-adjusted results from H3 should be interpreted with caution.

Nevertheless, the results from looking at isolated changes in EBITDA margin and ROA between entry and exit and exit +1 for the BO companies were as expected. We observe increased numbers for both ratios, and three of them are significant on either 5 percent or 10 percent significance levels. The results from testing BO companies against comparable firms were, as mentioned above, somewhat unexpected. The BO companies have performed slightly worse than their control group in the period from entry to exit and exit +1.

9.3 Improved asset utilization

The results for revenue growth and cost reductions show mixed results. The BO companies have been successful in generating revenues and less successful in reducing costs. This section examines asset utilization and more specifically capital productivity, looking at different ratios evolved around managing working capital. Figure 9.3 presents results for improved asset utilization.

[54] On a 5 percent significance level

This table presents the entry level for Days Receivables, Days Inventory, Days Payable Outstanding and Working Capital Turnover for BO companies and how much they have all changed from entry to exit and entry to exit+1. In addition, it presents the change in industry-adjusted measures for the ratios.

*** 1 percent ** 5 percent * 10 percent		From Entry to Exit	N	From Entry to Exit +1	N
Improved Capital Productivity					
H4	**Days Receivables**				
	Mean level at entry	56,6		64,2	
	Mean change	3,6	20	-6,5	11
	Mean industry-adjusted change	-7,4	18	-31,2 **	10
H5	**Days inventory**				
	Mean level at entry	42,7		38,2	
	Mean change	-7,8	12	-23,4 **	8
	Mean industry-adjusted change	-35,0 *	13	-76,9 ***	7
H6	**Days Payable outstanding**				
	Mean level at entry	99,0		107,7	
	Mean change	-1,2	18	-8,9	9
	Mean industry-adjusted change	31,5 ***	18	15,7	9
H7	**Working Capital Turnover**				
	Mean level at entry	4,5		4,8	
	Mean change	-0,6	17	-0,7	13
	Mean industry-adjusted change	-2,4	19	-4,4 *	12

Figure 9.3 Improved capital productivity (H4-H7)

The BO companies have been able to accelerate the collection of receivables compared to their peers during the holding period. They have had a positive change of 7 days from entry to exit and 31 days[55] from entry to exit +1 compared to their peers. However, the change from entry to exit is due to a larger increase in days receivables for comparables instead of a decrease in days receivables for buyout companies. Days receivables for buyout companies have actually increased with 3.6 between entry and exit. On the other hand, we observe a decrease by 6.5 days between entry and exit +1. The difference between the two periods is probably related to the difference in number of observations for each period.

From figure 9.3 we also observe that days inventory for BO companies decreases in both periods. The decrease gets larger when we move from exit to exit +1, which is similar to what Smith (1990a) found in her studies and from entry to exit +1 the decrease is significant at a 5 percent level. The development from exit to exit +1 may indicate that the PE firms have been successful in establishing efficient routines for inventory control in their target

[55] Significant on a 5 percent level

companies and that the implemented routines live on even after the exit of the PE firm. In addition, days inventory decreases at a higher ratio than the industry controls. The difference is particularly high between entry and exit +1 with an improvement of nearly 77 days compared to their peers, and the result is significant at one percent level.

The results for days payable outstanding show that days payable outstanding actually have decreased from entry to exit and exit +1, but the results are not particular significant. However, when looking at the changes in days payable outstanding for BO companies relative to their peers, we observe a significant difference from entry to exit[56]. Thus, the results are in line with our hypothesis, but the decrease in days payable outstanding compared to peers is surprisingly more a result of a reduction for comparables rather than an extension of days payable outstanding for BO companies. Smith did not find any significant changes in days payable for BO companies.

Finally, working capital turnover has developed in the opposite direction of what we would expect based on our hypothesis and at the same time the ratio shows the opposite development than what Smith found in her studies. We observe a reduction in working capital turnover for the BO company, both from entry to exit and from entry to exit + 1. Furthermore, the results show reduced turnover relative to comparables as well. In general however, these differences are not significant and we are not able to draw any specific conclusions.

[56] Significant on a 5 percent level

9.4 Financial engineering

In the following section we want to test differences in long-term debt share for BO companies against their peers at different time periods and the development between entry and exit for the BO companies.

This table presents the Long-Term Debt Share levels for BO companies and the Peer groups, as well as difference between these two groups. The first column reports the entry level. The second column reports the exit level, while the third column reports the exit+1 level.

*** 1 percent ** 5 percent * 10 percent		From Entry	N	From Exit	N	From Exit +1	N
Financial engineering							
H8	**Long-Term Debt Share**						
and	Mean level BO	0,200		0,179		0,178	
H9	Mean level peers	0,169		0,142		0,136	
	Difference in debt share	0,031	24	0,037	27	0,042	16

Figure 9.4 Financial Engineering (H8 and H9)

We started off by checking long-term debt levels at entry for both BO companies and comparables. The results from figure 9.4 show a slightly higher debt share for buyout companies at entry, but not significantly. We expected that the typical target company of a PE firm would have a low debt share relative to its peers but based on these results we are not able to draw any conclusions regarding different debt levels between BO companies and peers at entry.

We further investigate the difference in long-term debt share between buyout companies and comparables between exit and exit + 1. Figure 9.4 shows that debt share is still higher for buyout companies, although not significantly. Thus the results are consistent with our hypothesis that the debt share of BO companies is more or less the same as their peers after the PE firm exit.

This table presents the entry level for Long-Term Debt Share and Corporate Tax Rate for BO companies and how much they have both changed from entry to exit and entry to exit+1. In addition, it presents the change in industry-adjusted measures for both Long-Term Debt Share and Corporate Tax Rate.

*** 1 percent ** 5 percent * 10 percent	From Entry to Exit	N	From Entry to Exit +1	N
Financial engineering				
H10 **Long-Term Debt Share**				
Mean level at entry	0,200		0,184	
Mean change	-0,025	24	0,007	13
Mean industry-adjusted change	0,036	26	0,020	14
H11 **Corporate Tax Rate**				
Mean level at entry	0,431		0,521	
Mean change	-0,134 *	13	-0,426	8
Mean industry-adjusted change	-0,014	16	-0,123	9

Figure 9.5 Financial Engineering (H10 and H11)

When looking at the change in long-term debt share for BO companies, we found that BO companies increased their debt share with respectively 3.6 percent and 2 percent more than their comparables from entry to exit and entry to exit +1. This is in line with our hypothesis, which says that BO companies increase debt levels more than their peers from entry to exit. The significance levels of these results, however, are above ten percent leaving us no room for any categorical conclusions.

The next section focus on the reduced taxes that stem from the high amount of debt BO companies take on after the entry of a PE firm. We have tested whether or not tax rates for BO companies have changed relative to their peers. Furthermore, we have compared tax rates for BO companies before entry and after exit. Our results are summarized in the last part of figure 9.5.

The corporate tax rate for BO companies is significantly lower[57] at exit relative to entry (-13.4 percent). The initial conclusion to be drawn from this result is that PE firms have added additional debt to their BO companies and thereby the BO companies have made substantial tax-deductible interest payments, which in turn translates into lower taxes. However, from H8 and H9 we observed that isolated long-term debt on average had been reduced by a small percentage making this explanation for a lower corporate tax rate somewhat superfluous.

[57] Significant on a 10 percent level

Another explanation for the lower tax rate could therefore be that PE firms have decreased financial revenues rather than increased interest payments.

When comparing tax rates for BO companies with tax rates for their peers, we observe that corporate tax rates have been reduced more for BO companies, which is in line with our hypothesis. Thus, the signs of the corporate tax rate differences are consistent with the findings of Muscarella (1990), even though they are not significant.

9.5 Employment

Figure 9.6 presents changes in employment and wage expenditures.

This table presents the entry level for Employment and Wage Expenditures/Sales for BO companies and how much they have both changed from entry to exit and entry to exit+1. In addition, it presents the change in industry-adjusted measures for both Employment and Wage Expenditures/Sales.

*** 1 percent ** 5 percent * 10 percent		From Entry to Exit	N	From Entry to Exit +1	N
Employment					
H12	**Employment**				
	Mean level at entry	312		215	
	Mean CAGR	0,026	23	0,017	11
	Mean industry-adjusted CAGR	0,001	23	-0,007	11
H13	**Wage Expenditures/Sales**				
	Mean level at entry	0,281		0,336	
	Mean change	-0,012	26	-0,064	10
	Mean industry-adjusted change	-0,070 *	26	-0,030	12

Figure 9.6 Employment (H12 and H13)

From figure 9.6 we can see that annual employment growth from entry to exit and from entry to exit +1 were respectively 2.6 percent and 1.7 percent. As mentioned in 8.3 however, these results are probably upwards biased due to the extensive acquisitions performed by BO companies. The results will to some extent be corrected by adjusting for industry changes and by looking at these numbers we can see that there is practically no difference in annual employment growth between BO companies and peers. A common belief has been that BO companies have a negative impact on employment during holding period. In contrast, our results show a different side of this issue. Thus, much like Kaplan we cannot confirm the wealth transfer hypothesis suggested by Schleifer and Summers based on H12.

However, even the industry-adjusted changes in H12 are in danger of being somewhat biased due to the more aggressive acquisition strategies undertaken by BO companies than their peers and for that reason we should not necessarily put too much emphasis on the findings from H12. Our attempt to fully control for the acquisition and divesture problem was to look at wage expenditures relative to sales instead of just looking at changes in number of employees. From the results for H13 we are able to see that the BO companies have reduced their level of employee expenses. The industry-adjusted changes tell us much of the same picture and the industry-adjusted reduction in wage expenditures relative to sales for BO companies is significant on a 10 percent level from entry to exit (-7 percent). Consequently, these results are partly in line with the belief of wealth redistribution from employees to shareholders stated by Schleifer and Summers. However, it is worth noting that the wealth transfer hypothesis pertains to actual employment changes rather than industry-adjusted changes.

10. Limitations of Study and Areas of Future Research

This paper's approach has been to offer a broad overview of potential sources and drivers of value creation in a buyout process and to explore the effect some of these drivers have on buyout companies in the Norwegian market. The empirical part has focused on the direct drivers and a few financial ratios and figures. The use of ratios and figures could be extended to present another perspective on the development for these drivers. Previous studies have shown that the effect of these drivers on value creation can be tested differently. In addition, studies that focus on changes in R&D expenses for companies that have been involved in a PE acquisition could be very useful as there has been little research on this topic for the Norwegian PE market. We found this challenging to test since it was rather difficult to obtain R&D expenses for the different BO companies.

Collection of data for the peer groups we have designed for this study is another example of what could be extended. A peer group consisting of five companies is likely to be too small and an extension including more companies would probably give a better industry-adjusted measure. Furthermore, testing the same hypotheses as in this thesis in a few years time should contribute to more significant results and powerful conclusions due to larger sample groups. The Norwegian market for leveraged buyouts is still fairly young as we have emphasized several times throughout this paper.

Another interesting aspect would be to look at value creation from financial arbitrage as well. This is a complicated task to measure properly and in addition it requires access to private information from the PE firms, which has proven to be difficult to obtain as the PE companies are very reluctant to share this information. However, if one is able to cooperate with some PE firms, there are quite a few studies of interest which can be done. Information such as purchase price and sale price for each of the buyouts could be used to split the entire value creation for each PE firm into smaller parts (leverage, revenue, margin, multiple) based on the DuPont formula and get an impression of which of the drivers that contribute with most of the value creation.

11. Conclusions

In this paper we have presented evidence on post-buyout operating changes in 31 buyouts completed by Norwegian PE firms between 1993 and 2007. Our intention was to test whether Norwegian PE firms have created value in their respective portfolio companies. In addition we tested Schleifer and Summers' wealth transfer hypothesis.

Our results tell us that BO companies have experienced significant revenue growth and changes in EBITDA margin from the year prior to buyout to the years after PE firms have exited. Changes in ROA and capital productivity are in general not significant[58] and we cannot conclude as whether or not there have been positive changes in these ratios due to the involvement of a PE firm. In terms of leverage we observe small insignificant changes in long-term debt share for BO companies from the year prior to buyout to the years after PE firms have exited and the debt levels are not especially different from their peers at entry, exit and exit +1. In addition we observe a decline in corporate tax rates for BO companies, but not exceptionally significant changes[59]. Annual employment growth and changes in wage expenditures relative to sales do not suggest any dramatic decreases in employment or level of wage expenditures in the BO companies during the PE firms' holding period.

After adjusting for industry changes and thereby deducting changes due to general market conditions or specific developments in the companies' industry, the results are somewhat different than the isolated results. Revenue growth and changes in EBITDA margin and ROA are not significant different from their peers and we cannot draw any conclusion regarding outperformance of BO companies relative to peers[60]. In fact we find that comparables outperform BO companies from entry to exit +1 when testing changes in ROA, but as noted in 9.2 this could be a result of a presumably higher debt share and thus higher interest expenses for BO companies.

In terms of capital productivity we find some evidence of significant changes, especially for days receivables, days inventory and days payable. However, the results from entry to exit

[58] Median change in ROA from entry to exit however, and days inventory from entry to exit +1, proves significant changes on a 10 percent and 5 percent level respectively.
[59] Significant reduction in corporate tax rates from entry to exit on a 10 percent significance level
[60] Industry-adjusted revenue growth however, is significant on a 10 percent significance level

and entry to exit +1 do not produce consistent significant changes. Similarly to the isolated tests, we do not find any significant changes in debt levels and difference in debt levels at entry, exit and exit +1. Finally, our results suggest that BO companies practically have the same annual employment growth as their peers during PE firms' holding period. The test on changes in wage expenditures relative to sales gives slightly different results, suggesting that BO companies have reduced its level of wage expenditures at least from entry to exit.

References

Literature:

Anders, G. (1992). "The 'barbarians' in the boardroom." Harvard Business Review 70(4): 79.

Anslinger P.L, Copeland T.E (1996) - "Growth through acquisitions: A fresh look." McKinsey Quarterly(2): 96

Baker, G. P. and K. H. Wruck (1989). "Organizational Changes and Value Creation in Leveraged Buyouts." Journal of Financial Economics 25(2): 163.

Baker, G. P. and Wruck, K. H. (1989). "Organizational Changes and Value Creation in Leveraged Buyouts: The case of O.M. Scott & Sons Company". Journal of Financial Economics 25(2): 163-190.

Baker, G. P. and C. A. Montgomery (1994). "Conglomerates and LBO associations: A comparison of organizational forms." Harvard Business School Working Paper(November 4): 1-34.

Baker, G. P. and G. D. Smith (1998). "The New Financial Capitalists: Kohlberg Kravis Roberts and the Creation of Corporate Value." Cambridge University Press.

Berg, A. and O. Gottschalg (2003). "Understanding value generation in buyouts." INSEAD working paper.

Brealy, R., S. Myers and F. Allen (2008). "Principles of Corporate Finance, 9th edition." McGraw-Hill Education

Bull, I. (1989). "Financial Performance of Leveraged Buyouts: An Empirical Analysis." Journal of Business Venturing 4(4): 263

Butler, P. A. (2001). "The Alchemy of LBOs." The McKinsey Quarterly (2): 140-151.

Cotter, James F. and Sarah W. Peck (2001). "The structure of debt and active equity investors: The case of the buyout specialist." Journal of Financial Economics 59(1): 101-147.

Demsetz, H. (1983). "The Structure of Ownership and the Theory of the Firm." Journal of Law & Economics 26(2): 375.

Ennis Knupp (2004). "Private Equity Overview"

Fama, E. F. and M. C. Jensen (1985). "Organizational Forms and Investment Decisions." Journal of Financial Economics 14(1): 101.

Fox, I. and A. Marcus (1992). "The Causes and Consequences of Leveraged Management Buyouts." Academy of Management Review 17(1): 62.

Gilbert X., Strebel P. (1987) – "Strategies to outpace the competition." Journal of Business Strategy 8(1): 28.

Gjerland, K. (2007). "Private Equity on the rise in Norway: The effects of active ownership on post-buyout performance."

Grossman, S. J. and O. Hart (1982). "Corporate and financial structure and managerial incentives." The Economics of Information and Uncertainty. J. McCall Ed.).

Grubb, M. and S. Jonsson (2007). "The Operating Impact of Buyouts in Sweden – A Study of Value Creation."

Gulliksen, A-V. et al (2008). "The Operating Performance of Scandinavian Private Equity Companies."

Hall, B. H. (1990). "The impact of corporate restructuring on industrial research and development." Brokings Papers on Economic Activity: 85.

Jensen, M. C. (1989a). "Active investors, LBOs and the privatization of bankruptcy." Journal of Applied Corporate Finance 2(1): 35-44.

Jensen, M. C. (1989b). ”Eclipse of the public corporation.” Harvard Business Review 67(5): 61

Jensen, M.C and R.S Ruback (1983). “The market for corporate control.” Journal of Financial Economics 11(1-4): 5.

Kaplan, S. (1989). ”The effects of management buyouts on operating performance and value.” Journal of financial economics 24(2): 217

Kaplan S. (1990) – ”Sources of value in managed buyouts.” Journal of Financial Economics.

Kaufman, A. and Englander, E. (1993). “Kravis Roberts & Co. and the restructuring of American capitalism”. Business History Review 67(1): 52-97.

Kester, W. C. and T. A. Luehrman (1995). “Rehabilitating the Leveraged Buyout.” Harvard Business Review 73(4): 119.

Kitching, J. (1989), “Early returns on LBOs: A transatlantic study sheds new light on how and why they work.” Harvard Business Review 67(6): 74-81.

KKR (1989). “Leveraged Buy-Outs”. Journal of Applied Corporate Finance 2(1): 74-81.

Lee, D. S. (1992). “Management Buyout Proposals and Inside Information.” Journal of Finance 47(3): 1061.

Lehn, K and A. Poulsen (1990). “The economics of event risk: The case of bondholders in leveraged buyouts.” Journal of Corporation Law 15(2): 199.

Lichtenberg F. R, Siegel D. – ”The effects of leveraged buyouts on productivity and related aspects of firm behaviour.” Journal of Financial Economics 27: 165-194.

Liebeskind, J. P. et al (1992). “LBOs, Corporate Restructuring, and the Incentive-Intensity Hypothesis.” Financial Management: 73-88.

Lowenstein, L. (1985). ”Management Buyouts.” Columbia Law Review 85(4): 730-784.

Lundgren, G. and P. Norberg (2006). “Operating Performance in Swedish Buyouts 1988-2003.”

Magowan, P. A. (1989). “The Case of LBOs: The Safeway Experience” California Management Review 23(1): 9-19

Muscarella, C. and M. Vetsuypens (1990). “Efficiency and organizational structure, A study of reverse LBOs” Journal of Finance 45(5): 1389-1413

Myers, R. L. (1984). ”Lowering Barriers to Innovation.” Journal of Business Strategy 5(1): 80.

Newbould, G. D. and R. E. Chaffield (1992). “Leveraged buyouts and tax incentives.” Financial Management

Opler, T. (1992). “Operating performance in leveraged buyouts: Evidence from 1985-1989.” The Journal of Financial Management Association 22(1): 27

Opler, T. and S. Titman (1993). ”The determinants of leveraged buyout activity: Free cash flow vs. financial distress costs.” Journal of Finance 48(5): 1985.

Palepu, K. G. (1990). ”Consequences of leveraged buyouts.” Journal of Financial Economics 27(1): 247.

Phan, P. H. and C. W. L. Hill (1995). “Organizational Restructuring and Economic Performance in Leveraged Buyouts: An Expost Study.” Academy of Management Journal 38(3): 704-739

Porter, M.E (1996). “ What is strategy?” Harvard Business Review 74(6): 61.

Reyes, J. and E. Mendell (2004). “Private Equity Performance Continued Positive Growth in Q1 2004.” Venture Economics and NVCA NEW YORK, NY(July 21, 2004).

Samdani, S. et al (2001). “The Alchemy of Leverage Buyouts.” Value Creation: Strategies for the Chemical Industry, Weinheim, Wiley-VCH Verlag: 93-107.

Seth, A. and J. Easterwood (1993). “Strategic Redirection in Large Management Buyouts: The evidence from post-buyout restructuring activity.” Strategic Management Journal 14(4): 251-273.

Singh, H. (1990). ”Management Buyouts: Distinguishing Characteristics and Operating Changes Prior to Public Offering.” Strategic Management Journal 11(4): 111.

Smith, A. J. (1990a). ”Corporate ownership structure and performance.” Journal of Financial Economics 27(1): 143.

Smith, A. (1990b). ”The effects of leveraged buyouts.” Business Economics 25(2): 19

Waite, S and M. Fridson (1989). “Do leveraged buyouts pose big risks for the U.S. financial system?” Merger and Acquisitions March-April: 43-48.

Wright, M. et al. (1992a). “Buy-Outs, divestment and leverage: Restructuring transactions and corporate governance.” Oxford Review of Economic Policy 8(3): 58-69.

Wright, M. and K. Robbie (1996). ”The investor-led buy-out: A new strategic option.” Long Range Planning 29(5): 691.

Wright, M., R. Hoskisson and L. W. Busenitz (2001). “Firm Rebirth: Buyouts as Facilitators of Strategic Growth and Entrepreneurship.” Academy of Management Executive 15(1): 111-125.

Internet links:

Center for private equity and entrepreneurship (2003). “Note on leveraged buyouts”
http://mba.tuck.dartmouth.edu/pecenter/research/pdfs/LBO_Note.pdf

Argentum on the lack of long-term institutional capital:
http://www.argentum.no/index.php?struct=23&lang=nor

“Principal-agent theory”
http://www.referenceforbusiness.com/encyclopedia/A-Ar/Agency-Theory.html

Corporate and Finance in Europe: “Main Mergers and Acquisitions Definitions”
http://www.corporatefinanceineurope.eu/mergers_and_acquisitions_definitions.htm

Library of Economics and Liberty: “Market for Corporate Control”
http://www.econlib.org/library/Enc/MarketforCorporateControl.html

2.1 What is Private Equity?
http://financecareers.about.com/od/investmentcompanies/a/privateequity.htm

BVCA (2004). ”A Guide to Private Equity”
http://admin.bvca.co.uk/library/documents/Guide_to_private_equity.pdf

Chicago Booth Publication
http://www.chicagogsb.edu/research/workshop/finance/docs/metrick-pe.pdf

Definitions:

Net income:	http://www.investopedia.com/terms/n/netincome.asp
EBITDA:	http://www.investopedia.com/articles/06/ebitda.asp
Liabilities:	http://www.investopedia.com/terms/l/liability.asp
NWC:	http://www.investopedia.com/terms/w/workingcapital.asp
Margins:	http://www.investopedia.com/terms/p/profitmargin.asp

Other references:

NVCA (2007). “Aktivitetsanalyse”

EVCA (2008): “EVCA Private Equity Activity Survey 2008 – Europe”

EVCA (2008): “EVCA 2008 Nordic Report – An EVCA Research Paper”

Lecture in Financial Statement Analysis, Bocconi (2008) -“Ratio analysis”

Appendices

Appendix I: Accounting variables

Revenues	Inventory
Operating expenses	Accounts payable
Cost of sales	Total assets
Cost of employees	Employment
EBITDA	Working capital
Income before tax	Equity
Net income	Non-current liabilities
Accounts receivable	

Appendix II: BO companies

Nordpeis	Selmer
Grenland Group	Plugging Specialists International (PSI)
Cermaq ASA	daVinci Consulting AS
Software Innovation	Handicare
Jernia	SPT Group AS
VIA Gruppen	Konsberg Automotive
Sonans	VIA Travel Group ASA
Component Software	Luxo
Cogen	Dynal Biotech Holding ASA
Odim	Pan Fish
Scribona	Jøtul (now Klippen Invest ASA)
Bjørge ASA	Noral designer
Point International AS	Expert
Webcenter Unique	EDB
Aalesundfisk	Dyno Nobel
Plantasjen	

Appendix III: PE companies

Norgesinvestor	IndustriKapital
Norvestor	FSN Capital
Reiten	Nordic Capital
Altaria	Whitecliff
HitecVision	

Appendix IV: Companies providing annual reports

Company	**Contact**
PSI	*Ina Svensen*
Norgesinvestor	*Richard Bjørkmann*
ISS Personalhuset	*Bjørnar Jaabæk*
Selmer	*Sissel Carlsen*
Bjørge	*Sindre Flydal*
Odim	*Toivo Nilsen*
Kongsberg Automative	*Kari Anne Romarheim Soltvedt*
APL	*Knut Sæthre*
Dyno Industrier	*Pål Moe*
Ide Skeidar	*Linn Kupen*
EDB	*Liv Skotner*
Elkjøp	*Kjersti Gjertsen*
Expert	*Philip Straumsheim*
Ide Skeidar	*Audrey Linn Kupen*

Appendix V: Explanation to the industry-adjusted variables

Industry-adjusted CAGR for Revenues

$$\left[\frac{Revenues\ BO_{exit}}{Revenues\ BO_{entry}}\right]^{\frac{1}{n}} - \left[\frac{Median\ Revenues\ peers_{exit}}{Median\ Revenues\ peers_{entry}}\right]^{\frac{1}{n}} - 1$$

Industry-adjusted CAGR for Employment

$$\left[\frac{Employment\ BO_{exit}}{Employment\ BO_{entry}}\right]^{\frac{1}{n}} - \left[\frac{Median\ Employment\ peers_{exit}}{Median\ Employment\ peers_{entry}}\right]^{\frac{1}{n}} - 1$$

Industry-adjusted change in EBITDA margin (EM)

$$\left(EM_{Exit} - EM_{Entry}\right)_{BO\ company} - \left(Median\ EM_{Exit} - Median\ EM_{Entry}\right)_{peer\ group}$$

Industry-adjusted change in ROA

$$\left(ROA_{Exit} - ROA_{Entry}\right)_{BO\ company} - \left(Median\ ROA_{Exit} - Median\ ROA_{Entry}\right)_{peer\ group}$$

Industry-adjusted change in Days Receivables (DR)

$$\left(DR_{Exit} - DR_{Entry}\right)_{BO\ company} - \left(Median\ DR_{Exit} - Median\ DR_{Entry}\right)_{peer\ group}$$

Industry-adjusted change in Days Inventory (DI)

$$\left(DI_{Exit} - DI_{Entry}\right)_{BO\ company} - \left(Median\ DI_{Exit} - Median\ DI_{Entry}\right)_{peer\ group}$$

Industry-adjusted change in Days Payable Outstanding (DPO)

$$\left(DPO_{Exit} - DPO_{Entry}\right)_{BO\ company} - \left(Median\ DPO_{Exit} - Median\ DPO_{Entry}\right)_{peer\ group}$$

Industry-adjusted change in Working Capital Turnover (WCT)

$$\left(WCT_{Exit} - WCT_{Entry}\right)_{BO\ company} - \left(Median\ WCT_{Exit} - Median\ WCT_{Entry}\right)_{peer\ group}$$

Industry-adjusted change in Long-Term Debt Share (LDS)

$$\left(LDS_{Exit} - LDS_{Entry}\right)_{BO\ company} - \left(Median\ LDS_{Exit} - Median\ LDS_{Entry}\right)_{peer\ group}$$

Industry-adjusted change in Corporate Tax Rate (CTR)

$$\left(CTR_{BO\ company} - CTR_{Median\ peer\ group}\right)_{Exit} - \left(CTR_{BO\ company} - CTR_{Median\ peer\ group}\right)_{Entry}$$

Industry-adjusted change in Wage Expenditures/Sales (WES)

$$\left(WES_{Exit} - WES_{Entry}\right)_{BO\ company} - \left(Median\ WES_{Exit} - Median\ WES_{Entry}\right)_{peer\ group}$$