

CEOs and Earnings Management: The Distributional Anomalies of Discretionary Accruals in Post- SOX Era

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Tämä Pro gradu –tutkielma käsittelee tuloksenohjaukseen käytettäviin harkinnanvaraisiin jaksotuseriin liittyviä anomaliaita listattujen yhdysvaltalaisyriyten toimitusjohtajien toimikausien aikana Sarbanes-Oxley Actin voimaantulon jälkeen.

Tutkielma on luonteeltaan kvantitatiivinen ja siinä hyödynnetään neljää harkinnanvaraisten jaksotuserien erotuksessa yleisesti käytettävää mallia: Healyn mallia, DeAngelon mallia, Jonesin mallia ja modifioitua Jonesin mallia. Näyte koostuu listattujen yhdysvaltalaisyriyten vuosien 2003-2013 välisestä talous- ja toimitusjohtajadatasta.

Saadut tulokset viittaavat vahvasti siihen, että viimeisenä kokonaisena toimivuonnaan toimitusjohtajat hyödyntävät tulosta kasvattavia harkinnanvaraisia jaksotuseriä. Tämän lisäksi toimitusjohtajan kauden alun tulosta kasvattavien harkinnanvaraisten jaksotuserien käytölle löydettiin tukea. Näiden havaintojen ohella tutkimuksessa havaittiin myös merkitsevyydeltään heikohkoa evidenssiä tuloksenohjauksesta alaspäin kahden toimitusjohtajan välisenä siirtymävuonna harkinnanvaraisia jaksotuseriä hyväksi käyttäen.

Avainsanat tuloksenohjaus, harkinnanvaraiset jaksotuserät, toimitusjohtaja, Sarbanes-Oxley Act

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Abstract

This thesis examines anomalies related to the discretionary accruals usage during the tenures of CEOs in listed U.S. companies since the implementation of Sarbanes-Oxley Act.

The approach used in this thesis is quantitative in nature. Four well-known discretionary accruals models: Healy model, DeAngelo model, Jones model and modified Jones are used in to separate discretionary accruals from the total accruals. The sample consists of financial and executive data of listed U.S. companies between the years 2003-2013.

The results of this study strongly support the idea that income-increasing accruals are used in the final year of the average CEO's tenure. Furthermore, support for the usage of income-increasing discretionary accruals during the early years of CEO's tenure was found. In addition, in the transition year between two CEOs, weak evidence for the downwards management of discretionary accruals was observed.

Keywords earnings management, discretionary accruals, CEO, Sarbanes-Oxley Act

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1. Introduction

1.1 Background

For an investor, the financial statements of a company are vital if not the single most important source information when making an investment decision. Despite the content of financial statements being mandated by respective law, some elements of it are left to the discretion of each individual company. One of such elements is accruals. Accruals are an interesting area of study because they often relate closely to earnings management decisions made by a company. It could be even stated that ultimately most of earnings management is done with the help of accruals (Mohanram, 2003). Furthermore, the financial aspect of considering accruals can be rather significant for an investor. It has been proven for example that companies with an unusually high level of accruals (top quartile) during the year of their IPO, offered 20% smaller three-year post-IPO return for their stock compared with the most conservative quartile at the bottom (Teoh et. al., 1998).

In general, the listed companies usually tie at least some part of their CEO's compensation to the performance of their stock. This gives an incentive for the CEO to state financial information in as positive manner as possible in order to maximize the stock price at the market. One way to manipulate the earnings and hereby improve the amount of remuneration received by the CEO, is through accruals. A strong link has been found between tying the CEO's compensation more tightly to the company's stock price and earnings manipulation assisted by discretionary accruals. In addition, there seems to be a connection with a high level of accruals in a certain year and execution of large amounts of options. (Bergstresser & Philippon, 2006)

The stock-based compensation plays an especially important role when the CEO is considering whether to manage earnings if the company is in risk of falling short of consensus estimates for earnings set by the analysts. This is due to the fact that the stock prices, particularly the prices of growth stocks experience a hard, asymmetrical hit when the targets set by analysts for the company are not met or exceeded (Skinner & Sloan, 2002). Accordingly, the empirical evidence presented by Payne & Robb (2000) suggests that if the pre-managed earnings fall short of the market expectations, the CEO tries to inflate the

earnings to meet those expectations. Additionally, they state if the pre-managed earnings happen to be already above the anticipated, the CEO's actions are driven by two conflicting interests. First of all, the CEO might want to build up accruals "storage" by using income-decreasing accruals which enable meeting the earnings targets set by the market more easily in the future. On the other hand, the CEO may want to surprise the market by posting earnings that exceed the expectations in order to get an immediate positive reaction in the stock market. Furthermore, the empirical evidence of Payne & Robb (2000) indicate that the incentive to store the accruals is stronger than the incentive to surprise the market. This is aligned with the findings of Skinner & Sloan (2002) that the asymmetrical reaction from the market rewards those who meet targets every time rather than those whose earnings fluctuate from falling short to exceeding the market expectations by a mile. However, it has been questioned whether discretionary accruals are used to manage earnings just above these target levels. A study by Dechow et. al. (2003) addressed this issue concluding that small profit and small loss reporting companies' discretionary accruals levels were equal. Furthermore, they found out that the proportional number of companies reporting income-increasing accruals were equally big in both of these groups.

The accruals are a complex issue and according to Badertscher et. al. (2012) there are three alternatives of what the CEOs are trying to achieve by using them. First of all, the CEO might be motivated by "contracting". The contracting reasons can be further divided into ex-post opportunistic contracting and ex-ante efficient contracting. Ex-post opportunistic contracting means that the manager makes decisions regarding earnings management, especially accruals, self-interest such as a bonus (Healy, 1985) or the avoidance of a debt covenant violation (Sweeney, 1994; DeFond & Jiambalvo, 1994) in mind. Ex-ante efficient contracting hypothesis in turn, suggests that the accounting decisions such as earnings management are mainly driven by manager's urge to minimize contracting costs between the company and its' partners, thus maximizing the value of the company. Moreover, the CEO may have an incentive to manage earnings for informational reasons. Badertscher et. al. (2012) uses the term "informational" to refer to a situation where the manager uses the accruals to share private information on the company's future performance capability. Finally, the CEO may be interested managing earnings for opportunistic reasons such as keeping up or exceeding the market expectations by concealing the actual financial position of the company in order to strengthen their own status while the investors bear the ultimate expense from this.

So why is that CEO's versatile incentives to use discretionary accruals are important then, one might ask. Badertscher et. al. (2012) suggest that motivation behind the CEO's actions gives the investors a hint whether to concentrate on the original or the restated accruals when the goal is to forecast future cash flows and hereby determine the value of the company. Their empirical evidence indicates that if the sole purpose of CEO's opportunistic accruals usage is to maximize his/her wellbeing by meeting or exceeding the market expectations, the restated accruals are a more reliable source of information than the originally reported. On the other hand, if the CEO uses accruals for informational reason to share additional information with the market, the originally reported accruals are more useful as they predict future cash flows on a significant level. Finally, Badertscher et. al. (2012) find weak support for the contracting hypothesis, no matter whether income-decreasing and income-increasing accruals are observed. If the motivation of the CEO derives from contracting (minimizing the contract related costs), the accruals will not offer the investors that much help for the forecasting of the future performance of the company as they would if the reasons behind CEO's actions were purely informational or opportunistic.

In 2002, Sarbanes-Oxley Act (SOX) came into effect in the United States. Consequently, U.S. Securities and Exchange Commission (SEC) began to demand that CEOs and CFOs of all listed companies in the USA must prove that their company's financial statements are materially accurate and complete. Some empirical evidence suggests that the implementation of SOX, especially Section 404 (the assessment of internal control) has lowered the level of listed companies' discretionary accruals usage. More conservative approach to financial reporting may derive from the fact that companies expect SOX to inflict harsher punishments for those who overstate their financials compared with those understating them. (Lobo & Zhou 2006; Iliev, 2010)

The CEO of a company ultimately holds the primary responsibility for the decisions made by it. Thus, it falls to the hands of the CEO to choose whether the company's earnings should be managed and if the accruals are the best way to execute the plan. Hence, it is important to study the CEOs, accruals and to ponder what motivates the CEOs to use accruals and for what purposes accruals are used.

1.2 Aim of the study

Previous academic literature has mainly had its focus on years surrounding CEO turnover rather than concentrating on the complete tenures of CEOs and distribution of accruals during them which would help to define more accurately the level of “normal” accruals. Furthermore, many of the studies have had a relatively short time span after CEO turnover, covering usually only one to three years of the new CEO’s tenure. The aim of this thesis is to contribute to the less covered area of this field by researching questions related to the accrual distribution over a longer time period of a CEO’s tenure. Moreover, one of the goals is to offer investors some insights when it is more likely that the company’s financial statements contain accruals related earnings management thus helping them to make better investment decisions. In addition, it is interesting to see whether an uneven distribution of accruals between financial years is still possible and observable after the implementation of Sarbanes-Oxley Act as the time-series used in the study will consist of post-SOX years. Cohen et. al. (2008) have found empirical evidence suggesting that as a consequence of implementation of SOX, the companies have not stopped managing earnings but merely changed their methods for it. According to them, the shift has been from accruals-based earnings management more towards real earnings management methods such as accelerating sales with discounts or better credit terms. Furthermore, the SOX has had its’ impact on the previously found connection between CEO equity incentives and accruals-based earnings management as this connection seems to have disappeared after the act came into effect (Jiang et. al., 2010).

This thesis addresses following three research questions:

Do the discretionary accruals differ from the average level during the transition year (year 0) between two CEOs?

Do the discretionary accruals differ from the average level during the final year (-1) of CEO’s tenure?

Do the discretionary accruals differ from the average level during the early years (years 1-3) of CEO’s tenure?

2. Literature review

Multiple of distributional anomaly assumptions could be drawn from the academic literature. In this chapter, the following hypotheses are more closely examined and justified:

1. *In the transition year between two CEOs (year 0), the discretionary accruals are below the average level*
2. *In the final year (-1) of CEO's tenure, the discretionary accruals are above the average level*
3. *In the early years (years 1-3) of CEO's tenure, the discretionary accruals are above the average level*

2.1 Hypothesis 1: In the transition year between two CEOs (year 0), the discretionary accruals are below the average level

The earnings bath assumption is strongly based on the idea that the new CEO wants to maximize his/her future compensation. This is especially the case if the main reason for the CEO replacement decision has been the company's unsatisfactory financial performance. As a consequence, the new CEO can blame the old CEO for the mistakes made and thus justify the usage of income-decreasing accruals. The empirical evidence from the United States suggests that earnings bath theory can not be pervasively applied to all CEO turnover situations. There are at least two factors that raise the probability of its occurrence. First of all, it is more likely that a company with a newly appointed CEO "cleans the table" with an earnings bath if the CEO change has been due to the bad financial performance of the company. Secondly, the phenomenon is more common if the CEO turnover has been a non-routine one. This kind of turnover is often associated with the poor financial performance of the company, whereas the routine one hasn't got this kind of strong relation to the company's performance as it usually refers to the retirement of the CEO. (Murphy & Zimmerman, 1993)

The higher probability of an earnings bath occurring after CEO turnover seems logical in the aforementioned situations. If the change is of non-routine fashion and it is related to the bad financial performance of the company, as one could assume, the departing CEO has most likely tried to manage earnings upwards to retain his/her position. If this is the case, an earnings bath seems appropriate and justifiable. Furthermore, the reason for earnings bath

effect occurring less frequently when CEO turnover is executed in a routine fashion could be speculated. It might be that the departing CEO has not had such a high need to manage the earnings upwards as usually she/he has done well and perceived the CEO position secured. Consequently, there may not be that much room left for the new CEO of a well performing company to manage accruals downwards during the transition year. This is due to the nature of accruals being reversal which means that income-increasing accruals must be at some point offset by income-decreasing accruals and vice versa (Guay et. al., 1996).

A study about CEO turnovers in South Korean companies suggests that if the old CEO is forced to leave the company and is replaced by a company insider, the departing CEO tend to manage earnings upwards with the help of accruals. Consequently, the internally promoted new CEO supplanting the dismissed or resigned CEO, has a tendency to carry out an earnings bath during the transition year. A similar kind of empirical evidence about an earnings bath could not be found if the old CEO departed peacefully even in the case that the replacing person was an insider. (Choi et. al., 2014)

Often the routine CEO turnover is related to the new CEO being promoted inside the company rather than an outsider as well as that in many cases the old CEO stays with the company in some other role, as a member of the board for example. As a result, the relationship between the predecessor and successor CEOs might be similar to one between a master and an apprentice if the former has trained the latter one (Rosser, 2005). What follows is a situation where it is in the best interest of both the new and the old CEO to avoid actualizing an earnings bath. This results from the fact that executing an earnings bath would make the former CEO look like a bad manager, possibly jeopardizing his/her board seat (in the case the old CEO was offered one) as well as future opportunities in the boards of other companies. At the same, the freshly appointed CEO needs all the support he/she can get from the company's board and pointing out the incompetence of a board member would be a terrible move in a political sense.

Lam Detzler & Machuga (2002) findings from Japan support the idea of the departing and the new CEO sharing a common goal, a successful transition. Their coaching theory suggests that as it is customary in Japanese corporate culture for the ceding CEO to coach his/her follower before routine turnover. As a result, an earnings bath does not occur. They find empirical evidence supporting this theory but as they define routine turnover rather narrowly

(the relinquishing CEO continues as a board member afterwards), it could be questioned whether the results would change if the board membership was not a condition. Furthermore, it would be interesting to find out if there would a similar outcome if the study was replicated and the same methods used in more individualistic society (e.g. United States) and where the losing the respect of others is not as big issue as it is in Japan.

Consistent with the evidence gathered in the USA (Murphy & Zimmerman, 1993) and South Korea (Choi et. al., 2014) companies with newly appointed CEOs of Australian companies, are more likely carry out an earnings bath after non-routine CEO turnover. However, contrary to the Korean study, there seems to be only small amount of support to the theory that the departing CEOs manage earnings upwards during their last year of their tenure which is then followed by an earnings bath. (Wells, 2002)

Occasionally a group of shareholders start opposing the current board of directors and their managerial policies which leads to a proxy contest. In a proxy contest dissident shareholders try to gather as much support from the other owners with voting rights in order to replace dissatisfactory board members, often including the CEO. Usually, the background of their discontentment is in the below market average earnings rather than in the performance of company's stock itself. As the battle for the control of the company commences, it is usually in the best interest of the incumbent directors to start managing earnings upwards so that they can convince the owners of their capability and thus securing their position within the company. What typically happens is that reported profitability of the company significantly rises during the election campaign for control, whereas the campaign has no effect on the real profitability of the company. If the group opposing the current board prevails in the proxy contest, a significantly negative amount of unexpected accruals is posted during the transition year. The interesting part is that this is possible despite almost in a half (45%) of the companies the transition year's accruals included quarterly (positive) accruals chosen by incumbent board trying to prove their worth to the shareholders. (DeAngelo, 1988)

All in all, the empirical evidence gathered in the previous studies seems to be pointing out that the earnings bath theory is plausible especially when the CEO turnover is a forced/non-routine one and turnover is a consequence of bad financial performance of the company during the tenure of the last incumbent. A special occasion where the execution of an earnings bath looks to be typical is after a successful proxy battle for the control of the

company as the new board blames the previous one on the bad decisions which led the company to distress in the first place. The evidence about the relation between the old CEO managing earnings upwards during the last year of his/her tenure and the new executing an earnings bath appears to be more contradictory issue while there are multiple of supporters for this assumption (e.g. Murphy & Zimmerman, 1993; Wells, 2002) as well as objectors (e.g. Choi et. al., 2014; Godfrey et. al., 2003; Pourciau, 1993).

2.2 Hypothesis 2: In the final year (-1) of CEO's tenure, the discretionary accruals are above the average level

In theory, one could expect that the departing CEO tries to manage earnings during the last year of their tenure in order to maximize his/her bonus payment or to secure future career opportunities such board seats. Some studies (Brickley et. al., 1999; Reitenga & Tearney, 2003; Guan et. al., 2005) have embraced this idea while others (Murphy & Zimmerman, 1993) are somewhat skeptical or even state that during the last year of CEO's tenure the accruals may actually be income-decreasing (Pourciau, 1993).

One important motivational factor behind the final year's earnings management besides the sole maximization of the managerial bonus, is the future career ambitions of the incumbent CEO. One of the most prominent career prospects for a departing CEO often is the board membership of the company he/she is working for. Consequently, the CEO is motivated to indicate capability during his/her tenure to secure a board seat afterwards. Empirical evidence points out that both the companies whose CEO stayed on the board after their tenure and those whose did not, posted positive discretionary accruals during the final year of CEO's tenure. What separates these two cases from each other is that for the companies whose CEO stayed, the discretionary accruals were also positive the year before the final year of CEO's tenure whereas these numbers were negative for companies whose CEO left. Furthermore, in the case CEO didn't stay with the company, the amount of discretionary accruals was significantly higher during the final year than when he/she did. (Reitenga & Tearney, 2003)

The findings of Reitenga & Tearney (2003) are intriguing as they state that the level accruals during the final year(s) CEO's tenure is significantly higher for the CEO's not retaining a

board seat afterwards, during the last year of their tenure. At the same time, the accruals for these CEOs are negative during the year before the final year. There could be at least a couple of explanations for this. First of all, if the CEO has done well, the company might want to make an agreement for the board seat early on with the incumbent CEO so there is no need for him/her to report exceptional earnings during the last year. On the contrary, if the CEO knows that he/she will not continue on the board or this is informed relatively late, the main motivation might be to maximize the last year's bonus payment by inflating accruals. Secondly, as there seems to be a strong connection between the good financial performance during CEO's tenure and post-career board membership (Brickley et. al., 1999), the top performing directors might have smaller incentives to manage accruals upwards especially if their bonus is tied to a certain threshold level after which the amount of remuneration does not grow any further. In fact, previous studies (Degeorge et. al., 1999; Burgstahler & Dichev, 1997; Gaver et. al., 1995; Healy, 1985) indicate that there is a distributional anomaly as an extraordinary amount of managed earnings fall just above the threshold value when pre-managed earnings are slightly below zero or another verge such as analyst consensus estimates. Juxtaposing this to bonuses, this could implicate that a successful CEO who retains a seat on the board do not feel the urge to manage accruals upwards all at once as she/he tries to adjust the earnings just to exceed the yearly bonus threshold while keeping it easier to reach the earnings goal next year too. On the other hand, for an unsuccessful director who often fails to sustain the board seat afterwards, the distance from the yearly earnings limit for bonuses might be far off or even utterly unreachable. Hence, it is wiser for the failed CEO to use accruals to manage earnings downwards until the last year and then posting a hugely positive amount of accruals in a last attempt to meet the earnings target and to cash in the final year's bonus.

Those speaking against the unusually positive accruals during CEO's last years, do not seem to be able to produce as a compelling case as the supporters because the motivational factors behind this behavior are not fully understood. There is evidence gathered by Murphy & Zimmerman (1993) pointing out that the CEO's pre-departure accrual distribution for routine (years -5 to -2 positive) and non-routine (year -5 highly positive, -4 around zero, years -3 to -2 negative) turnover somewhat differ from each other two to five years prior to the manager exiting the company. On the other hand, in both cases the level of accruals during the final year of CEO's tenure seems to relatively close to one another, near to zero.

Thus, the results of the study indicate that the theory of abnormally positive accruals in the final year does not necessarily apply.

Susan Pourciau (1993) takes even more drastic an approach against this assumption by presenting data indicating that actually the companies in non-routine CEO turnover process report negative unexpected accruals during the CEO's final year (-1). As she herself admits the surprising result of the study might be due to multiple factors. Firstly, there might be a time horizon problem as year -2, before CEO's departure seems positive in terms of accruals. This sound like that she might have mixed the actual final year (-1, the last complete year of CEO's tenure) perceived as -2 and the transition year (0) which should be the year between two CEOs, which defined as the final year (-1) by her. Of course the negative result maybe just consequence of cancelling the year -2's and other positive, sometimes inappropriate accruals back to the normal level. It could be also speculated whether the reason behind this behavior she observed is that the relinquishing CEO tries to cover his/her back for possible litigation against the shareholders as the new CEO unveils the earlier inflation of company's earnings. Furthermore, a possible explanation could be that as Pourciau (1993) states, the directors might get the information on their dismissal relatively late (e.g. one quarter before being replaced) and were not hereby able to affect the yearly accruals as much. Additionally, it should be remembered that as non-routine CEO turnover seems to be related to the bad financial performance of a company, the departing director does not feel motivated to manage earnings upwards as the bonus threshold is too far off (Degeorge et. al., 1999; Burgstahler & Dichev, 1997), especially if the negative accrual reserves are used during the year -2 to inflate earnings. There might also be an incentive for a CEO to raise negative accrual reserves during financially poor years and then use those the reserves to reach bonus thresholds during better years. As the non-routine change often catches the CEO by surprise, it seems to be that the receding manager either has no will (if the bonus verge can not be reached) or the time (if the dismissal announcement comes relatively late) to manage earnings accruals upwards before being replaced.

Guan et. al. (2005) warns that the results obtained by Pourciau (1993) should be taken with a grain of salt. They state there is a fundamental problem with her definition of non-routine CEO turnover being too broad as she includes all executive changes other than retirement or if the resigned CEO is offered another position within the company such as membership on the board. Accordingly, if the CEO willingly leaves to work for another company for

example, Pourciau (1993) classifies this kind of turnover to be non-routine. Consequently, non-routine turnover can be voluntary or routine turnover “forced” if the CEO is promised a position in the company under the condition of resignation. The results of Guan et. al. (2005) highlight the definition problem even further as they do not find CEOs to manage earnings upwards in his/her final year of tenure if the turnover is “non-routine”, consistent with the finding of Pourciau (1993). Conversely, when they took into account only the cases where turnover was classified as “forced”, they found that the discretionary accruals in the CEO’s last year at the office were significantly higher than in the control group as a clear indication of earnings management.

The discussion whether companies post abnormally positive accruals prior CEO turnover seems to be divisive within the academic circle. Those who support this hypothesis argue that one major motivation to inflate earnings during the last two years of the manager’s tenure with the help of accruals is the future career ambition of relinquishing CEO in the company’s board (Reitenga & Tearney, 2003). Brickley et. al. (1999) have a slightly different view to this matter. Whereas, they agree that earnings are being managed upwards during the final years, they also state that in accounting terms good financial performance raises the probability of the ceding CEO getting a board seat from other companies. On the contrary, they purport that retaining a board seat within the company is better explained by abnormal stock returns in the final two years of director tenure rather than the accounting returns. Furthermore, one reason behind the extraordinary high level of positive accruals prior to CEO’s departure might be the fact that the CEO tries maximize the amount of bonus no matter what. In a normal year, the manager has an incentive to use income-increasing accruals only if the bonus threshold is within his/her grasp while managing accruals downwards during financially bad years in order to obtain the bonus level more easily in years to come (Gaver et. al., 1995; Healy, 1985; Kaplan, 1985).

The oppositionists of the hypothesis state that there are no positive (Murphy & Zimmerman, 1993) abnormally positive accruals during the final year of CEO’s tenure or that the accruals are actually negative during that year (Pourciau, 1993). It seems to be hard for them to find an explanation for these findings. Furthermore, Pourciau (1993) argues that her results might be due to the fact information about their dismissal is passed to the CEOs relatively late in the case of forced turnover which is often related to the company’s bad performance. This gives the incumbent manager only short time to react to the news and the company might

already have posted highly income-decreasing accruals during earlier quarters of the fiscal year to maximize CEO's future bonus compensation for upcoming years. Pourciau (1993) also suggests that her study might just show the reversal of earlier income-increasing accruals in the final year. One could argue that this reversal is possibly done to protect the incumbent CEO from the litigation against disappointed shareholders accusing the company exaggeration of earnings. In turn, managing earnings upwards during the last year would not help out the director as the bonus threshold is in any case unattainable as it is often prior to forced CEO turnover.

On the other hand, highly positive and negative accruals before forced CEO turnover could be merely seen as the two sides of a single coin. According to Hazarika et. al. (2012) the magnitude of company's accruals raises the probability of forced CEO turnover regardless to whether those accruals are deflating or inflating the earnings. Furthermore, they find that the tenure of a CEO aggressively managing earnings tend to be shorter on average than what it is for a CEO with a more moderate attitude towards this kind of earnings management.

A view that somewhat contradicts both of those who support the idea of abnormally positive accruals during the final year(s) of a CEO's tenure and those who oppose it. Accordingly, the only driving force behind the CEO's willingness to manage discretionary accruals upwards, is the relative superiority of Supplemental Executive Retirement Plan (SERP). The empirical evidence from Fortune 1000 companies indicates that the enthusiasm to manage accruals before CEO's retirement was exceptionally high when the SERP was contingent to the company's financial performance. It is noteworthy that in case the company did not offer SERP to their manager, no proof of earnings management by using accruals was found prior to CEO retirement.

(Kalyta, 2009)

2.3 Hypothesis 3: In the early years (years 1-3) of CEO's tenure, the discretionary accruals are above the average level

Ali & Zhang (2015) suggest that a new CEO has a special interest to manage accruals upwards during the early years of their service. According to them, this is due to the fact that the newly appointed manager tries to convince the uncertain financial market of their capability to lead the company. A major question here is whether the CEO's motivational

factors to manage earnings during the early years of his/her tenure differ from the reasons behind earnings management during the transition year (the earnings bath) and the final year.

The study of Ali & Zhang (2015) is on some level groundbreaking as many research papers concentrate on following the accruals some years before CEO turnover and after it (Wells, 2002; Reitenga & Tearney, 2003; Murphy & Zimmerman, 1993; Choi et. al., 2014; Pourciau, 1993; Bengtsson et. al., 2007) whereas their work is more about the distribution of accruals without CEO changes as they examined complete CEO tenure. Their method is reasonable as it keeps the “variable”, the CEO that is, constant. At least partly, this deletes the possibility of new generations of managers, often sharing similar mindsets and values interfering with the results. Furthermore, comparing the before and after turnover numbers is not always that sensible as the perception towards the use discretionary accruals maybe impacted by education given in business schools at a certain era.

Graham et. al. (2005) argue that managers who want to meet or exceed earnings benchmarks have four main reasons for this 1) assuring the stock market 2) sustaining or increasing the stock value 3) improving management team’s image in the eyes of outsiders 4) advancing the company’s future growth prospects. Furthermore, they state that against traditional beliefs, bonuses and keeping the credit rating on a good level does not play that of a big role when companies are trying to reach the benchmarks. Of course, the result of this study could be doubted as the used survey-based method tells us what people tell rather than what really drives their actions. This often leaves some hidden motives behind their actions unveiled as the interviewees do not want to show themselves in bad light.

Despite the motivational factors for a CEO to inflate the accruals upwards during the early years of his/her tenure can be found, the empirical evidence gathered in multiple studies (Wells, 2002; Reitenga & Tearney, 2003) speak against this assumption or suggest that its’ existence depends on the company’s financial performance (Murphy & Zimmerman, 1993). Although most of the studies around this field concentrate comparing accruals before and after CEO turnover rather than following the distribution of accruals during certain CEOs’ careers, these studies still offer view points to this matter.

The occurrence of an earnings bath in the transition year is an important aspect to take into consideration as it often enables the posting of strongly income-increasing accruals during

the following years. Murphy & Zimmerman (1993) present interesting data which suggests that an earnings bath occurs both in the case of routine turnover (CEO is under 64 years old) and non-routine (CEO is 64 or older). Despite the earnings bath, in neither case there is no significant sign of upwards earnings management during the first three years of new CEO's tenure. Regardless to that in the case non-routine turnover the earnings bath being bigger in magnitude, fresh manager's first year accruals seem to be still highly negative which is interesting. Murphy & Zimmerman (1993) also use another method to classify turnover to routine or non-routine based on whether the performance index which consists of changes in earnings and market-adjusted stock returns of the company is above (routine) or below (non-routine) the median index value. Under this classification, the results are somewhat unexpected. As under the other classification, after non-routine (sub-median performing CEO) turnover a significantly big earnings bath occurs during the transition year followed by an "aftershock" as the company posts highly negative accruals in the first complete year of the new manager's tenure. Besides this, the accruals are significantly negative in the years 2 and 3 too. The noteworthy part of this classification is that the routine (superiorly performing CEO) turnover is not followed by an earnings bath at all and the company posts significantly positive accruals during the CEO's first year at the office. Furthermore, the accruals for years 2 and 3 seem to be also positive in this case. The results of Murphy & Zimmerman (1993) might hereby suggest that upwards earnings management with the help of accruals during the early years of CEO tenure does not require an earnings bath in the transition year in order to occur.

On the contrary, Godfrey et. al. (2003) discover some evidence supporting this connection between the earnings bath and income-increasing accruals in the early years. They find some proof of income-decreasing accruals during the transition year suggesting an earnings bath. Furthermore, they find this tendency for an earnings bath stronger in the case of CEO resignation compared with the explanation being CEO retirement. In addition, their empirical evidence offers strong support for the assumption that the new CEO manages earnings upwards during the first year his/her tenure. As is the case with the earnings bath, the strongest support for hypothesis is obtained if the turnover is due to CEO resignation.

The income smoothing theory (Fudenberg & Tirole, 1995; DeFond & Park, 1997) might offer some insight of the differences between the accruals of high-performing and low-performing companies during the first three years after CEO turnover presented by Murphy

& Zimmerman (1993). The theory of income smoothing is based on the idea that the actions a CEO takes are driven by the urge to secure his/her position. The CEO tries to execute this by smoothing the company's earnings by taking into account the current and the future relative performance. The theory suggests that poor performing managers are more likely to be fired but at the same time good performance in the past does not protect the CEO from the dismissal either if the current goals are not met or exceeded. Thus, the CEOs are motivated to keep the earnings smooth. The smoothing theory's underlying assumption is that ultimately the long-term sum of accruals is zero. Consequently, the starting point for the smoothing process is the CEO's expectations for the future performance compared with the performance the company is experiencing at the moment. If he/she suspects that the future performance will beat the current performance, the CEO most likely decides to use income-increasing items such as accruals. In a way, the manager takes a loan from the future earnings in order to strengthen his/her position in the company. On the contrary, if the CEO has a gloomy view about the future earnings, it is in his/her best interest to save the current earnings for the "rainy" day and thus the usage of income-decreasing accruals during the current period might make more sense.

Furthermore, a study by Myers et. al. (2007) suggests that CEOs' income smoothing actions may as well stem from their willingness to keep earnings momentum (constant improvement of quarterly earnings numbers) on. Their evidence indicates that companies associated with the long streaks of constantly improving earnings experience abnormally strong performance at the stock market. At the same time the longer the company has reported constantly improving numbers, the harder market hits the company in the case it fails to do so. Taking into account that the managerial remuneration is often tied to the value of the company's stock, the CEOs can be expected to appreciate smooth streams of incomes.

As stated by Murphy & Zimmerman (1993), the post-turnover accruals in the case of routine (above median performing companies) and non-routine (below median performing companies) transition differ from each other pretty dramatically as the better performing half posts significantly positive accruals while the worse half significantly negative during the first three years of their CEO's tenure. According to the income smoothing theory (Fudenberg & Tirole, 1995; DeFond & Park, 1997) the earnings management executed in a company tells a story about the CEO's future expectations related to the company's current performance. In this light, the findings of Murphy & Zimmerman (1993) are rather

fascinating. If a CEO has a successful predecessor, the bar for the current performance is set high relatively high. Consequently, the new manager has to use income-increasing accruals for example to meet the expectations. On the other hand, if the CEO is replaced in a non-routine manner, the expected level of performance is not as high in a low-performing company as in a high-performing company experiencing CEO turnover. The low level of current performance may leave the newly appointed CEO more leeway to use income-decreasing accruals. If it is assumed that the income smoothing theory holds true, the findings of Murphy & Zimmerman (1993) indicate that the new CEOs of worse performing half assume during the first three years that they will do worse whereas the better half expects to improve the company's performance even further in the future. In one sense, this sounds reasonable if it is taken that it is hard to make a fast turnaround for a company in distress whereas a successful company might need only some slight adjustments to be even more thriving.

Findings of Farrell & Whidbee (2003) might give some explanation to this matter. They suggest that the actual level of CEO's performance does not play that big of a role in turnover decisions but the performance in relation to the expectations set by the company or the analysts. This might mean that some of the CEOs are fired not because of their own performance but because competitors have done better. Thus, the usage of income-increasing accruals could be due to unrealistically high expectations set for the new CEOs. At the same time, it could be reasoned that for the worse performing companies, improving the earnings in the upcoming years would be relatively easy as the starting level is set so low. By contrast, it could be anticipated that the CEOs of the better performing half would see constant improvement quite challenging as the performance level is already so high.

Empirical evidence provided by Choi et. al. (2014) supports the findings of Murphy & Zimmerman (1993) indicating that an earnings bath and the early years' high accruals are not that strongly connected to each other. According to their evidence, an earnings bath occurs mainly in the case that CEO turnover is forced and the replacement CEO is promoted internally. At the same time, they state that the fresh CEO tends to manage accruals upwards during the first year of tenure only when he/she is hired outside the company and the turnover has been a peaceful one.

There could be at least a couple of reasons to manage accruals upwards for an externally appointed CEO after peaceful turnover. First of all, the combination of external CEO and peaceful (often connected with successful tenure of the ceding CEO) turnover might imply that the company is willing to make strategic changes despite that the current strategy has worked well. In this case it is vital that the CEO and the board ensure the support of the stock owners and to assure them that the decision of strategic change was correctly made. Secondly, the incoming CEO might feel pressure as the predecessor has most likely succeeded in the job as their peaceful departure suggests and therefore the new manager feels an urge to prove his/her worth. Furthermore, the reason behind the phenomenon could be as well bonus payments. By contrast, forced turnover is often related to poor financial performance, the incoming CEO is usually not able to reach the bonus threshold during the first year as the management of change takes more time. Consequently, she/he settles for managing accruals downwards to enable higher income-increasing accruals when the need be. This would explain why forced CEO turnovers are not followed by income-increasing accruals during the first year of incoming CEO's tenure. On the other hand, it might be that the bonus payment levels for the new CEO are set moderately after an unsuccessful CEO as suggested by the forced turnover and those limits can be achieved without the extensive use of accruals.

The difference for an internally promoted CEO not manage accruals upwards and for an outsider to do so may also be explained with bonus payments. As the internally promoted CEO is rarely outside the group of high level executives, which means that they are often already part of company's bonus plans which might have a maturity time of a couple of years. Consequently, during his/her first year as a CEO the bonus terms for their older plan might already be easily reached (as peaceful departure is often related to good financial performance) and it is wiser not to manage the accruals upwards in order to make achieving the future goals easier (Healy, 1985; Kaplan, 1985). On the contrary, an externally appointed new CEO faces only the new, challenging bonus terms as they are likely tied to high level performance in the case of peaceful turnover. Given this, combined with the fact that an outsiders' "track record" is not usually as well known as the internally promoted CEOs', the outsiders are highly motivated to show their worth early on to the shareholders and the board. Therefore, the CEOs appointed from the outside of the company are more likely to use income-increasing accruals in the first year of their tenure.

2.4 Connection between the hypotheses

The connection between the abovementioned hypotheses is an interesting because of the reversal nature of accruals. Is it possible that if one or two of them held true the others have to hold true as well?

It could be assumed to be mentally easier for a new CEO to manage earnings if his/her predecessor has done it as it is customary and accepted within the company. On the contrary, if the former manager has not managed the earnings that aggressively, the fresh CEO might not take the initiative and start doing so.

The findings of Reitenga & Tearney (2003) at least speak against this assumption of the three hypotheses being intertwined. Their evidence indicates that an average ceding CEO manages accruals pretty aggressively upwards during the last year of his/her tenure. Nevertheless, the discretionary accruals under the newly appointed CEO's first three years are neither significantly positive nor negative. It could be of course considered whether the influence of predecessor's earnings management choices and the general corporate environment would be seen more clearly if the distribution of accruals during the whole tenure of both the new and the old CEO would be compared. Further, it could be examined if those accrual distributions remind each other significantly more than your average CEO's accruals.

The results Choi et. al. (2014) could be interpreted like Reitenga & Tearney's (2003), opposing the idea that if the ceding CEO uses accruals aggressively in his/her final year to manage earnings upwards, so does the successor in the early years of his/her tenure. They find that the only case the departing CEOs manage earnings (upwards) is when the CEO is forced to leave and the successor is an insider whereas the new CEOs seem only to be managing earnings if the turnover is peaceful and the arriving CEO is an outsider. Besides this, they find no signs of earnings management prior or after the turnover. It could be stated that in their study there are no scenarios where both the departing CEO (in the last three years of his tenure) and the arriving one (during the first year in the position) manage earnings. On the other hand, they offer two scenarios where neither one of the CEOs

manages the earnings: Forced turnover replaced by an outsider and peaceful turnover with an insider replacement.

Findings of Wells (2002) seem to be aligned with Reitenga & Tearney's (2003) that a new manager rarely uses upwards earnings management in the early years of his/her tenure. Furthermore, controversially to them he states that there is only a little evidence showing that the relinquishing CEO would manage earnings upwards in his/her final year.

The research results by Murphy & Zimmerman (1993) and Pourciau (1993) do not agree on the connection between the ceding CEO's final year's income-increasing accruals and the new CEO managing the earnings upwards during his/her early years. She believes that the outgoing CEO posts actually income-decreasing accruals in the final year his/her tenure whereas Murphy & Zimmerman (1993) do not. Moreover, Murphy & Zimmerman (1993) do not find strong evidence supporting that the incoming CEO manages earnings upwards in the first years of his/her tenure in all cases, as according to them only the better performing half of the CEOs does this whereas the worse performing half does not, which is then followed by the transition year's earnings bath. Pourciau (1993) on the other hand, suggests that the newly appointed CEOs manage earnings upwards during their early years in general. Nevertheless, them being in disagreement over the details, they are in line with the aforementioned literature (Reitenga & Tearney, 2003; Choi et. al., 2014; Wells, 2002) suggesting that there is no evidence of the ceding CEO managing earnings upwards in the final year(s) of his tenure followed by a new CEO continuing in the predecessor's footsteps during the early years of his/her incumbency.

Despite the evidence being somewhat similar in Korea (Choi et. al., 2014), Australia (Wells, 2002) and the United States (Reitenga & Tearney, 2003; Pourciau, 1993; Murphy & Zimmerman, 1993) indicating the CEO's positive perception towards earnings management is not at least directly shared with the predecessor and the follower in these studies, there are limitations to this interpretation. First of all, it can not be seen from the studies whether the corporate culture was just not strong enough in the country in question or if the corporate culture even has a role to play in accrual decisions. Secondly, it is safe to say that a sample consisting of three countries is not that comprehensive to draw hasty conclusions from whether the corporate culture matters or not in the rest of the world.

Bengtsson et. al. (2007) offer some evidence from Swedish companies that supports the possibility of corporate culture being an explanatory factor of CEO’s earnings management decision. Their study seems to be one of the few that agrees with all three of the hypotheses introduced in this chapter. First of all, they believe that the accruals are abnormally positive during the ceding CEO’s last year in the office. Furthermore, they state that their evidence seems to be pointing out that during the transition year, an earnings bath occurs. Finally, they present that the new CEO manages earnings upwards in his/her first year with the help of accruals. All in all, their findings prove that at least the introduced hypotheses do not rule each other out.

The evidence offered by Bengtsson et. al. (2007) might give some insight under which kinds of circumstances, earnings management is more likely to happen and under which not so likely as found in above-mentioned studies (Choi et. al., 2014; Reitenga & Tearney, 2003; Pourciau, 1993; Murphy & Zimmerman, 1993; Wells, 2002). The findings of Ali & Zhang (2015) point at the same direction as concluded by Bengtsson et. al. (2007) that CEOs manage earnings upwards during their early year(s) and in their final year. Unfortunately, Ali & Zhang’s (2015) approach (analyzing the accruals of CEO’s whole tenure) differs from the ones chosen by other prominent research (analyzing the accruals around CEO turnover). Thus the results from Sweden are intriguing as they differ from ones attained in countries such as Australia, the United States and South Korea, regardless the standard of living being relatively similar in these countries. Some explanation for these differences could be discovered from the national culture which for its part affects the corporate culture of the companies located the country in question.

	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long Term Orientation	Indulgence
Australia	36	90	61	51	21	71
United States	40	91	62	46	26	68
South Korea	60	18	39	85	100	29
Sweden	31	71	5	29	53	78

Table 1. Hofstede’s cultural dimensions. Source: The Hofstede Centre, <http://geert-hofstede.com/countries.html>

As the Table 1 points out, Sweden scores the lowest amongst four countries in three cultural dimension categories: Power Distance, Masculinity and Uncertainty Avoidance. Further, Sweden scores the highest in Indulgence category. In the Power Distance and the Indulgence categories the differences between Sweden, Australia and the United States are not that

drastic so it is unlikely that these cultural factors would make the difference between the earnings management research results obtained in the different countries. Singh et. al. (2005) state that countries that score high in Uncertainty Avoidance, usually have more laws and regulation in general. They thus suggest that Sweden scoring relatively low compared with the other countries might indicate that the Swedish companies have less compulsory guidelines to follow and their actions are not as strongly controlled by the corporate codes of ethics as the companies in the other countries mentioned. This might give some explanation for the CEOs' of Swedish companies to manage earnings more aggressively as their discretionary actions are not as limited as in Australia, the United States and South Korea. Another dimension that really stands out from the table is the Masculinity where Sweden scores significantly lower than the rest of the countries. According to Hofstede Centre (2016) the low score of 5 for Sweden indicates highly feminine culture which means that predominant values emphasize co-operation and decisions are based on consensus rather than being dictated by managers alone. Therefore, on average the co-workers affect the actions taken by CEOs more strongly in Sweden than they do in Australia, the United States and South Korea. All in all, the reason behind the results of Bengtsson et. al. (2007) might be that more flexible formal laws and ethics codes hinted by the low level of uncertainty avoidance allow CEOs to manage earnings more easily. The second option is that it is not even possible for Swedish managers to act differently than their predecessor did as in consensus-seeking culture the general opinion of co-workers shifts slowly if at all, regardless CEO turnovers. This may make it more common for a newly appointed manager to for example manage earnings if the previous CEO has done so too.

At the end of the day, the corporate culture might or might not play such a crucial role when the new CEO decides whether to use accruals or not. Surprisingly, Bengtsson et. al. (2007) do not consider whether their results are partly due to the distinct corporate culture of Sweden even though companies under their research are all Swedish and corresponding studies are usually executed by using data collected in other countries. The conclusion drawn by them is that there are two possible explanations for the earnings management by both by the old CEO during the last year at the office and the new CEO in the first year of his/her tenure. First of all, the CEOs are trying to maximize their bonus compensation. For second option they suggest that the earnings management is to cover the costs which are related to the financial position of the company in CEO turnover situation. Both of those reasons seem unlikely. If the bonus payment argument held true, even stronger evidence of earnings

management should be seen in the U.S. studies (Reitenga & Tearney, 2003; Pourciau, 1993; Murphy & Zimmerman, 1993) as the bonus schemes are not yet as extensive and well socially accepted in Sweden as they are in the USA (Lubatkin et. al., 2005). Likewise, the earnings management forced by the financial position of the company sounds dubious as it would be reflected in other studies as well, unless if it was related to some peculiarity in the Swedish corporate law.

Tosi & Greckhamer (2004) have studied the relation between cultural factors and CEO compensation. According to them, from Hofstede's dimensions Power Distance has the biggest influence on CEO compensation. As Table 1 shows, Sweden scores the lowest in this category suggesting that the Swedish CEOs do not get that much better level of compensation than the other employees in Swedish companies do. Moreover, in Individualism category Sweden scores pretty well which Tosi & Greckhamer (2004) find to be connected with the greater level of CEO compensation. Unfortunately, the USA and Australia score even better in this category which diminishes the plausibility the bonus payment maximization explanation for the high level of accruals near the end and at the beginning of CEO's tenure, made by Bengtsson et. al. (2007). Whereas Tosi & Greckhamer (2004) do not find a connection between the masculinity and CEO compensation which it is somewhat surprising as one could think a higher level of masculinity would increase the competition and that would improve the CEO compensation. Finally, they suggest that scoring high on Uncertainty Avoidance suggests that bigger portion of the CEO's compensation is fixed. Thus, significantly lower score of Sweden compared with the USA, Australia and South Korea suggests Swedish companies use more flexible remuneration policies than the companies in the other countries. This finding might give some insight why the Swedish CEOs are managing earnings so actively. The reason is that the low level of Uncertainty Avoidance of the Swedish may give the CEOs in the country both the motivation, the flexible compensation (Tosi & Greckhamer, 2004) that is and the opportunity due to feebler regulation and not as widespread use of the corporate codes of ethics as in the U.S. for example, to manage earnings by using discretionary accruals.

In its entirety, it could be stated that the empirical evidence seems to be more strongly supporting that the earnings management of the ceding manager during the last few years of his tenure does not have a strong connection to earnings management executed by his/her successor despite the results obtained by Bengtsson et. al (2007). On the other hand, it might

be that their results tell more about the general culture of the company's home country than the corporate culture even though these are two are often aligned. If the explanations presented by Bengtsson et. al. (2007) (CEO is trying to maximize his/her bonus payments and/or ensure the financial position of the company around the time of turnover) for their results supporting hypotheses 1 to 3 held true, stronger evidence should be found in other studies as well. Especially strong evidence should be found in the studies concentrating on the U.S. companies if the reason for the earnings management was the bonus payments.

At the same time, some studies find that neither the ceding CEO nor the newly appointed CEO manages earnings around CEO turnover (Wells, 2002) or under certain circumstances they refrain from it (Choi et. al., 2014). Therefore, the evidence for the new CEO not to manage earnings if the predecessor has not done that neither is a little bit more convincing than the suggestion that new CEO manages earnings if the old one has done that. In the bigger picture, a fresh CEO mimicking the actions of his/her predecessor seems unlikely as some of the studies find only either the ceding CEO managing the earnings (Reitenga & Tearney, 2003) or the new one (Murphy & Zimmerman, 1993). Furthermore, Pourciau (1993) believes that the departing CEO manages earnings downwards while the arriving CEO upwards. Choi et. al. (2014) on the other hand, present two situations where the actions of the predecessor and the successor differ from each other. Firstly, if CEO turnover is forced and the successor is an insider, the departing CEO manages the earnings upwards. Moreover, the new CEO tend to manage earnings upwards in the case of peaceful turnover and an outsider replacement. A conclusion can be drawn that the cultural burden of left by the relinquishing CEO does not seem to be that significant and the new CEO is relatively independent to decide whether to manage earnings or not. All in all, it can be stated that based on the literature it seems to be that the relationship between the hypotheses is not that strong so it is possible that the results may support any number between 0-3 of these presented three hypotheses without affecting the others.

3. Methods

3.1 Research design

The sample was collected to determine whether the following three hypotheses hold true:

1. *In the transition year between two CEOs (year 0), the discretionary accruals are below the average level*
2. *In the final year (-1) of CEO's tenure, the discretionary accruals are above the average level*
3. *In the early years (years 1-3) of CEO's tenure, the discretionary accruals are above the average level*

To address these issues an adequate sample of CEO tenures and the financial data is matched and analyzed by using SAS 7.4 and Microsoft Excel. The tenures are wholly from the start and the years in the sample are classified as the transition year (0), years 1-8 and the final year of CEO's tenure. As the goal is to study whether the above-mentioned hypotheses are true, all the tenures selected in the sample must contain at least a transition year, the early years (1-3) and the final year. In practice this sets a minimum length of 5 whole years for the tenures of the CEOs to be part of the study.

3.2 Sample

The data of CEO tenures was extracted from Execucomp and similarly the concomitant financial information was gathered from Compustat North America by using WRDS. Both of these databases contain the information of about 7500 publicly held companies.

The CEOs of North American listed companies had to fulfill the following requirements to qualify:

1. *The CEO's tenure has started after 2002 when Sarbanes-Oxley Act came into effect*
2. *The CEO's tenure has ended 2013 at latest*
3. *The CEO's tenure has lasted at least 5 complete fiscal years*
4. *The CEO's company does not operate in the banking industry (limitation set by the database)*

All of the tenures fulfilling these conditions were included in the sample originally. However, in the data collection stage some of the tenures had to be dropped from the sample due to inconsistency (for example the CEO tenure was marked as having ended before it started). Furthermore, the data needed for all of the models used had to be complete and consistent. In the case that the observations for most of the years in the CEO's tenure were in place and were presented in a consistent manner, only the missing and/or inconsistent data was removed from the sample. All in all, the CEO tenures used for this research was 220.

The sample for the final year consists of accruals posted for the last complete year (-1) of CEOs' tenures. Furthermore, the year 0 is the transition year between two CEOs. Whereas the early years were defined to be the first three years of a CEO's tenure.

The following table gives the background information about the length of CEO tenures in the sample:

Average CEO tenure (years)	Standard deviation of CEO tenure (years)	The shortest CEO tenure (years)	The longest CEO tenure (years)
6.80	1.40	5.00	10.52

Table 2. Sample's CEO tenures: average length, standard deviation, the shortest and the longest

The total lengths of the CEO tenures of the sample are distributed as follows:

Length of the CEO's tenure	5-6 years	6-7 years	7-8 years	8-9 years	9-10 years	10- years
n	81	50	38	34	13	4

Table 3. Distribution of the lengths of CEOs' tenures in the sample

3.3 Discretionary accruals models

The process of separating discretionary accruals from the total accruals is usually the first step to take when building a model for accrual-based earnings management detection. Depending on the model it either divides the total accruals into non-discretionary and discretionary components or scrutinizes changes in the total accruals which are then considered discretionary. In this study four well-known models are used to test for earnings management with the help discretionary accruals. As the researchers have formatted their models in a different manner, a framework created by Dechow et. al. (1995) is used to make the formulas of the models more comparable rather than trying to replicate the models precisely as they were originally expressed in the literature. As all the formulas used in this study include total accruals, the definition of the term is of vital importance and is defined as:

$$TA = NDA + DA \quad (1)$$

where

TA = Total accruals

NDA = Non – discretionary accruals

DA = Discretionary accruals

Thus, the discretionary accruals can be separated from the non-discretionary accruals or the “normal” accruals by using the following formula:

$$DA = TA - NDA \quad (2)$$

In practice the total accruals are calculated by using the information from the financial statements as follows:

$$TA = \frac{NIBEIDO - CFOP}{Lagged\ total\ assets} \quad (3)$$

where

NIBEIDO

= *Net income before extraordinary items and discontinued operations*

CFOP = Cash flow from operations

3.3.1 The Healy model

The Healy model (1985) uses the total accruals divided by lagged assets average over the estimation period as the normal level of non-discretionary accruals. In this model accruals under or over the estimation period's average, are considered discretionary. An underlying assumption Healy (1985) makes with his model is that earnings management occurs in every period as it is highly unlikely to that some of the yearly accrual amounts would fall exactly to the average. Furthermore, he uses partitioning variable to divide the sample into three groups in one of which he expects to detect income-increasing accruals while in the other two groups income-decreasing. This portioning variable practice is not applied to this study. The Healy model (1985) formula as represented by Dechow et. al. (1995) as follows:

$$NDA_{\tau} = \frac{\sum_{T} TA_{\tau}}{T} \quad (4)$$

where

NDA_τ = Estimated non-discretionary accruals in the event year scaled by total lagged assets

TA = Total accruals scaled by lagged total assets

$T = \text{Amount of years in the estimation period}$

$\tau = \text{A year subscript indicating a year in the event period}$

Consequently, the amount of discretionary accruals suggesting earnings management is calculated as:

$$DA_{\tau} = TA_{\tau} - \frac{\sum_T TA_{\tau}}{T} \quad (5)$$

where

$DA_{\tau} = \text{Discretionary accruals in the event year scaled by lagged assets}$

$TA_{\tau} = \text{Total accruals in the event year scaled by lagged assets}$

3.3.2 The DeAngelo model

Despite being an exception of the Healy model (1985), the DeAngelo model (1986) embodies a contrary underlying assumption in relation to it as DeAngelo (1986) presumes that earnings are not regularly managed. Accordingly, it might appear to be somewhat dubious to assume this, including this model can be justified. The advantage of comparing certain year's total accruals with the previous year's total accruals to calculate discretionary accruals is that consecutive years' financial position is often at least comparable on some level. On the contrary, the Healy model's (1985) big idea is that the period average represents the normal level of accruals the best might be problematic. As pointed out by Dechow et. al. (2012) the different stages of company growth complicate the estimation of this level of accruals and thus the DeAngelo model (1986) takes more into account that the "normal" level of accruals may actually fluctuate. Furthermore, one of the virtues of this model is that unlike the other models used, it does not take regular earnings management as given which widens the perspective of this study. Accordingly, under the DeAngelo model (1986) the

difference between accruals in subsequent years is perceived as the amount of discretionary accruals, suggesting earnings management. Thus, the model can be expressed as:

$$NDA_{\tau} = TA_{\tau-1} \quad (6)$$

where

NDA_{τ} = *Non-discretionary accruals in the year τ / Lagged total assets*

$TA_{\tau-1}$ = *Total accruals in the year $\tau - 1$ / Lagged total assets*

Thus, the event year's discretionary accruals under the DeAngelo model are calculated as follows:

$$DA_{\tau} = TA_{\tau} - TA_{\tau-1} \quad (7)$$

where

DA_{τ} = *Discretionary accruals (scaled by lagged total assets) in the event year*

TA_{τ} = *Total accruals (scaled by lagged total assets) in the event year*

3.3.3 Feasibility of the Healy model and the DeAngelo model

As stated by Dechow et. al. (1995), the usability of the DeAngelo model (1986) as well as the Healy model rely strongly on the idea that the non-discretionary accruals are constant over time. Furthermore, during the estimation period the average of discretionary accruals has to be zero or very near to it, in order to help these models to capture the earnings management signals properly, without error. Whereas the constant stream of non-discretionary accruals and zero mean of discretionary accruals both help the models function correctly, Dechow et. al. (1995) state that the feasibility of the DeAngelo model (1986) and the Healy model (1985) depends on the nature of the related discretionary accruals creating time-series. If it is assumed that the non-discretionary accruals fluctuate in a random walk type of manner, DeAngelo's model (1986) is a more suitable model for the earnings management measuring purposes. On the contrary, Healy's model (1985) works better in the case that the discretionary accruals follow a white noise pattern around a constant mean. The

assumption that the discretionary accruals follow a white noise pattern in the Healy model (1985) seems to make more sense as in theory the long-time average of discretionary accruals should be zero. Moreover, supposedly there are at least some technical limitations after the random walk can not be random no more as well as financial and career incentives for the CEOs encouraging them to use about equal amount of income-increasing and income-decreasing accruals. The empirical evidence gathered by Dechow (1994) support the white noise theory as he finds a certain range within which the discretionary accruals stay over time. Despite the possible weakness of the theory, the assumption of the random walk of discretionary accruals, involving the DeAngelo model (1986) into this study seems justifiable as it might offer auxiliary proof for a conclusion drawn from the results of the Healy model (1985). What is more, despite being unlikely, the random walk assumption might have its' virtues. For example, if the time span of the CEO's tenure might be so short (e.g. 5 years) that the CEO is able to use accruals rather freely throughout the whole tenure, possibly making the time-series remind more of a random walk than a white noise process. In the bigger picture (over a couple of CEO tenures) these abnormalities are likely to be leveled but in a smaller scale random walk of discretionary accruals might occur.

3.3.4 The Jones model

The Jones model (1991) differs from the ones put forth by Healy (1985) and DeAngelo (1986) in the sense that it does not automatically assume that the stream of non-discretionary accruals would be constant and the discretionary accruals could be separated from the total accruals by observing the changes in total accruals. Rather than that, the model carries an underlying supposition that the level of non-discretionary fluctuates as the consequence of changes in the revenue stream, in the value of property, plant and equipment as well in assets general. The usage Jones model (1991) can be problematic as it entails an assumption that revenues are non-discretionary. This presumption does not often hold true as pointed out by Dechow et. al. (1995) which is also mentioned by Jones (1991) as a limitation of her model. The formula for the Jones model (1991) can be expressed as:

$$NDA_{\tau} = \alpha_1\left(\frac{1}{A_{\tau-1}}\right) + \alpha_2(\Delta REV_{\tau}) + \alpha_3(PPE_{\tau}) \quad (8)$$

where

NDA_{τ} = Non – discretionary accruals in the event year scaled by total lagged total assets

$A_{\tau-1}$ = Lagged total assets

$$\Delta REV_{\tau} = \frac{\text{Change in revenue between } \tau \text{ and } \tau - 1}{\text{Total assets in } \tau - 1}$$

$$PPE_{\tau} = \frac{\text{Gross property, plant and equipment in year } \tau}{\text{Total assets in } \tau - 1}$$

$\alpha_1, \alpha_2, \alpha_3$ = Firm – specific parameters

The firm-specific parameters are estimated by using following formula:

$$TA_{\tau} = \alpha_1 \left(\frac{1}{A_{1-\tau}} \right) + \alpha_2 (\Delta REV_{\tau}) + \alpha_3 (PPE_{\tau}) + v_{\tau} \quad (9)$$

where

TA = Total accruals scaled by lagged total assets

$\alpha_1, \alpha_2, \alpha_3$ = OLS estimates for parameters

v = Error term

Hence, the amount of discretionary accruals can be calculated as:

$$DA_{\tau} = TA_{\tau} - \alpha_1 \left(\frac{1}{A_{\tau-1}} \right) - \alpha_2 (\Delta REV_{\tau}) - \alpha_3 (PPE_{\tau}) \quad (10)$$

where

$DA_{\tau} = \text{Discretionary accruals}$

From this formula it can be observed that in the Jones model discretionary accruals are seen as the error term of the regression explaining the amount of total accruals.

3.3.5 The modified Jones model

The modified Jones model firstly introduced by Dechow et. al. (1995) solves the biggest problem related to the original Jones model (1991). Under the original version of the model, revenue is seen non-discretionary which often is not the case and the companies are in some cases able to manage earnings by arbitrarily deciding the principles for revenue recognition. The modified Jones model is otherwise like the original model, but under the modified version the revenue change is adjusted by the change in the net receivables. The formula for the modified Jones model is formatted as:

$$NDA_{\tau} = \alpha_1 \left(\frac{1}{A_{\tau-1}} \right) + \alpha_2 (\Delta REV_{\tau} - \Delta REC_{\tau}) + \alpha_3 (PPE_{\tau}) \quad (11)$$

where

$$\Delta REC_{\tau} = \frac{(\text{Net receivables in year } \tau - \text{net receivables in year } \tau - 1)}{\text{Total assets in } \tau - 1}$$

The modified model estimates the coefficients $\alpha_1, \alpha_2, \alpha_3$ and the error term v similarly as the original Jones model (1991) by using the total accruals formula:

$$TA_{\tau} = \alpha_1 \left(\frac{1}{A_{1-\tau}} \right) + \alpha_2 (\Delta REV_{\tau} - \Delta REC_{\tau}) + \alpha_3 (PPE_{\tau}) + v_{\tau} \quad (12)$$

Consequently, the discretionary accruals in this are calculated as follows:

$$DA_{\tau} = TA_{\tau} - \alpha_1 \left(\frac{1}{A_{\tau-1}} \right) - \alpha_2 (\Delta REV_{\tau} - \Delta REC_{\tau}) - \alpha_3 (PPE_{\tau}) \quad (13)$$

4. Results

4.1 The distribution of discretionary accruals

The following table represents statistical background information of the perceived discretionary accruals under each of the selected models:

	Mean	Std.	p10	q1	Median	q3	p90
Healy	0.000	0.075	-0.083	-0.027	0.012	0.039	0.066
DeAngelo	0.001	0.101	-0.089	-0.033	0.000	0.037	0.084
Jones	0.000	0.071	-0.078	-0.029	0.010	0.037	0.064
Mod. Jones	0.000	0.072	-0.076	-0.028	0.010	0.038	0.064

Table 4. Discretionary accruals/Lagged total assets under Healy, DeAngelo, Jones and Modified Jones models: mean, standard deviation, bottom percentile, bottom quartile, median, top quartile, top percentile

The mean of discretionary accruals scaled by lagged assets is zero under the Healy model as it should be. After all, this model's underlying thought is that the average of total accruals is the basis for normal accruals and the accruals above and beneath this level are considered discretionary. The median value of discretionary accruals suggests that distribution of the discretionary accruals is skewed to the left which for its' part indicates that there are more slightly positive values than slightly negative values for discretionary accruals. On the other hand, it also means that the negative values are overrepresented in the discretionary accruals that fall far from the average of zero. This phenomenon can also be observed from the quartile and decile limits as the top quartile is significantly further from zero than the negative quartile but at the same time the top decile limit's distance from the zero is much smaller than the bottom decile's. These observations are in line with the theory (Payne & Robb, 2000; Skinner & Sloan, 2002) that the CEOs try to meet or beat the analysts' expectations by a little in order to keep the stock holders satisfied. If the CEO notices that there are no means to beat the benchmark set by the analysts or the terms of an executive bonus plan, the wisest thing to do might be to vigorously manage earnings downwards by using income-decreasing accruals to ensure that the desired goals can be reached during the years and/or quarters to come. On the other hand, the upside in terms of reputation in the job market or the bonus payment might be limited and exceeding the expectations by a mile does not add any value to the CEO which explains why the use of fiercely income-increasing accruals is not as common as using income-decreasing accruals is. The distribution of

discretionary accruals under the Healy model does not follow the normal distribution pattern perfectly as pointed out by the difference between the population mean and median, the skewness factor of the distribution is -1.07 which is relatively low and makes it acceptable.

Furthermore, it can be observed from table 4 that surprisingly the mean of discretionary accruals of DeAngelo model amounts to 0.001 which is not far from the theoretical average of 0 despite the fact that this model entails the assumption that the discretionary accruals move in a random walk type of manner rather than being a white noise around a constant mean like the Healy model which could from its' part raise or lower the mean if the CEOs' starting levels of the accruals differ significantly from the ending point. Another contradiction between these two models (Healy and DeAngelo) is the order of magnitude. Whereas with the Healy model, the median of discretionary accruals was larger than the mean, with the DeAngelo model things are the other way around. On the other hand, similarly in both models the top quartile limit is further from zero than the bottom quartile limit. Analogously, as in the Healy model, the top decile limit is somewhat closer to zero than the bottom decile limit. The distribution of accruals under the DeAngelo model is only slightly skewed to the left with a skewness factor of -0.046 (despite the mean being bigger than the median) which is acceptable and supports the idea that the discretionary accruals fall into normal distribution pattern.

It can be seen that the statistics of discretionary accruals under Jones model are rather similar with the statistics perceived when the Healy model was applied. First of all, the median is slightly bigger than the mean suggesting subtle (skewness factor -0.922) skew to to the left as was perceived in the distribution of discretionary accruals under the Healy model. The statistics are also similar in other sense in the Healy model and in the Jones model if you look at the standard deviation for example. Whereas with the DeAngelo model standard deviation was 0.101, the number for the Jones model was 0.071 which is very close to the standard deviation for the discretionary accruals under the Healy model, 0.075. Likewise, with DeAngelo and Healy models the bottom quartile limit under the Jones model is closer to zero than the top quartile limit and at the same time bottom decile limit is a lot further from zero than the top decile limit. This suggests that it is more typical to use discretionary income-increasing accruals discreetly than aggressively in comparison with the income-decreasing accruals. This observation is in line with the theory that the managers want to

avoid negative earnings surprises in order to keep the stock owners satisfied (Matsumoto, 2002).

The statistics of the modified Jones model do not differ much from the statistics of the original Jones model, as expected. Likewise, in the other models the top quartile limit is further from zero than the bottom quartile limit but at the same time top decile limit is closer to the zero than the bottom decile limit. This suggests that the most aggressive cases of earnings management by using discretionary accruals tend to be income-decreasing rather than income-increasing. Accordingly, the skewness factor of the distribution under the modified Jones model is -0.897 which suggest subtle skew to the left, similar to the one perceived in the original Jones model.

4.2 The Healy model

As explained in the Chapter 3, under the Healy model (1985) a normal level of accruals is set to be the average amount of accruals over a certain estimation period. Accruals above or under this amount are considered to be discretionary. To avoid comparing apples with oranges, all accrual numbers are scaled by lagged total assets. In practice the amount of total accruals is calculated by subtracting the operational cash flow from net income before extraordinary items and discontinued operations and scaling this number by lagged total assets.

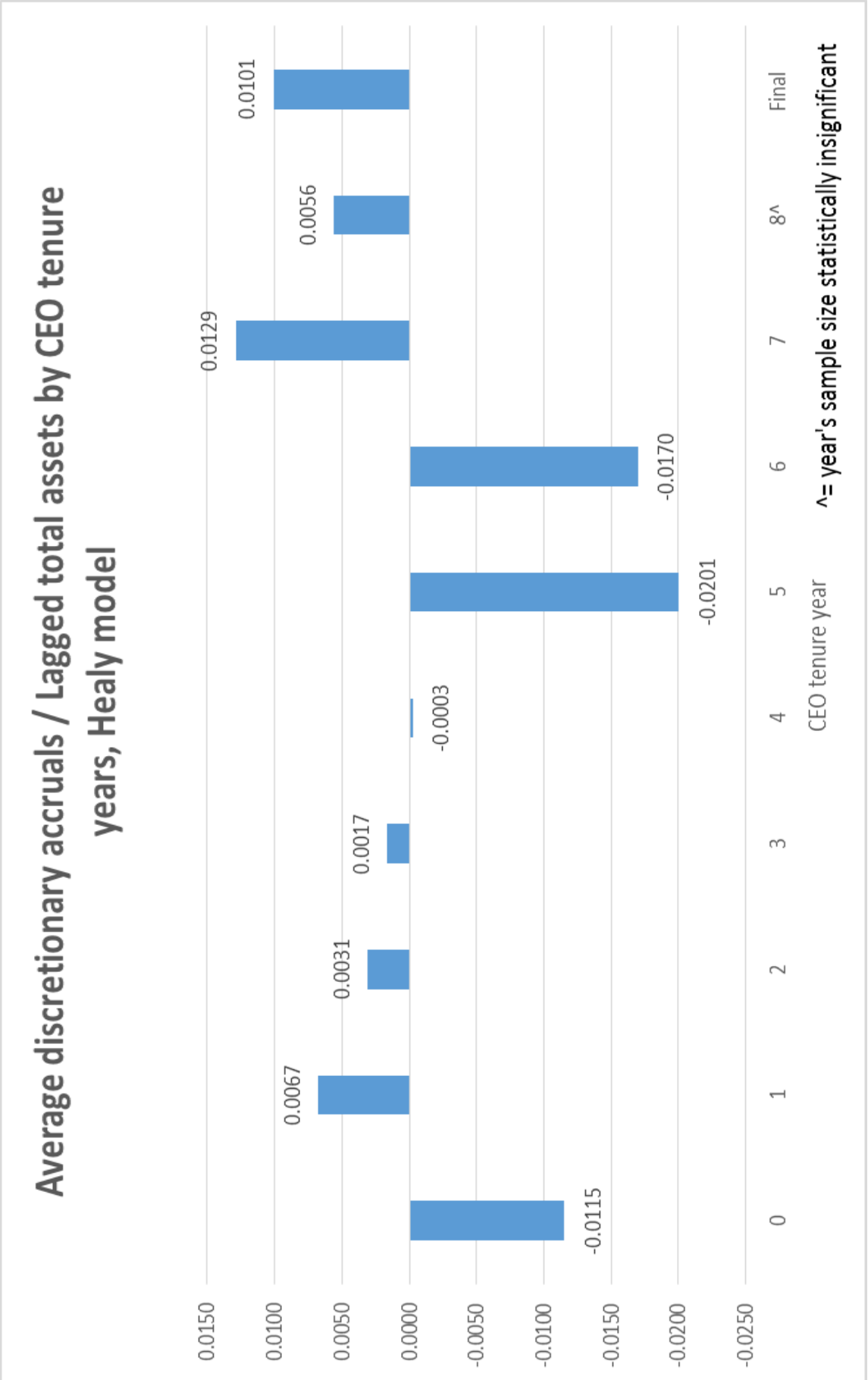


Figure 1. Average yearly discretionary accruals, Healy model.

From Figure 1 it can be observed that under the Healy model the distribution of discretionary accruals is in some respects as expected based on the hypotheses built on the literature review section. First of all, the discretionary accruals are rather strongly income-decreasing for the year 0 which offers support for the theory of an earnings bath occurring when the “torch” is passed from one CEO to another. The surprising part here is that under this model the discretionary accruals for early years 1 to 3 are surprisingly near to the average level especially years 2 and 3. On the other hand, all of the first three years are on the positive which is a supportive sign when considering the plausibility of hypothesis 3. Furthermore, the results for first three years seem to be aligned with the findings of Ali & Zhang (2015) for example. It is also surprising to see that the discretionary accruals are quite strongly income-decreasing in year 5 and 6. This could be due to the income-increasing discretionary accruals during the earlier years have to be compensated somehow to enable the usage of income-increasing accruals later on and there is no special incentive to choose these years to serve this purpose. To test whether the results for years 5 and 6 being so drastically income-increasing low had something to do with those years being the second to last year (-2) of CEOs' tenures. Thus, the second last years were tested for discretionary accruals. This explanation did not hold true as discretionary accruals for the second last year averaged at -0.0011 (n=210) so there was no clear tendency for CEOs to favor either income-decreasing or income-increasing accruals during the second last year. The second highest amount (after the 7th year which could be due to relatively small (n=30) sample size) of income-increasing accruals can be observed in the final year which makes sense as the relinquishing CEO might try for example to maximize received bonus payments.

The year 8 did not have enough statistical coverage as the amount of observations was limited to 8 so dramatic conclusions can not be drawn right off the yearly values whereas the sample size for year 7 just met the limit of statistical significance (n=30). To solve this issue, the CEO tenure years were divided into four different groups. One of the groups includes only the transition year (year 0), another includes the early years (years 1-3) of CEOs incumbencies, the third group later years (years 4-8) and finally, one portrays the final year of the CEOs' tenures. The results under this group classification will be shown in Chapter 4.5.

4.2 The DeAngelo model

The DeAngelo model defines the normal level to be the level of previous year's accruals and thus all the changes between years are considered discretionary. Accordingly, the DeAngelo model is a modification of the Healy model. The main difference between these two models is that Healy's model sets the baseline of total accruals from the estimation period's average and then compares each year's accruals with this level to calculate the amount of discretionary accruals. In turn, DeAngelo's model uses the previous year's accruals as the basis point and the residual of the difference between this and last year's total accruals indicates the amount of discretionary accruals.

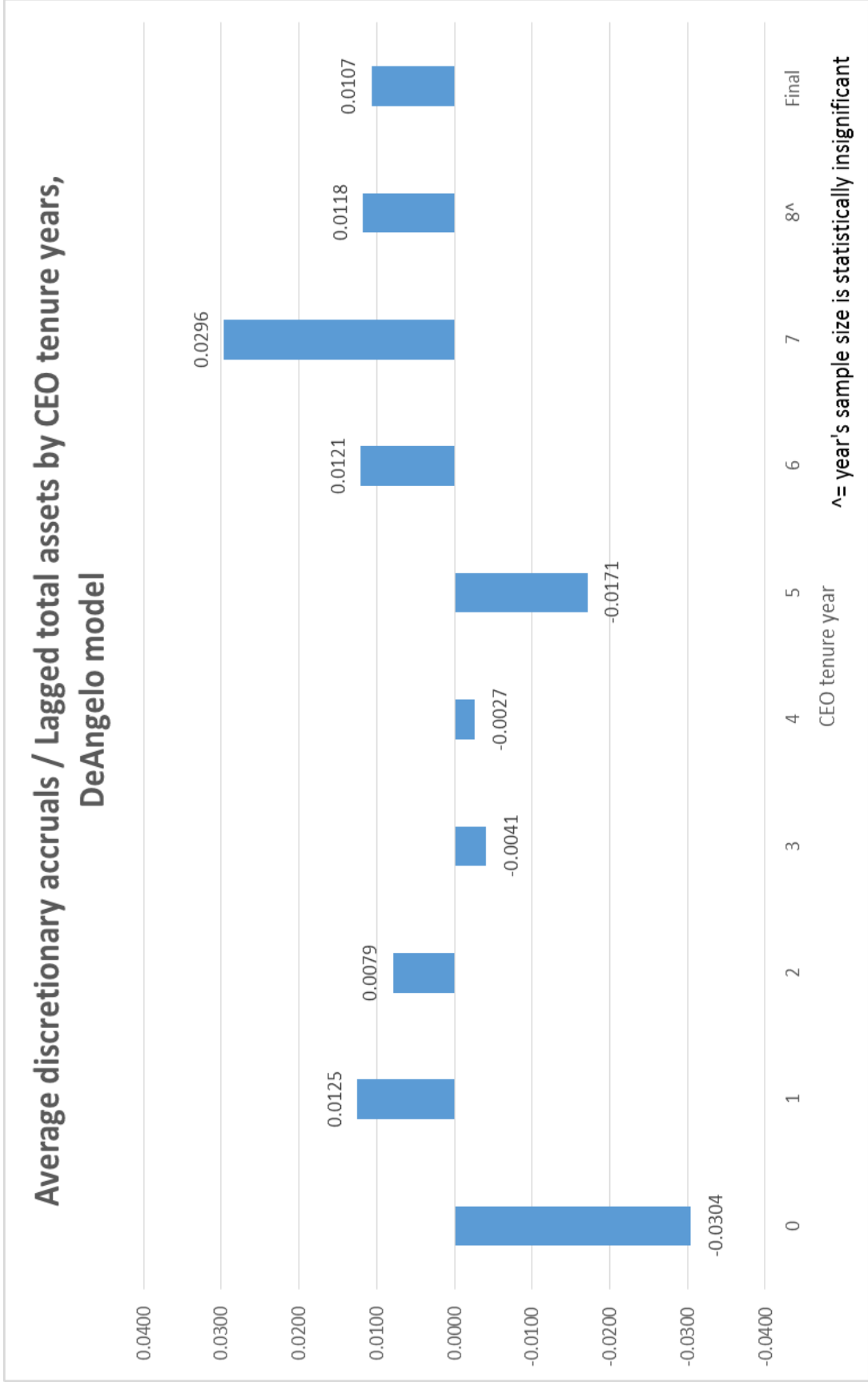


Figure 2. Average yearly discretionary accruals, DeAngelo model

It can be observed from the Figure 2 that despite having to some extent different fundamental assumption about the nature of the distribution of the discretionary accruals, the results for the DeAngelo model resemble the ones perceived by using the Healy model. The biggest difference is that as the normal level of accruals is defined to the preceding year's level, some discretionary accruals turn from negative to positive and other way around when compared with the results perceived by using the Healy model. The most noteworthy change from negative to positive can be observed during the year 6. In the year 6, the discretionary accruals are rather negative (-0.0170) when the Healy model is applied whereas quite positive in the case of DeAngelo model (0.0121). This is an interesting observation but it probably tells more about the DeAngelo model's main weakness which is that the previous year's accruals are not the most reliable starting point for discretionary accruals measuring purposes, than anything else. Similarly, the peaking of discretionary accruals perceived in year 7 (0.0296) is probably partly due to the relatively small sample size ($n=30$) and partly due to the relatively low absolute level of accruals (as measured in the Healy model) used in the year 6. Despite the pointed out weaknesses in the model, the final year's positive discretionary accruals might offer some support for Hypothesis 2 as despite the years' 6 and 7 (typical second to last years) being the most positive in discretionary accruals terms, the final year's accruals (0.0107) are still highly income-increasing. Also the earnings bath theory (hypothesis 1) seems rather convincing based on the results, as the transition year's accruals are by far the most income-decreasing on average.

4.3 The Jones model

The Jones model (1991) as well as the modified Jones model can be seen as a more sophisticated model for discretionary accruals measurement purposes than Healy or DeAngelo models for example. In order to calculate the discretionary accruals, the non-discretionary accruals have to be separated from the total accruals. The model estimates non-discretionary accruals by building a regression model that uses total accruals as a proxy value. Contrary to Healy and DeAngelo models, Jones model does not have an underlying assumption that the accruals of different years are directly comparable but that the normal level of accruals fluctuates between years. Thus, the model adds changes in revenue and in gross property, plant and equipment as factors that have to be considered when determining the normal level accruals and ultimately the amount that is discretionary accruals.

The following regression statistics were obtained by using the Jones model to estimate non-discretionary accruals:

<i>Regression Statistics</i>	
Multiple R	0.2939
R Square	0.0864
Adjusted R Square	0.0840
Standard Error	0.0715
Observations	1173

Table 5. Jones model, Regression statistics

In general terms, the correlation (multiple R) between the total accruals (dependent variable) and the independent variables ΔREV_{τ} , PPE_{τ} and $\frac{1}{A_{\tau-1}}$ is pretty moderate. In natural sciences, the relatively low values of the R square and the adjusted R square would be an issue but as the CEO behavior is rather unpredictable and building a well-fitting model is challenging, the Jones model may provide at least some information on the matter of accruals usage. Originally, Jones (1991) created her regression model to estimate discretionary accruals during import relief (such as tariff increases and quota reductions) investigations made by United States International Trade Commission (ITC). Thus, during the estimation period she used the companies had a clear incentive to manage earnings to obtain certain import relief or a higher amount of relief conceded. In turn, in this study the estimation period consisted of more versatile years, during some of which (years 4-8) there are no clear incentives for earnings management. This could explain why this model had a better fit in her study (R square = 0.232) in comparison with the results received of R square being 0.0864 and adjusted R square 0.0840.

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	0.5646	0.1882	36.8380	9.50498E-23
Residual	1169	5.9718	0.0051		
Total	1172	6.5364			

Table 6. Jones model, ANOVA statistics

From the table 6 it can be observed that significance F (p value) of the regression is really low (clearly under the alpha level of 0.0001) on a statistically highly significant level which means that the null hypothesis of there being no relation between the total accruals and the used independent variables, can be hereby rejected.

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	-0.0457	0.0037	-12.3689	4.10188E-33	-0.0529	-0.0384	-0.0529	-0.0384
1/LagAT	-3.5435	0.8165	-4.3396	1.55044E-05	-5.1456	-1.9415	-5.1456	-1.9415
C.Re./L.AT	0.0796	0.0102	7.8071	1.2937E-14	0.0596	0.0996	0.0596	0.0996
PPE/L.AT	-0.0293	0.0046	-6.3017	4.16308E-10	-0.0384	-0.0201	-0.0384	-0.0201

Table 7. Jones model, Coefficient statistics

The P value of each individual predictor is really low on an extremely significant level (under 0.0001) and high t stat values suggest that all of them add value and none of them has to be removed from the model. Considering all the facts, the Jones model seems to appropriate enough for the separation between non-discretionary accruals and discretionary accruals.

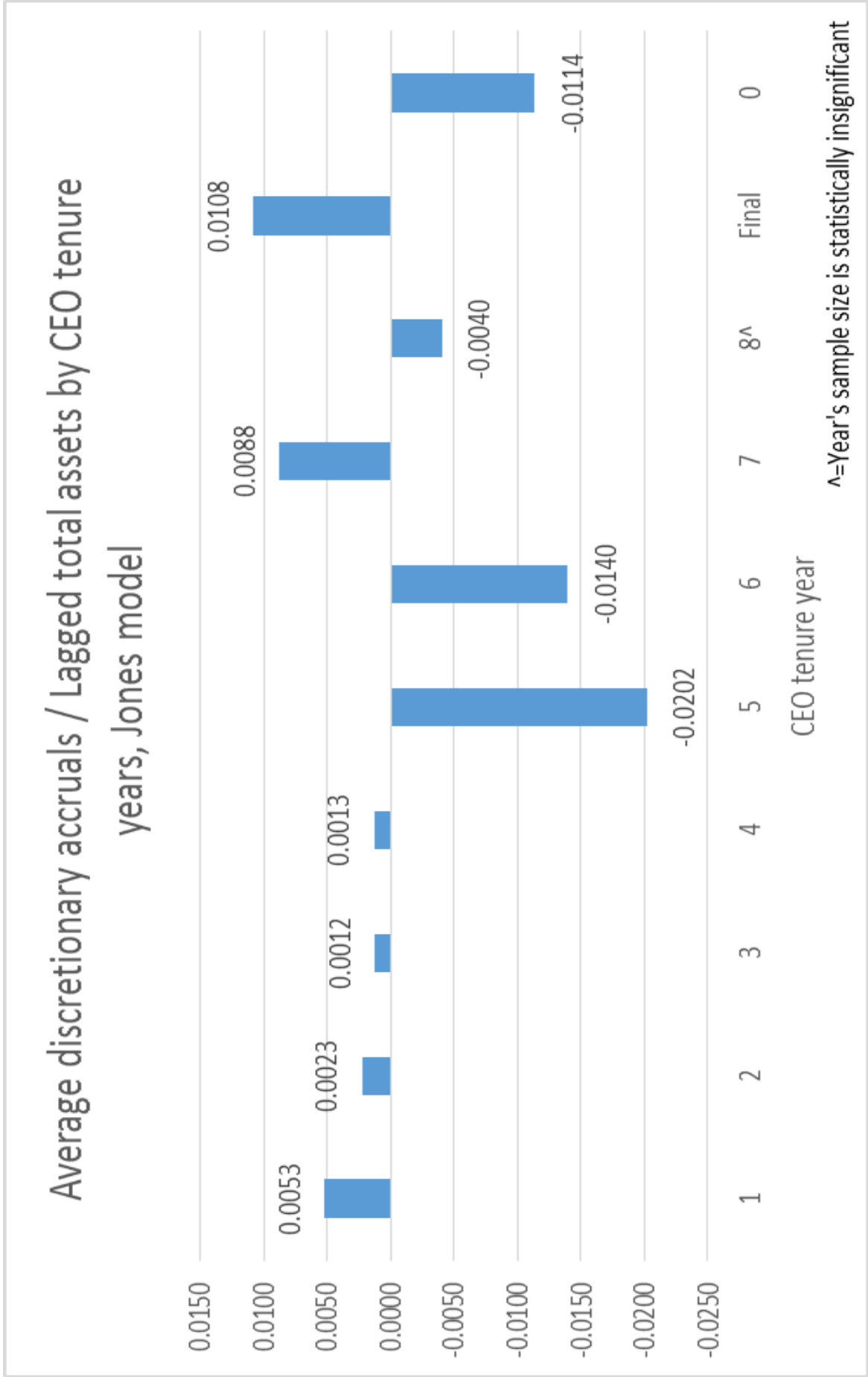


Figure 3. Average yearly discretionary accruals, Jones model

Figure 3 shows the average yearly discretionary accruals obtained by using Jones model. The results are quite similar to the ones obtained with the Healy model. First of all, the early years (1-3) are all somewhat positive (income-increasing discretionary accruals are used) and like with the Healy model, the order of magnitude of these accruals is descending between these years. Year 4 is rather similar in both of these despite the fact that in the Healy model the number is just below zero and by using the Jones model slightly income-increasing accruals can be observed. The final year stands out from the distribution and is the year during which the highest level of income-increasing accruals on average can be detected.

As with the Healy model, the lowest levels of discretionary accruals can be detected in years 5 and 6. This is pretty surprising as during these years the usage of income-decreasing accruals is even more aggressive than during the transition year. This is an interesting observation as the average CEO tenure in this study lasted for 6.8 years which raises the question whether the CEOs notice during these years that the analysts or company set targets can not be achieved and thus it is wiser to manage earnings downwards in order to achieve those goals in the future more easily. As a consequence of this substandard performance, the company starts seeking a replacement CEO during the last complete year of CEO's tenure (the final year) and the income-decreasing accruals during the fifth and sixth year enable the final year's accruals to be so positive because of the reversal nature of accruals.

4.4 The modified Jones model

The modified Jones model is otherwise like the original model, but under the modified version the revenue change is adjusted by the change in the net receivables. As the difference between Jones model and the modified Jones model is not that drastic, the results between these models should not differ dramatically from each other.

The following regression statistics were obtained by using the modified Jones model to estimate non-discretionary accruals:

<i>Regression Statistics</i>	
Multiple R	0.2703
R Square	0.0731
Adjusted R Square	0.0707
Standard Error	0.0720
Observations	1173

Table 8. Modified Jones model, Regression statistics

It is somewhat surprising that the regression statistics for the modified Jones suggest that the original Jones model actually had better fit for the purpose. Whereas R square for the original model were 0.0864 and adjusted R square 0.0840 the values are respectively 0.0731 and 0.707 under the modified model. However, this difference is not that large that we could expect to see significantly different results by using this model instead of the original one.

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	0.4776	0.1592	30.7191	4.07946E-19
Residual	1169	6.0588	0.0052		
Total	1172	6.5364			

Table 9. Modified Jones model, ANOVA statistics

Similarly, as in the original Jones model the overall significance F is really low, suggesting that the null hypothesis of there being no earnings management by using discretionary accruals should be rejected.

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	-0.0450	0.0037	-12.0979	7.90738E-32	-0.0523	-0.0377	-0.0523	-0.0377
1/LagAT	-3.3299	0.8209	-4.0565	5.31107E-05	-4.9404	-1.7193	-4.9404	-1.7193
REVchg. - RECchg./LagAT	0.0759	0.0115	6.5806	7.0545E-11	0.0532	0.0985	0.0532	0.0985
PPE/LagAT	-0.0293	0.0047	-6.2772	4.84934E-10	-0.0385	-0.0202	-0.0385	-0.0202

Table 10. Modified Jones model, Coefficient statistics

From Table 10, it can be observed that all individual P-values of variables are clearly under 0.001 suggesting extreme statistical significance and thus adding value to the model.

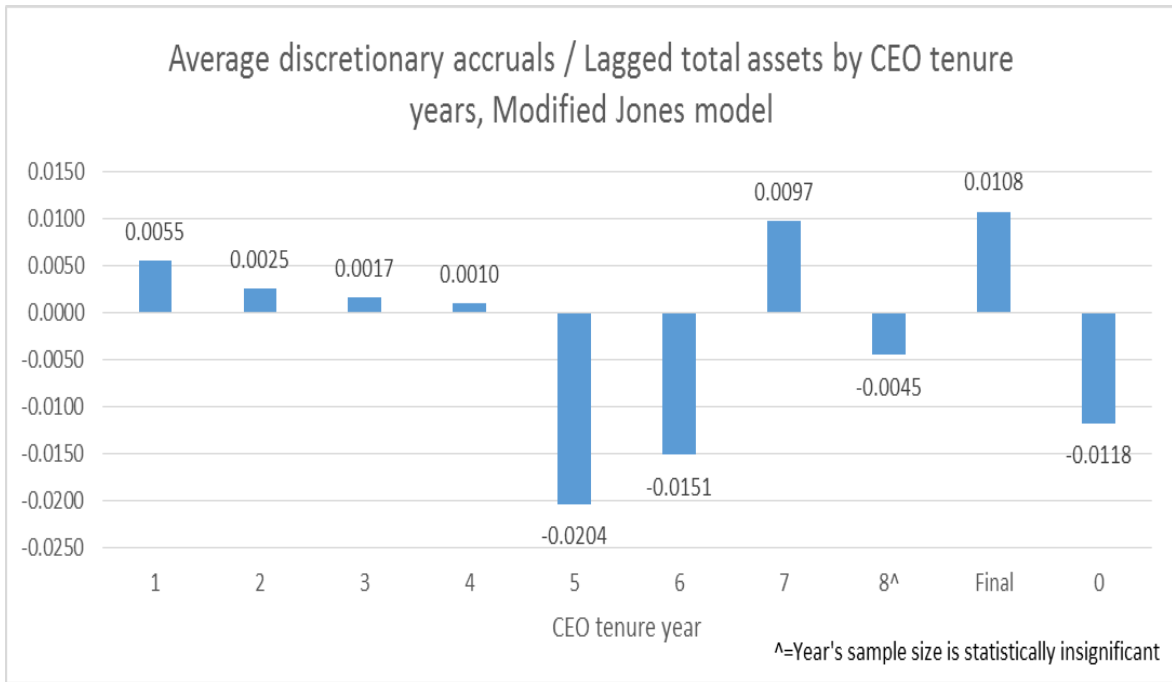


Figure 4. Average yearly discretionary accruals, Modified Jones model

As it could have been presumed from the regression and from the discretionary accruals statistical information, resemble the values observed by using the original Jones model. The only difference is that almost all of the averages for the discretionary accruals are further from zero which means that the positive values are a tad more positive under the modified version whereas the negative are more negative. These differences between the original and the modified model are only cosmetic as for an example under the modified version the discretionary accruals are 0.003 (0,3%-units) higher during the early years, 0.003 lower during the years 4-8 while being 0.004 lower during the transition year and at the same level in the final year. As was the case with the original model, final year's discretionary accruals are clearly above the average suggesting the usage of income-increasing accruals whereas the transition year's clearly below it. In a similar manner years' 1-3 discretionary accruals are slightly positive (0.0028) and years' 4-8 negative to some extent (-0.0072).

4.5 Compiled results from all of the models

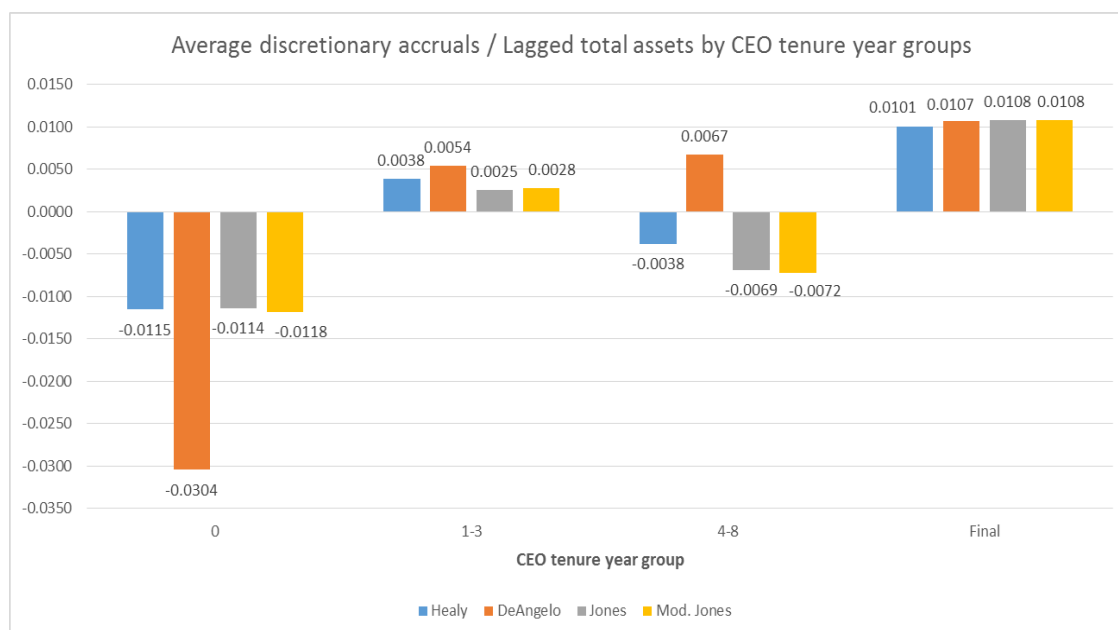


Figure 5. Average discretionary accruals / Lagged total assets by CEO tenure year groups

Figure 5 addresses the hypotheses directly by classifying CEO tenure years to four different groups. The first group consists of average discretionary accruals in CEO transition year. The second group shows the average of discretionary accruals in the first three years of CEOs' tenures. Group number three could be called the normal group or control group for CEO years 4-8 when no major earnings management through discretionary accruals is expected to occur. The fourth and the final group represents the last complete year of CEO's tenure.

As expected, the discretionary accruals are negative under all of the used models (Healy, DeAngelo, Jones and Modified Jones) in the transition year. Whereas the actual amount of discretionary accruals is pretty similar (-0.0114 to -0.0118) whether Healy, Jones or the Modified Jones model is used, the results are more drastic (-0.0304) if the DeAngelo model is used for measuring purposes. All in all, the results from all of the models are in line with the hypothesis 1 that during the transition year income-decreasing discretionary accruals are used.

Equally, the results shown in Figure 5 for the final year support hypothesis 2 that during the final complete discretionary accruals are above the average. The outcome is rather

unanimous regardless to which model is used to measure discretionary accruals. In its entirety the range of discretionary accruals is from Healy model's 0.0101 to Jones and Modified models' 0.0108 which is surprisingly small as Healy and DeAngelo models' base assumptions differ quite a lot from that of Jones and modified Jones models'.

Finally, under all of the models income-increasing discretionary accruals are on average used in the early years (1-3) of CEO's tenure but the use of these accruals seems not be as aggressive as during the final year. However, when discretionary accruals of the early years are compared to years 4-8 when no aggressive earnings management is expected to occur, it can be noted that the discretionary accruals are income-increasing in the early years whereas income-decreasing in years 4 to 8 under all of the models but DeAngelo's.

All in all, the results are in line with the built hypotheses. The final step is to conclude whether the perceived differences are statistically significant.

4.6 Hypothesis testing with a dummy model

In order to test the significance of the results, the following dummy model was created:

$$EM_{Proxy} = a_0 + a_1 * Dummy(t - 1) + a_2 * Dummy(t) + a_3 * (t + 1 - 3) \quad (14)$$

where

$EM_{Proxy} = Discretionary\ accruals$

$a_0 = Intercept,$

Average of discretionary accruals when no earnings management is expected,

$a_1 = Final\ year\ coefficient$

$Dummy(t - 1) = 1\ if\ year - 1, otherwise\ 0$

$a_2 = Transition\ year\ coefficient$

$Dummy(t) = 1$ if year t , otherwise 0

$a_3 =$ Early years coefficient

$Dummy(t + 1 - 3) = 1$ if year $t + 1 - 3$, otherwise 0

4.6.1 Healy model dummy testing

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Significance F</i>
Intercept	-0.0075	0.0039	-1.9475	0.0517	0.0146
Year -1	0.0176	0.0065	2.7140	0.0067	
Year 0	-0.0040	0.0090	-0.4459	0.6558	
Years 1-3	0.0108	0.0051	2.1371	0.0328	

Table 11. Healy model: dummy model testing for perceived discretionary accruals

Table 11 represents the regression statistics received by using discretionary accruals from Healy model as EM_Proxy. The total significance F is rather low (under 5% significance level) and it supports rejecting the null hypothesis that the CEO's tenure year does not affect the amount of discretionary accruals. Furthermore, the p-value 0.0067 for Year -1 suggest that the discretionary accruals are on a very significant ($p < 0.01$) level higher than in an average year. This result gives strong support for the hypothesis number 2. In addition, Years' 1-3 P-value 0.0328 indicates that the discretionary accruals are significantly ($p < 0.05$) more income-increasing during the early years than the average. This corroborates hypothesis 3. The dummy testing of the Healy model's discretionary accruals did not add significant proof for hypothesis 1 of the transition year's abnormally low discretionary accruals.

4.6.2 DeAngelo model dummy testing

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Significance F</i>
Intercept	-0.0013	0.0050	-0.2625	0.7930	0.0091
Year -1	0.0120	0.0085	1.4227	0.1551	
Year 0	-0.0291	0.0117	-2.4852	0.0131	
Years 1-3	0.0054	0.0066	0.8147	0.4154	

Table 12. DeAngelo model: dummy model testing for perceived discretionary accruals

The results from dummy model testing deviated quite considerably when the DeAngelo model's discretionary accruals for EMProxy were used instead that of Healy model's. Overall significance F's low value (0.0091) suggests that it is highly unlikely that the CEO's tenure year does not affect company's discretionary accruals usage. Surprising part is that unlike Healy's DeAngelo's model's dummy testing gives a low P-value (0.0131) for Year 0. Combined with negative coefficient value this indicates that the transition year's discretionary accruals are on a significant ($p < 0.05$) level lower than during the average year and thus provides support for hypothesis 1. Furthermore, on the contrary to Healy model the dummy testing, no significant support for hypotheses 2 and 3 was found when DeAngelo model was used.

4.6.3 Jones and modified Jones model dummy testing

Jones	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Significance F</i>
Intercept	-0.0069	0.0037	-1.8637	0.0626	0.0121
Year -1	0.0177	0.0062	2.8555	0.0044	
Year 0	-0.0045	0.0086	-0.5190	0.6039	
Years 1-3	0.0094	0.0048	1.9409	0.0525	
Mod. Jones	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Significance F</i>
Intercept	-0.0072	0.0037	-1.9450	0.0520	0.0094
Year -1	0.0181	0.0062	2.8905	0.0039	
Year 0	-0.0046	0.0087	-0.5287	0.5971	
Years 1-3	0.0101	0.0049	2.0672	0.0389	

Table 13. Jones and modified Jones model: dummy model testing for perceived discretionary accruals

Table 13 represents results of the dummy model testing results when the discretionary accruals obtained from the Jones model and modified Jones were used as EMProxy values in the dummy model. The total significance F is rather low under both of the model as was the case with Healy's and DeAngelo's and thus all of the models support the rejection of null hypothesis of no earnings management through discretionary accruals. Neither Jones nor modified Jones models' dummy testing add further evidence for hypothesis 1 as suggested by similarly high P-values perceived when the Healy model's discretionary accruals were used. The dummy testing suggests that whether Jones or modified Jones model's discretionary accruals are used, the final year's (-1) numbers are on a very significant level ($p < 0.01$) higher than in the average year supporting hypothesis 2. Finally, the dummy test gave additional support for hypothesis 3 as the outcome was that the early

years' discretionary accruals were on a significant level ($p < 0.05$) above the average when EMProxy was defined by using the modified Jones model and impliedly significantly ($p < 0.1$) higher when the original version of the model.

5. Conclusions

5.1 Research summary

The objective of this thesis was to research whether well-known accruals related distributional anomalies still held true in the listed U.S. companies after the introduction of Sarbanes-Oxley Act in 2002 which from its' part increased the requirements related to the material accuracy and completeness of the financial statements. Prior empirical evidence (Lobo & Zhou 2006; Iliev, 2010) suggests that especially the implementation of Section 404 (the assessment of internal control) in SOX has lowered the level of discretionary accruals usage in the listed U.S companies. This more conservative attitude towards the accruals may be related to the fact that the punishments for overstating the financial records under the SOX leads to harsher judicial consequences than understating them do.

This thesis aimed to answer following research questions related to the discretionary accruals:

Do the discretionary accruals differ from the average level during the transition year (year 0) between two CEOs?

Do the discretionary accruals differ from the average level during the final year (-1) of CEO's tenure?

Do the discretionary accruals differ from the average level during the early years (years 1-3) of CEO's tenure?

To answer aforementioned research questions, the following three hypotheses were built by examining the previous academic literature related to the topic:

- 1. In the transition year between two CEOs (year 0), the discretionary accruals are below the average level*
- 2. In the final year (-1) of CEO's tenure, the discretionary accruals are above the average level*
- 3. In the early years (years 1-3) of CEO's tenure, the discretionary accruals are above the average level*

The reasoning for hypothesis 1 was that it is possible for the new CEO make his/her predecessor the scapegoat for the bad financial performance during the transition year. Keeping in mind the reversal nature of (discretionary) accruals, the usage of income-decreasing accruals now enables income-increasing accruals at a later point of time. What highlights this motivation is that the use of income-decreasing accruals is especially active if the CEO turnover has been a forced/non-routine one as suggested by a multiple of studies (e.g. Murphy & Zimmerman, 1993; Choi et. al., 2014; Wells, 2002). As forced turnover is often related to the bad performance of the CEO, it is easier for the new CEO to blame the former CEO for the poor performance in the transition year if the predecessor has been perceived as an incompetent manager. Thus, the new CEOs are motivated to storage accruals for later use, especially if the deed is easily done.

The motivation behind hypothesis 2 for the final year's aggressive usage of income-increasing can be divided into three factors. First of all, the most obvious one is the maximization of the managerial bonus. As the outgoing CEO does not benefit from the built up the storage of accruals after leaving the post, his/her main motivation might be to collect as big bonuses before quitting in the job. Supposedly, this is a strong motivational factor especially if the CEO does not anticipate new career opportunities in the near future. Secondly, the ceding CEO might have future career prospects such as board membership(s) in mind which often requires having a good track record as a CEO. Therefore, CEOs use income-increasing accruals to prove their worth to potential new (or old) employers. Finally, the CEOs who are about to retire and have a Supplemental Executive Retirement Plan (SERP) including a contingent on company's financial performance, are motivated to use income-increasing discretionary accruals during their final year as it improves their retirement benefits (Kalyta, 2009).

Different studies have listed a multiple of reasons that could justify the hypothesis 3 of the discretionary accruals of being above average during the early years (years 1-3) of CEO's tenure. Many of those reasons are related to the reputation. First reputational factor is a very important one for a listed company. That is of course the financial market's perception of the company after CEO turnover. As the market's perception towards the company affects a wide variety of matters from of getting reasonably priced loans to the valuation of company's stock and thus the amount of compensation received from example option plans. Thus, it is of vital importance to assure the market early on that the new CEO is a capable manager.

Furthermore, it is also in the interest of the CEO himself/herself to come across as adept in order to leave the door open for future job opportunities. Ultimately, the reputation of the board of the company is also in line when hiring a new CEO. In order to secure their seats and convince the shareholders that the right person was selected for the job, it is also in their interest that the early years of CEO's tenure go smoothly. All of these reputational factors encourage to the usage of income-increasing discretionary accruals during the early years of new CEO's tenure.

To test the hypotheses a sample consisting of 1173 company years occurring between 2003 and 2013 in the listed U.S. companies was collected. The sample was then divided into individual years of CEOs' tenures 1, 2, 3, 4, 5, 6, 7, 8, -1 (the final full year of CEO's tenure), 0 (the transition year between two CEOs). Then, with the help of four well-known discretionary accruals models (Healy, DeAngelo, Jones and Modified Jones), the average of discretionary accruals for each year was calculated.

	Year's average DA	Coefficient	t Stat	P-value	Significance
Healy	-0.0115	-0.0040	-0.4459	0.6558	Not significant
DeAngelo	-0.0304	-0.0291	-2.4852	0.0131	Significant
Jones	-0.0114	-0.0046	-0.5287	0.5971	Not significant
Modified Jones	-0.0118	-0.0046	-0.5287	0.5971	Not significant

Table 14. The transition year. Average discretionary accruals, dummy model testing regression coefficient for the year's discretionary accruals, t stat, P-value and interpretation of significance

Table 14 shows the test results for the hypothesis 1 that in the transition year between two CEOs an earnings bath is executed and thus the discretionary accruals are below the average (income-decreasing). Depending on the model used, the observed level of discretionary accruals was from 1.14 to 3.04 percentage points lower than the average. However, this difference was only significant ($p < 0.05$) when the DeAngelo model was applied to the calculation of discretionary accruals. All in all, the evidence gathered weakly supports the hypothesis 1 of an earnings bath occurring when the CEO is replaced, resulting in the sub-average level of discretionary accruals in the transition year.

Model	Year's average DA	Coefficient	t Stat	P-value	Significance
Healy	0.0101	0.0176	2.7140	0.0067	Very significant
DeAngelo	0.0107	0.0120	1.4227	0.1551	Not significant
Jones	0.0108	0.0177	2.8555	0.0044	Very significant
Modified Jones	0.0108	0.0181	2.8905	0.0039	Very significant

Table 15. The final year. Average discretionary accruals, dummy model testing regression coefficient for the year's discretionary accruals, t stat, P-value and interpretation of significance

Table 15 compiles the results for hypothesis 2 of discretionary accruals being above the average in the final year of CEO's tenure. The measured income-increasing discretionary accruals were very similar in magnitude regardless to the model used and the amounts ranged from being 1.01 percentage points to 1.08 percentage points above the average in the final year of CEO's tenure. The difference was very significant at 99% significance level whether Jones, the modified Jones or Healy model was applied. As whole, the found evidence strongly supports Hypothesis 2 that the discretionary accruals above the average in the final year of CEO's tenure.

	Year's average DA	Coefficient	t Stat	P-value	Significance
Healy	0.0038	0.0108	2.1371	0.0328	Significant
DeAngelo	0.0054	0.0054	0.8147	0.4154	Not significant
Jones	0.0025	0.0094	1.9409	0.0525	Implied signific.
Modified Jones	0.0028	0.0101	2.0672	0.0389	Significant

Table 16. The early years. Average discretionary accruals, dummy model testing regression coefficient for the year's discretionary accruals, t stat, P-value and interpretation of significance

Table 16 represents the results for Hypothesis 3 that in the early years (years 1-3) of CEO's tenure the discretionary accruals are above the average. The amount of discretionary accruals perceived varied from being 0.25 percentage points to 0.54 percentage points above the average level with the models used. The difference was significant on a 95% level when either Healy or Modified Jones model was used for discretionary accruals measuring purposes. In addition, under the original Jones model the early years' discretionary accruals were higher than average on impliedly significant level ($p < 0.1$). Thus, the evidence supports Hypothesis 3 that the CEOs use income-increasing discretionary accruals in the early years of their tenure.

To conclude it can be stated that the evidence gathered strongly suggests that the average CEO uses income-increasing discretionary accruals during the final year of his/her tenure. Furthermore, weak evidence for the usage of income-decreasing discretionary accruals during the transition year was found. In turn, support for the income-increasing accruals of the early years of CEO's tenure was discovered. All in all, the obtained results of this thesis prove that despite financial statements' increased requirements for material accuracy and completeness in the listed U.S. companies since the introduction Sarbanes-Oxley act, the earnings can still be managed with the help of accruals.

5.2 Limitations of the study and suggestions for the future research

As the sample consists of CEO tenures lasting from 5 to 11 years the results do not necessarily hold true in case of shorter tenures lasting under 5 years or very long tenures that last longer than 11 years. Furthermore, this thesis concentrated on CEO tenures occurring in listed U.S. companies so the findings do not necessarily apply to companies that are either not listed or operating in the same geographical area. Another limitation is that the sample includes unequal amount observations from different years of CEO tenures which might affect the level of accruals that is perceived as normal and thus what is considered discretionary.

The future research could cover the cultural aspect of the discretionary accruals usage. For example, the connection between Hofstede's cultural dimensions of different countries and perceived discretionary accruals' usage of the companies operating in the countries in question. This could be a fruitful field to do research on as the cultural implications of accruals usage is not yet a well-covered area of study.

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