Does the CEO manipulate earnings prior to routine departure?

- *An empirical study about earnings management prior to routine CEO departure on Swedish firms listed on NASDAQ OMX Stockholm*

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ABSRACT

Title:	Does the CEO manipulate earnings prior to routine departure? – An empirical study about earnings management prior to routine CEO departure on Swedish firms listed on NASDAQ OMX Stockholm
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Key words:	Routine CEO departure, earnings management, discretionary accruals, research and development expenditures, Swedish public market
Purpose:	The aim of the study is to empirically describe and analyze whether and if so why CEOs on Swedish public firms, listed on NASDAQ OMX Stockholm, use earnings management prior to routine CEO departures.
Theoretical perspective:	This study is based on prior research that examines the relationship between routine CEO departures and the use of earnings management and literature on earnings management. Furthermore, the theories used in this thesis are based on the agency theory, the stakeholder and shareholder theory, compensation, corporate governance and ownership structure.
Methodology:	A quantitative study is made with a deductive approach by running a cross sectional regression to measure the use of discretionary accruals and a panel data regression on the explanatory variables. Furthermore, a panel data regression is used to measure the use of research and development expenses prior to a routine CEO departure.
Empirical foundations:	The analysis includes companies listed on NASDAQ OMX Stockholm with a routine CEO departure between the period 2007 to 2014.
Conclusion:	Real earnings management occurs prior to routine CEO departures, while there tends to be less use of accruals management. A negative significant relationship is found between board independence, institutional ownership, market capitalization and earnings management. A positive significant relationship is found between the market book ratio and earnings management.

1. Introduction

This chapter provides the reader about the background for earnings management in relation to routine CEO departures. It highlights the current condition for Swedish public firms and why it is of essence to examine and mitigate the phenomena. Furthermore the purpose of this study is presented and finally the disposition.

1.1 Background

The following quote emphasizes the increased importance of examining CEOs possible incentives for using earnings management the years prior to leaving the office.

"*Executives who place little value on future earnings relative to current earnings face stronger incentives to improve short term earnings performance. One class of executives who are likely to place little value on future earnings are those who have short horizon because they are expecting to leave their position in the near future*" (Dechow & Sloan, 1991, p 54).

Earnings management can be defined as "the practice of distorting the true financial performance of the company" (Klein, 2002, p 376). It occurs when financial reporting and structuring of transactions are used by managers to make changes to financial reports with the aim to either mislead some stakeholders about the company's underlying economic performance or to have an impact on contractual outcomes that depend on reported accounting numbers (Healy & Wahlen, 1999). The phenomenon can be classified into three main categories: fraudulent accounting, accruals management and real earnings management (Ronen & Yaari, 2008). The first category refers to accounting choices that violate the accounting laws such as IFRS or GAAP. The second category, accruals management, refers to accounting choices which lies within the accounting law but where actions actively have been taken in order to try to conceal or obscure the true economic performance of the company (Dechow &Skinner, 2000). The last category, real earnings management, refers to actions undertaken by the CEO that deviate from best practice (Ronen & Yaari, 2008). This thesis focuses on the last two categories.

There are well-known examples of powerful firms manipulating earnings and taking fraudulent measures such as Enron Corporation and WorldCom Incorporated. In the first case,

Enron's earnings had been overstated by several $100 million dollars, which among other things was possible due to them having subsidiaries in Cayman Island, utilizing tax loopholes (McGill & Outslay, 2002). For instance, Enron was selling assets to these subsidiaries for inflated prices, without mentioning it in the company's external accounting. Management was also found guilty for insider trading, before the firm filed for Chapter 11 bankruptcy. The bankruptcy affected many stakeholders, especially employees who had retirement savings in company stock (Oppel, 2001). In the second case, which is quite similar to Enron, WorldCom was found guilty for inflating profits by improperly spreading operating costs (Tran, 2002). After these scandals an increased awareness is directed towards giving a true and fair view of financial accounting. Regulations such as Sarbanes-Oxley Act (SOX) are established in response to accounting scandals such as Enron and WorldCom. Despite the fact that Sweden has not yet suffered from large accounting scandals, there are cases such as Trustor and Skandia which have resulted in a higher need for control of public companies. Equivalent to Sarbanes Oxley Act, Sweden introduced the Corporate Governance Code in 2005 to firms listed on the A-list and firms on the O-list with a market cap over 3 billion SEK (Kollegiet för Svensk bolagsstyrning, 2009.) However, NASDAQ OMX Stockholm was introduced in October 2006, which meant that public firms had other requirements than previously and the Code comprised all Swedish firms listed on NASDAQ OMX Stockholm first in 2008 (Kollegiet för svensk bolagsstyrning, 2009).

Over the years, media have directed more attention towards departing CEOs and the large bonuses they receive when leaving the office. A well-known example highlighted in media was when ABB's CEO Percy Barnevik departed after 8 years and received a large retirement bonus (Carlsson & Nachemson-Ekwall, 1996). The CEO left the office in a well-planned and peaceful way, which in academic research is referred to as a routine departure[1] (Ronen & Yaari, 2008). Furthermore, the compensation plan was a combination of the final salary and bonus based on ABBs result and stock price (Nachemson-Ekwall, 2002). As a result of the large stock price increase and the good firm performance over the years Barnevik received a compensation of 930 million SEK. He also received a directorship on the board after leaving the office (Fagerström, 2002). However, according to Peter Wallenberg the accounting statements in ABB were misleading during the years Barnevik was CEO. The large compensation and the misleading accounting directed more attention towards Barnevik, which

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[1] The definition of routine departures is presented under section 1.5

resulted in him paying back 548 million SEK in 2002 (Gripenberg, 2007). Examples similar to ABB have led to criticism directed towards the compensation contracts that are linked to financial reporting in Swedish corporations, as it might create incentives for the CEO to engage in earnings management at the shareholders' expense. However, the example also highlights the incitement to receive a directorship. The incentive to receive a directorship after departure can lead the use of earnings management during the years prior to routine departure (Brickley, Coles & Linck, 1999; Reitenga & Tearney, 2003).

Despite the increased attention towards departing CEOs, there are no academic studies in Sweden, to the authors' knowledge, specifically examining a CEO's incentives to engage in earnings management prior to a routine departure. In theory, a CEO that planning to leave the office has larger incentives to engage in opportunistic behavior than a CEO who does not plan to leave: a phenomenon often referred to as the horizon problem (Dechow & Sloan, 1991; Cheng, 2004; Kalyta, 2009). The horizon problem is divided into two aspects: the short horizon problem and the post horizon problem (Reitenga & Tearney, 2003). According to Reitenga and Tearney (2003) the problems lead to that a CEO might have incentives to make discretionary accounting choices in order to (1) receive a higher bonus when leaving the office or (2) receive a directorship after departure. These issues lead to several studies within the field of earnings management and routine CEO departure (Dechow & Sloan, 1991; Brickley, Coles & Linck, 1999; Reitenga & Tearney, 2003; Graham, Harvey & Rajgopal, 2005) testing different explanatory variables and implications in order to try to explain what might impact a departing CEO's incentives to act opportunistically. As a reaction to the mentioned scandals such as Enron and WorldCom, recent studies have a larger focus on controlling for corporate governance mechanisms and the ownership structures impact on routine CEO departure in relation to earnings management (Reitenga & Tearney, 2003; Bebchuk & Fried, 2006). Therefore, the authors of this study have the same aspect, as the Swedish Corporate Governance Code could have a different impact on a departing CEO's possibilities to manipulate earnings than the SOX have in the United States.

1.2 Problem Discussion

Prior research shows that routine outgoing CEOs will attempt to increase reported earnings in their final year(s) to receive larger bonus payments, referred to as the short horizon hypothesis (Dechow & Sloan, 1991; Brickley, Coles & Linck, 1999; Reitenga & Tearney, 2003). Some of the research also finds evidence showing that outgoing CEOs not only manipulate earnings

in order to receive higher bonus payments but also in order to take a board seat, referred to as the post horizon hypothesis (Brickley, Coles & Linck, 1999; Reitenga &Tearney, 2003). There are multiple other explanations for a CEOs attempt to increase earnings in the final year, such as reputation, honour or the desire to meet or beat earnings benchmarks (Graham, Harvey & Rajgopal, 2005). However, these factors are hard to measure which might explain why prior research gives it little focus.

There are several discretionary ways for a CEO to boost the firm value during the final year(s) at the office. Research shows that CEOs who planning to leave the firm are significantly lowering the firm's research and development costs during their final year(s), since the outgoing CEO does not receive the full future benefit which is incurred by the current costs of research and development via bonus and compensation plans (Dechow & Sloan, 1991; Murphy & Zimmerman, 1993). However, most studies examine the use of accruals management and find that CEOs planning to leave the firm significantly increase the manipulation of accruals prior to departure (Brickley, Coles & Linck, 1999; Reitenga & Tearney, 2003). One of the outcomes from the financial crises in the late 90s and early 2000s is an increased awareness among investors and the media on firms' incorporation of corporate governance. According to Reitenga and Tearney (2003) one important corporate governance mechanism which has an impact on the use of earnings management, prior to routine CEO departure, is board composition. The boards main objective is to reduce the problem with the separation of ownership and control in public corporations by acting in the best interest of the shareholders and ensuring that the actions of managers serves their interest (Fama & Jensen, 1983) . The board of directors can ensure that the CEO acts in the interest of the shareholder by adopting compensation plans, structured to provide CEOs with efficient incentives to maximize shareholder value. Nevertheless after the corporate governance scandals in 2001, it has been recalled that many boards have employed compensation arrangements which do not serve shareholders' interest (Bebchuk & Fried, 2006). This has perverted pay arrangements, decreased CEOs' incentives to improve firm value and also provided distort incentives to reduce long-term firm value (Bebchuk & Fried, 2006). The findings underline the importance to control for the variable salary compensation, but also for different board composition variables, such as board size and board independence (Reitenga & Tearney, 2003; Bebchuk & Fried, 2006). Swedish public firms follow the Swedish Corporate Governance Code, which indirectly might mitigate CEOs possibility to engage in earnings management. However, as the Swedish Corporate Governance Code is not mandatory, but rather a norm, (Swedish

Corporate Governance Code, 2010), it is questionable whether it is enough. By controlling for corporate governance mechanisms as board size and board independence, this thesis tries to test for this. Does the Swedish Corporate Governance Code mitigate CEO's incentives to act opportunistically prior to routine departure?

Another factor possibly having an impact on CEOs' incentives to manipulate earnings prior to departure is ownership structure which can be tied to the principal agent theory and the costs of monitoring. Theory states that owners with larger ownership stake have higher incentives to monitor the agent (Reitenga & Tearney, 2003). This stresses the importance to test for different ownership variables such as institutional ownership and blockholding. Furthermore this study examines all[2] routine CEO departures on Swedish firms listed on NASDAQ OMX Stockholm, which includes firms from different industries and with different size. These are differences that might have a great impact on the CEO´s actions. In order to make reliable assumptions, the authors also control for firm characteristics such as market capitalization and the market to book ratio.

This study can be considered to be of great importance and a contribution to this field of research because of several factors. Firstly, it is of essence to know which factors that potentially impact the CEOs use of earnings management during routine departure, since IFRS and the Swedish Corporate Governance Code could then be adjusted in order to mitigate these incentives. Secondly, the findings of this thesis can help potential investors to know what to look for when investing in a firm thus making the correct investment decision. This is very important since the majority of the Swedish population, directly or indirectly, through funds and pension plans are shareholders. Therefore they are affected by the actions taken by a CEO on a public firm prior to routine departure. Lastly, the majority of prior research is conducted on the U.S. market, where laws and regulations differ from Sweden. Therefore, the authors conduct this study with a comparative approach and examine whether one country´s laws and regulations might be more useful than the other, when it comes to mitigating the use of earnings management.

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[2] Excluding financials, see 1.4 Delimitation

1.3 Purpose

The aim of the study is to empirically describe and analyze whether and if so why, CEOs on Swedish public firms listed on NASDAQ OMX Stockholm, use earnings management prior to routine CEO departures.

1.4 Delimitation

First, the authors are not interested in examining financial companies as they follow a different accounting practice than the rest of the industries listed on NASDAQ OMX Stockholm (Lag 1995:1559). Second, the choice of focusing on the regulated market and not the trading platform is due to the fact that only these firms need to follow IFRS and the Swedish Corporate Governance Code. Lastly, as NASDAQ OMX Stockholm is established in late 2006 combined with the fact that it is the authors' ambition to examine the current situation, the study is delimited to the period 2007 to 2014.

1.5 Routine CEO departure

In order for the reader to easily understand and follow the different concepts and theories in the thesis it is important to clarify how a routine CEO departure is defined.

This study investigates routine CEO departures, which are defined as well-planned and peaceful. Routine CEO departures are seen as a process where the outgoing CEO retires, stays within the firm or leaves the firm on his or her own initiative. In order to define it as a departure, there has to be an event where the CEO leaves his or her position and a new person takes over. The authors of this thesis choose to define routine CEO departures as defined above.

1.6 Audience

This thesis is of interest to board of directors of firms listed on NASDAQ OMX Stockholm and stakeholders striving to learn more about earnings management and routine CEO departure in Swedish listed firms. This study is also of interest to academics in the field of finance and auditing who may want to further explore earnings management prior to routine CEO departure.

1.7 Thesis outline

The chapters in this thesis are structured according to the following outline: Chapter two presents the theoretical framework which the thesis is based on and the hypotheses for the regressions are formed. In order to gain a better understanding for the outcome of this thesis, chapter three highlights the relevant differences among laws and regulations between U.S.

and Sweden. Chapter four develops the theoretical part into a research approach where details about the two substudies: Substudy 1 and Substudy 2 data set, statistical methods and explanatory variables are presented. Chapter four also includes discussions regarding OLS-assumptions and potential methodological problems in terms of validity, reliability and replicability. Chapter five presents the empirical findings of the substudies. Chapter six analyzes the empirical findings as well as a discussion in the context of the theoretical framework and empirical literature presented. Lastly, the seventh chapter the further discusses the analysis presented in chapter five on a higher level where conclusions, recommendations and proposals for further research are provided.

2. Theoretical framework and empirical hypotheses

In this chapter empirical findings of previous research are first discussed to establish an understanding for the issue concerning CEO's incentives to use earnings management prior to routine departure. In addition, the theoretical framework is presented. Finally, based on the previous research and the theoretical framework presented empirical hypothesis are established and motivated.

2.1 Empirical findings of previous research

To clarify how routine CEO departures influence the use of earnings management it is relevant to identify what prior research find.

Smith and Watts (1982) are among the first to link executive compensation plans to earnings management. At that time, their study was of interest since executive compensation plans, based on firm performance had not existed for a long period of time and were increasing in popularity. They state that there are at least two potential reasons for the increased popularity of executive compensation plans. The first is the tax incentives, and the second is the compensation encouraging executives to maximize firm value. The result of the study shows that tax incentives cannot explain some of the cross-sectional differences in the sample, but the incentive effects of compensation plans can. Healy (1985) also investigated the relationship between earnings management and bonuses and states that when the economic earning yield falls between the minimum and maximum bonus the manager has an incentive to increase his current payoff by inflating the accounting earnings.

Similarly to Smith and Watts (1982) and Healy (1985), Dechow and Sloan (1991) examine the relationship between variable salary compensation and earnings management. Dechow and Sloan (1991) finds evidence that support the short horizon hypothesis. Their study is conducted on American manufacturing firms between 1979 and 1989 that have a routine CEO departure. The sample is restricted to industries with a R&D expenses to sales ratio above five percent. Another requirement is that the CEO has a variable compensation linked to the fixed salary prior to departure. They link executive compensation plans to discretionary accounting with the R&D expenses variable and find that CEOs who plans to leave the firm are significantly lowering their research and development costs during the final year. According

to the researchers' findings one explanatory reason for the CEOs behavior is that the CEO in a routine departure does not receive the full future benefits that is incurred by the current costs of R&D via bonus and compensation plans. Therefore, there is a possibility that the outgoing CEO reduces these expenditures in the year(s) before the planned departure. Correspondingly to Dechow and Sloan (1991), Murphy and Zimmerman (1993) controls for the short horizon hypothesis. Contradicting to Dechow and Sloans (1991) study, Murphy and Zimmerman (1993) examine all American firms with routine departure between 1971 and 1990. In addition, they link not only R&D expenses as one potential variable for managerial discretion, but also advertising costs, capital expenditures and discretionary accruals. However, their study does not find any evidence that support the short horizon hypothesis. The researchers conclude that the change in the discretionary variables is mostly due to the financial performance of the company. Gao and Shrieves (2002) examine the association of the components of the compensation package with the intensity of earnings management. They find that earnings management is negatively associated with salary and positively associated with stock options and bonuses. Studies have shown that assessment and bargaining power controlled by the board of directors decline if the CEO performs well (Adams, Hermalin & Weisbach, 2010), hence a CEO with bargaining power usually bargain for more compensation.

Brickley, Coles and Linck (1999) examine the relationship between earnings management and the short horizon hypothesis, similarly to prior research (Dechow & Sloan, 1991; Murphy & Zimmerman, 1993). However, they are among the first to link the use of earnings management during routine CEO departures to the post horizon problem. They study U.S. firms listed on Forbes annual executive survey between 1989 and 1993 and examine the relationship between board seat retention and discretionary accruals. They find a strong positive relationship between firm performance during the departing CEOs four final years and the likelihood of retaining a board seat after departure. Their study is thereby suggesting an additional source of CEO incentives that has not been previously discussed.

After the crisis in the late 20th and early 21st century[3] the focus turned to corporate governance and the composition of the board (Bebchuk & Fried, 2006, Ronen & Yaari, 2008). Reitenga and Tearney (2003) control for corporate governance mechanisms prior to routine

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[3] the dot-com bubble 2000 and the financial crises in 2008.

CEO departure. The researchers examine both the post horizon hypothesis and the short horizon hypothesis. Furthermore, Reitenga and Tearney (2003) use cross-sectional data on the Jones cash-flow model to measure the use of discretionary accruals prior to routine CEO departure. Their findings show strong evidence of earnings management in the final year and the final two years prior to routine CEO departure and find evidence that support the post horizon hypothesis, which is consistent to Brickley, Coles and Linck (1999). However, their results are inconsistent with the short horizon hypothesis as discretionary accruals are more income-increasing in year -1 and not in the CEOs' final year (year 0). Reitenga and Tearney (2003) also find that independent directors mitigate the use of earnings management and that institutional ownership exacerbates earnings management in a CEO's final years.

Graham, Harvey and Rajgopal (2005) conduct both a qualitative and quantitative study on executives. In the qualitative part of their study the researchers document that three quarters of the responding executives in their study consider upward mobility in the labor market to be more important than the short run compensation benefits i.e. the short horizon hypothesis. This means that CEOs find it more important to meet or beat earnings benchmarks, build credibility, maintain or increase stock price and improving the external reputation. This is due to the career concern motivations for the departing CEOs that are found to be important. In the quantitative part of their study they find that most earnings management is achieved via real earnings management as opposed to accrual earnings management. Managers take real economic actions such as delaying research and development expenses or advertising costs in order to meet earnings benchmarks.

As can be inferred from this section prior research have both focused on earnings management in form of discretionary accruals and real earnings management. Real earnings management refers to actions undertaken by the CEO such as delaying or giving up R&D expenses and advertising costs in order to meet the short term earnings target. This thesis is therefore divided into two substudies. The first substudy focuses on accruals earnings management by measuring the use of discretionary accruals prior to routine CEO departure. The second substudy focuses on real earnings management by measuring the use of R&D expenses prior to routine CEO departure.

2.2 Agency theory

When discussing corporate governance in terms of the system of control, regulations and attempts to design incentives to hinder fraud, its main focus is often the existing conflict of interest and the endeavor to reduce them. According to Eisenhardt (1989) the agency theory aspires to reconcile two problems that can occur in agency relationships. The first agency problem occurs as a result of conflicting goals or desires between the principal and agent. It also occurs as a result of being costly or difficult for the principal to confirm the agents' actions. This can be referred to the agency cost of managerial incentives. It is costly for the principal to decrease the agency problem. The costs are usually divided into three groups: monitoring costs, bonding costs and shrinking costs (Ogden, Jen & O'Connor, 2003). Since the costs are large it is understandable that an owner with small ownership stakes is not interested in taking on these costs. The incentives might however be greater for investors with large ownership stakes such as blockholders or institutions. According to Fama and Jensen (1983) this conflict is likely to happen when a key decision maker does not have financial interest in the outcome of his or her decisions. The second agency problem concerns risk sharing that occur when the principal and agent have different risk attitudes, hence they may lean towards different actions due to different preferences towards risk. The agent, for example a CEO, hired by the principal, for example the owner, cannot diversify away its risk in the same way as the owner can. Hence, it is likely that the agent is more risk-averse than the principal.

Prior research shows that there is a relationship between the agency problem and earnings management during routine CEO departure. The CEO (agent) might have incentives to increase reported earnings by using earnings management in the final year on the expense of the firms' shareholders (principals), as he or she wants to receive a greater variable compensation and/or increase the probability of having a seat on the board after the routine departure.

2.3 Stakeholder-, and shareholder theory

As the study examines public companies during routine CEO departure, there is a higher degree of stakeholders which are interested in the well-being and survival of the firm. According to the stakeholder and shareholder theory, the view towards investors differs. Therefore, it is relevant to introduce these theories.

In order to manage the day to day business a firm needs capital. When a firm grows and need to implement significant investments they might not have all the capital they need to fund all their expenses. Instead they might need to attract external capital. In Sweden and the majority of Europe, both the state and the union have a strong influence on the corporations. This leads to several outcomes but the major one is that firms need to focus more on their stakeholders[4]. In these markets the shareholders have less protection since they are only one out of several important stakeholders. This in turn leads to that both the shareholders and the banks are considered as major creditors to these corporations (Moffett, Stonehill & Eiteman, 2003). This is not the case in the Anglo-Saxon markets, where neither the state nor the union has the same control. In these countries, the shareholders are considered to be the most important stakeholder and creditor of the firm. This leads to two different approaches of corporate governance. The first approach is the stakeholder theory characterized by European markets and the second approach is characterized by the Anglo-Saxon markets and is called shareholder theory. These different approaches will most likely affect the use of earnings management, since the earnings management phenomenon is built on the belief that the shareholders and all the stakeholders can be fooled. As this thesis aims to investigate firms listed on NASDAQ OMX Stockholm, the result can differ from the studies discussed under prior research.

2.4 Empirical hypothesis

2.4.1 The horizon problem

A horizon effect exists when a CEO retires or separates from his or her job and approaches a well-defined point. The question is how the horizon problem impacts a manager's investment decision, an issue that is examined in several studies (Dechow & Sloan, 1991; Murphy & Zimmerman, 1993; Brickley, Coles & Linck, 1999; Reitenga & Tearney, 2003). Correspondingly, Murphy and Zimmerman (1993) state that a horizon problem exists when the outgoing CEOs have incentives, as they are approaching a known departure or retirement, to make accounting choices or investment plans that increase current earnings during the years prior to departure at the expense of the firm's future earnings. These issues lead to two hypotheses that will be further discussed below called the short horizon hypothesis and the post horizon problem

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[4] Shareholders, employees, clients, creditors, suppliers, the government and the society.

2.4.1.1 The short horizon hypothesis

The short horizon hypothesis predicts that CEOs in a routine departure will try to increase reported earnings in their final year with the aim to receive a larger variable bonus payment (Reitenga & Tearney, 2003). There is empirical evidence that CEOs reduce research and development expenditures in their final year (Dechow & Sloan, 1991) in order to receive a larger variable bonus payment. On the contrary, there is not as much evidence showing that CEOs use discretionary accruals in order to increase earnings in their final year (Murphy & Zimmerman, 1993). However, in order to conclude if similar empirical results are found in Sweden, both research and development expenses and discretionary accruals are measured.

In order to control for the short horizon problem it is important to understand that there are several possible ways for a firm to compensate its CEO. Some of the components are increasing the salary, stock options, variable salary compensation and vacation. In this study the main focus will be on variable salary compensation, since it typically is paid on accounting measures of performance such as earnings (Murphy, 1999). This potentially gives managers an incentive to accept negative NPV projects where expenses are foisted first after the CEO departure rather than accepting positive NPV projects which have a long payback (Smith & Watts, 1982). In Sweden, the board of directors of public firms listed on NASDAQ OMX Stockholm delegate their decision-making authority to the compensation committee to calculate the variable salary designated to the CEO. A bonus depends on achieving a performance target, an element that is sensitive to firm size and growth (Ittner, Lacker & Rajan, 1997; Nagar, 2002). Salary affects the payment of bonus, since target bonus typically is expressed as a percentage of base salary (Holthausen, Larcker & Sloan, 1995; Murphy, 1999). The arguments above lead to the following hypotheses:

H1: Discretionary accruals are positively related with a CEOs variable salary compensation prior to routine CEO departure

H2: Research and development expenses are more likely to reduce in the final year prior to routine CEO departure

2.4.1.2 Post horizon problem

The post horizon problem occurs when departing CEOs have incentives to obtain a directorship or a better employment after departure (Ronen & Yaari, 2008). According to Brickley, Coles and Linck (1999) and Reitenga and Tearney (2003) accounting performance

is positively related to the probability that the departing CEO will retain a board seat. This suggests that CEOs might have incentives to use discretionary accruals to manipulate reported earnings upwards in his or her final years.

This leads to the following hypothesis:

H3: Discretionary accruals are positively related with receiving a directorship after routine CEO departure

2.4.2 Board structure

It can be discussed whether corporate boards matter because their day-to-day impact is difficult to observe. However, when things go wrong, as in a bad investment decision taken by the CEO, boards usually become the center of attention (Adams, Hermalin & Weisbach, 2010). In order to understand the hypotheses under section 2.4.3.1 and 2.4.3.2 and its potential impact on and the actions undertaken by the departing CEO, it is important to understand and highlight the tasks assigned to the board of directors.

The board is hired by the firm and aims to act in the best interest of the shareholders. Therefore, the board shall ensure that the actions taken by the CEO align with the shareholders interest. However, as discussed under section 2.2 there might be a separation of ownership and control in public corporations (Fama & Jensen, 1983). The board of directors has the responsibility of controlling the process by which top executives are hired, promoted and assessed. If necessary they shall also take the decision of firing a bad performing CEO (Adams, Hermalin & Weisbach, 2010).

The boards in U.S. listed firms follow the Sarbanes-Oxley Act. SOX is stipulated as a law with strict penalties for non-compliance. On the contrary, Swedish firms listed on NASDAQ OMX or NGM Equity follow the Swedish Corporate Governance Code which is based on the principle comply or explain.

2.4.3.1 Board size

Lipton and Lorsch (1992) and Jensen (1993) argue that a large board size has behavioral norms that contribute to less open discussions of managerial performance. The researchers state that due to the poor communication and decision-making the effectiveness of such larger board groups decline. Jensen (1993) finds that smaller boards are more effective in monitoring the managers than larger boards. Yermack (1996) finds evidence consistent with

Jensen (1993). Similarly, Core, Holthausen and Larcker (1999) argue that larger boards are more susceptible to the influence of the CEO and being less effective, and therefore state that the size of the board is expected to be associated with less effective board monitoring. Therefore, if smaller boards are more effective in monitoring the managers, this should lead to less earnings management being executed. The Swedish Corporate Governance Code (2010) states that a board must involve at least three members, whereas one of the members is appointed chair. The average board size in Sweden is 10.9 directors, while the average board size in the U.S. is 10.7 (Nordic Board Index, 2012). Prior studies find that a board size of four to six members might be more effective as smaller boards are able to communicate more effectively and make well-timely strategic decisions (Jensen, 1993; Yermack; 1996). The arguments above lead to the following hypothesis:

H4: Board size is positively related to discretionary accruals in the years prior to routine CEO departure

2.4.3.2 Board independence

A departing CEO's ability to use discretionary accruals may be affected by the composition of the board of directors. Fama (1980) argues that outside directors are vitally important in order to create a board that serves as an important monitoring mechanism of the management. The Swedish Corporate Governance Code (2010) states that the majority of the board members should be independent in relation to the firm and the management. The Code also states that at least two of these board members should be independent in relation to the shareholders. In comparison to U.S. firms where CEO duality is allowed (Adams, Hermalin & Weisbach, 2010), a Swedish public firm's CEO is not allowed to be the chairman of the board during his or her tenure. However, CEOs are allowed to be a member of the board *(*Bolagsverket, 2014*)*. Independent directors can be considered to be more objective against a CEOs action than dependent directors and are probably better from a shareholder perspective. Independent directors care about their public reputation and are therefore more likely to argue for the remove of a poorly performing CEO (Warther, 1998). A successful CEO receives a higher bargaining power and studies shows that the more power a CEO gain, the less independent becomes the board, since the CEO prefers to remain in his or her position rather than being fired (Adams, Hermalin & Weisbach, 2010; Shivdasani and Yermack, 1999). According to Weisbach (1988) a board consisting of a majority of independent directors is more likely to dismiss a CEO for poor performance. Similarly to Weisbach (1988), Reitenga and Tearney

(2003) finds that independent board members are an effective governance mechanism, meaning that outside directors mitigate agency problems. Based on these arguments, the hypothesis is stated as follows.

H5: The proportion of independent board members is negatively related to discretionary accruals in the years prior to routine CEO departure

2.4.3 Ownership

As stated under Section 2.2, there is a tradeoff between an executives desire and the desire of investors. Similarly to the board of directors, investors might have a large impact on a CEO's incentives to manipulate discretionary accruals prior to leaving office.

2.4.3.1 Institutional ownership

Institutional stockholders may have an impact on actions taken by the departing CEO as they, due to their large stockholdings, could become effective monitors and reduce the probability of CEOs manipulating accruals. Prior research show that the amount of stock held by institutional stockholders has a negative relationship to discretionary accruals (Peasnell, Pope & Young, 1999) and a positive relationship to research and development expenditures (Hansen & Hill, 1991). Nevertheless, Cheng and Reitenga (2009) find that institutional investors effect on management behavior is contingent on the type of institution. The researchers show that small stakes held by institutions in firms tend to create pressure on management to prioritize short-term results. The threat that the institutional investors will reduce their stock holdings if expectations of earnings are not met may put additional pressure for CEOs to manipulate earnings in his or her final years. This is due to the likelihood of a CEO wanting to leave office on a high note. In accordance to the above arguments, this leads to the expectation of institutional stockholders creating a difficulty for CEOs leaving the firm to manipulate accruals. This leads to hypothesis H6.

H6: The proportion of outstanding stock held by institutional owners has a negative relationship to discretionary accruals in the years prior to routine CEO departure

2.4.3.2 Blockholders

Similarly to institutional ownership, the expectation is that the external pressure from large stockholders may have an impact on the departing CEO's behavior. A blockholder is defined as a stockholder that is not associated with management and holds five percent of the outstanding stock of the company (Reitenga & Tearney, 2003). Blockholders can work as

effective monitors, due to their large stockholdings and thereby reducing the likelihood of earnings management. Previous research shows that the probability of firms having a prior period income-decreasing adjustment is smaller when a blockholder is present (DeFond & Jiambalvo, 1991) and the probability of firms committing fraud when a blockholder is present is smaller (Dechow, Sloan & Sweeney, 1996). As a result, blockholders might make it more difficult for outgoing CEOs to manipulate accruals. Thus the H7 hypothesis is:

H7: The proportion of outstanding stock held by blockholders has a negative relationship to discretionary accruals in the years prior to routine CEO departure

2.5 Summary of theoretical foundation

In Table 1 below the hypotheses are presented with supporting theories and empirical evidence.

Table 1 Hypotheses and supporting theories

Hypotheses	Supporting
H1: Discretionary accruals are positively related with a CEOs variable salary compensation prior to routine CEO departure	Brickley, Coles & Linck, 1999; Reitenga & Tearney, 2003
H2: Research and development expenses are more likely to reduce in the final year prior to routine CEO departure	Dechow & Sloan, 1991
H3: Discretionary accruals are positively related with receiving a directorship after routine CEO departure	Brickley, Coles & Linck, 1999; Reitenga & Tearney, 2003
H4: Board size is positively related to discretionary accruals in the years prior to routine CEO departure	Yermack, 1996; Core, Holthausen and Larcker,1999
H5: The proportion of independent board members is negatively related to discretionary accruals in the years prior to routine CEO departure	Weisbach, 1988; Reitenga & Tearney, 2003; Cornett, Marcus & Tehranian, 2008
H6: The proportion of outstanding stock held by institutional owners have a negative relationship to discretionary accruals in the years prior to routine CEO departure	Peasnell, Pope & Young, 1999; Cheng & Reitenga, 2001
H7: The proportion of outstanding stock held by blockholders have a negative relationship to discretionary accruals in the years prior to routine CEO departure	DeFond & Jiambalvo, 1991; Dechow, Sloan & Sweeney, 1996

3. Laws and Regulations

The historical origin of a country is highly correlated with its laws and regulations (La Porta, Lopez-De-Selanes & Shleifer, 2008). Laws and regulations in turn affect the economic outcome of a country. This part of the study is thus of importance since the majority of prior studies are conducted in the United States. Therefore, there are certain differences between laws and regulations that need to be considered.

3.1 Common law and civil law

There are two main legal systems called civil law and common law. The key feature of these legal traditions is that they have been transplanted through colonization or conquest from relative few origin countries to the rest of the world (Watson, 1974). Countries may adopt laws from both of the legal systems and are called hybrids, but generally a particular tradition dominates each country. The common law system origin from England and has spread through its former colonies and to the Anglo-Saxon markets. It was developed because landed aristocrats and merchants wanted a system that could provide strong protection of their properties and contract rights meanwhile limit the crowns ability to interfere in the market (Mahoney, 2001). Civil law, on the other hand, was adopted in France, during Napoleon's era, in the desire to use state power to alter property rights in an attempt to insure that judges did not interfere.

There is a sharp difference between the ideologies underlying common law and civil law, with the latter one considerably more comfortable with the centralized and active government (Mahoney, 2001). As stated before, the majority of prior studies are conducted in the Anglo-Saxon markets. These are defined as common law countries, meanwhile this study only concerns Swedish firms listed on NASDAQ OMX Stockholm. Sweden is seen as a hybrid between civil law and common law (La Porta, Lopez-De-Selanes, & Shleifer, 2008). Common law stands for the strategy of social control that seeks to support private market outcomes, in comparison to civil law that seeks to replace the outcomes with state desire provisions. Civil law is policy implementing meanwhile common law is dispute resolving (La Porta, Lopez-De-Selanes & Shleifer, 2008). This indicates that there is a significant difference in investor protection. Specifically, La Porta, Lopez-de-Silanes and Shleifer (2008) find that common law provides stronger investor protection, while French civil law provides the weakest investor protection. This suggests that CEOs in firms located in civil law

countries, are more likely to engage in earnings management than CEOs in firms located in common law countries, such as the U.S. As stated above the historical origin affects regulations and laws. Swedish listed firms follow IFRS as the general accounting practice, while U.S. firms follow GAAP. The authors highlight some of the relevant differences among the accounting practices that might affect the use of earnings management.

3.2 IFRS and GAAP

There exist some key differences between the U.S. Generally Accepted Accounting Practice (GAAP) and International Financial Reporting Standards (IFRS). GAAP is considered as a rule based accounting standard compared to IFRS that is considered as more principle based. This implies that IFRS captures and represents the economics of a transaction better than the U.S. GAAP. Some of the major differences between GAAP and IFRS that are relevant for this thesis are presented below.

One significant difference between IFRS and GAAP exist when it comes to intangibles. Both IFRS and GAAP define intangible assets as a non-monetary asset without physical substance (Ernst & Young, 2011). Both accounting models require that there are more probable future economic costs and benefits that can be reliably measured in order to recognize the item. Amortization of intangible assets over their estimated lives is required in both IFRS and GAAP, with one exception in GAAP for software costs. In both standards there is no limit to the period in which the intangible asset is expected to generate net cash inflows. However, there are differences as well. For instance, in GAAP development costs are expensed as they incur, meanwhile in IFRS development costs are capitalized when: *"technical and economic feasibility of a project can be demonstrated in accordance with specific criteria including: intend to complete the asset, and ability to sell the asset in the future."* (Ernst & Young, 2011, p. 16). Substudy 2 of this thesis focuses on research and development expenses. Prior studies made in the U.S market find that in order to receive a higher bonus, CEOs tend to decrease research and development expenses by using real earnings management prior to leaving the office (Dechow & Sloan, 1991).

When it comes to the disclosure of inventory, there are differences between IFRS and GAAP. Under GAAP you can apply either LIFO[5] or FIFO[6] when accounting for inventory. This is

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[5] Last in first out

prohibited in IFRS where only FIFO is allowed (Ernst & Young, 2011). During increasing prices LIFO can provide a comparable advantage since it can give a less taxable income and thus increase the cash flow. Write downs are also handled differently. If an inventory is written down under IFRS it can be reversed in future periods if specific criterias are met, meanwhile under GAAP any reversal is prohibited (Ernst & Young, 2011). Since Substudy 1 is measuring the discretionary accruals based on a number of variables including PPE, cash flows, revenues and assets, which all are affected by the accounting differences stated above this part is important to remember, when it comes to interpret and compare the result to prior studies.

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[6] First in first out

4. Methodology and data

In this chapter both the research approach and research method is presented and motivated. The chapter will be divided into two substudies: Substudy 1 and Substudy 2. Furthermore, OLS-assumptions and potential methodological problems in terms of validity, reliability, and replicability are discussed.

4.1 Research approach

The aim of this study is to empirically describe and analyze whether and if so why CEOs on Swedish public firms, listed on NASDAQ OMX Stockholm, use earnings management prior to routine CEO departures. The time period examined is 2007 to 2014. The reason for investigating routine CEO departures from the year 2007 is due to NASDAQ OMX Stockholm being established in late 2006. Before NASDAQ OMX Stockholm existed, firms were listed on the Stockholm Stock Exchange that had rules and requirements that differ from NASDAQ OMX Stockholm (Aktiespararna, n.d.). The reason for including firms listed on regulated markets is due to the requirement that only regulated markets follow the Swedish Corporate Governance Code (Swedish Corporate Governance Code, 2010) and IFRS. Therefore, firms listed on trading platforms are not included. There are two regulated markets in Sweden one is NASDAQ OMX Stockholm and the other one is NGM Equity. The reason for not including firms listed on NGM Equity is due to NASDAQ OMX Stockholm being the largest market with the most listed firms and the largest turnover (NASDAQ OMX Nordic, n.d.). This study includes all Swedish firms listed on NASDAQ OMX Stockholm´s small cap, mid cap and large cap.

Consistent to prior research, this study applies a quantitative approach which focuses on numerical data (Bryman & Bell, 2011). The reason for conducting a quantitative approach is due to the authors' aim to capture all public firms on NASDAQ OMX Stockholm and to provide a more generalized empirical result. This study uses secondary data. Furthermore, a deductive approach is applied which represents the most common view of the nature of the relationship between theory and research. The theory and hypotheses deduced are presented in Section 2.4 Empirical hypotheses, which drive the process of gathering data in this section (Bryman & Bell, 2011).

4.2 Substudies

The chapter is divided into two substudies: Substudy 1 and Substudy 2 and apply two different models: although, both substudies intend to examine the relation between routine CEO departures and earnings management. The Jones cash-flow model is applied in the first study and focuses on accruals management, investigating the amount of discretionary accruals used before a routine CEO departure. However, earnings management is not only executed in accruals (Bartov, Gul & Tsui, 2001), but also in investment expenditures such as research and development. Therefore, the authors apply a different model in Substudy 2 measuring the amount of real earnings management used on research and development expenditures prior to a routine CEO departure. Both Substudy 1 and 2 consist of the same population in terms of CEO departures between the period 2007 and 2014, although, the sample requirements differ and thereby also the sample selection.

4.2.1 CEO routine departures - sample selection

The first step in the sample selection process is to include all CEO departures on Swedish companies listed on NASDAQ OMX Stockholm in 2014. As the period of interest includes CEO departures between the period 2007 and 2014, the list is supplemented with CEO departures on firms that are listed on NASDAQ OMX Stockholm between this period, but might not be listed any longer. In order to identify all CEO departures during the estimated period, the authors use annual reports and the book "Ägarna och Makten 2007-2009". As seen in Table 2 this gives a total of 219 CEO departures (see Appendix 1[7]), which results in 151 Swedish firms. Furthermore, to detect the reason for a CEO leaving the firm, the authors search through press releases and Swedish newspapers such as Dagens Industri and Affärsvärlden. As the purpose of this study is to examine routine CEO departures all non-routine CEO departures are excluded from the sample. A CEO departure is defined as non-routine when a CEO leaves the office due to being fired, sickness or "taking time out", or due to circumstances such as the firm having an acting CEO or due to M&A, as seen in Table 2. This reduces the sample to 125 CEO departures.

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[7] Appendix 1 includes all CEO departures collected between the period 2007 to 2014

Table 2 Sample selection

Sample	CEO departures
CEO departures between 2007 - 2014	219
Fired	54
Time out	1
Acting CEO	27
Sickness	2
M&A	3
No clear reason	7
Routine CEO departures	**125**

4.3 Research method for Substudy 1

As mentioned Section 4.1, this study adopts a quantitative approach. In this section, the method applied and the data used to accomplish the approach is presented in details. Substudy 1 examine if CEOs manipulate accruals prior to routine departure and which potential factors that can explain the use of earnings management.

4.3.1 Sample characteristics

The sample is restricted to (1) firms that have at least one routine CEO departure, (2) firms listed on NASDAQ OMX Stockholm between the period 2007 to 2014, (3) firms that have required data from the income statement, balance sheet and cash flow statement at least four years prior to the routine CEO departure and (4) firms with variable salary compensation. As several years prior to the departure are examined, having long time-series for each sample firm is important. Finally, the firm must provide the routine departing CEO with variable salary compensation since the short horizon hypothesis predicts that the performance-based incentive pay will give the departing CEO an incentive to engage in earnings management (Reitenga & Tearney, 2003).

4.3.2 Data Collection

The data collection for the routine CEO departures are the same for both Substudy 1 and Substudy 2, as explained in Section 4.2.1. Furthermore, the secondary data used in the Jones-cash flow model mainly consists of accounting data. The data is collected from the database DataStream and the companies' annual reports. Data for the explanatory variables institutional ownership and blockholding is collected from SIS Ägarservice.

4.3.3 Sample selection

As seen in Table 3, the preliminary sample consists of 125 routine CEO departures. However one of the sample requirements, as mentioned in Section 4.3.1, is that there are available data from the income statement, balance sheet and cash flow statement at least four years prior to the routine CEO departure. As seen in Table 3 this resulted in 37 routine CEO departures being excluded. Furthermore 8 routine CEO departures are eliminated from the sample as they do not offer variable salary compensation to the routine departing CEO. Furthermore 2 routine CEO departures are excluded due to uncertain circumstances, meaning that there is no clear information if the CEO received a variable salary compensation or not. The final sample consists of 78 routine CEO departures. This gives a relatively good final sample, as only 37,6 percent of the 125 routine CEO departures are excluded and can be seen as representative in general. The final year for Substudy 1 is defined as the last year the CEO stays in office for at least six months beyond the fiscal year.

Table 3 Sample selection for Substudy 1

Sample - Substudy one	Routine departures
Routine CEO departures	125
Too short time period (<4)	37
No variable salary compensation	8
Uncertain	2
Total	**78**

4.3.4 Normal and abnormal components

There is a general framework outlined by McNichols and Wilson (1988) for classifying accounting accruals into normal (non-discretionary) and abnormal (discretionary) components. The non-discretionary accruals, NDA, are legal and occur from transactions from the current period, such as depreciation. Discretionary accruals are illegal and occur due to accounting methods that are chosen in order to manipulate the result (Ronen & Yaari, 2008). Hence, the reason for calculating the use of DA is due to it being considered to be the outcome of managerial opportunistic choices (Kalyta, 2009). DA is calculated by using the Jones cash-flow model as explained under Section 4.3.6. This means that discretionary accruals are equivalent to the use of earnings management in this thesis.

Discretionary accruals are calculated by taking total accruals subtracted by non-discretionary accruals.

DA = TA- NDA

TA= total accruals

NDA= non-discretionary accruals

DA = discretionary accruals

4.3.5 Measures of discretionary accruals

There are several models for detecting accruals management, as it is not possible to measure earnings management directly. There are several studies (Dechow, Sloan & Sweeney, 1995; Cornett, Marcus & Tehranian, 2008; Patro & Pattanayak, 2014) testing and comparing which model that measures discretionary accruals best. In order to clarify the model with the highest accuracy for measuring DA, the most well-known models are explained and compared below. According to the Healy (1985) model non-discretionary accruals are measured by scaling the mean of total assets by lagged total assets. He states that the average of non-discretionary accruals is zero, as non-discretionary accruals follow the regression of white noise. Healy (1985) argues that there is earnings management if the value of total accruals is non-zero.

The DeAngelo model measures non-discretionary accruals by using last period's total accruals scaled by lagged total assets. This model is seen as a special case of the Healy model, where the non-discretionary accruals estimation period is limited to previous year's observation (Dechow, Sloan & Sweeney, 1995). Similar to the Healy Model, the DeAngelo model use total accruals from the estimation period to proxy for expected non-discretionary accruals. According to Dechow, Sloan and Sweeney (1995) both models measure non-discretionary accruals without error if the non-discretionary accruals are constant over time, and discretionary accruals have a mean of zero in the estimation period. However, the models tend to measure NDA with error, if non-discretionary changes over time (Bartov, Gul & Tsui, 2001). While the Healy model assumes that NDA follow the regression of white noise, which is a mean reverting process, the DeAngelo model assumes that non-discretionary accruals follow a random walk process (Bartov, Gul & Tsui, 2001). Hence, the most appropriate model when DA changes over time is resultant from the nature of the time series process generating non-discretionary accruals. There is a small chance that the assumption that non-discretionary accruals is empirically descriptive, as NDA is impacted by the economic circumstances, and

therefore changes over time. This implies that there is a high probability that both the Healy Model and the DeAngelo model will give faulty measurements of earnings management.

In contrast to the Healy model and the DeAngelo model, the Jones model endeavors to control for the effect of economic circumstances on NDA (Bartov, Gul & Tsui, 2001), implying that the Jones model does not assume that non-discretionary accruals are constant. Jones (1991) shows that the model manages to explain one quarter of the change in TA (Dechow, Sloan & Sweeney, 1995). One of the weaknesses of the Jones model is that it assumes that revenues are non-discretionary (Ronen & Yaari, 2008), implying that firms do not manage revenues before the event (routine CEO departure). However the Jones-model has been developed and improved over the years. A version of it called the modified Jones model does consider earnings management in revenues[8] (Ronen & Yaari, 2008).

Bartov, Gul and Tsui (2001) draw the conclusion that the modified Jones model is able to consistently detect earnings management and that both the Jones model and the modified Jones model perform better than the Healy model and the DeAngelo model in detecting earnings management. Consequently, Dechow, Sloan and Sweeney (1995) conclusion shows that the modified Jones model tends to have the lowest standard deviation among the models they tested including both the Healy model and the DeAngelo model.

Furthermore, a third version of the Jones model called the Jones cash flow model includes measuring earnings management in operating cash flows. According to Dechow (1994) discretionary accruals are negatively associated to cash flows, which is consistent with accruals leading cash flows. Therefore, for the purpose of this study, the authors measure earnings management by applying the Jones cash flow model on Substudy 1.

4.3.6 Jones cash-flow model
This study applies the Jones cash flow model to measure the use of discretionary accruals. However, this version of the Jones cash flow model includes operating cash flow. According to Dechow (1994) discretionary accruals have a negative relationship to cash flows, which is consistent with accruals leading cash flows and with incentives to manipulate earnings. For instance, a positive cash flow can point out a strong performance, which will reduce a CEO's

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[8] This is the only adjustment made in the modified Jones model, in comparison to the Jones model (Ronen and Yaari, 2008).

incentives to use accruals to increase earnings. Respectively a negative cash flow can point out a weak performance, which will increase a CEO's incentives to use accruals to increase earnings. Furthermore in order to reduce heteroscedasticity (Jones, 1991) the variables in Jones cash flow model are scaled by the prior year's assets. The Jones cash flow model (Cornett, Marcus & Tehranian, 2008) is presented below.

$$\frac{TA_i}{A_{t-1}} = \alpha_0 \frac{1}{A_{t-1}} + \alpha_1 \frac{(\Delta Rev_i - \Delta Rec_i)}{A_{t-1}} + \alpha_2 \frac{PPE_i}{A_{t-1}} + \alpha_3 \frac{\Delta CFO_i}{A_{t-1}}$$

Equation 1a

$$\%DA_i = \frac{TA_i}{A_{t-1}} - (\hat{\alpha_0} \frac{1}{A_{t-1}} + \hat{\alpha_1} \frac{(\Delta Rev_i - \Delta Rec_i)}{A_{t-1}} + \hat{\alpha_2} \frac{PPE_i}{A_{t-1}} + \hat{\alpha_3} \frac{\Delta CFO_i}{A_{t-1}})$$

Equation 1b

$TA_i =$	Total Accruals for firm i
$A_{t-1} =$	Assets year t-1
$\Delta Rev_i - \Delta Rec_i =$ change in	change in revenues for firm i - receivables for firm i
$PPE_i =$	Propoerty, plant and equipment for firm i
$\Delta CFO_i =$	change in cash flow operations for firm i

The first step in the Jones cash flow model is to estimate normal accruals scaled by assets by performing Equation 1a. Each variable that is included in Equation 1a and Equation 1b is explained under the equations, for instance total accruals, TA_i, denotes for total accruals for firm i. Equation 1a and Equation 1b are computed by using cross-sectional data. The firm-specific estimate α_1, α_2, and α_3, are obtained yearly by using Equation 1a in the estimation period, as the authors want to calculate the proportion of discretionary accruals that is executed yearly. By dividing each variable with last year's total assets, it is possible to avoid heteroscedasticity and make a comparison between firms (Jones, 1991). Equation 1b is used to estimate the discretionary accruals as a fraction of assets, DA%, where hats in the equation are denoted from regression Equation 1a. Accordingly, to measure propensities for earnings management the dependent variable, DA%, is adjusted to the absolute value of discretionary accruals (Cornett, Marcus & Tehranian, 2008). The reason for the adjustment to absolute values is that the authors aim to examine the use of all accruals management. If only discretionary accruals are accounted for, and not the absolute values, positive and negative

values will cancel each other out when analyzing the average. To be able to detect earnings management the Jones cash flow model makes certain assumptions. For instance, all changes in net sales, between the years, where products are sold in credit are assumed to be earnings management as it is easier to manipulate receivables than cash sales. The original Jones model (Jones, 1993) did not consider for changes in sales, and did therefore not measure earnings management arising from sales.

A weakness with the Jones cash flow model is that it only measures earnings management on accruals. According to Bartov, Gul and Tsui (2011) earnings management is not only executed on accruals, but also by manipulating research and development. This thesis takes this weakness into consideration in Substudy 2 by testing if CEOs tend to manipulate research and development expenses prior to routine departure.

4.3.7 Choice of data regression

According to prior research accrual based models are estimated by using time series data, cross-sectional data or panel data. Therefore it is relevant to discuss the best type for the Jones cash flow model.

A first alternative is time series. Jones (1991) applies a time series version to her model in order to estimate discretionary accruals. Time series is used as accruals cannot be destroyed or created, but needs to be moved from one year to another. This assumes that total accruals are zero when examining a longer time period. The advantage of using time series to estimate discretionary accruals is that the coefficients in the model are specified for each firm's conditions. Although in order to have this advantage and receive a reliable estimation of a firm's accruals, it requires a larger amount of data for a longer period. The large amount of data required leads to a decrease in total observations. However, despite the advantage of time series specifications, empirical evidence reported by Guay, Kothari and Watts (1996) and Dechow, Sloan and Sweeney (1995) show that applying a firm specific time series regression to estimate DA leads to considerable imprecision. The disadvantages of applying time series to the model, such as the presumption that the variables in the Jones cash-flow model to be constant over time, leads to it rarely being used by later research.

A second alternative to estimate discretionary accruals is panel data, a combination of cross section and time series. According to Arellano (2003) panel data is applicable when retrieved

data is a combination of different individuals and years. An advantage of using panel data is that unobservable heterogeneity becomes observable. Firm-specific effects that theoretically exist in the sample are adjusted by fixed effects. The adjustment is made by creating a dummy variable for each firm in order to capture the firm-specific effect. Another advantage is that panel data enables the detection of effects that are not possible to find by using time series or cross-sectional data (Baltagi, 2011). Despite the advantages, the sample in this particular study includes too many firms and too few years, therefore the regression is practically lacking power to detect discretionary accruals.

A third alternative is to apply cross-sectional data on the Jones cash flow model. Cross-sectional procedures are according to Peasnell, Pope and Young (2000) now more widely applied in earnings management research. Cross-sectional data estimate a firm's normal accruals each year separately, as an average for the market. An advantage of using a cross-sectional method is that a larger sample and subgroup is obtained. According to Kasznik (1999), the cross-sectional method controls for market effects that vary between the years. Estimating discretionary accruals by using a cross-sectional model should end in a larger sample size and be less subject to survivorship bias than a time-series model would (Bartov, Gul & Tsui, 2000). A negative aspect of using the cross-sectional method is that it does not take each firms uniqueness into account, as a subgroup is used. Therefore, it is important to create subgroups that give a true and fair view. Prior research which applies the cross-sectional method on the Jones cash flow model creates subgroups in different ways. While Cornett, Marcus and Tehranian (2008) divide them into industry, Siregar and Utama (2008) divide their sample into manufacturing and non-manufacturing firms.

Considering both the advantages and disadvantages using time series data, cross-sectional data or panel data the authors of this study decide to apply the cross-sectional method on the Jones cash flow model. However, as mentioned above it is important to create subgroups that give a true and fair view. There are not a large enough amount of firms in the sample in order to divide the firms into industries. An alternative could be to join similar industries with each other, but the authors of this study do not consider this to give a true and fair view. Another alternative could be to follow Reitenga and Tearney (2003) who examine earnings management prior to routine CEO departure. Their sample only consists of manufacturing firms, and concludes that their sample is too small to divide into industry groups. However, as this study aims to examine all firms listed on NASDAQ OMX Stockholm the sample does

not only consist of manufacturing firms. Therefore, for the purpose of this study, the authors follow Siregar and Utama's (2008) definition of subgroups, who divide their sample into manufacturing and non-manufacturing firms. The sample is divided into 29 non-manufacturing firms and 48 manufacturing firms.

4.4 Explanatory variables for Substudy 1

In order to examine whether the short horizon hypothesis and post horizon hypothesis actually exist and is a problem during routine CEO departures, two main variables are collected. For the short horizon hypothesis the variable collected is variable salary compensation and for the post horizon hypothesis a dummy variable that captures whether the CEO becomes director after departure is created. However, to be able to examine whether other potential factors might explain the outcome, other variables are collected. These are partly selected based on the hypotheses presented in Table 1 under Section 2.5, but also on what is considered to be of importance in this study. The explanatory variables are divided into 3 subgroups: corporate governance, ownership and firm characteristics.

4.4.1 CEO compensation

The authors of this study predict that the departing CEO might have different incentives to behave opportunistically before leaving the office. As discussed before, prior research finds that accounting performance is positively associated with CEO compensation. In order to control for the short horizon hypothesis a variable compensation variable has been collected through annual reports. The variable is measured as a ratio of the CEO's annual fixed salary, see Equation 2.

$$Variable\ salary\ ratio = \frac{Variable\ salary}{Annual\ fixed\ salary}$$

Equation 2

4.4.2 Directorship after departure

Research shows that the routine departing CEO may have incentives to use discretionary accruals to manipulate reported earnings upwards in his or her final years, which results in hypothesis 2. The hypothesis is tested by collecting data from DataStream and annual reports two years after the routine departure. The hypothesis is controlled for by creating a dummy variable which is 1 if the CEO retained a board seat two years after leaving the office and 0 otherwise. However, there is a possibility that the departing CEO knows that he or she will

receive a directorship which results in him or her less likely to inflate earnings in order to protect their long-term reputation with the firm.

4.4.3 Corporate Governance variables

4.4.3.1 Board size
Another variable controlled for is board size. As discussed before, prior research argues that a larger board size is less effective in monitoring the managers in comparison to a smaller board (Jensen, 1993; Yermack, 1996; Core, Holthausen & Larcker, 1999). However, prior studies also find contradicting results. Siregar and Utama (2008) and Gulzar and Wang (2011) find no significant relationship between board size and earnings management. On the other hand, Cornett, Marcus and Tehranian (2008) find that there is a significant positive relationship between board size and earnings management. This suggests that if smaller boards are better at monitoring than larger boards, there should also be less earnings management executed when a firm has a smaller board size than a larger board size. The measurement for board size is the same as in prior studies, where board size is measured as the total number of board members.

4.4.3.2 Board independence
Several studies show that independent board members have a monitoring function over the management (Weisbach, 1988; Reitenga & Tearney, 2003) and are assumed to have larger incentives to prevent earnings management in comparison to insiders (Cornett, Marcus & Tehranian, 2008). The Swedish Corporate Governance Code (2010) states that half of the board of directors in a firm should be independent in relation to the company and its management. The Code also defines independency against major shareholders. This thesis only focuses on independency against the company and its management, since it is more likely that the board members then are independent from the CEO. For instance, if the CEO is a member of the board, it automatically reduces the ratio in Equation 3 as he or she is dependent in relation to the company and its management. The variable is measured by dividing independent board members with the total number of board members excluding employee representatives and deputies appointed by the unions.

$$Independent\ board = \frac{independent\ board\ members}{number\ of\ board\ members}$$

Equation 3

4.4.4 Ownership structure variables

Institutional ownership is in this thesis classified as the 15 largest institutional owners in a firm. Similarly to Cheng and Reitenga (2009) the authors of this thesis want to capture different types of institutional owners, as the type of institution creates different kind of pressure on management, and therefore also the CEO. The variable is computed by dividing the number of shares that are owned by the 15 largest institutional owners by the total number of shares, see Equation 4.

$$Institutional\ ownership = \frac{no.\ of\ shares\ owned\ by\ institutional\ owners}{total\ no.\ of\ shares}$$

Equation 4

Furthermore, blockholders are defined as investors who own 5 percent or more of the firm's total number of shares, which could include private owners, spheres and institutional owners. The variable is computed as the number of shares that are owned by non-managerial blockholders divided by the total number of shares, see Equation 5. The data for institutional ownership and blockholding is retrieved from SIS Ägarservice.

$$Blockholders = \frac{no.\ of\ shares\ owned\ by\ non-managerial\ blockholders}{total\ no.\ of\ shares}$$

Equation 5

4.4.5 Firm characteristics variables

As stated in Section 4.2.1 this study consists of Swedish firms listed on NASDAQ OMX Stockholm small-, mid-, and large cap between 2007 to 2014. All firms that have a routine CEO departure during this period is collected, thus there potentially exist differences within the sample. To be able to control for some of these differences the authors have decided that the following variables shall be included: market capitalization and the market to book ratio.

The variable market capitalization is collected from DataStream. Prior research shows that larger firms are expected to be more monitored than smaller firms. In this specific sample it would mean that larger firms listed on large cap are expected to be more monitored than firms listed on small cap. This is due to larger firms having more stakeholders and investors than a smaller firm (Lee & Choi, 2002). Hence the CEO might not be able to manipulate earnings in the same way in large firms. On the other hand, larger firms have a tendency to use financial

instruments that are seen as more complex and therefore can lead to greater possibilities for utilizing accounting in order to manipulate earnings (Lee & Masulis, 2008). Thus the authors expect market capitalization to be negatively related to earnings management. The variable market capitalization is measured as ln-market capitalization, so that the variance is closer to the other explanatory variables.

The variable market to book ratio is calculated by taking a firm's market value divided by its book value. The purpose of including this variable is that it is a proxy for the growth opportunities available to the firm. Firms with a higher market to book ratio, such as firms with higher growth opportunities, should have more opportunities for earnings management. This depends on these kinds of firms having more intangible assets that sometimes can be interpreted differently according to different accounting rules (Lee & Masulis, 2008). Previous studies find that the market to book ratio is positively associated with abnormal accruals (Klein 2002; Menon & Williams, 2004; Kalyta, 2009). Therefore, this is also the expected relationship between earnings management and the market to book ratio in this particular study.

4.4.6 Panel data regression for explanatory variables

In order to conduct a regression on the explanatory variables, the authors have decided to use a panel data regression. This is done in order to capture both cross sectional and the period dimension. An advantage with the panel data regression is that potential heteroscedasticity is observed and mitigated. Another advantage is that panel data enables the detection of effects that are not possible to find by using time series or cross-sectional data (Baltagi, 2011). Equation 6 shows the regression. The dependent variable, which is the absolute value of discretionary accruals, is calculated in equation 1b. Furthermore, different tests are conducted in order to control for potential OLS problems. [9]

$$ABS(DA\%) = \alpha_0 + \alpha_1 (variable\ salary\ compensation) + \alpha_2 (post\ horizon\ dummy)\ \alpha_3 (board\ size) + \alpha_4 (board\ independence) + \alpha_5 (institutional\ ownership) + \alpha_6 (blockholding) + \alpha_7 (lnmarket\ capitalization) + \alpha_8 (market\ to\ book)$$

Equation 6

4.5 Research method for Substudy 2

This part of the study focuses on the behavior of R&D expenditures during the CEO´s final year in office. The aim is to investigate whether CEOs whose incentive compensation is based

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[9] The tests are conducted and presented under section 5.1 Substudy one

on earnings decreases their R&D cost for maximizing short term payoff, this study therefore only tests for the short horizon hypothesis in relation to real earnings management. As mentioned in the previous section, this study is conducted by using a quantitative approach.

4.5.1 Sample characteristics

Firstly, as mentioned in Section 4.2.1 this study examines all Swedish firms listed on Nasdaq OMX that have a routine CEO departure during 2007 to 2014. Secondly, only industries that have large R&D expenses are included. According to Dechow and Sloan (1991) industries with a R&D expense to sales ratio at or above five percent are defined as industries with large R&D expenses. The reason for including this requirement is that firms that have larger R&D expenditures may be able to reduce them to some extent without any larger notable differences. In comparison to firms with less R&D expenditures, where a change might have a noticeable effect and therefore reduces the CEO's possibility to manipulate the R&D expenses without attracting attention. The sample is narrowed further by only including firms that have (i) no other routine CEO departure five years prior to the change and (ii) a variable compensation salary based on performance. The final criteria (iii) is that there are five years of data for the selected sample prior to the routine CEO departure for the variables: R&D expenses, sales and market value.

4.5.2 Data Collection

As mentioned in Section 4.2.1 the information about CEO departure is collected from annual reports and financial magazines, such as Affärsvärlden. In appendix 1 the information about routine departures, during the selected time period, is obtained. Furthermore, the information about the variables: R&D expenditures, sales and market value are collected from Datastream. However, variable salary compensation is collected from the firm's annual reports.

4.5.2.1 Sample selection

Table 2 shows that out of the 219 departures, 125 are defined as routine, which equals 74 different firms. As stated above in Section 4.5.1 only industries that have a R&D to sales ratio at or above five percent are included. This ratio is calculated on 74 different firms, which is done by calculating the mean of the R&D expenses to sales ratio for each firm, across all firm years, in the same industry classification. As seen in Table 4, the industries highlighted in green have a research and development to sales ratio at or above five percent. These are technology, industrials and health care.

Table 4 Industry selection for Substudy 2

Industry	Firms	R&D expenditures/sales(%) Average over 07-14
Basic materials	5	0,85
Consumer goods	9	1,71
Consumer services	4	4,09
Health care	18	128,46
Industrials	27	9,84
Technology	10	13,12
Telecommunications	1	0,77
Total firms	74	

In total, there are 76 routine CEO departures within the three selected industries. However, as there are certain requirements, as mentioned in Section 4.5.1, the 76 routine CEO departures are narrowed further. First, 23 routine CEO departures do not fulfill the first requirement (i) of having only one routine CEO departure five years prior to the change. Second, six routine CEO departures are excluded due to not fulfilling requirement (ii) of having a variable salary compensation to the CEO, resulting in 47 routine departures. Finally, 29 out of the 47 routine CEO departures do not fulfill the (iii) requirement of having data for five years prior to the departure for the variables: R&D expenses, sales and market value. This results in a final sample of 18 routine CEO departures, as can be seen in Table 5.

Table 5 Final sample selection for Substudy 2

Final sample	Routine departures	(i)CEO > 4 years	(ii)Variable salary	(iii)All variables exist
Total	76	76	53	47
Excluded		23	6	29
Total		53	47	**18**

4.5.3 The R&D-model

There are not several well-established models for detecting real earnings management, to the author's knowledge. Instead, prior research has conducted similar equations that attempt to measure the use of R&D expenses prior to a routine CEO departure (Dechow & Sloan, 1991; Murphy & Zimmerman, 1993). The authors of this thesis choose to follow Dechow and Sloan's (1991) method. A drawback with their method, and thereby a drawback with this substudy, is that the final-sample only consist of firms with high research and development expenditures and will therefore not provide a general result. The R&D model is presented in Equation 8 (Dechow & Sloan, 1991). The variables in Equation 8 are estimated from year 0 to year -4. Year 0 denotes the year when the routine CEO departure takes place, and year -1 to -4

denotes the year prior to the departure. Since some of the variables are estimated in year t-1, data is collected to year -5. Since routine CEO departures are collected between the years 2007 to 2014, this leads to data being collected as far back as in 2002. As Substudy 2 includes expenses, such a long time period can lead to large uncertainty. Consequently, the numbers need to be adjusted in order to be comparable. The authors have decided to adjust them to 2014 value. This is conducted by taking the Consumer Price Index list given on Statistiska Centralbyran and then adjusting the variables: R&D expenses and market value to 2014 value. Equation 7 presents how the CPI ratio is calculated. Appendix 2 shows the CPI and the yearly ratio. Thereafter, to adjust the variable of interest, it is multiplied with the yearly ratio for that particular year.

$$CPI\ Ratio_{Year\ X} = \frac{CPI_{2014}}{CPI_{Year\ X}}$$

Equation 7

The R&D equation

$$ln\ \Delta R\&D_{it} = \alpha + \beta_1 DUM_{it} + \delta 1 \Delta R\&D_{m(i)t} + \varepsilon_{it}$$

Equation 8

$ln\ \Delta R\&D_{it} = ln\ R\&D_{it} - lnR\&D_{it-1}$

$\beta_1 DUM_{it} = 1$ for final year, 0 otherwise

$\delta_1 \Delta R\&D_{m(i)t} =$ Index for economy wide changes

Equation 8 is estimated with a panel data regression. The dependent variable is the change in R&D expenditures, consistent with Dechow and Sloan's (1991) study. By having the change in R&D expenditures potential econometrics problems are avoided (Dechow & Sloan, 1991).

4.5.4 Explanatory variables
Before conducting the regression, the explanatory variables need to be estimated. The R&D model consists of two explanatory variables: the first one is a dummy that takes on the value 1 for the final year and 0 otherwise. The second explanatory variable is a market value index, which purpose is to mitigate the endogeneity problem.

4.5.4.1 Dummy variable

The short horizon problem is expected to be larger during the CEOs´ final year. The problem predicts that CEOs who have variable salary compensation based on performance decreases the firm´s R&D expenditures in order to maximize short term payoff during their final year. In order to collect the dummy variable (DUM) the final year needs to be defined. In comparison to Substudy 1 that has a four year window, Substudy 2 only focuses on the CEO's final year at the office. Moreover, R&D expenditures are recognized as they occur, while accruals are recognized at the end of the fiscal year. Therefore, the definition of the final year differs. The final year for Substudy 2 is defined as the last year the CEO stays in office for at least six months beyond the fiscal year (year 0) and the year prior to the CEO's departure (year -1). However, if the departing CEO does not stay for at least six months beyond the fiscal year, year 0 is excluded. The final year is then defined as the year prior to the CEO's routine departure (year -1). Meaning that the last full fiscal year in office always is included. This definition of a final year differs from Dechow and Sloan's (1991) as they always include year -1 and year 0 to the final year, however, the authors find it to be more reliable to define the final year for Substudy 2 as mentioned above.

The dummy variable (DUM), in Equation 8, takes on the value 1 in the CEO's final year and 0 otherwise. The short horizon problem predicts that the coefficient of the variable DUM will be negative in relation to the use of R&D expenditures. A negative coefficient on DUM indicates that the change in R&D expenditures are below average during the CEO´s final year, indicating that the departing CEO is using real earnings management.

4.5.4.2 Market index

As seen in Equation 8, the regressions includes a market index ($\delta_1 \Delta R\&D_{m(i)t}$). The market index measures the economy wide changes in R&D expenditures. The reason for including the market index is to mitigate the endogeneity problem that R&D expenditures may contain an economy wide component. This leads to better estimation of the parameters and it mitigates the concern that the standard errors in the pooled regression are overstated due to cross-sectional dependence (Dechow & Sloan, 1991).The market index is a value weighted index of the change in R&D expenditures. All 74 firms in Table 4 are used to compute the index.

The market value index for firm i in year t is denoted $\Delta R\&D_{m(i)t,}$ and it is estimated by the following steps:

- The first step is to calculate a market value index for firm i in year t: $U_{jt}=$(Market Value)$_{jt}/\sum_{k\neq i}$ (Market Value)$_{kt}$. This is done by taking the market value of firm i and dividing it by all the other firms (k) in the same year (t) market value.
- The second step is to calculate the change in R&D for firm i in year t.
- The third step is to multiple the market value index of firm i with its change in R&D ($U_{jt}\Delta R\&D_{jt}$).
- The final step is to summarize $U_{jt}\Delta R\&D_{jt}$, for all firms in the same year. This equals the market value index for each firm in each year ($\Delta R\&D_{m(i)t}$).

4.6 OLS assumptions

Substudy 1 consists of both a cross sectional data set to estimate the Jones model and a panel data set to estimate the regression for the explanatory variables. Substudy 2 consists of a panel data set. Both Substudy 1 and 2 are using the OLS regression to estimate the variables. When conducting an OLS regression there exist five assumptions underlying the model that need to be fulfilled. If the assumptions are violated the consequences could be that the coefficient estimates and standard errors are estimated incorrect but also that the significance levels will be inappropriate. This could thus lead to both bias-, and incorrect inference problem (Brooks, 2008).

The first OLS assumption is $E(u_t)= 0$. This assumption means that the errors in the regression equation should have zero mean. This assumption does not need to be tested, because the mean of residuals equals zero in OLS (Brooks, 2008).

The second OLS assumption $Var(u_t)= \sigma^2$ can be interpreted as the variance of errors should be constant and finite over all values of X_t and is known as homoscedasticity. If the assumption is violated there is heteroscedasticity. There are several ways in which heteroscedasticity can be detected. The two most known tests are the Breusch-Pagan-Godfrey (BPG) test and the White test, which can be conducted in Eviews. If heteroscedasticity exists but is not controlled for OLS will still give unbiased coefficient estimates but the standard errors in the regression could be wrong i.e. too small or too big which in turn could lead to incorrect inference of the result. One possible remedy for heteroscedasticity is to transform the variables, take logs to reduce the size effects (Brooks, 2008).

The third OLS assumption $Cov(u_i,u_j)=0$ states that the errors should be linear and independent of one another otherwise there exists autocorrelation. The population's disturbance cannot be observed thus the test for autocorrelation is conducted on the residuals (Brooks, 2008). The reason for the occurrence of autocorrelation depends on bubbles or seasonal patterns. But it could also occur during omission of relevant independent variables, which are autocorrelated. If autocorrelation exist the OLS estimation will lead to coefficients that are unbiased but inefficient. The consequence could be incorrect inference of the result and a type II error problem, as when violating the second OLS assumption. The most common way to control for autocorrelation is by conducting a Durbin Watson test, which tests for the first order autocorrelation[10]. A Durbin Watson statistic near 2 indicates that there exist no autocorrelation, while a Durbin Watson statistic near 0 indicates that there exist perfect positive autocorrelation between the variables. A Durbin Watson statistic near 4 indicates that there exist a perfect negative autocorrelation between the variables (Brooks, 2008).

The fourth OLS assumption $Cov(u_t, x_t)=0$ states that there should be no relationship between the error and the corresponding x variables, otherwise there is a endogeneity problem. The endogeneity problem could result in biased and inconsistent parameters estimate. There are several ways to control for the endogeneity problem. A way to mitigate the endogeneity problem is by relying on modelling assumptions (Dougherty, 2011). A way to do this is by relying on panel data models as the fixed effect model or random effect model. Substudy 2 already handles the endogeneity issue by including a market value index.

The fifth and final assumption $u_t \sim N(0, \sigma^2)$, means that u_t should be normally distributed. The normality of the residuals is determined by examining the skewness and kurtosis of the residuals. The normal distribution has zero skewness and a kurtosis of three (Brooks, 2008) One way to detect non-normality is by conducting the Jarque-Bera test. If the probability value is significant it indicates that there is a non-normality problem. The non-normality problem can be solved by increasing the sample size, transform variables by taking logs and if there exist few extreme outliers one can use dummies to remove them.

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[10] First order autocorrelation assumes that the relationship is between a residual and the immediately preceding one (Brooks, 2008)

4.7 Methodological problems

Three of the most important criterias for the assessment of research in business administration is validity, reliability and replicability (Bryman & Bell, 2011). They are assessed in order to create credibility for the received results and its contribution to the scientific progress within the field. The first and most important criteria is validity, it assesses whether the conclusions that are generated from this study have a relationship (Bryman & Bell, 2011). The second is reliability, which refers to empiric reliability. It evaluates the studies ability of reliable and trustworthy results. Replicability assesses the ability for an independent person to reproduce the study and receive the same results (Bryman & Bell, 2011).

4.7.1 Validity

Validity is described as the rationality and the relevance of empirical data (Jacobsen, 2002). The intention is to examine how well the measurement methods applied, de facto measures the concept in question. In this case it examines the validity in the relationship between earnings management and routine CEO departure. In order to show that the Jones cash flow model in Substudy 1 is the most reliable and best performing model when measuring the use of accruals management, a discussion is presented under Section 4.3.5. The R&D model in Substudy 2 is replicated from Dechow and Sloan's (1991) study.

This thesis examines routine CEO departures on firms listed on NASDAQ OMX Stockholm's small-, mid- and large cap between the time period 2007 to 2014. The authors decide to examine a current period, which covers the financial crisis in 2008. Even though 7 years is a long period to examine, a longer time period that includes a whole business cycle gives a truer and fairer view on the use of earnings management prior to routine CEO departure. The authors only need to include three more years to cover a business cycle. However, as the system changed in late 2006 from the A and O list to NASDAQ OMX Stockholm, the authors have decided to set the time period from 2007. Furthermore, during the estimated period several listings and delistings have occurred. In order to minimize the risk of survival bias all firms that have been delisted during the estimated period, but have a routine CEO departure during their time as listed public firms are included. This increases the external validity and thus the transferability since the risk of distortion of the population towards companies reluctant to bankruptcies and mergers and acquisitions are avoided.

The data is collected from secondary sources which include: DataStream, SIS Ägarservice and annual reports. DataStream and SIS Ägarservice are two highly credible databases used by academics. However, all variables do not exist in these databases and is therefore supplemented with information from annual reports.

4.7.2 Reliability and replicability

Reliability and replicability is, as mentioned above in Section 4.7 two very important criterias for the assessment of a business administration study. Chapter 4 continuously provide relevant information for replicability for Substudy 1 and Substudy 2. Appendix 1 provides the full sample of CEO departures between the time periods.

A strong reliability exists if the results over time are stable and if internal reliability exists. In this study, internal reliability is of high essence, since a regression analysis is conducted on the panel data in order to examine the explanatory variables. Thus, several tests are conducted on the population as well as on the regression equations in order to ensure proper results, which are presented and conducted in Section 5. The tests ensure that the OLS assumptions mentioned in 4.6 are fulfilled. A redundant fixed effect test is also conducted on the regressions in both Substudy 1 and 2 to control for potential cross-sectional or/and period specific heterogeneity that should be accounted for in the regressions.

The reliability is partly dependent on the population. During the estimated period there are 125 routine CEO departures. However, these are narrowed further within each substudy.
Substudy 1 consists of 78 routine departures meanwhile Substudy 2 consists of 18 routine departures. The final sample in Substudy 2 is relatively small compare to prior studies that has been conducted in the U.S. However, the U.S. market consists of more public firms, which also should result on a higher number of routine CEO departures. However, the authors of this thesis follow the same sample criteria as prior studies conducted on the U.S. market.

Inter-examiner reliability refers to that the study should have an objective approach during collection and application of the data. The information is collected from secondary data, which decreases the probability that subjective error is made. However, there is a probability that some data has been collected incorrectly due to the human factors in this study. The variables: CEO variable salary compensation, board size and board independence are collected manually for 125 firms during five years. This leaves room for individual mistakes

which could affect the results. To overcome this problem, a very accurate data collection method is designed when collecting and interpreting the result. In addition, random tests are conducted to compare the collected data with its source of origin. During the random testing no mistakes were found, which indicates on a good internal reliability.

5. Empirical findings

This chapter presents the results of the use of earnings management prior to a routine CEO departure. The chapter is divided into two sections: Substudy 1 and Substudy 2. Finally, a table is presented that summarizes the result of the hypotheses tested.

5.1 Substudy 1

5.1.1 Descriptive statistics and correlation matrix

Before analyzing the regression estimated in Substudy 1 the data collected and the variables estimated need to be controlled for. Therefore a descriptive statistic test and a correlation matrix test are conducted. The main point of conducting the descriptive statistics test is to spot any extreme skew and the kurtosis of the distribution in the variables, since the fifth OLS assumption mentioned in Section 4.6 is that the variables are normally distributed (Brooks, 2008). The Jarque Bera test is conducted to test for this. As can be seen from Table 6, the Jarque-Bera test is significant for all the variables. A significant Jarque-Bera indicates that the variables are not normally distributed (Brooks, 2008).

Table 6 Descriptive statistics for Substudy 1

	ABS_DA	VARIABLE SALARY COMP	POST_ HORIZON	BOARD _SIZE	BOARDI	BLC5	INC15	LN_MARK ET_CAP	MARKET_VA LUE_TO_BO OK
Mean	0,06	0,61	0,06	7,15	0,83	38,67	23,75	14,63	3,04
Median	0,04	0,50	0,00	7,00	0,86	40,40	23,65	14,24	2,27
Maximum	0,63	1,50	1,00	13,00	1,00	85,20	62,50	19,90	47,54
Minimum	0,00	0,17	0,00	3,00	0,29	0,00	0,00	9,20	0,29
Std. Dev.	0,08	0,28	0,24	1,75	0,16	18,79	14,40	2,26	3,71
Skewness	3,76	0,85	3,59	0,51	-0,88	-0,08	0,36	0,23	7,26
Kurtosis	23,49	3,73	13,86	3,03	3,20	2,08	2,55	2,47	77,97
Jarque-Bera	5955,02	42,56	2116,31	12,92	39,57	10,99	8,97	6,11	72882.52
Probability	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,05	0,00
Sum	18,620	183,790	19	2144	248,816	11601,7	7125,5	4388,354	911,940
Sum Sq. Dev.	1,789	23,197	17,797	917,547	7,304	105529	62022	1522,395	4118,663
Observations	300	300	300	300	300	300	300	300	300

The maximum and minimum values within the variables, the median and the mean are presented in Table 6. The reader can see that the reason for that the non-normality problem exist is because there are extreme outliers in the sample, which can be seen in the large difference between the maximum and minimum values. One way to improve the chance of normality would thus be to use some method to effectively remove these variables (Brooks, 2008). However, the authors have decided to keep the variables intact, since one reason for this outcome could be that the sample consist of firms from both small-, mid-, and large cap.

Table 7 Correlation matrix for Substudy 1

	BLC5	BOARD SIZE	BOARDI	BONUS	INC15	MARKETCAP	MVB	POST HORIZON
BLC5	1,00	-0,14	-0,06	-0,10	-0,10	-0,35	-0,22	0,02
BOARD SIZE	-0,14	1,00	-0,21	0,02	0,10	0,60	0,01	0,03
BOARDI	-0,06	-0,21	1,00	0,06	0,00	-0,19	-0,02	0,02
BONUS	-0,10	0,02	0,06	1,00	0,26	0,15	-0,02	-0,07
INC15	-0,10	0,97	0,00	0,26	1,00	0,31	0,15	-0,02
MARKETCAP	-0,35	0,60	-0,19	0,15	0,31	1,00	0,28	0,00
MVB	-0,22	0,01	-0,02	-0,02	0,15	0,28	1,00	-0,03
POST HORIZON	0,02	0,03	0,02	-0,07	-0,02	0,00	-0,03	1,00

Further, a pairwise correlation is conducted on Eviews to make sure correlations between the independent variables in Equation 6 are not too high. As see in Table 7 there generally is no high correlation between the different variables. The highest correlation is 0,6 and between board size and ln market cap, this could be the case since size and market capitalization sometimes can be correlated in complicated ways (Yermack, 1996). The correlation will not have a major impact on the regression results, as near multicollinearity exists when the correlation is above or at 0,8 (Brooks, 2008). To make sure that the correlation does not have a significant effect on the regression for Equation 6 two more times first by dropping board size, second by dropping ln market cap. The result shows that there is no significant difference on the outcome.

5.1.2 Regression

Table 8 Firm-specific estimates from Equation 1a

Year	0	0	-1	-1	-2	-2	-3	-3	-4	-4
Manufacturing (1), non-manufacturing (0)	1	0	1	0	1	0	1	0	1	0
α	-0,008	-0,050	0,018	-0,026	-0,002	-0,010	-0,023	-0,058	-0,008	0,013
α_1	0,207	0,110	0,162	0,064	0,274	0,102	0,155	-0,069	0,114	0,884
α_2	-0,092	0,055	-0,151	-0,046	-0,063	-0,141	-0,075	0,238	-0,068	-0,348
α_3	-0,466	-0,352	-0,265	-0,487	-0,548	-0,613	-0,170	0,128	-0,451	0,224
Observations	48	29	48	29	48	28	48	28	42	26
R^2	0,387	0,333	0,430	0,277	0,490	0,344	0,399	0,112	0,241	0,363

$$\frac{TA_i}{A_{t-1}} = \alpha_0 \frac{1}{A_{t-1}} + \alpha_1 \frac{(\Delta Rev_i - \Delta Rec_i)}{A_{t-1}} + \alpha_2 \frac{PPE_i}{A_{t-1}} + \alpha_3 \frac{\Delta CFO_i}{A_{t-1}}$$

Equation 1a

Table 8 shows the regression output from *Equation 1a* for the firm-specific estimates. The sample is in this stage, as previously discussed, divided into manufacturing and non-manufacturing firms. The firm-specific coefficient α_1 that measures total accruals after change in revenues is adjusted for change in receivables. The coefficient results generally in a positive value in every period in the regression. This is consistent with the expected sign, as increased revenues should lead to, increased receivables. Although, α_1 for year -3 for non-manufacturing firms prior to routine CEO departure have a negative sign. Even though this is not what was expected it is consistent with Kasznik (1999) and Siregar and Utamas' (2008) research. Coefficient α_2 is expected to be negative as property, plant and equipment often lead to accruals by depreciation. Table 8 shows that this is true for all years except year 0 and year -3 for non-manufacturing firms. Siregar and Utama (2008) result shows a positive coefficient on α_2 in 25 percent of the regressions, leading to the conclusion that the authors result is reasonable. α_3 that measures the change in operative cash flow is overall negative as can be seen in Table 8. This is consistent with both prior research (Dechow, 1994) and more recent research (Reitenga & Tearney, 2003) which shows that the change in operative cash flow is negatively correlated with discretionary accruals.

Furthermore, R^2 is relatively high for each period except year -3 for non-manufacturing firms which has a R^2 of 11 percent. The average R^2 for Equation 1a is 33,76 percent which is close to Siregar and Utama (2008) who have an average R^2 of 35 percent with the lowest being 10

percent. Considering that Siregar and Utama (2008) who divide their sample into manufacturing and non-manufacturing firms, have a larger sample, this study has a good degree of explanation. Kasznik (1999) that divides his sample into industries and has 106 observations on average in each period, receives an R^2 of 42 percent, which suggests that dividing the sample into manufacturing and non-manufacturing firms might have affected the degree of explanation.

Table 9 Estimated accruals from Equation 1b

Discretionary accruals	Year 0	Year -1	Year -2	Year-3	Year-4
ABS DA% average	0,0548	0,0479	0,0531	0,0700	0,1016
ABS DA% median	0,0375	0,0340	0,0369	0,0528	0,0437
DA% average	-0,0311	0,0048	-0,0152	-0,0384	-0,0422
DA% median	-0,0138	0,0100	-0,0008	-0,0273	-0,0158

$$\%DA_i = \frac{TA_i}{A_{t-1}} - \left(\hat{\alpha}_0 \frac{1}{A_{t-1}} + \hat{\alpha}_1 \frac{(\Delta Rev_i - \Delta Rec_i)}{A_{t-1}} + \hat{\alpha}_2 \frac{PPE_i}{A_{t-1}} + \hat{\alpha}_3 \frac{\Delta CFO_i}{A_{t-1}} \right)$$

Equation 1b

Table 9 shows the result from *Equation 1b* for the Jones cash-flow model for each period. Discretionary accruals are presented for all years. Year 0 is the year the CEO leaves the office with a four year window prior to routine CEO departure. In order to give a more true and fair view discretionary accruals are presented as both as an average and median. When the values are in absolute DA% all negative values are converted into positive values. The difference between average and median values of DA% and ABSDA% indicates that the sample consists of some deviating figures of firms that execute a higher degree of earnings management. Reitenga and Tearney (2003) exclude these kinds of extreme deviating figures but as the sample of this thesis is smaller in relation to their sample and other studies on the field, the authors choose to keep their final sample. Furthermore, if only discretionary accruals are accounted for, positive and negative values will cancel each other out when analyzing the average. However, as it may be of interest to discuss whether positive or negative DA is executed, the variable DA% is not excluded from Table 9. Table 9 shows that the firms included in the sample tend to use negative earnings management all years except year -1 prior to CEO departure.

As can be seen from Table 9, the median of absolute discretionary accruals (ABSDA%) shows that accruals management (discretionary accruals) increases in year 0 and year -3. The largest spike is in year -3. However, in absolute values the average of discretionary accruals is only increasing in year 0.

5.1.3 Regression on explanatory variables

The authors noticed that prior research that use panel data when applying the Jones cash flow model, only uses a pooled regression (Reitenga & Tearney, 2003; Cornett, Marcus & Tehranian, 2008; Kalyta, 2009). However, as it is important to test for heterogeneity in both the cross-sectional and period dimension, the authors of this thesis conduct a redundant fixed effects test on Equation 6. The table is presented in Appendix 3 and the F-stat and chi-square show that the null hypothesis of no heterogeneity is rejected in both the cross- sectional and period dimension, meaning that there is heterogeneity which needs to be taken into account. The next step is to decide if the regression should be conducted on a fixed effects model or a random effects model. This is done by conducting a Hausman test, which can be seen in Appendix 4. The results show that the null hypothesis of the random effect model being well-specified is accepted. However, as the data is unbalanced it is not possible to run a two-way random effect model. The sample is therefore conducted by a random effects model on the cross-sectional dimension. However, the authors are aware of the possibility that the sample is being affected by period heterogeneity as well, as the data is collected from 2002 to 2014 and thus includes the financial crises in 2008. Therefore, the authors solve the issue by creating year dummy variables for the period dimension. In order to avoid the dummy variable trap a year needs to be dropped (Brooks, 2008). The authors chose to drop 2002 years dummy variable, since the most important changes will likely occur in 2007 to 2008, during the financial crises and not in 2002. The full regression with the year dummy variables can be seen in Appendix 5. Furthermore, by conducting the regression with a random effect model the endogeneity problem is mitigated, and the fourth OLS assumption is thereby not violated.

Table 10 Regression output Equation 6

Dependent Variable: ABS_DA_2
Method: Panel EGLS (Cross-section random effects)
Date: 04/19/15 Time: 20:57
Sample: 1 5
Periods included: 5
Cross-sections included: 73
Total panel (unbalanced) observations: 300
Swamy and Arora estimator of component variances

Variable	Coefficien...	Std. Error	t-Statistic	Prob.
BONUS_VARIABLE_SALARY	0.007700	0.016696	0.461215	0.6450
POST_HORIZON_DUMMY__1_...	0.011913	0.018105	0.657987	0.5111
BOARD_SIZE	-0.001428	0.003229	-0.442150	0.6587
BOARDI	-0.068866	0.030690	-2.243891	0.0256
BLC5	-0.000209	0.000260	-0.801926	0.4233
INC15	-0.000691	0.000336	-2.057564	0.0406
LN_MARKET_CAP	-0.008840	0.002920	-3.027261	0.0027
MARKET_VALUE_TO_BOOK	0.002631	0.001271	2.070299	0.0393

Weighted Statistics			
R-squared	0.131037	Mean dependent var	0.058653
Adjusted R-squared	0.068746	S.D. dependent var	0.076013
S.E. of regression	0.073332	Sum squared resid	1.500340
F-statistic	2.103614	Durbin-Watson stat	1.599189
Prob(F-statistic)	0.004408		

Unweighted Statistics			
R-squared	0.137914	Mean dependent var	0.062065

$ABS(DA\%) = \alpha_0 + \alpha_1 (variable\ salary\ compensation) + \alpha_2 (post\ horizon\ dummy)\ \alpha_3 (board\ size) + \alpha_4 (board\ independence) + \alpha_5 (institutional\ ownership) + \alpha_6 (blockholding) + \alpha_7 (lnmarket\ capitalization) + \alpha_8 (market\ to\ book)$

Equation 6

As can be seen in Table 10, the variable salary compensation is not rejected, which is inconsistent with the short horizon hypothesis (H1). The post horizon hypothesis (H3) is not statistically significant either.

The study controls for corporate governance mechanisms, and shows that hypothesis H5 is rejected, which means that there is a negative significant relationship between board independence and earnings management. As seen in Table 10 the relationship is significant on a 5%-level, but is close to the 1%-level, and can be interpreted as a larger ratio of independent board members on the board leads to less earnings management. The explanatory variable board size that concerns hypothesis H4, that board size is positively related to discretionary accruals in the years prior to routine CEO departure, is accepted. The average board size of this study's sample is 7,1 directors, with the largest board consisting of 13 members and the smallest board has three members, which also is the minimum requirement according to the Swedish Corporate Governance Code (2010).

Out of the ownership variables tested, institutional ownership is found to be negatively significant on a 5%-level, hence hypothesis H6 is rejected. This means that more institutional investors lead to less earnings management. The ownership variable blockholding, that concerns hypothesis 7, is not statistically significant.

Regarding the firm specific variables, the results in Table 10 show that market capitalization has a statistically negative relationship to discretionary accruals. The variable is negatively significant on a 1%-level. The market to book variable is positively significant with discretionary accruals, on a 5%-level.

As can be seen in Table 10 R^2 is 13,8 percent, which can be seen as decent considering that it is an unbalanced panel data. However, the R^2 indicates that there exist other explanatory factors that are not in this regression that can explain the outcome.

The second OLS assumption, $Var(u_t) = \sigma^2$ mention in Section 4.6, is hard to test for when it comes to panel data. But one way to test for heteroscedasticity is to run a Breusch Godfrey test manually. This is conducted by firstly saving the residuals from the original regression in Eviews and thereafter squaring them and then running the regression of the squared residuals on the independent variables. The F-stat as can be seen from Appendix 6, is in this equation is insignificant. This tells us that the residuals are constant in the independent variables, which is an indication of homoscedasticity. Therefore, the second OLS assumption is not violated.

The third OLS assumption, $Cov(u_i, u_j) = 0$, mentioned under 4.6 is controlled for with the Durbin Watson statistics, that estimate the first order autocorrelation. The result of the test indicates that there is no autocorrelation in the residuals, since the Durbin Watson statistics is 1.59. However carefulness should be exercised when interpreting the result, since it does not account for the panel structure of the data (Brooks, 2008).

5.2 Substudy 2

5.2.1 Descriptive statistics and correlation matrix
Just as in Substudy 1 both a descriptive statistic test and a correlation matrix test is conducted.

Table 11Descriptive statistics for Substudy 2

	LN R&D	MARKET INDEX	DUM
Mean	0,07	1791803,00	0,39
Median	0,09	952171,00	0,00
Maximum	0,60	14823866,00	1,00
Minimum	-0,41	-4817950,00	0,00
Std. Dev.	0,20	5050545,00	0,49
Skewness	-0,12	1,42	0,46
Kurtosis	3,32	4,71	1,21
Jarque-Bera	0,62	41.08710	15,16
Probability	0,73	0.000000	0,00
Sum	6,26	161000000	35,00
Sum Sq. Dev.	3,44	2,27E+15	21,39
Observations	90,00	90,00	90,00

As can be seen from Table 11, the Jarque-Bera test is insignificant for the R&D variable. An insignificant Jarque-Bera indicates that the variable R&D expenditures is normally distributed. However, the market index and DUM variable are significant, indicating that they are not normally distributed. By studying the maximum and minimum variables within these variables or just examining the median and the mean the reader can see that the reason for the non-normality distribution exists is because there are extreme outliers in the sample. However, the reason for including the market index in the first place is to be able to estimate the regression and take into account for market wide changes over time, thus the authors do not see any problem with this variable. The dummy variable is only introduced to be able to separate the use of research and development expenditures in the final year from the other years. Due to DUM being a dummy variable the authors do not find the significant Jarque-Bera test for the variable particularly alarming and therefore leaves the sample as it is.

Table 12 Correlation matrix for Substudy 2

	MARKET INDEX	DUM
MARKET INDEX	1	-0,24
DUM	-0,24	1

As seen in Table 12 a correlation matrix is conducted on the sample. It is conducted in order to test for potential multicollinearity within the chosen explanatory variables. As can be seen from Table 12 the correlations between the explanatory variables market index and DUM is -0,24, thus there is no problems in using the regression equation.

5.2.2 Regression for Substudy 2

Before running Equation 8 (the R&D model), a redundant fixed effect test is conducted in order to estimate whether there exist cross-sectional or period specific heterogeneity. As can be seen from Appendix 7 there is no cross or period specific heterogeneity in the sample, since both the Chi square and F-stat is highly insignificant in both the time and cross-sectional dimension. Thus the regression is conducted on a pooled regression with the OLS method. As stated in Section 4.6 by conducting an OLS regression the first OLS assumption is assumed to be fulfilled.

Table 13 Regression output from Equation 8

Dependent Variable: LN_R_D
Method: Panel Least Squares
Date: 03/27/15   Time: 14:55
Sample: 1 90
Periods included: 5
Cross-sections included: 18
Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUM	-0.141435	0.041366	-3.419129	0.0010
MARKET_INDEX	8.22E-10	4.02E-09	0.204817	0.8382
C	0.123134	0.027373	4.498325	0.0000

R-squared	0.128254	Mean dependent var	0.069605
Adjusted R-squared	0.108213	S.D. dependent var	0.196704
S.E. of regression	0.185757	Akaike info criterion	-0.495993
Sum squared resid	3.001982	Schwarz criterion	-0.412666
Log likelihood	25.31969	Hannan-Quinn criter.	-0.462391
F-statistic	6.399830	Durbin-Watson stat	1.786414
Prob(F-statistic)	0.002553		

$$ln\ \Delta R\&D_{it} = \alpha + \beta_1 DUM_{it} + \delta 1 \Delta R\&D_{m()t} + \varepsilon_{it}$$

Equation 8

Table 13 shows that the variable DUM is negatively statistically significant at a 1 percent level. This indicates that CEOs during their final year in office preceding turnover are lowering their research and development expenses. Thus hypothesis H2 is accepted. The coefficient on the variable DUM indicates that one unit change in DUM decreases the dependent variable with a 0,14 change. The coefficient of the market index is positive but insignificant indicating that economy wide changes are not affecting the sample significantly. This can be seen as a bit surprising since the study includes data that includes the period during the financial crises. However, by including the market index the authors control for the potential endogeneity problem and thus the fourth OLS assumption $Cov\ (u_{t,}\ x_t)=0$, mentioned in Section 4.6. The inclusion of the market index may have improved the significance level of the variable DUM marginally.

The R^2 of 12,8 percent in the pooled regression is relatively high considering that it is a panel data which only includes 18 cross-sectional observations and 5 period dimensions. The value of R^2 indicates however that there are other explanatory factors which are not in this regression that can explain the outcome.

The third OLS assumption, $Cov(u_i,u_j)=0$, explained in Section 4.6 is controlled for with the Durbin-Watson statistics, that estimate the first order autocorrelation. The result of the test indicates that there exist no autocorrelation in the residuals, since the Durbin Watson statistics is 1.78.

The second OLS assumption, $Var(u_t)=\sigma^2$ is hard to test for when it comes to panel data since Eviews does not provide a built in function. Similarly to, Substudy 1 a manual Breusch-Godfrey test is conducted. The result in Appendix 8 shows that the F-stat is insignificant as the p-value is 0,358. This tells us that the residuals are constant in the independent variables, indicating that there is homoscedasticity. The second OLS assumption is thereby not violated.

5.3 Summary

As a conclusion, Substudy 1 and Substudy 2 show interesting results. These are presented below in Table 14. Furthermore, Substudy 1 also finds that the variables: market to book ratio and market capitalization affect the use of accruals management.

Table 14 Hypotheses and results

Hypotheses	Result
H1: Discretionary accruals are positively related with a CEOs variable salary compensation prior to routine CEO departure	Accepted, insignificant
H2: Research and development expenses are more likely to reduce in the final year prior to routine CEO departure	Rejected, significant on a 1 percent level
H3: Discretionary accruals are positively related with receiving a directorship after routine CEO departure	Accepted, insignificant
H4: Board size is positively related to discretionary accruals in the years prior to routine CEO departure	Accepted, insignificant
H5: The proportion of independent board members is negatively related to discretionary accruals in the years prior to routine CEO departure	Rejected, significant on a 5 percent level
H6: The proportion of outstanding stock held by institutional owners have a negative relationship to discretionary accruals in the years prior to routine CEO departure	Rejected, significant on a 5 percent level
H7: The proportion of outstanding stock held by blockholders have a negative relationship to discretionary accruals in the years prior to routine CEO departure	Accepted, insignificant

6. Analysis

In this chapter the empirical findings are discussed by mainly focusing on the relationship between earnings management and routine CEO departure. The analysis is based on the the aim of this study, which is to empirically describe and analyze whether and if so why, CEOs on Swedish public firms listed on NASDAQ OMX Stockholm, use earnings management prior to routine CEO departures. Furthermore, in order to explain the empirical findings the chapter presents an analysis of both substudies: Substudy 1 and Substudy 2 by connecting the theoretical framework and empirical hypotheses with the empirical results.

6.1 Earnings management and routine CEO departure

The empirical results show that there is earnings management prior to routine CEO departures on Swedish firms listed on NASDAQ OMX Stockholm. However, the extent of earnings management varies between Substudy 1 and 2. Substudy 2 measures real earnings management prior to routine CEO departure. The empirical results of Substudy 2 show that research and development expenses significantly decrease in the final year, which is consistent with the short horizon hypothesis. As mentioned in Section 4.5.2, the final sample only includes industries with a research and development expenses to sales ratio above five percent. These industries are health care, industrials and technology. Thus the result cannot be generalized on all firms listed on NASDAQ OMX Stockholm. Furthermore, neither can it be generalized on the three included industries due to the large sample loss. However, the result can be generalized on firms in health care, industrials and technology with high research and development expenditures. Similarly to Dechow and Sloan (1991), the result of Substudy 2 find that CEOs who plan to leave the firm, in industries with a research and development expense to sales ratio above five percent, are significantly lowering their research and development expenditures during their final year. However, the outcome in Substudy 2 is not consistent with Murphy and Zimmerman (1993) who did not find evidence that support the short horizon hypothesis. However, their non-significant result could depend on the researchers' choice to include all industries in their sample.

Prior research is conducted on U.S. firms where the recognition of R&D expenditures according to GAAP occurs directly, meanwhile, they only occur in IFRS when the item is intended to be complete and sold. Thus one might argue that this would explain the outcome in prior research. Since the outgoing CEO in U.S. firms does not receive the future benefits

but only the costs of taking on more research and development, which indirectly affect the potential variable compensation. However, even though the recognition of the research and development expenses occurs later in IFRS, the costs still occur before the potential benefits do. Since this still is a risk, even though the risk is a lot smaller than in the U.S., the CEO might reduce the investments in R&D a few years prior to departure so that the costs do not occur. That CEOs are willing to reduce their investments in research and development or even give up positive NPV projects, during their final year(s) in office stresses the importance of trying to mitigate the short term horizon problem.

In contrast to Substudy 2, Substudy 1 includes all industries when measuring accruals management prior to routine CEO departure. As Substudy 1 includes all industries and has a relatively small loss in the sample, the result can be seen as generalized. The result show that the use of accruals management increases the final year compared to year -1 and year -2. Nevertheless, year -4 has the largest absolute value of average DA. The outcome in prior research differs in the use of discretionary accruals, accruals management, in relation to routine CEO departure. This substudy shows that there is earnings management prior to routine CEO departure, but it does not increase remarkably in the CEO's final year. This is partly consistent with prior research (Brickley, Coles & Linck 1999; Gao & Shrieves 2002; Reitenga & Tearney, 2003) as empirical findings have shown varying results. However, one interesting finding is that the discretionary accruals changes from being negative to positive in the year prior to routine CEO departure. This indicates that CEOs generally uses positive earnings management to some extent prior to their final year. The difference in the empirical findings can depend on how firms value inventories. Firms included in this thesis sample solely follow IFRS and can therefore only choose to value their inventory according to LIFO, while prior research only include firms following GAAP that allows firms to choose between LIFO and FIFO. As this creates larger opportunities for earnings management for firms who follow GAAP, it indirectly creates larger opportunities for departing CEOs to manipulate earnings for their own benefit.

The outcomes from the different substudies suggest different results regarding earnings management prior to routine departure. Substudy 1 finds that earnings management is not conducted more in the CEOs final year, meanwhile Substudy 2 finds that the use of earnings management is larger during the final year. According to La porta, Lopez-De-Selanes, and Shleifer (2008) civil law countries provide weaker investor protection than common law

countries, indicating that CEOs in civil law countries are more prone to use earnings management. As Sweden is not entirely based on the civil law, but rather a mix with the common law this might be the reason for the outcome of Substudy 1. Therefore, there might be certain aspects of the common law that influences Swedish public firms concerning investor protection and thereby indirectly mitigates earnings management.

6.2 Explanatory variables

The short horizon hypothesis predicts that CEOs in a routine departure will try to increase reported earnings in their final year in order to receive a larger variable salary compensation (Reitenga & Tearney, 2003). This study tries to examine this problem with two substudies and hypothesis H1 and H2. In the first substudy, the focus is on accrual based earnings management. This study cannot find a correlation between the extent of variable salary compensation and the use of earnings management. One explanatory reason for this outcome can be that the targets set for reaching the maximal variable compensation are very low, so the CEO will reach the targets anyway. Another reason for the outcome could be that the future career concerns for the CEO are more important than a short term high bonus payment. The career concerns imply that CEOs needs to build reputation through the records of their firm's performance, since the reputation of a high quality CEO plays a crucial role in drawing lucrative contracts. This might lead to that the CEO tries to maximize the long term value of the firm and thereby does not act opportunistic. A third reason for the outcome in Substudy 1 can be explained by the stakeholder theory that states that there is a larger focus on stakeholders in Sweden as the union have a strong influence on firms. Once again, departing CEOs might not want to risk their reputation among the stakeholders as it is important to create a high credibility among the stakeholders and opportunistic behavior could affect their future career. As the union or state does not have the same control in the U.S. this could be a reason for why the result differs from prior research (Reitenga & Tearney, 2003; Bebchuk & Fried, 2006). However, as stated above, in Substudy 2, the result shows that the CEOs during their final year in office are significantly lowering their research and development expenses, consistent with the short horizon hypothesis. But as Substudy 2 only focuses on particular industries with a research and development expenditures to sales ratio at or above five percent, and therefore cannot be applied to all firms listed on NASDAQ OMX Stockholm, it would not give a fair view to explain the outcome by linking it to the stakeholder theory.

The study does not find a significant relationship between the post horizon variable and earnings management. This is not consistent with Reitenga and Tearney (2003) who find a positive relationship between earnings management and the probability that the departing CEO will retain a board seat. The outcome in this study can depend on that CEOs leaving the office knows that they will receive a directorship and therefore did not have any incentives to inflate earnings. The outcome for both the short horizon hypothesis and the post horizon hypothesis could also depend on the fact that there are other explanations for a CEO to attempt to increase earnings in the final year. A lot of these factors have been attempted to be measured, but there are other factors such as reputation (Graham, Harvey & Rajgopal, 2005) which have not been measured in this thesis.

In accordance to prior research (Weisbach, 1988; Reitenga & Tearney, 2003) this study finds a negative significant relationship between board independence and earnings management, in other words the more independent a board is, the less earnings management is conducted. The result shows that the routine departing CEO's ability to use discretionary accruals is affected by the composition of the board of directors. This suggests that the recommendations stated in the Swedish Corporate Governance Code (2010) that a board should include more than 50 percent of independent directors should be followed to mitigate the use of earnings management. Despite the fact that the Swedish Corporate Governance Code is not stipulated by law with strict penalties as SOX, only 3 out of 385 firms in the sample do not have an independent board ratio at or above 50 percent. As the board is hired by the firm and aims to act in the best interest of the shareholders, it is more likely that the board will do so when the majority of the members are independent in relation to the company and its management. It is also more likely that an independent board takes the decision of firing a bad performing CEO (Adams, Hermalin & Weisbach, 2010). This might also explain the negative relationship between earnings management and board independence. The authors of this thesis expected a positive significant relationship between board size and earnings management, as smaller board sizes often work as a more effective monitoring mechanism. However, as seen in Table 10 this is not the case for this specific sample, which contradicts Jensen (1993) and Yermack (1996) findings.

Substudy 1 finds a significant negative relationship between institutional investors and earnings management. The result is consistent with Peasnell, Pope and Young (1999) and Cornett, Marcus and Tehranian (2008) and applies generally on all Swedish listed firms on

NASDAQ OMX Stockholm. Hence, institutional owners function as effective monitors preventing the departing CEO from opportunistic behavior. As they function as an effective monitoring device, they also mitigate the possible agency problem that might arise between owners and management. It is often costly for the principal to monitor the agent, which in this aspect can be referred to as the agency cost of managerial incentives (Ogden, Jen & O'Connor, 2003). However when institutions invest in firms, they usually invest in a larger proportion of shares and have thus higher incentives to work as effective monitors. This might be one of the reasons for the outcome. Furthermore, according to Cheng and Reitenga (2009) institutional investors' effect on management behavior is contingent on the type of institution. The negative relationship indicates that Swedish firms listed on NASDAQ OMX Stockholm have institutional owners that prioritize long-term results rather than short-term results (Cheng & Reitenga, 2001). This creates less incentives and pressure on the CEO to manipulate earnings in the final year(s).

This thesis finds no negative significant relationship between the use of earnings management and blockholders. The result is not what the authors expected, since blockholders could work as effective monitors, due to their large stockholdings. This in turn would reduce the use of earnings management. The result is consistent with Reitenga and Tearney (2003) but contradicting to Dechow, Sloan and Sweeney (1996) and DeFond and Jiambalvo (1991) findings.

The study finds a negative significant relationship between market capitalization and earnings management on a 1%-level , which is consistent with Lee and Choi (2002) findings. The result shows that larger firms tend to use less earnings management in comparison to smaller firms that tend to use more earnings management prior to routine CEO departure. A reason for the outcome can be that larger firms have a higher amount of stakeholders that are attentive to the firm's interest and survival, consistent with the stakeholder theory. This should lead to larger listed companies on NASDAQ OMX Stockholm being more monitored by media and analysts. Therefore, CEOs might not have the same opportunities to behave opportunistically as CEOs in smaller firms, with fewer stakeholders. Furthermore, the study finds a positive significant relationship between the market to book ratio and earnings management on a 5%-level, which was expected and consistent with prior research (Klein 2002; Menon & Williams, 2004; Kalyta, 2009; Lee & Masulis, 2008). This means that departing CEOs at firms with a higher market to book ratio, such as firms with growth

opportunities, may have more opportunities to use earnings management since these kinds of firms have a higher degree of intangible assets with room for different interpretations of accounting rules.

7. Conclusion and proposals for further research

Based on the empirical findings and analysis this chapter presents the conclusion by a discussion about implications and other concluding remarks. Finally, ideas on further research are presented.

7.1 Conclusion

The aim of this study was to empirically describe and analyze whether and if so why, CEOs on Swedish public firms listed on NASDAQ OMX Stockholm, use earnings management prior to routine CEO departures.

The outcome of this study shows contradicting results. On one hand, in Substudy 1 that measures the use of discretionary accruals the outcome shows that the degree of accrual management is not generally increasing prior to routine CEO departure. On the other hand, Substudy 2 that measures the use of real earnings management shows that research and development expenditures are significantly reduced prior to routine CEO departure. The thesis also examines explanatory variables that can explain the use of accruals management. The following explanatory variables are found significant in relation to accruals management: board independence, institutional ownership, ln market capitalization and the market to book ratio.

Prior research that controls for corporate governance variables finds that boards consisting of a higher proportion of independent board members are more effective monitors in comparison to boards with a higher proportion of dependent board members (Weisbach, 1988; Reitenga & Tearney, 2003; Cornett, Marcus & Tehranian, 2008). Consistent with prior studies, this is shown to be true in general for Swedish listed firms on NASDAQ OMX Stockholm. However, a small portion of the sample contains of more dependent board members than independent board members. This could lead to the routine departing CEO having greater opportunities to affect the board members to vote through opportunistic suggestions that indirectly lead to earnings management. The Swedish Corporate Governance Code is assumed to have contributed to the increasing number of independent board members, but as there still are firms which do not follow the Code's recommendation the authors suggest that it would be more effective to make this particular part a requirement instead of comply or explain.

Furthermore, the empirical result indicate that the differences between IFRS and GAAP that apply to Sweden and the U.S. respectively have an impact on mitigating a CEOs incentives to use earnings management up to a certain point. Nevertheless, the authors can not find that one country's laws and regulations mitigate the use of earnings management prior to a routine CEO departure more than the other. However, interestingly CEOs in Swedish public firms seem more reluctant to manipulate discretionary accruals than reducing research and development expenditures. Although, accruals management probably is cheaper than using real earnings management, as real earnings management is likely to reduce firm value by the CEO delaying research and development expenditures. The tendency that departing CEOs rather use real earnings management than accruals management can be an outcome of the increased attention towards accounting frauds such as Enron and Trustor.

The negative significant relationship between the explanatory variable ln market capitalization and earnings management highlights that departing CEOs in smaller firms find it easier to use more earnings management in comparison to CEOs in larger firms. An explanatory reason for this outcome could be that a larger firm has more stakeholders and is therefore higher monitored than smaller firms. Another variable in this study that shows the importance of monitoring is institutional ownership, where more institutional owners tend to lead to less earnings management prior to a routine CEO departure. The authors of this thesis find that institutional owners in Sweden tend to have long term goals rather than short term goals, which mitigate the CEO's incentives to behave opportunistically. Both these findings indicate that the principal agent problem clearly exists between CEOs in Swedish public firms and stakeholders. Therefore, it is important to mitigate the agency problem by using different monitoring mechanisms such as including independent board members or attracting more institutional owners to the firm.

The positive relationship between the market to book ratio and earnings management accentuate the possible loophole in accounting rules that leads to the opportunity for high growth firms to use earnings management. The positive relationship can also be related to the outcome in Substudy 2, since high growth firms usually have high R&D expenditures, as they in general also have more intangible assets. This highlights the importance of trying to regulate firms with a larger amount of research and development, since the outcome could be devastating. By CEOs neglecting positive NPV projects and only focusing on the short term

results, the firm value could easily be destroyed, which in turn have a negative impact on the stakeholders.

As a conclusion this thesis contributes to earnings management research by demonstrating that real earnings management exists prior to routine CEO departures, while there tends to be less use of accruals management prior to routine CEO departures. The empirical outcome also shows that there are different factors to consider when examining the potential incitements for CEOs to act opportunistically prior to departure. Therefore, the quote **"***Executives who place little value on future earnings relative to current earnings face stronger incentives to improve short term earnings performance. One class of executives who are likely to place little value on future earnings are those who have short horizon because they are expecting to leave their position in the near future***"** (Dechow & Sloan, 1991, p 54) is to some extent applicable on departing CEOs in Swedish firms listed on NASDAQ OMX Stockholm.

7.2 Recommendation for further research

A proposal for further research is to extend the study by including Swedish firms listed on NGM Equity, since this list also is regulated, and therefore also follows the Swedish Corporate Governance Code. By including another Swedish market the sample for Substudy 2 will increase and the degree of explanation might rise.

A second proposal is to include more explanatory variables in Substudy 1. The R^2 of Substudy 1 suggests that there are other factors that can contribute to explaining the use of earnings management. For instance, as the explanatory variable blockholding is insignificant, but institutional ownership is significant it would be interesting to also include a variable called spheres. Spheres are special for Sweden and are defined as a structure where group management and single firms are linked by one owner who has a large influence. The authors suggest that spheres can have a significant mitigating impact on CEO's incentives to use earnings management prior to routine departure. Another factor to include in future research is independent board members towards larger shareholders rather than independent board members toward the company and management and conclude if this leads to a different outcome.

This study finds that a departing CEO tends to reduce research and development expenditures to receive a higher compensation. However, a CEO can also have incentives to reduce

advertising costs and capital expenditures prior to leaving the office to receive a higher compensation. Therefore, a third proposal for further research is to examine real earnings management by measuring items like advertising costs and capital expenditures.

Finally, as this study is conducted with a quantitative approach the authors have not been able to examine explanatory variables such as: reputation, honor or the desire to meet or beat earnings benchmarks. These are factors that might affect the routine departing CEOs incentives to behave opportunistically. Therefore the final proposal is to extend this study by including a qualitative   approach.

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Appendix 1

Company	Industry	Year	Replaced CEO	Reason for leaving	Reason for excluding
AAK	Consumer goods	apr-10	Jerker Hartwall	Routine	Not Excluded
Atlas Copco	Industrials	jun-09	Gunnar Brock	Routine	Not Excluded
Boliden	Basic materials	sep-07	Jan Johansson	Routine	Not Excluded
Com Hem Holding	Telecommunications	apr-14	Tomas Franzén	Routine	Not Excluded
Electrolux	Consumer goods	jan-11	Hans Stråberg	Routine	Not Excluded
Elekta	Health care	maj-14	Tomas Puusepp	Routine	Not Excluded
Eniro	Consumer services	jun-08	Tomas Franzén	Routine	Not Excluded
Ericsson	Technology	2010	Carl-Henric Svanberg	Routine	Not Excluded
Hennes & Mauritz	Consumer services	jun-09	Rolf Eriksen	Retirement	Not Excluded
Holmen	Basic materials	apr-14	Magnus Hall	Routine	Not Excluded
Husqvarna	Consumer goods	okt-08	Bengt Andersson	Retirement	Not Excluded
ICA Gruppen	Consumer services	maj-12	Kenneth Bengtsson	Routine	Not Excluded
Lindab International	Industrials	sep-08	Kjell Åkesson	Retirement	Not Excluded
Meda	Health care	2013	Anders Lönner	Retirement	Not Excluded
Modern Times Group	Consumer services	sep-12	Hans-Holger Albrecht	Routine	Not Excluded
NCC	Industrials	nov-07	Alf Göransson	Routine	Not Excluded
Nobia	Consumer goods	apr-08	Fredrik Cappelen	Routine	Not Excluded
PEAB	Industrials	maj-11	Mats Paulsson	Retired	Not Excluded
SAAB	Industrials	sep-10	Åke Svensson	Routine	Not Excluded
SAS	Consumer Services	dec-06	Jörgen Lindegaard	Routine	Not Excluded
Skanska	Industrials	apr-08	Stuart Graham	Retirement	Not Excluded
SKF	Industrials	dec-14	Tom Johnstone	Retirement	Not Excluded
SSAB	Basic materials	mar-06	Anders Ullberg	Retirement	Not Excluded
Swedish Match	Consumer goods	jun-08	Sven Hindrikes	Routine	Not Excluded
Tele2	Telecommunications	2008	Lars-Johan Jarnheimer	Routine	Not Excluded
Volvo	Industrials	2011	Leif Johansson	Retirement	Not Excluded
Active Biotech AB	Health Care	aug-08	Sven Andréasson	Routine	Not Excluded
B&B TOOLS AB	Industrials	dec-12	Stefan Wigren	Routine	Not Excluded
Bilia AB	Consumer Services	maj-11	Jan Pettersson	Retirement	Not Excluded
Biovitrum	Health Care	maj-07	Mats Pettersson	Retirement	Not Excluded
Bufab Holding AB	Industrials	2012	Hans Björstrand	Retirement	Not Excluded
Clas Ohlson AB	Consumer Services	sep-07	Gert Karnberger	Retirement	Not Excluded
Cloetta AB	Consumer Goods	feb-12	Curt Petri	Retirement	Not Excluded
Duni AB	Consumer Goods	jan-12	Nils Fredrik von Oelreich	Routine	Not Excluded
Fagerhult, AB	Industrials	dec-08	Per Borgvall	Routine	Not Excluded
Fingerprint Cards	Industrials	maj-09	Lennart Carlsson	Retirement	Not Excluded
Gant	Consumer Services	dec-07	Arthur Engel	Routine	Not Excluded
HMS Network	Technology	apr-09	Nicolas Hassbjern	Routine	Not Excluded
KappAhl AB	Consumer Services	dec-11	Christian W Jansson	Routine	Not Excluded
Net Entertainment	Consumer Services	okt-11	Johan Öhman	Retirement	Not Excluded
New Wave Group	Consumer Goods	maj-07	Torsten Jansson	Retirement	Not Excluded
Proffice AB	Industrials	dec-14	Lars Kry	Routine	Not Excluded
Qliro Group	Consumer Services	aug-11	Mikael Olander	Routine	Not Excluded
Rezidor Hotel Group	Consumer Services	jan-13	Kurt Ritter	Retirement	Not Excluded
SAS AB	Consumer Services	okt-10	Mats Jansson	Retirement	Not Excluded
SECTRA AB	Health Care	okt-12	Jan-Olof Brüer	Retirement	Not Excluded
SWECO AB	Industrials	nov-12	Mats Wäppling	Routine	Not Excluded
Unibet Group	Consumer Services	jul-10	Petter Nylander	Routine	Not Excluded
Vitrolife	Health Care	okt-11	Magnus Nilsson	Routine	Not Excluded
Acando AB	Technology	maj-09	Lars Wollung	Routine	Not Excluded
Allenex AB	Health Care	maj-11	Ingemar Lagerlöf	Retirement	Not Excluded
Beijer Electronics	Industrials	apr-08	Göran Sigfridsson	Retirement	Not Excluded
Bergs Timber AB	Basic Materials	2012	Åke Bergh	Retirement	Not Excluded
Björn Borg AB	Consumer Goods	nov-13	Arthur Engel	Routine	Not Excluded
Bong AB	Industrials	jul-14	Anders Davidsson	Routine	Not Excluded
Brio	Consumer Goods	jul-08	Thomas Bräutigam	Routine	Not Excluded
CellaVision AB	Health Care	nov-14	Yvonne Mårtensson	Routine	Not Excluded
Concordia Maritime	Industrials	dec-13	Hans Norén	Routine	Not Excluded

Company	Sector	Date	Name	Type	Status
Diamyd Medical	Health Care	2007	Anders Essen-Möller	Routine	Not Excluded
Duroc AB	Industrials	jul-14	Erik Albinsson	Routine	Not Excluded
Elanders AB	Industrials	jun-09	Patrick Holm	Routine	Not Excluded
Electra Gruppen AB	Consumer Services	nov-15	Anders Dahlström	Routine	Not Excluded
Elektronik Gruppen	Technology	apr-08	Johan Ålander	Routine	Not Excluded
Enea AB	Technology	maj-08	Johan Wall	Routine	Not Excluded
eWork Scandinavia	Industrials	mar-14	Claes Ruthberg	Retirement	Not Excluded
Feelgood Svenska	Health Care	aug-12	Per Sunnemark	Routine	Not Excluded
Geveko, AB	Industrials	sep-10	Hans Ljungkvist	Routine	Not Excluded
Global Health Partner	Health Care	maj-12	Per Båtelson	Retirement	Not Excluded
Intellecta AB	Industrials	aug-12	Richard Olsson	Retirement	Not Excluded
Karo Bio AB	Health Care	maj-11	Per Olof Wallström	Routine	Not Excluded
Knowit AB	Technology	feb-11	Anders Nilsson	Routine	Not Excluded
Medivir	Health Care	jan-09	Lars Adlersson	Routine	Not Excluded
MSC Konsult	Technology	dec-10	Muazzam Choudhury	Retirement	Not Excluded
MultiQ International	Technology	jan-13	Anders Laurin	Routine	Not Excluded
Net Insight	Technology	jun-13	Fredrik Trärgårdh	Routine	Not Excluded
Nordic Service Partners	Consumer Services	mar-09	Ulf Wahlstedt	Routine	Not Excluded
Odd Molly Int.	Consumer Goods	nov-11	Christina Tillman	Routine	Not Excluded
Poolia AB	Industrials	aug-07	Erik Strand	Routine	Not Excluded
Precise Biometrics	Industrials	nov-13	Thomas Marschall	Routine	Not Excluded
Prevas AB	Technology	nov-07	Anders Englund	Routine	Not Excluded
Pricer AB	Industrials	aug-07	Jan Forssjö	Routine	Not Excluded
Proact IT Group	Technology	nov-12	Olof Sand	Routine	Not Excluded
Probi AB	Health Care	maj-13	Michael Oredsson	Routine	Not Excluded
ProfilGruppen AB	Basic Materials	dec-10	Nils Arthur	Retirement	Not Excluded
Rederi AB Transatlantic	Industrials	aug-07	Håkan Larsson	Retirement	Not Excluded
RnB retails and brands	Consumer Services	feb-11	Mikael Solberg	Routine	Not Excluded
Rottneros AB	Basic Materials	jan-08	Lars Blecko	Routine	Not Excluded
Semcon AB	Industrials	apr-12	Kjell Nilsson	Routine	Not Excluded
Stockwik Förvaltning	Technology	dec-13	Jonas Arnström	Routine	Not Excluded
Studsvik AB	Industrials	aug-11	Magnus Groth	Routine	Not Excluded
Svedbergs i Dalstorp	Industrials	nov-10	Jörgen Ekdahl	Routine	Not Excluded
XANO Industri AB	Industrials	jul-14	Sune Lantz	Routine	Not Excluded
Nobia	Consumer goods	okt-10	Preben Bager	Routine	To short time period
Aspiro AB	Technology	2014	Peter Tonstad	Routine	To short time period
Avega Group AB	Technology	dec-14	Jan Rosenholm	Routine	To short time period
BE Group AB	Basic Materials	okt-12	Roger Johansson	Routine	To short time period
BE Group AB	Basic Materials	2014	Kimmo Väkiparta	Routine	To short time period
Hemtex AB	Consumer Services	sep-09	Göran Ydstrand	Routine	To short time period
Hemtex AB	Consumer Services	maj-11	Erik Gumabon	Routine	To short time period
Image Systems AB	Industrials	2012	Mikael Jacobsson	Routine	To short time period
NOTE AB	Industrials	2008	Kaj Samlin	Routine	To short time period
NOTE AB	Industrials	jun-09	Knut Pogost	Routine	To short time period
Ortivus AB	Health Care	2007	Mikael Strindlund	Routine	To short time period
Probi AB	Health Care	jan-14	Gun-Britt Fransson tf	Routine	To short time period
Rederi AB	Industrials	dec-11	Rolf Skaarberg	Routine	To short time period
Sensys Traffic AB	Industrials	2007	Harry Vesanen	Routine	To short time period
Studsvik AB	Industrials	2012	Anders Jackson	Routine	To short time period
Svedbergs i Dalstorp	Industrials	jul-11	Peter Petersson tf	Routine	To short time period
TradeDoubler AB	Consumer Services	2012	Örjan Frid	Routine	To short time period
TradeDoubler AB	Consumer Services	2013	Urban Gillström	Routine	To short time period
Teligent	Telecommunications	2007	Tomas Duffy	Routine	To short time period
Björn Borg AB	Consumer Goods	2008	Nils Vinberg	Routine	To short time period
Medivir AB	Health Care	sep-11	Ron Long	Routine	To short time period
Medivir AB	Health Care	aug-14	Maris Hartmanis	Routine	To short time period
New Wave Group AB	Consumer Goods	maj-09	Göran Härstedt	Routine	To short time period
Enea AB	Technology	sep-11	Per Åkerberg	Routine	To short time period
Human Care	Health Care	maj-07	Anders Rothstein	Routine	To short time period

Lammhults Design Group	Consumer Goods	apr-09	Johan Hjertonsson	Routine	To short time period
Midsona AB	Consumer Goods	dec-07	Lennart Nylander	Routine	To short time period
MultiQ International AB	Technology	jul-08	Thomas Keifer	Routine	To short time period
Poolia AB	Industrials	aug-10	Johan Eriksson	Routine	To short time period
Pricer AB	Industrials	aug-10	Charles Jackson	Routine	To short time period
Pricer AB	Industrials	dec-13	Fredrik Berglund	Routine	To short time period
Rederi AB Transatlantic	Industrials	dec-13	Henning Jensen	Routine	To short time period
Fenix Outdoor	Consumer Services	aug-07	Johan Vikman	Routine	To short time period
Husqvarna	consumer goods	2011	Magnus Yngen	Sickness	Non routined
Husqvarna	consumer goods	jul-13	Hans Linnarsson TF	Acting CEO	Non routined
PEAB	industrials	2013	Jan Johansson	Fired	Non routined
Sandvik	industrials	2011	Lars Petersson	No clear reason	Non routined
SCA	consumer goods	2008	Jan Åström	Fired	Non routined
Securitas	Industrials	2008	Thomas Berglund	Fired	Non routined
Swedish Orphan Biovitru	health care	aug-11	Martin Nicklasson	No clear reason	Non routined
Tele2	telecommunications	2010	Harri Koponen	Fired	Non routined
TeliaSonera	telecommunications	2007	Anders Igel	Fired	Non routined
TeliaSonera	telecommunications	2013	Lars Nyberg	Fired	Non routined
Addtech AB	Industrials	2008	Roger Bergqvist	No clear reason	Nonroutined
Cision	Consumer Services	2008	Niklas Flyborg	Fired	Nonroutined
Cloetta AB ser. B	Consumer Goods	2008	Jesper Åberg	M&A	Nonroutined
Eniro AB	Consumer Services	2010	Jesper Kärrbrink	Fired	Nonroutined
Eniro AB	Consumer Services	aug-14	Johan Lindgren	Fired	Nonroutined
Fingerprint Cards AB ser.	Industrials	2014	Johan Carlström	"Time out"	Nonroutined
Gunnebo AB	Industrials	2008	Göran Gezelius	Fired	Nonroutined
Haldex AB	Consumer Goods	dec-11	Joakim Olsson	Fired	Nonroutined
Haldex AB	Consumer Goods	jul-12	Ulf Ahlén TF	Acting CEO	Nonroutined
Lindab International AB	Industrials	2013	David Brodetsky	Fired	Nonroutined
Mekonomen AB	Consumer Goods	2007	Roger Gehrman TF	Acting CEO	Nonroutined
Mycronic	Industrials	2012	Peter Uddfors	Fired	Nonroutined
Net Entertainment NE AE	Consumer Services	feb-12	Björn Krantz TF	Acting CEO	Nonroutined
Orexo AB	Health Care	2007	Zsolt Lavotha	M&A	Nonroutined
Orexo AB	Health Care	2010	Tobjörn Bjerke	Fired	Nonroutined
Proffice AB	Industrials	2008	Lars Wahlström	Fired	Nonroutined
Swedol AB	Consumer Services	aug-13	Markku Piippo	Fired	Nonroutined
Systemair AB	Industrials	2013	Gerald Engström	No clear reason	Nonroutined
Acando AB ser. B	Technology	2009	Bengt Lejdström	Acting CEO	Nonroutined
AddNode Group AB ser.	Technology	2007	Bo Strandberg	Fired	Nonroutined
Aerocrine	Health Care	sep-11	Paul de Potocki	No clear reason	Nonroutined
AllTele Allmänna Svenska	Telecommunications	2013	Carlos Riera	Fired	Nonroutined
AllTele Allmänna Svenska	Telecommunications	2014	Paul Moonga tf	Acting CEO	Nonroutined
Anoto Group AB	Technology	2010	Anders Norling	Fired	Nonroutined
Anoto Group AB	Technology	2011	Torgny Hellström	Acting CEO	Nonroutined
Arctic Paper S.A.	Basic Materials	2014	Lars Eriksson	Fired	Nonroutined
Aspiro AB	Technology	2007	Johan Lenander	Fired	Nonroutined
Aspiro AB	Technology	2012	Gunnar Selläg	Fired	Nonroutined
BE Group AB	Basic Materials	feb-09	Håkan Jeppsson	No clear reason	Nonroutined
Bergs Timber AB ser. B	Basic Materials	2013	Henrik Egnell	Acting CEO	Nonroutined
BioInvent International AI	Health Care	2013	Svein Mathisen	Fired	Nonroutined
Björn Borg AB	Consumer Goods	aug-14	Henrik Fischer	Fired	Nonroutined
Borås Wäferi	Consumer Services	2008	Thomas Widstrand	Fired	Nonroutined
Boss Media	Technology	2007	Johan Berg	No clear reason	Nonroutined
Bulten AB	Consumer goods	2014	Johan Westman	Fired	Nonroutined
CashGuard	Consumer Goods	feb-07	Ove Wedsjö	Fired	Nonroutined
Cybercom Group AB	Technology	2007	Peter Keller-Andreasen (T	Acting CEO	Nonroutined
Cybercom Group AB	Technology	aug-11	Patrik Boman	Fired	Nonroutined

Company	Sector	Date	Name	Reason	Type
DORO AB	Technology	2007	Rune Tobjörnsen	No clear reason	Nonroutined
Enea AB	Technology	mar-09	Åsa landen Eriksson TF	Acting CEO	Nonroutined
FormPipe Software AB	Technology	apr-13	Fredrik Thafvelin	Fired	Nonroutined
Geveko, AB ser. B	Industrials	apr-12	Stefan Tilik	Fired	Nonroutined
Global Health Partner AB	Health Care	nov-11	Marianne Dicander Alexar	Fired	Nonroutined
Hemtex AB	Consumer Services	2008	Anders Jansson	Fired	Nonroutined
Hemtex AB	Consumer Services	dec-08	Kia Orback Pettersson TF	Acting CEO	Nonroutined
IBS	Technology	2008	Erik Heilborn	Fired	Nonroutined
Image Systems AB	Industrials	2008	Lars Taflin	Fired	Nonroutined
Image Systems AB	Industrials	2009	Gerth Schyborger tf	Acting CEO	Nonroutined
Image Systems AB	Industrials	apr-11	Bengt Broman tf	Acting CEO	Nonroutined
MQ Holding AB	Consumer Services	jun-13	Mats Gärdsell	Fired	Nonroutined
Nilörngruppen	Consumer Goods	2009	Stefan Tingström	Fired	Nonroutined
Nordic Mines AB	Basic Materials	2012	Michael Nilsson	Fired	Nonroutined
NOTE AB	Industrials	feb-07	Arne Forslund	Fired	Nonroutined
NOTE AB	Industrials	2010	Göran Jansson TF	Acting CEO	Nonroutined
Ortivus AB	Health Care	maj-08	Bengt Arne Sjöqvist TF	Acting CEO	Nonroutined
Ortivus AB	Health Care	2011	Jan Andersson	Fired	Nonroutined
PA Resources	Oil & Gas	maj-10	Ulrik jansson	Fired	Nonroutined
PA Resources	Oil & Gas	2013	Bo Askvik	Fired	Nonroutined
PA Resources	Oil & Gas	okt-13	Philippe Probst TF	Acting CEO	Nonroutined
PartnerTech	Industrials	2007	Mikael Jonson	Fired	Nonroutined
PartnerTech	Industrials	2010	Rune Glavare TF	Acting CEO	Nonroutined
Poolia AB	Industrials	feb-14	Monika Eling	Fired	Nonroutined
Prevas AB	Technology	maj-13	Mats Lundberg	Sickness	Nonroutined
Pricer AB	Industrials	okt-14	Harald Bauer tf	Acting CEO	Nonroutined
Probi AB	Health Care	2007	Rolf Bjerndell tf	Acting CEO	Nonroutined
ProfilGruppen AB	Basic Materials	jul-12	Peter Schön tf	Acting CEO	Nonroutined
ProfilGruppen AB	Basic Materials	aug-14	Kåre Wetterberg tf	Acting CEO	Nonroutined
Rederi AB	Industrials	2008	Carl-Johan Hagman	Fired	Nonroutined
Rederi AB	Industrials	2009	Anders Källström tf	Acting CEO	Nonroutined
Rederi AB	Industrials	2011	Stefan Eliasson tf	Acting CEO	Nonroutined
Rottneros AB	Basic Materials	jul-13	Ole Terland	Fired	Nonroutined
Rottneros AB	Basic Materials	nov-14	Carl-Johan Jonsson	Fired	Nonroutined
Semcon AB	Industrials	jun-07	Henrik Sund	Fired	Nonroutined
Sensys Traffic AB	Industrials	2008	Helena Claesson tf	Acting CEO	Nonroutined
Sigma	Technology	aug-08	Sune Nilsson	Fired	Nonroutined
Stockwik Förvaltning	Technology	jul-09	Bent Brugård TF	Acting CEO	Nonroutined
Stockwik Förvaltning	Technology	dec-10	Berndt Karlsson	M&A	Nonroutined
Svedbergs i Dalstorp	Industrials	2013	Anders Tofte	Fired	Nonroutined
TradeDoubler AB	Consumer Services	2007	Martin Henricson	Fired	Nonroutined
TradeDoubler AB	Consumer Services	2008	William Cooper	Fired	Nonroutined
TradeDoubler AB	Consumer Services	2014	Rob Wilson	Fired	Nonroutined
Thalamus Networks	Telecommunications	2007	Fredrich Dahlman	Acting CEO	Nonroutined
Tilgin	Technology	2007	Jan Werne	Fired	Nonroutined
Venue Retail Group AB	Consumer Services	sep-14	Susanne Börjesson	Fired	Nonroutined

Appendix 2 CPI calculations

Year	CPI	Ratio
2002	272,8	1,149157
2003	278,1	1,127256
2004	279,2	1,122815
2005	280,4	1,11801
2006	284,22	1,102984
2007	290,51	1,079102
2008	300,61	1,042846
2009	299,66	1,046152
2010	303,46	1,033052
2011	311,43	1,006615
2012	314,2	0,99774
2013	314,06	0,998185
2014	313,49	1

Appendix 3 Substudy 1- Redundant Fixed effect test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.268747	(72,215)	0.0986
Cross-section Chi-square	106.226852	72	0.0054
Period F	5.848157	(4,215)	0.0002
Period Chi-square	30.984297	4	0.0000
Cross-Section/Period F	1.548411	(76,215)	0.0078
Cross-Section/Period Chi-square	130.962237	76	0.0001

Appendix 4 Substudy 1, Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	10.844624	8	0.2107

Appendix 5 Substudy one, the full regression

Dependent Variable: ABS_DA_2
Method: Panel EGLS (Cross-section random effects)
Date: 04/19/15   Time: 20:57
Sample: 1 5
Periods included: 5
Cross-sections included: 73
Total panel (unbalanced) observations: 300
Swamy and Arora estimator of component variances

Variable	Coefficien...	Std. Error	t-Statistic	Prob.
BONUS_VARIABLE_SALARY	0.007700	0.016696	0.461215	0.6450
POST_HORIZON_DUMMY 1 ...	0.011913	0.018105	0.657987	0.5111
BOARD_SIZE	-0.001428	0.003229	-0.442150	0.6587
BOARDI	-0.068866	0.030690	-2.243891	0.0256
BLC5	-0.000209	0.000260	-0.801926	0.4233
INC15	-0.000691	0.000336	-2.057564	0.0406
LN_MARKET_CAP	-0.008840	0.002920	-3.027261	0.0027
MARKET_VALUE_TO_BOOK	0.002631	0.001271	2.070299	0.0393
2014_YEAR_DUMMY	-0.051295	0.059217	-0.866210	0.3871
2013_YEAR_DUMMY	-0.044267	0.055706	-0.794647	0.4275
_2012_YEAR_DUMMY	-0.045352	0.054392	-0.833799	0.4051
2011_YEAR_DUMMY	-0.029859	0.053582	-0.557250	0.5778
_2010_YEAR_DUMMY	-0.037533	0.053092	-0.706948	0.4802
2009_YEAR_DUMMY	-0.036337	0.052988	-0.685767	0.4934
2008_YEAR_DUMMY	-0.027895	0.052927	-0.527045	0.5986
2007_YEAR_DUMMY	-0.029159	0.052866	-0.551568	0.5817
2006_YEAR_DUMMY	0.007132	0.053280	0.133867	0.8936
_2005_YEAR_DUMMY	-0.030553	0.054807	-0.557462	0.5777
2004_YEAR_DUMMY	0.001055	0.061152	0.017251	0.9862
2003_YEAR_DUMMY	-0.027318	0.089851	-0.304041	0.7613
C	0.299110	0.070934	4.216770	0.0000

Effects Specification

			S.D.	Rho
Cross-section random			0.011717	0.0260
Idiosyncratic random			0.071724	0.9740

Weighted Statistics

R-squared	0.131037	Mean dependent var	0.058653
Adjusted R-squared	0.068746	S.D. dependent var	0.076013
S.E. of regression	0.073332	Sum squared resid	1.500340
F-statistic	2.103614	Durbin-Watson stat	1.599189
Prob(F-statistic)	0.004408		

Unweighted Statistics

R-squared	0.137914	Mean dependent var	0.062065
Sum squared resid	1.542673	Durbin-Watson stat	1.555304

Appendix 6 Substudy one manual BG test.

Dependent Variable: GENRRESID02
Method: Panel EGLS (Cross-section random effects)
Date: 03/31/15   Time: 15:19
Sample: 1 5
Periods included: 5
Cross-sections included: 73
Total panel (unbalanced) observations: 300
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BONUS_VARIABLE_SALARY	0.000147	0.005161	0.028503	0.9773
POST_HORIZON_DUMMY__1__...	-0.001737	0.005628	-0.308624	0.7578
BOARD_SIZE	5.72E-05	0.001012	0.056544	0.9549
BOARDI	-0.020656	0.009097	-2.270765	0.0239
BLC5	-0.000115	7.92E-05	-1.448798	0.1485
INC15	-0.000157	0.000104	-1.511986	0.1316
LN_MARKET_CAP	-0.001547	0.000888	-1.742394	0.0825
MARKET_VALUE_TO_BOOK	0.000513	0.000397	1.292217	0.1973
C	0.051283	0.015035	3.410915	0.0007

Effects Specification

			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.023658	1.0000

Weighted Statistics

R-squared	0.045914	Mean dependent var	0.005313
Adjusted R-squared	0.019685	S.D. dependent var	0.024032
S.E. of regression	0.023794	Sum squared resid	0.164750
F-statistic	1.750505	Durbin-Watson stat	1.873807
Prob(F-statistic)	0.086646		

Appendix 7 Substudy 2 Redundant Fixed effect test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.094867	(17,66)	0.3775
Cross-section Chi-square	22.358704	17	0.1713
Period F	1.147431	(4,66)	0.3421
Period Chi-square	6.050687	4	0.1954
Cross-Section/Period F	1.116460	(21,66)	0.3545
Cross-Section/Period Chi-square	27.357881	21	0.1593

Appendix 8 Substudy 2 Manual BG-test

```
Dependent Variable: GENRRESIDUAL2
Method: Panel Least Squares
Date: 03/30/15   Time: 18:05
Sample: 1 90
Periods included: 5
Cross-sections included: 18
Total panel (balanced) observations: 90
```

Variable	Coefficien...	Std. Error	t-Statistic	Prob.
DUM	-0.011992	0.011704	-1.024576	0.3084
MARKET INDEX	-1.40E-09	1.14E-09	-1.227923	0.2228
C	0.040519	0.007745	5.231397	0.0000

R-squared	0.023288	Mean dependent var	0.033355
Adjusted R-squared	0.000835	S.D. dependent var	0.052582
S.E. of regression	0.052560	Akaike info criterion	-3.020971
Sum squared resid	0.240339	Schwarz criterion	-2.937644
Log likelihood	138.9437	Hannan-Quinn criter.	-2.987368
F-statistic	1.037194	Durbin-Watson stat	1.767680
Prob(F-statistic)	0.358789		