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Corporate Governance in Private Equity: Do Boards Really Matter?

An empirical study of Norwegian private equity

Hadi Farran and Kim-Alexander Lâm

Supervisor: Associate Professor Carsten Bienz

Master thesis in Financial Economics

NORWEGIAN SCHOOL OF ECONOMICS

Fall 2015

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Hadi Farran and Kim-Alexander Lâm

December 21, 2015

Abstract

We examine how private equity funds affect corporate governance in Norwegian portfolio companies. We find that general partners do not prioritize the board as long as everything is going according to plan. We also find that when a company is taken private CEO turnover during the first year after the buyout is a matter of control change. Key factors of keeping the sitting CEO is thus highly based on information not directly tied to performance. Moving past this period into the monitoring period we find that performance becomes important. However, general partners do not seem to influence decisions about the CEO directly from the board. Furthermore, our findings suggest that the board is being neglected and interaction between general partners and management is conducted in alternative ways.

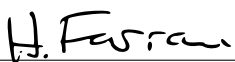**Keywords:** Private Equity, Corporate Governance, CEO Turnover.

Preface

This master thesis represents the end of our period at the Norwegian School of Economics, and a five-year study.

The process of finding an interesting subject was early determined as we found private equity to be intriguing. We are proud of what we have managed to learn and understand within the field of private equity and econometrics during this process.

While writing this thesis we are thankful for receiving constructive feedback and advice from friends and family. In addition we would like to thank Hilde Karine Sæberg and Ole Kristian Lohnaas for sharing their list of buyouts. We would also like to thank Andreas Olden for sharing his thoughts about the chosen methodology.

When gathering information about non-executive board of directors and chief executive officers we were fortunate to receive a data set from Aksel Mjøs, for which we are grateful. Last but not least we would like to thank our supervisor Carsten Bienz for his support and direct honesty. Knowing we were always welcome to drop by the office made the whole process easier.

Bergen, December 21, 2015

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Hadi Farran

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Kim-Alexander Lâm

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1 Introduction

Do boards really contribute to corporate governance? Or are they simply an irrelevance when it comes to how the company is structured and run? We set out to answer the following research question: *how do private equity funds affect corporate governance in Norwegian portfolio companies?* We focus on three aspects: (i) General Partners on the Board, (ii) CEO Turnover and (iii) Performance.

We run our analyzes on a data set we construct of Norwegian portfolio companies acquired by private equity (PE) funds[1] between 1999-2009. It is comprehensive and includes firm specific information, CEO turnover and board composition. With 100 portfolio companies we calculate descriptive statistics. However, as the availability of lagged performance measures prior to the buyout were difficult to track, our final data set consists of 76 companies with complementary information.

In the first part we find that PE funds prefer having fewer general partners (GPs) on the board when everything is going according to plan. Implicitly it means that the number of GPs on the board may increase in the more challenging cases. The results are firstly supported by the fact that co-investments between several PE funds do not demand more GPs on the board. Their time is valuable as they could be working on other projects, hence board positions do not seem to be emphasized. Secondly, changing the CEO shortly after the buyout does not have an impact on board composition. This is presumably because the PE firms undergo a thorough due diligence process prior to the buyout. Lastly, we find some evidence that increasing leverage also increases GPs on the board. Whether this is a matter of financial engineering or a monitoring device is unclear. Nevertheless, the evidence is weak. In short, PE funds do not seem to prioritize board positions.

In the second part of our analysis we examine which factors PE firms consider regarding CEO turnovers. We find that during the total holding period the main driver of a CEO change is past performance. However, as we believe the timing of the CEO change may provide further insight we divide the holding period into two sub periods - control and monitoring. The control period is defined between the buyout announcement and the

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[1]By construction, the PE funds are managed by the PE firms as shown in Figure 3. Thus we will use PE firms and PE funds interchangeably.

first year after the transaction. The monitoring period extends from the control period until the PE fund exit[2]. Figure 1 gives an illustration of how the total period is divided between the two.

Following our reasoning behind the timing of the turnovers, we find that a CEO change during the control period is due to a control and ownership change and thus heavily based on the preferences of the PE firms. A turnover suggests that the incumbent CEO is not considered the appropriate candidate to lead the company through the needed restructuring. The analysis shows that past performance does not affect CEO control changes. Leverage, on the other hand, seems to marginally explain some of these changes. We argue that high levels of leverage aligns incentives between managers and owners. This will in turn reduce the need for a control change, which is further supported by several academics (Kaplan and Strömberg, 2008; Gao, Harford, and Li, 2014).

Changing the CEO during the monitoring period is often a result of close monitoring. The board, which oversees the CEO, is often divided into two types - internal and external directors. External directors are members of the board who are not employed by - or in any other way directly connected to - management. Subsequently, internal directors are either employed, are major shareholders or are engaged in day-to-day operations (Weisbach, 1988). As GPs are a mixture of internal and external directors, it is not clear which factors GPs emphasize when monitoring the CEO. As internal directors they can incorporate soft information[3] when evaluating the CEO's performance. On the other hand, as external directors they also have equity stakes invested into the portfolio company through their fund. As GPs ultimately want to achieve high returns to their investors they should assess hard information[4] as well. This is confirmed in the analysis, implying that GPs rely heavily on past performance. We also find that co-investments tend to increase the probability of a CEO change during the monitoring period. This imply that the CEO has to fulfill additional requirements from the PE funds that are involved. The results strengthen our suspicion regarding the analysis of GPs on the board.

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[2]Or at the latest to 2013 as our data ends at that year.

[3]We define soft information as subjective information that is not easily measured. For instance personal characteristics, charisma, leadership style etc.

[4]We define hard information as unbiased information that is easily measured. For instance financial statements, key figures, profitability analyzes etc.

In the third and last part of our analysis we conclude that PE funds ignore the board and its formal functions. The findings do not reveal any specific link between value creation and the presence of GPs on the board. Nonetheless we find support documented from earlier studies that there is value creation in PE. We argue that interaction happens directly between GPs and management, thus aligning incentives, as potential agency cost may inflict substantial damage. This argument is supported by the advantageous effect that CEOs no longer have the opportunity of withholding information, which may hurt owners.

Methodologically we run fixed effects models for our board and CEO regressions where standard errors are clustered on firm level. Additionally we briefly discuss whether clustering on industry would be more efficient. Consequently by following a conservative approach we end up with the fixed effects model. When examining performance we need to address the endogeneity problem which arises. Three types of endogeneity problems are accounted for: unobservable heterogeneity, simultaneity and the one that arises from the possibility that current values of governance variables are a function of past firm performance (Wintoki, Linck, and Netter, 2012). To adjust for this we run a static model, a dynamic model, and a Two Stage Least Squares (2SLS) model. The choice and reasoning behind the econometric methods used in the respective regressions are discussed in section 5.

To summarize, we assess three areas. Firstly, we assess board composition with respect to GPs. Secondly, we examine what motivates CEO turnovers during the involvement of a PE firm and contribute to the literature on CEO turnover. Thirdly, we assess how PE involvement affects performance and whether it is through board positions. In total our results suggest that Norwegian PE funds ignore board positions and interact directly with management when restructuring the portfolio companies.

Common for all three contributions is that they add insight to the PE literature in terms of corporate governance. This has historically been difficult to address as the industry is opaque, making information and data collection difficult.

The thesis is organized as follows. Section 2 provides a brief overview of the basic concepts within the PE industry and how the funds are structured. Section 3 provides a literature review where we document earlier studies done within the relevant areas in order to answer our research question. Section 4 presents how the data set was constructed. Section 5 presents the analyzes where each part contain relevant summary statistics, methodology and our regression results. Section 6 addresses limitations and suggestions for future studies. Section 7 concludes.

2 Private Equity

At the simplest level private equity is a medium or long-term equity investment that is not publicly traded on an exchange (Cendrowski and Wadecki, 2012). It is often referred to as an alternative asset class pooled within a fund and invested in private companies. Figure 2 shows an overview of the two main segments within PE which is Venture Capital and Leveraged Buyouts.

Venture Capital (VC) invest in start-up and growth companies. These companies often have high technological risk and high R&D expenses. Furthermore, they usually need to undergo investments in equipment, intellectual property and more generally fixed assets (Demaria, 2013). VC contribute by giving access to capital markets, expertise and experience.

A Leveraged Buyout (LBO) is usually an acquisition of a mature company using leverage. Companies undergoing an LBO transaction have a history of strong earnings. However, due to factors such as poor management or market conditions these companies are not performing at par.

2.1 Private Equity Funds

Metrick and Yasuda (2011) define PE funds based on four specific characteristics. Firstly, a PE fund is a financial intermediary, meaning that it manage investors' capital and invest directly in portfolio companies. Secondly, a PE fund invest only in private companies. This means that once the investments are made, the companies cannot be immediately traded on a public exchange. Thirdly, a PE fund takes an active role in monitoring and helping the companies in its portfolio. Lastly, a PE fund's primary goal is to maximize its financial return by exiting investments through a sale or an initial public offering (IPO).

Figure 3 gives an overview of how the funds are structured and how the different entities are connected. The funds are organized as a limited partnership between GPs and Limited Partners (LPs) (Cendrowski and Wadecki, 2012).

GPs represent the PE firm and act as sole managers of the fund. The GPs contribute to the fund through their managerial skills and market expertize (Kaplan and Strömberg,

2008). They are compensated in three ways. The first way being a fixed fee which is a percentage of capital committed. The second way is through "carried interest", which GPs are entitled to as long as the fund generates a profit exceeding a specified threshold. This interest usually equals about 20% of the generated profits. Thirdly some GPs charge deal fees and monitoring fees to the companies in which they invest.

LPs, the investors, consist of a variety of entities such as corporations, banks, insurance companies, pension funds, foundations, sovereign wealth funds and university endowments. The investments are done at the discretion of the GPs, whom investors trust their capital (Weisbach, Axelson, and Strömberg, 2007). The LPs are by definition not able to influence the day-to-day operation of the fund as it may repeal their limited liability status.

2.2 Norwegian Private Equity

Norwegian PE funds have historically targeted small to mid capitalization companies. From the mid 80s the primary focus was towards information and communication technology companies, but has since shifted its focus towards oil and gas dominated companies. The industry has experienced increased growth during the last decade, where capital under management has grown from 7.5 BNOK in 2001 to 61.0 BNOK in 2011 (Hognestad, 2011). Buyouts account for approximately 33.8 BNOK and consist of about 13 Norwegian PE firms. This is where the PE industry has experienced highest growth in recent years.

3   Literature Review

The literature on corporate governance is extensive. It addresses the dynamic relationship between owners and management. Warner, Watts, and Wruck (1988) were one of the first to study the relationship between stock return and changes to top management. They find an inverse relationship between stock performance and CEO turnover implying that weak performance leads to CEO turnover. This issue has further been examined as academics try to distinguish monitoring differences between two types of board members - internal and external directors. Weisbach (1988) was one of the first to specifically examine external directors sensitivity to performance compared to internal directors. He finds that external directors on the board to a greater extent emphasize performance measurements. He further questions whether internal directors are more cautious in opposing the sitting CEO as their career is highly dependent of the CEO. Additionally, Adams and Ferreira (2007) suggest that independent boards, i.e. boards mainly consisting of external directors, monitor management more intensively. In their model they illustrate a situation where the CEO faces a paradox regarding information sharing. On one side, if the CEO shares his information to the board, they will be better informed and their advice more well-founded. On the other side, as the CEO shares information he might also reveal sensitive information about his own performance jeopardizing his future in the company. This is further supported by Huson, Parrino, and Starks (2001) who examine the evolution of how boards are composed in terms of internal and external directors. They find that the use of external board members result in an increase in CEO turnover.

Part of the issue regarding corporate governance, especially monitoring of management, has its origin from the renowned Principal-Agent problem[5]. The problem arises when two parties have different interests and asymmetric information, the agent having more information. Thus, the principal cannot directly ensure that the agent is always acting in the principal's best interest (Eisenhardt, 1989). Consequently academics have tried to find efficient tools in order to mitigate the agency problem. For instance, Jensen (1986) finds that leverage solves the problem by forcing management to commit free cash flows to service debt. This effectively prevents investments in value decreasing projects.

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[5]Referred to as the agency problem.

Most research regarding corporate governance and agency problems is based on public companies. Nonetheless the majority of the literature is directly applicable to the PE industry. For instance, Kaplan and Strömberg (2008) find that the use of leverage mitigates agency problems in LBOs, supporting Jensen's (1986) findings. Further, several studies compare public against private companies regarding the effect of changes in corporate governance. According to Gao et al. (2014), CEOs who induce high agency costs are replaced within the first two years of an LBO announcement. They also show that boards are more likely to remove incumbent CEOs if pre-LBO ROAs are low. On the other hand some academics claim that GPs replacing external directors after an LBO cause fewer CEO turnovers (Cornelli and Karakaş, 2013). These results suggest that more inside information and effective monitoring allow GPs to assess CEOs' performance over a longer horizon relative to comparable public companies. Hence this should reduce CEO turnover.

The literature concerning PE firms' ability to improve performance is mixed. Kaplan and Strömberg (2008) distinguish between three types of changes PE firms implement in portfolio companies to improve performance: financial, governance, and operational engineering. The most common one being financial engineering, which is changes to the capital structure. Governance engineering concerns control of the board and levels of involvement. Operational engineering is adding value by industry and market expertize. Wright, Amess, Weir, and Girma (2009) find some evidence indicating that UK buyouts between 1998-2004 increased operational performance in the respective portfolio companies. On the other hand, Gao et al. (2014) find marginal evidence of improved operating performance. In short, there seem to be a consensus that PE firms do improve performance, but the significance of it seem to be more ambiguous and difficult to prove.

4 Data

We have constructed a new set of data where we track Norwegian portfolio companies acquired by PE funds through buyouts between 1999-2009. Following firm specific information, CEO turnover and the equivalent board size and composition, the data set should be comprehensive. The time period was carefully chosen as information before 1999 was difficult to obtain and available information after 2009 only extends to 2013 in our available data. The final data set consist of 100 companies for statistical summary and 76 companies for the regressions.

4.1 Identifying Buyouts and the Holding Period

We received a data set from the Argentum Centre for Private Equity[6] (ACPE). Here we had to exclude all venture and seed investments as well as deals before 1999. We were fortunate to receive a complementary list of 233 deals from an earlier thesis written by Hilde Karine Sæberg and Ole Kristan Lohnaas (2014). This is arguably the most complete list of deals in Norway as it supplements and enhances the ACPE database.

To identify the right entry and exit dates of the PE funds we used data received from ACPE. The holding period is defined as the period between the entry and exit given there is a PE fund invested in the portfolio company. Subsequently a secondary buyout between two PE funds still count as one holding period. The rationale behind this assumption is that PE funds wish to obtain the same thing - the highest return possible. Unfortunately, many of the entry and exit dates were missing and in certain cases in conflict with what the PE funds announced themselves. For instance, according to Herkules' homepage, they exited Bandak AS in 2010, while in the ACPE database the exit was in 2009 (Herkules, 2015). Hence, we had to control for this in order to improve the validity of the data set. Of the 100 portfolio companies 52 have been exited.

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[6]The Argentum Centre for Private Equity is a research centre concentrating on Private Equity, based at Norwegian School of Economics (NHH) in Bergen, Norway. The centre's mission is to produce objective research of the highest quality on all topics related to Nordic Private Equity.

4.2 Firm Specific Information

Identifying the right company is crucial. Having read previous theses, the use of organizational numbers in order to find the right companies seem somewhat inconsistent. This is a common problem in the field of PE as information is limited. Thus, quality assurance was conducted in two ways. Firstly, we contacted the PE firms requesting the correct organizational numbers, assuring whether it was a seed or venture and if there were any additional information to account for. For instance, CyberWatcher is according to ACPE defined as a buyout transaction, but Joakim Bredahl (personal communication October 17, 2015) at Verdane Capital informed us that it in fact was a venture. Those who did not respond were quality checked by extensive online research. Secondly, we had to ensure that the GPs were represented on the relevant boards linked to the correct organizational number.

Firm specific information was mainly gathered from the SNF database (SNF, 2015)[7]. As SNF only have financial figures to 2013, this is where our data set ends. Finding firm specific information as firm size, leverage and return on assets (ROA) were easily obtained when organizational numbers were consistent. When they were not, we made extensive use of Ravn (RavnInfo, 2015) and Proff Forvalt (Forvalt, 2015) in order to retrieve the remaining financial figures[8].

However, ownership structures tend to become complex after a buyout, hence this proved to be a challenge when gathering information. Especially prior to the buyouts when we wanted to find lagged performance measures. For instance, Sonans was merged with Aktiv Opplæring in the buyout of 1999 under the name Sonans, making the companies more difficult to track prior to the buyout.

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[7]SNF is part of NHH dedicated to the task of initiating and undertaking contract research.

[8]Ravn, short for RavnInfo, and Proff Forvalt are both web pages that provide corporate information on Norwegian corporations. Access was provided by the library at NHH.

4.3 Board Composition and CEO turnover

After identifying the right organizational numbers, CEO turnover as well as total board size was next in order to identify GPs. Board composition was tracked one year prior to the buyout until an exit or the last year of data. Complex organizational structures proved again to be challenging as some companies are used as "shell companies" for tax purposes. These structures may change over the years and thus it was important to find the relevant board. We received a data set from Aksel Mjøs[9] tracking board composition and CEOs for private companies in Norway between 1998-2013[10]. Furthermore we received a data set from Associate Professor Carsten Bienz[11], displaying GPs in Scandinavian PE funds. Board composition was examined once a year.

As another measure of quality assurance we tracked all board members by online searches. LinkedIn (LinkedIn.com, 2015) was helpful as GPs rarely keep their success stories to themselves.

4.4 Holding Period and Firm Specific Statistics

The mean (median) holding period is 3.14 (3.00). Our longest observed holding period is 13 years. This is in contrast to Cornelli and Karakaş (2013), who observe a mean holding period of 4.5 years in their sample. PE funds in general have holding periods ranging from three to seven years (Stowell, 2012). When looking at exited buyouts, the mean (median) holding period is reduced to 2.08 (2.00). As most of the companies in our data are located in the small-/mid- cap market, one could expect that the period needed to restructure the company may be shorter.

A common way to calculate leverage is by dividing total debt by total firm value. However, we calculate leverage by dividing total debt by total assets due to potential financial

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[9]Aksel Mjøs is a postdoctor at The Department of Finance and Management Science at NHH. His research is in the field of financing of corporates, in particular bank loans and other forms of debt financing.

[10]The data on non-executive board of directors and chief executive officers in Norwegian companies is provided by the Brønnøysund Registry Centre (www.brreg.no) and comes from each company's own reporting of individual officers.

[11]Carsten Bienz is an Associate Professor of Finance at the NHH, where he teaches Private Equity. His main research interests include Corporate Finance, Private Equity, Fixed Income, and the Economics of Contracts.

restructuring after the buyout. This is also done by Cornelli and Karakaş (2013). The mean and median is 0.72.

Industry is divided into six sub categories. Consumption, Energy, Health Care, Information and Communication Technology (ICT), Industrial and Other.

In the analysis we use a set of variables describing certain characteristics of the PE fund. These, among other regression variables, are found in table 1 with appropriate explanation.

5 Analysis

In this part we present our findings in order to answer the research question. The analysis is divided into GPs on the Board, CEO Turnover and Performance. Each part contains descriptive statistics, the applied methodology and the results.

5.1 Board

5.1.1 Board Statistics

The average board size in our sample is 5.52 for all periods. The GPs represent 1.71 which is approximately 33% of the board seats. In some cases we observe GPs entering the board before the transaction as illustrated in Figure 4. The figure shows how the board and its composition change in different periods. According to Yermak (1996) and Cornelli and Karakaş (2013), better corporate governance is maintained by decreasing the total board size when taken private. Both papers find a reduction of approximately 15%, but in our case board size on average increase by 14%. This is an interesting result and will later be addressed.

5.1.2 Board Methodology

GPs assist, manage and consult the portfolio companies supposedly through board positions. We want to examine and analyze which factors explain the GPs on the board. Hence, this will be the dependent variable explained by a set of firm, governance and fund specific independent variables. In order to run the best estimated regression we have to consider potential econometric issues which might arise. Using panel data we account for changes in entities observed across time, which in our case are the portfolio companies. Commonly used methods as the pooled Ordinary Least Squares (OLS) may ignore the structure of the panel data and hence give biased results (Wooldridge, 2010). Other methods often applied to panel data is the fixed effects (FE) and random effects (RE) specifications. By applying FE one is interested in controlling for time-invariant observations within companies that are difficult to measure. This method will to some extent account for omitted variable bias (OVB). Each company is treated individually,

therefore their error term and the constant should be uncorrelated with the other companies. If the error terms are correlated, FE is not the preferred model. On the other hand, RE models assume that variation in the companies is a matter of random events and hence uncorrelated with the independent variable(s). A way of testing this is by applying the Durbin-Wu-Hausman test (Wooldridge, 2010), which in short tests whether the error term is correlated with the independent variable. After running the test we reject the null hypothesis and use the FE model. This test is consistently run for all the regressions throughout the thesis. Additionally we add year dummies to control for temporal variation as macroeconomic effects. As robustness we include OLS to compare our results.

Standard errors are clustered by company in all regressions. As FE adjust for the effect of OVB within each company, it does not fully capture the possible correlation between portfolio companies within the respective industries. We thus control for this by clustering standard errors on industry. However, as we only have six categories of industry our results may suffer of "overfitting". This would make the estimated residuals systematically too close to zero compared to the true error terms. In deciding what to cluster, we chose a conservative approach using the model with the highest standard errors, which was clustering by company (Cameron and Miller, 2015).

5.1.3 Board Regression Results

A general presumption is that the board plays an important role in organizations. To help answer the research question we set out to explore what determines GPs on the board. Identifying these determinants might contribute in understanding how PE firms alter corporate governance.

Exit is a measure of success. In Table 3 Exit is significant on a 1% level with a negative coefficient. Keeping all other factors constant, an exit reduce GPs on the board by 12.1%. Assuming PE firms conduct a detailed due diligence prior to a buyout they already have an impression of which changes are needed in order to successfully exit the company. Consequently they use as few GPs as possible when everything is going according to plan. On the other hand this could imply that GPs may become more present in investments

they expect to be more complex and thus harder to exit. For instance, if the portfolio company is experiencing a downturn due to unforeseen factors, GPs would oversee the company closer.

Leverage is another significant variable but only marginally on a 10% level. Keeping all factors constant an increase in leverage increase GPs on the board by 4.42%. Leverage in the literature is mostly mentioned in the context of financial engineering and for monitoring management. As monitoring, leverage mitigates agency problems between the board and management (Müller and Panunzi, 2003; Kaplan and Strömberg, 2008; Grinstein, 2006). By increasing leverage, closer monitoring may be required in order to prevent the company of going into financial distress. Thus the increase in GPs on the board can be seen as a proactive measure of keeping the firm on the right track. With respect to financial engineering, the goal is to improve the capital structure. It is carried out as the GPs apply their hands-on experience and connections in order to get access to capital. This may be done by underwriting bonds and negotiating bank loans.

PE funds co-investing in portfolio companies is insignificant. One would expect a positive relationship between the number of PE funds invested and the GPs represented on the board. However, in our case such a relationship does not seem to exist, although our descriptive statistics show increasing board size after the buyout. A sensible explanation is that the PE firms bring in experts from different fields of business to strengthen the company where it is lacks expertize (Gao et al., 2014).

Replacing the CEO during the control period is insignificant and should be discussed. One would expect this variable to have two plausible effects on GPs on the board. On one hand, when the PE firm replace the CEO the need for close monitoring diminishes as the new CEO presumably acts in the interest of the PE firm. On the other hand, the act of replacing the CEO during the control period itself is a sign that the investment may be challenging. This would imply that more board monitoring is needed, hence more GPs may be expected to become present on the board. Nonetheless, we find that a CEO change during the control period does not explain GPs on the board.

5.1.4 Board Summary

In the previous paragraphs we explored which factors affect GPs on the board. Our results suggest that PE funds prefer having few GPs on the board when everything is going according to plan. Implicitly GPs on the board may increase in challenging cases or when something unexpected happens. An example of this is an economical downturn. Our results find support from two aspects. Firstly, the co-investment variable which indicated that PE funds do not seem to demand more GPs on the board when investing together. Secondly, changing the CEO during the control period does not have an effect. We find evidence that leverage increase GPs on the board, however, evidence is weak. In short, PE funds do not seem to put much emphasis on board positions.

5.2 CEO

5.2.1 CEO Statistics

In our list of 100 buyouts, 19 companies did not undergo a CEO turnover. Table 2 shows that in the remaining 81 companies the total CEO turnover is 154. This gives an average turnover rate of 1.54. As mentioned in the introduction we separate the holding period into two sub periods, namely the control period and the monitoring period (Figure 1). 52 turnovers are categorized as a CEO control change. Nine portfolio companies have had more than one CEO turnover during the control period. Changing the CEO two times is an unexpected result as one would believe a single change would be sufficient during the first year. Conclusively, a CEO control change is observed in 43%[12] of all deals, which is in line with findings done by Cornelli and Karakaş (2013), Acharya, Gottschalg, Hahn, and Kehoe (2013) and Gao et al. (2014) who find rates of 52.3%, 39% and 51% respectively.

The remaining 102 CEO turnovers are categorized as a monitoring change. 63 of the 100 companies experienced at least one monitoring change. Of the 52 companies who had a control change, 34 also had a monitoring change. Basically, this means that in 34%[13] of the times there is a change in both periods. The results are surprising as one would expect a control change to be sufficient in order to get the portfolio company on the right track. Especially when taking the short holding period we observe into consideration (see section 4.4).

The total average CEO turnover rate during the holding period is 11%[14]. This is in line with Cornelli and Karakaş (2013) findings of 9.2% following an LBO. Interestingly, this is a lower rate compared to public companies which was documented by Kaplan and Minton (2012) to be 15.8% between 1992 and 2007.

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[12]$0.43 = \frac{(52-9)}{100}$

[13]$0.34 = \frac{34}{100}$

[14]$0.11 = \frac{1.54}{13}$

5.2.2 CEO Methodology

Turnover analyzes are often based on stock price performance, which is not possible in our case as we assess private companies. We run FE with year dummies as our main model and test for robustness with OLS, similar to what was done in section 5.1. The dependent variable is a binary variable (dummy variable) which takes the value of 1 if there has been a CEO turnover in the respective year of observation. We use ROA as a performance measurement with other independent variables. In contrast, Weisbach (1988) and Cornelli and Karakaş (2013) apply logit regressions. Although this method in some cases might be useful, they are often difficult to interpret in terms of coefficients, modeling interactions between variables and measures of model fit (Hoetker, 2007). Tables four to six show our CEO turnover analysis. The regressions are separated into total CEO change, CEO control change and CEO monitoring change.

5.2.3 CEO Regression Results

Moving forward we assess determinants taken into consideration when there is a CEO turnover. This is done in three steps with three different analyzes. Firstly, we examine which factors are relevant for a CEO change during the *total* holding period. Next, we examine turnovers during the control period. Lastly, we explore what affects the decision of changing the CEO during the monitoring period.

In the first analysis we examine CEO changes during the total holding period. We use ROA_{t-1} as we believe that last period's performance is better suited to evaluate the quality of the current CEO. In the regression output in Table 4 ROA_{t-1} and NORPE are significant. The coefficient of ROA_{t-1} is negative and significant at a 1% level. Keeping all other factors constant a one unit increase in last year's performance reduces the probability of a CEO change during the total holding period by 26.9%. This imply that PE firms emphasize hard information, i.e. measurable data, when assessing whether or not to keep the CEO.

NORPE is significant at a 5% level with a positive coefficient. If a Norwegian PE fund is involved, the probability of a CEO change increases by approximately 30.7%. This could be explained by geographical distance between the PE firm and the portfolio company.

According to Chemmanur, Hull, and Krishnan (2014) PE firms are able to monitor portfolio companies more effectively when they are closer to their investments. This imply that Norwegian PE firms are able to carry out more precise decisions regarding the CEO during the holding period. Additionally it is possible that Norwegian PE firms benefit from a networking effect as GPs and CEOs of portfolio companies may have crossed paths before and thus have a professional relation.

In the second analysis we assess CEO changes during the control period. The regression output is shown in Table 5. It seems sensible that ROA_{t-1} is not statistically significant. As this is a change within the first year of the buyout, GPs neglect the sitting managements' past performance. The change is as a result outside the CEO's control and a matter of preference from the PE firms. This strengthens our belief that timing of CEO turnover matters.

Leverage is marginally significant at a 10% level with a negative coefficient. Although the evidence is weak, it is in line with the findings of Gong and Wu (2011). They observe a negative relationship between pre-LBO levels of leverage and the probability of a CEO turnover. They argue that companies with low levels of leverage before an LBO are subject to high agency costs due to management's access to high undistributed free cash flows. Consequently, companies with high levels of leverage are able to mitigate these agency problems. This in turn reduces the probability of changing the incumbent CEO after an LBO.

In the third analysis we focus on CEO changes during the monitoring period. As the PE firm observe the CEO over a certain period of time they are better suited to assess the skills of the CEO. We would therefore expect CEO changes occurring in this period to be explained by past performance measurements among other factors. The regression output for CEO monitoring is found in Table 6 where ROA_{t-1}, CoInvest and GP_CEO are significant.

ROA_{t-1} is statistically significant at a 1% level, as opposed to the results from the CEO control regression. A one unit increase in past performance would thus reduce the probability of a CEO turnover by 31.2%. This coincides with the common presumption about effective board monitoring, past performance and decisions regarding the sitting CEO

(Weisbach, 1988; Murphy and Zimmerman, 1993; Jenter and Lewellen, 2010; Kaplan and Minton, 2012). The general consensus is that the GPs on the board are often considered as a mixture of internal and external directors. As internal directors, GPs take part in daily operations of the firm. This enables them to obtain subjective soft information, i.e. unmeasurable data, regarding the CEO. On the other hand, GPs are also external directors as their fund is invested into the portfolio company through equity stakes. This is in favour of close monitoring based on unbiased performance measurement as the fund ultimately want to achieve high returns to their LPs. Since this is their main objective, GPs seem to prioritize performance measures over soft information.

Co-investment by several PE funds is significant at a 5% level. This implies that if there are more than one PE fund invested in the portfolio company, all else equal, the probability of a CEO turnover increases by 17.3%. One way of seeing this is that each PE firm would have a set of criteria the CEO would have to fulfill. On the other hand, as seen in section 5.1.3, the same variable does not have any explanatory power on the observed GPs on the board. Hence, it would seem as the respective PE funds involved are able to express their opinion about the CEO without necessarily holding official board positions.

Appointing a GP as CEO (GP_CEO) for the portfolio company effectively removes the distance between management and owners as it becomes one unit. Significant at a 1% level with a negative coefficient implies that, all else equal, if a GP is appointed CEO it will reduce the probability of a CEO turnover by 14.4%. This seems reasonable as a PE firm would not fire one of their own. GPs bring managerial experience to the portfolio company, thus a potential decline in firm performance would believably be attributed to other factors outside his control. This suggest that a preferred governance model within the PE industry is to appoint the GP as the intermediate CEO during the restructuring. However, GP's time is valuable and expensive as it could be used on other projects, inferring that it is not optimal. The results are therefore ambiguous and one should be careful to draw any conclusions.

In the previous paragraphs we assessed each of the three regressions separately with their respective results. We will now comment on specific variables we argue deserves a second look. From the total CEO change regression NORPE was significant. After we divided

the data into two sub sets NORPE was not significant in neither the control period nor the monitoring period. Hence this may indicate that the divided samples have become too small and thus do not capture the full effect. However, as discussed we believe examining geographical matters may reveal some interesting aspects in the Norwegian PE market.

Common for the three regressions is the insignificance of GPs on the board. In general our regression results indicate that GPs represented through board positions do not have any particular importance for a CEO turnover. We find this result counter intuitive as one would assume the decision regarding CEO changes to require the board's acceptance. In most cases the PE funds are the majority shareholders meaning that they effectively can make decisions without the total board's approval. The board would basically be a formal organ bound by law rather than an actual corporate channel for supervision and monitoring. The increase in total board members we observe after the buyout (see section 5.1.1) might therefore be explained by a cluster of experts the PE funds bring in to assist the restructuring. This has previously been discussed in the analysis in section 5.1.3.

5.2.4 CEO Summary

In this section we explored what affects CEO turnover in a portfolio company. Our data were divided into two subsets defined as control period and monitoring period. In the control period a CEO turnover seems not to be a matter of past performance but rather preferences of the PE firms. On the contrary, a CEO turnover in the monitoring period seems to be highly determined based on performance. The involved GPs have an unique position as they function as a mixture of internal and external directors on the board. However, we find no evidence of GPs on the board explaining CEO turnovers. If this is the case, boards would only be a formal organ bound by law rather than an actual corporate channel for supervision and monitoring.

5.3 Performance

5.3.1 Performance Statistics

ROA is derived by dividing total operating income by total assets. The mean is negative 3% for the total data set. When examining the data we find Meditron ASA as an outlier with a negative ROA of 1900% in one of the periods. Disregarding the outlier increases the mean to 0%. Additionally, adjusting for bankruptcies, which are observed in five cases, we get a mean of 1%.

5.3.2 Performance Methodology

Most of the literature concerning corporate governance examine how managerial and structural changes affect performance. We want to examine the link between changes to corporate governance and growth in portfolio companies. However, due to issues regarding endogeneity, the choice of method varies as researchers try to overcome these problems. Academics usually recognize two possible sources of endogeneity: unobservable heterogeneity and simultaneity. However, according to Wintoki et al. (2012) there is another source of endogeneity often ignored. More specifically, the one that arises from the possibility that current values of governance variables are a function of past firm performance. In order to analyze performance in a consistent and robust manner, we present several methods as done by Wintoki et al. (2012) and Chang and Zhang (2013). We start by running a static FE model with year dummies merely for comparison reasons. As this model neglects issues regarding endogeneity the regressors will be biased. Next, we transform our model into a dynamic model by lagging the dependent variable and use it as an independent variable. By doing this we control for past performance. In addition, the FE specification should to some extent control for unobservable heterogeneity. Finally, we introduce a simultaneous equation model, the 2SLS, to address issues regarding simultaneity. This model is an extension of the OLS method and is used when the independent variable(s) and the error term of the dependent variable are correlated (Wooldridge, 2010). Executed in two steps, the first is to find an instrument for the variables which suffer from simultaneity while not being correlated with the error term. The second stage is simply to substitute the instrument for the variable. Hence, the first stage equation requires a *valid*

instrument. Following the reasoning of Cornelli and Karakaş (2013) our choice of instrument for GPs on the board is the percentage of external directors on the board prior to the buyout - Outsiders. They argue that external directors prior to an LBO can be used as a measure of firm complexity. Assuming that this complexity is the same before and after the LBO, it should not directly affect the change in CEO turnover. Subsequently it serves as a proxy for difficulties regarding monitoring and advising the firm. The importance of finding a strong instrument is crucial. Unfortunately the instrument was not significant in our analysis hence weakening the reliability of the model. Thus, we use the dynamic model with FE as our main model, but estimate the 2SLS, for comparison, knowing it will be biased. Model specification is further elaborated in section 6.

5.3.3 Performance Regression Results

The literature shows that PE firms generally enhance performance. Friedrich (2015) finds in his master thesis a positive effect on performance in Norwegian buyouts. He examine buyouts between 1996-2009 which confirms that there is value creation[15]. In this section we examine if there are any apparent links between corporate governance and performance.

As seen in the regression output in Table 7 none of the variables significantly explain any of the variation observed in ROA. Basically this implies two things. On one hand, the choice of model may lack power and hence be inadequate. On the other hand, the model is applicable but with no significant results. Having thoroughly assessed and chosen a model, given the data set, we believe the latter is the appropriate explanation. As GPs on the board is insignificant it suggests that this channel does not necessarily induce operational growth. As we know, boards function as final reviewers in terms of operating and financial decisions. If one assumes that PE funds have determined which changes to undergo in order to improve the portfolio company, the board could become negligible. This is consistent with our findings in the board regression analysis where successful exits decrease GPs on the board. It implies that board positions are ignored in less challenging cases. Subsequently it is also consistent with our findings in the CEO regression analysis where co-investments increase CEO turnover during the monitoring period but not through

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[15]Other theses also suggest value creation, see for instance Gulliksen, Wara, and Hansen (2008) and Andresen and Sandnes (2009).

board positions. This would indicate that board positions are not prioritized. By removing the link between the board and management, the two entities would merge into one as the GPs are represented on the board while actively assisting management. The logical question that follows is therefore; if not from board positions then what channels do PE funds use to induce operational growth? In the next paragraph we offer a brief discussion on an alternative channel. But, due to the lack of statistical support from our regressions, this might be of a speculative nature.

For most businesses maximizing profits is the main objective. Optimizing corporate governance provides the foundation of a successful organization. Acharya et al. (2013) find that GPs interact directly with management often multiple times a week through formal and informal channels during the holding period. We believe this is the preferred governance model within PE as agency problems are value decreasing if not carefully assessed. Quickly after the transaction GPs join management in order to efficiently improve operational and financial aspects of the portfolio company. As mentioned in the literature review, CEOs might have incentives to withhold information (Adams and Ferreira, 2007). Working closely together reduces the problem of asymmetric information between the two entities. Whether this dilemma is solved by closer monitoring or other factors is unclear. Nevertheless it should not matter as it mitigates agency problems either way. Another argument supporting reduced agency problems is that PE funds often make customised incentive systems for management (Cronqvist and Fahlenbrach, 2013). These systems prioritize subjective performance evaluation while having low emphasis on relative industry performance. In short, this should motivate management to perform at their best and act in the interest of the PE firm.

5.3.4 Performance Summary

In this section we explored the link between changes in corporate governance and firm performance in portfolio companies. Results suggest that PE funds ignore the board and its formal functions and prefer fewer GPs present on the board if possible. Hence, we argue that interaction between the PE firms and the portfolio companies occur directly between GPs and management. This should in turn remove agency costs and further align incentives between owners and management.

6 Limitations and Future Studies

While working we quickly realized two specific challenges: Data availability and the application of the correct econometric methods.

The first challenge is a well known problem in PE related papers. Private companies are not required to disclose the same amount of information as public companies. Thus, financial figures become less reliable and harder to track. Especially when examining buyouts. The first year after a transaction is often characterized by restructuring in terms of mergers and/or divestitures. Obtaining financial measures as well as corporate governance specific information, i.e. board members before the buyout, was a challenge, and in some cases not possible.

We mainly used the ACPE database, but in many cases it lacked necessary information. For instance, fund information which we were unable to track online was removed. Conclusively the final data set is as comprehensive as we could make it, but would optimally benefit from more observations.

The second challenge is a renowned topic in the literature of corporate governance and PE. The problem with finding the best model is addressing potential endogeneity which may exist. Several papers apply a 2SLS model in order to overcome these issues. In our case, the choice of instrument which is an important condition for applying the model, was statistically inadequate. Identifying alternative instruments is not an easy task as they need to be economically justified. Optimally we wanted to use the Generalized Method of Moments (GMM). This method is said to be the best in order to address problems regarding endogeneity in panel data. GMM fits situations where the data is characterized of having many individual observations (large N) but over a short period of time (small T) (Wintoki et al., 2012). However, as the method requires historical measures, often four to ten years, it was not possible for us to implement. Especially as we are assessing buyouts within a certain period of time.

It is also important to mention the drawbacks by consistently using FE in all our models. If the variation within the companies are constant it will omit this variation. This can in turn reduce the overall signal from the data. However, as we are confident that there is

OVB the use of FE is necessary.

Another problem we had to address was how to cluster the standard errors. The choice was between clustering on industry level or company level. But as we only categorized the portfolio companies into six different industries, concerns about too few clusters arose. We therefore chose a conservative approach and used the model with highest standard errors, which is supported by Cameron and Miller (2015). This dilemma could have been avoided if we had more companies and subsequently more industries to cluster. Nonetheless, we believe our justifications and choice of models yield a reliable result given our data set.

We would also like to point out that the variable CEO Control Change is included in the Board regression (Table 3) as an independent variable. The same variable is then used as a dependent variable in the CEO Control Change regression with GPs on the Board as an independent variable (Table 5). This could give rise to an endogeneity issue, but as the sample for the two regressions are different we argue that this will not be of any major concern.

For future studies it would be interesting to investigate more closely which channel GPs use. We made a discussion on an alternative channel which was of a somewhat speculative sort. Uncovering the channel that PE firms use with proper empirical analyzes might complement our thesis and perhaps give a clearer picture of how they are able to induce growth.

7 Conclusion

In this thesis we set out to answer the following research question: how do private equity funds affect corporate governance in Norwegian portfolio companies? As the industry is opaque and data gathering is challenging this field of literature is still not fully explored.

We composed a new set of data consisting of firm and board specific information on Norwegian buyout companies between 1999-2009. The research question was addressed by looking at three distinct parts consisting of GPs on the Board, CEO Turnover and finally Performance.

The main empirical findings are summarized within the respective chapters in the analysis section. The results suggest that PE firms neglect the board and interact directly with management. This is an unconventional interference from owners, but believably the preferred governance model in order to restructure the portfolio company. Although PE funds are majority owners, they seemingly do not wish to prioritize board seats as long as everything is going according to plan. This is also the case when several PE funds co-invest in portfolio companies.

In terms of CEO turnover we started by examining the total holding period. We find that performance is an important driver when assessing the whole period. We further divided the data into two sub periods as we believe the timing of the CEO turnovers matter. Here we found that in the control period PE firms decide the future of the CEO on predetermined preferences. Supported by our findings, ROA_{t-1} does not significantly explain any of the control changes. This could further imply that PE firms take advantage of soft information when evaluating the sitting CEO during the control period.

In contrast to control changes, CEO turnover during the monitoring period is highly based on the CEO's past performance. The PE firm has now been able to closely monitor the CEO and should presumably be better suited to evaluate the performance. This is supported in our findings where ROA_{t-1} is significant. As the GPs on the board do not affect changes to the CEO regardless of period, this only amplifies the fact that PE firms do not intervene through board positions.

In our last analysis we assess how performance is affected. As we are aware of the common

econometric challenges that are related to these measures, we construct three different models. We start by running a static model, but as this model neglects issues regarding endogeneity we further improve it by introducing a dynamic model. The dynamic model includes the lagged dependent variable as an independent variable. This enables us to control for past performance and its effect on current measures. We also include a discussion about the 2SLS model and why we wish to use it, but conclude that our dynamic model is the preferred one as the instrument was inadequate. Conclusively our results imply two things. Either the models lack power and are not able to explain any of the variations seen in ROA, or the models are applicable but do not show any significant results. Our findings thus suggest that PE firms do not use board positions in order to induce operational growth, implying that boards do not matter.

8 Appendix

8.1 Figures

Figure 1: Holding Period

Overview of the total holding period and how it is divided into a control period and a monitoring period. The control period is from the announcement date prior to the buyout until the first year after the buyout. The monitoring period extends from the control period until the PE fund has exited, or until 2013 as this is our latest year with observations.
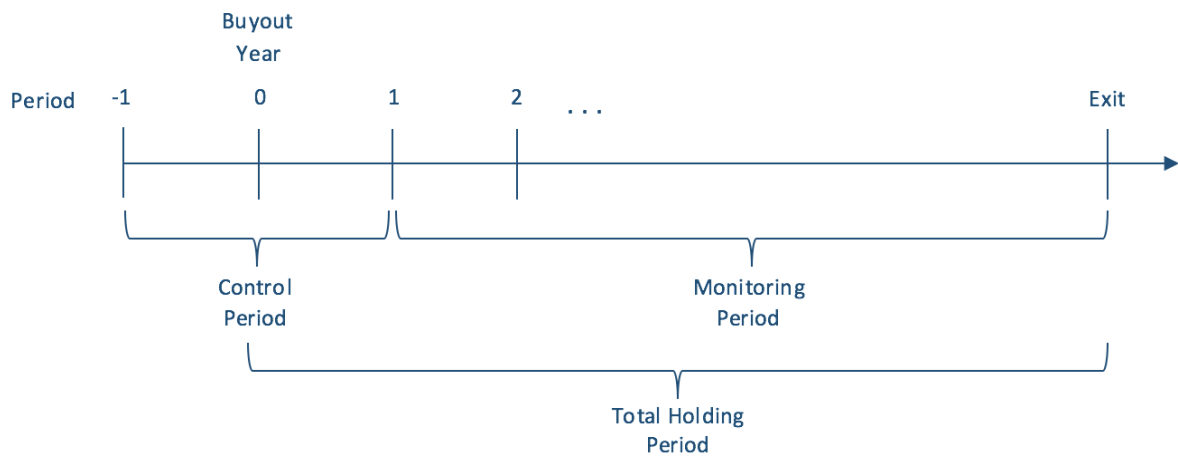
Figure 2: Private Equity Overview

Overview of the two main segments within the Private Equity industry and the resepctive main fields of operations.
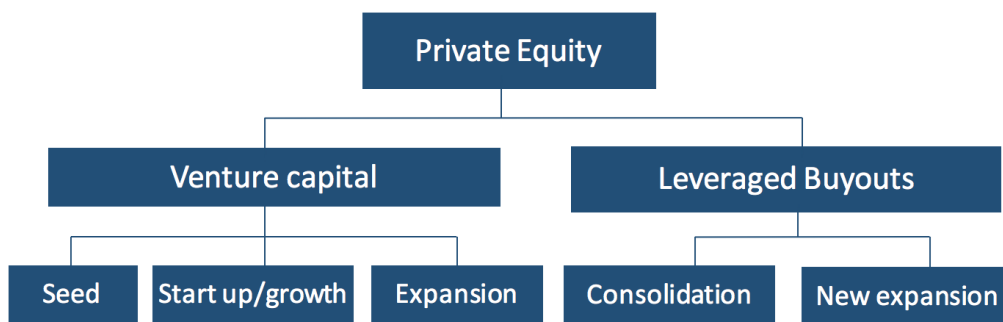
Source: Demaria, 2013

Figure 3: Private Equity Fund Structure

Illustration of how a Private Equity Fund is structured and how the different entities are connected.

Figure 4: Board Composition Development

This figure shows the development of board composition after a buyout. The transaction takes place at period 0. The figure shows average total board size, average GPs on the board and average GPs appointed CEO. The averages are calculated by all buyouts in the data set not exited in the respective period.
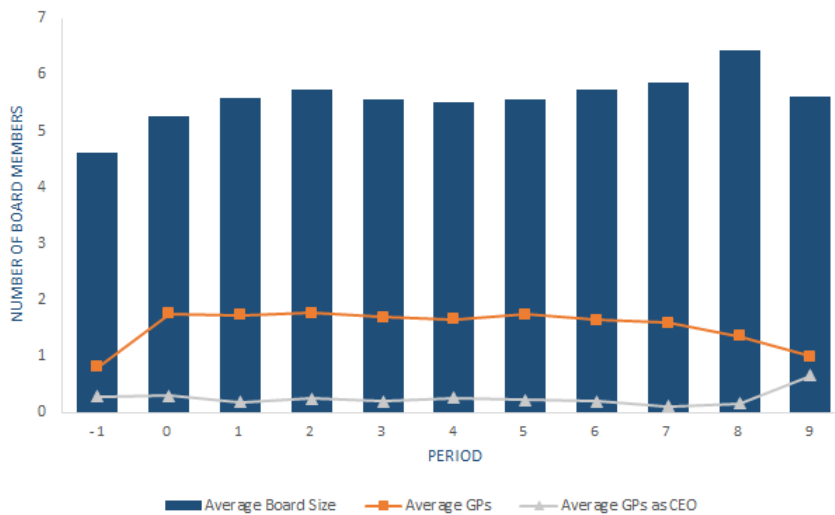
8.2 Tables

Table 1: Definitions and Variable Explanations

This table provides a description of the definitions and abbreviations used throughout the thesis. In addition it includes a description of the regression variables that are used.

	Explanation
LBO	Leveraged buyout.
PE	Private equity.
GP	General partners who manage a fund, representatives from a PE firm.
LP	Investors who invest in a fund.
Holding period	The period in which there is at least one PE fund invested in the portfolio company.
Control period	The period from the announcement date until the first year after the transaction.
Monitoring period	The period following the control period until the PE firm(s) exit.
FE	Fixed effects.
RE	Random effects.
OLS	Ordinary least squares.
2SLS	Two stage least squares.

Regression Variables	Explanation
ROA	Return on assets is calculated by dividing total operating income by total assets. We use this measure to isolate the operational growth and to to exclude effects as financial impact.
Leverage	Total debt divided by total assets.
Firm size	Total assets is used as proxy for firm size.
CoInvest	A dummy that takes the value of 1 if there are more than one PE fund invested in the portfolio company, 0 if only one.
NORPE	A dummy that takes the value of 1 if the invested PE fund has their headquarters in Norway, 0 if not.
Exit	A dummy that takes the value of 1 if the PE fund exit during the holding period, 0 if not.
Outsiders	The number of external board members on the board the year before the buyout.
GPs on the Board	The percentage of GPs on the Board each year.
CEO Change	A dummy that takes the value of 1 if a CEO change occurred during the *total* holding period, 0 if not.
CEO Control Change	A dummy that takes the value of 1 if a CEO change occurred during the *control period*, 0 if not.
CEO Monitoring Change	A dummy that takes the value of 1 if a CEO change occurred during the *monitoring period*, 0 if not.
GP_CEO	A dummy that takes the value of 1 if a GP is appointed CEO, 0 if not.
Industry Dummies	A factor variable which contains the six different industries in the sample. Consumption, Energy, Health Care, Information and Communication Technology (ICT), Industrial and Other.
Year Dummy	A dummy that controls for macroeconomic shocks.

Table 2: Descriptive Statistics for CEO turnover

Panel A displays the number of companies which had a CEO turnover during the total process of a buyout.
Panel B displays the distribution of CEO turnovers between the control period, monitoring period and the cases where both occurred.

Panel A: Number of companies who had a CEO turnover

	CEO change	No CEO change
Buyouts	81	19

Panel B: CEO turnover divided into periods

Control change	52
Monitoring change	68
Control change and monitoring change	34
Total	154

Table 3: Analysis of Board Composition

In the following table we report the regression coefficients (t-statistics in parentheses) from our Fixed Effects and OLS regressions. The dependent variable is the percentage of GPs on the Board. Leverage is calculated as total debt over total assets. Firm size is measured by total assets. Exit is a dummy which takes the value of 1 if the PE fund has exited. CoInvest is a dummy which takes the value of 1 if there are more than one PE firm investing in the portfolio company. NORPE is a dummy that takes the value of 1 if the invested PE fund has their headquarters in Norway. Outsiders is the percentage of external directors on the board prior to the buyout. CEO control change is a dummy that takes the value of 1 if there has been a CEO turnover during the control period. Errors are clustered at firm level. One, two, or three asterisks mean that the coefficients are significant at the 10%, 5% or 1% levels respectively.

	(1) GPs on the Board	(2) GPs on the Board
Leverage	0.0442* (1.90)	0.130*** (2.98)
Firm size	0.00660 (0.33)	0.0139* (1.67)
Exit	-0.121*** (-3.13)	-0.184*** (-4.69)
CoInvest	-0.00227 (-0.04)	0.00196 (0.03)
NORPE	0.00306 (0.04)	-0.0334 (-0.43)
Outsiders	-0.0968 (-0.73)	-0.119 (-1.03)
CEO Control Change	0.00750 (0.18)	0.0922 (1.53)
Constant	0.343 (1.57)	-0.00754 (-0.04)
Year Dummy	Yes	Yes
Industry Dummy	Yes	Yes
Model Specification	Fixed Effects	OLS
R^2	0.105	0.160
Observations	499	499

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Total CEO Turnover

In the following table we report the regression coefficients (t-statistics in parentheses) that affects the change in CEO in the total holding period. ROA_{t-1} is the lagged value of ROA calculated by total operating income over total assets. Leverage is calculated as total debt over total assets. Firm size is measured by total assets. CoInvest is a dummy which takes the value of 1 if there are more than one PE firm investing in the portfolio company. NORPE is a dummy that takes the value of 1 if the invested PE fund has their headquarters in Norway. GPs on the board is the fraction of GPs sitting on the board each year. GP_CEO is a dummy that takes the value of 1 if one of the GPs has been appointed the CEO. Errors are clustered at firm level. One, two, or three asterisks mean that the coefficients are significant at the 10%, 5% or 1% levels respectively.

	(1) Total CEO Turnover	(2) Total CEO Turnover
ROA_{t-1}	-0.269***	-0.152**
	(-2.93)	(-2.26)
Leverage	0.00993	-0.0108
	(0.19)	(-0.24)
Firm size	-0.00820	-0.0166
	(-0.19)	(-1.33)
CoInvest	0.0335	-0.0801
	(0.24)	(-0.66)
NORPE	0.307**	0.229**
	(2.55)	(2.07)
GPs on the Board	-0.145	-0.0833
	(-1.12)	(-1.03)
GP_CEO	0.000308	0.00725
	(0.01)	(0.15)
Constant	0.134	0.0678
	(0.22)	(0.33)
Year Dummy	Yes	Yes
Industry Dummy	Yes	Yes
Model Specification	Fixed Effects	OLS
R^2	0.075	0.063
Observations	499	499

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: CEO Control Change

In the following table we report the regression coefficients (t-statistics in parentheses) that affects the change of CEO during the control period. ROA_{t-1} is the lagged value of ROA calculated by total operating income over total assets. Leverage is calculated as total debt over total assets. Firm size is measured by total assets. CoInvest is a dummy which takes the value of 1 if there are more than one PE firm investing in the portfolio company. NORPE is a dummy that takes the value of 1 if the invested PE fund has their headquarters in Norway. GPs on the board is the fraction of GPs sitting on the board each year. GP_CEO is a dummy that takes the value of 1 if one of the GPs has been appointed the CEO. The sample only includes observations which had a control change. Errors are clustered at firm level. One, two, or three asterisks mean that the coefficients are significant at the 10%, 5% or 1% levels respectively.

	(1) CEO Control Change	(2) CEO Control Change
ROA_{t-1}	0.00248	0.137
	(0.02)	(1.08)
Leverage	-0.241*	-0.0559
	(-2.04)	(-0.59)
Firm size	-0.0162	-0.0104
	(-0.35)	(-0.56)
CoInvest	-0.0612	0.0447
	(-0.34)	(0.37)
NORPE	-0.0280	-0.0507
	(-0.24)	(-0.54)
GPs on the Board	-0.0527	0.121
	(-0.34)	(1.16)
GP_CEO	0.0791	0.0384
	(0.91)	(0.64)
Constant	1.247**	0.485*
	(2.08)	(1.88)
Year Dummy	Yes	Yes
Industry Dummy	Yes	Yes
Model Specification	Fixed Effects	OLS
R^2	0.459	0.330
Observations	161	161

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: CEO Monitoring Change

In the following table we report the regression coefficients (t-statistics in parantheses) that affects the change in CEO in the monitoring period. ROA_{t-1} is the lagged value of ROA calculated by total operating income over total assets. Leverage is calculated as total debt over total assets. Firm size is measured by total assets. CoInvest is a dummy which takes the value of 1 if there are more than one PE firm investing in the portfolio company. NORPE is a dummy that takes the value of 1 if the invested PE fund has their headquarters in Norway. GPs on the board is the fraction of GPs sitting on the board each year. GP_CEO is a dummy that takes the value of 1 if one of the GPs has been appointed the CEO. Sample only includes observations which had a monitoring change. Errors are clustered at firm level. One, two, or three asterisks mean that the coefficients are significant at the 10%, 5% or 1% levels respectively.

	(1) CEO Monitoring Change	(2) CEO Monitoring Change
ROA_{t-1}	-0.312***	-0.209***
	(-3.57)	(-2.82)
Leverage	0.0218	0.00857
	(0.64)	(0.19)
Firm size	-0.0405	-0.00648
	(-1.14)	(-0.50)
CoInvest	0.173**	0.0412
	(2.41)	(0.81)
NORPE	0.101	0.0705
	(1.29)	(1.41)
GPs on the Board	-0.108	-0.0160
	(-0.75)	(-0.18)
GP_CEO	-0.144***	-0.0933**
	(-2.81)	(-2.10)
Constant	0.412	0.145
	(0.92)	(0.78)
Year Dummy	Yes	Yes
Industry Dummy	Yes	Yes
Model Specification	Fixed Effects	OLS
R^2	0.156	0.097
Observations	338	338

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Performance

In the following table we report the regression coefficients (t-statistics in parentheses) from our static model, dynamic model and 2SLS. The dependent variable is ROA. GPs on the board is the fraction of GPs sitting on the board each year. In the 2SLS model GPs on the Board is instrumented by the percentage of outsiders on the board prior to the buyout. Firm size is measured by total assets. Control change is a dummy which takes the value of 1 if there has been a CEO turnover during this period. Exit is a dummy which takes the value of 1 if the PE fund has exited. CoInvest is a dummy which takes the value of 1 if there are more than one PE firm investing in the portfolio company. NORPE is a dummy that takes the value of 1 if the invested PE fund has their headquarters in Norway. ROA_{t-1} is the lagged value of ROA calculated by total operating income over total assets. Errors are clustered at firm level. One, two, or three asterisks mean that the coefficients are significant at the 10%, 5% or 1% levels respectively. In the context of 2SLS R-squared is not meaningful (Wooldridge, 2010), thus we do not report it.

	(1) ROA	(2) ROA	(3) ROA
GPs on the Board	-0.166	-0.187	-7.199
	(-0.91)	(-1.01)	(-0.36)
Firm size	0.452	0.461	0.372
	(1.24)	(1.25)	(1.25)
Control Change	-0.0113	-0.00140	0.198
	(-0.14)	(-0.02)	(0.34)
Exit	-0.472	-0.479	-1.537
	(-1.13)	(-1.14)	(-0.52)
CoInvest	0.0360	0.101	-0.186
	(0.19)	(0.45)	(-0.23)
NORPE	-0.168	-0.0931	0.298
	(-0.74)	(-0.54)	(0.68)
ROA_{t-1}		-0.381	
		(-1.05)	
Constant	-4.728	-4.980	
	(-1.27)	(-1.24)	
Year Dummy	Yes	Yes	No
Industry Dummy	Yes	Yes	No
Model Specification	Static	Dynamic	2SLS
R^2	0.134	0.145	
Observations	499	499	499

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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