The changing role of a CFO: a Swedish study on Earnings Management

Ayesha Waqar[♣] Xinyu Wang[♦]

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ABSTRACT

This thesis aims to provide empirical evidence regarding the existence of earnings management through an investigation of the changes in discretionary accruals surrounding a Chief Financial Officer (CFO) turnover event and tests how the role of a CFO has evolved over time in Sweden. Empirical tests are conducted on a sample of 240 CFO turnover observations accumulated from 201 NASDAQ OMX Stockholm firms over the time period 2001- 2017. We find no significant evidence of changes indicating that the turnover event has an impact on the reported discretionary accruals. Furthermore, the results show that the role of the CFO, as a financial goalkeeper of the company, has not developed over the sample time period in the context of Sweden. A further sub-sample analysis conducted on the transitioning characteristics of the CFOs and their effects on discretionary accruals is reported inconclusive. These findings contribute to the existing literature by filling the gap that exists in the current research on the effects of CFO turnovers on discretionary accruals and if the role has evolved in Sweden.

Keywords: Earnings Management, CFO Turnover, Discretionary Accruals, Emerging Role
Supervisor: Milda Tylaite, Assistant Professor, Department of Accounting

[♣] 41315@student.hhs.se
[♦] 41321@student.hhs.se

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Ayesha Waqar Xinyu Wang

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1. Introduction

"One of the key elements of human behavior is, humans have a greater fear of loss than enjoyment of success. All the academic studies will show you that the fear of loss of capital is far greater than the enjoyment of gains." – *Laurence D. Fink, CEO of BlackRock*

Published earnings are said to be one of the most powerful elements of the financial statements which can directly impact the decisions of the management as well as those of the investors because of their representation of the performance of business activities. In the past few decades, due to this rising awareness of the association of power with earnings of a company, managers have been increasingly engaged in practices which involve the shift of earnings from one period to another with the motivation of misleading the stakeholders (Healy, 1985). Whilst most corporate executives respect stakeholders and abide by the International Financial Reporting Standards, there is always risk that some executives might misrepresent financial data for achieving contractual outcomes (Kellogg & Kelogg, 1991). This shift of earnings has been a leading cause of many worldwide scandals, Enron and WorldCom being the most notable ones. As a result, *earnings management* has considerably evolved over time as an area of research and one of the most influential areas in the accounting literature (Jones, 2018). The research design that has taken domination in this field remains to be the Jones Model (1991) as modified by Dechow and Sloan (1995) and Kothari, Leone and Wasley (2005), both of which have come to be recognized as the de facto research designs with their merits hardly being questioned (Christodoulou, Ma & Vasnev, 2018).

The rise of these high-profile corporate scandals mentioned above, brought to the spotlight not just the role of Chief Executives Officers (CEOs), but also that of the Chief Financial Officers (CFOs) who have now been elevated to being personally liable for the accuracy and completeness of the financial statements of the company as per the Sarbanes-Oxley Act 2002 in the United States (Geiger & Taylor III, 2003). Based on this premise, it can be safely established that the CFOs are now legislatively at the same level of accountability and responsibility as a CEO. However, despite this recognition, the role of CFO in the earnings of the corporation as an area of research has been largely neglected:

"Despite a long-standing acknowledgement regarding the involvement of CFOs in the financial reporting process, little academic research has been conducted to examine the effect of the CFO on a corporation's reported financial results." – *Geiger and North (2006)*

In a similar manner, this topic has hardly been acknowledged and barely any academic research has been conducted in a Swedish context. This study embarks on the journey to test the changing role of a CFO in the Swedish workplace through the investigation of the accounting choices that are undertaken by both the outgoing and incoming CFOs. If a change in CFOs comes around with an expectation of a turnaround of results, it implies that the personnel being appointed have the ability and power to cause this turnaround based on their capabilities and choices (Mian, 2001). The examination of this ability through financial reports is most clearly demonstrated through an analysis of earnings management through the use of discretionary accruals (Geiger & North, 2006) where the individual manifest their capabilities, especially surrounding the time where he attains and leaves the position. Thus, an investigation is conducted of these *Discretionary Accruals* (hereafter referred to as DA) surrounding the CFO turnover event through the application of the Modified Jones Model (1995) to present empirics for the possibility of a CFO engaging in earnings management. This question is further investigated by an analysis of the characteristics of the incoming and outgoing CFOs to present evidence for the possible reasons behind their inclination towards this behavior.

The emphasis on the changing role is crucial. The CFO, as a strategy setter and a leader has evolved from the status of a mere steward in the past decade (Deloitte Report, 2016). The financial system of a firm has gone on to be led by the CFO along with rising accountability for both the controlling and the treasury side of businesses which presents the question of the increasing impact they can have on earnings management (Mian, 2001). Furthermore, based on the premise that the DA are subject to reporting judgement and the influence from a CFO would manifest the most on the changes in the levels of DA when there is a change in personnel, this study conducts the analysis at the point of turnover (t) of the CFO (Geiger & North, 2006). However, in order to fully assess the impact of the CFO turnover event on the DA, the year before turnover (t_{+1}) and the year after turnover (t_{-1}) have also been employed as the CFO can take on the position anytime during the year, hence making the observations at time (t) insufficient. This is also helpful in ensuring that the impact is fully captured, where t_{+1} is the first full year of control for the incoming CFO, and t_{-1} is the last year of control for the outgoing CFO.

Therefore, based on the lack of prior research surrounding this topic, especially in the context of Sweden, this thesis attempts to fill the gap that exists in the existing literature. Thus, this study investigates the discretionary accounting choices that are undertaken by both the outgoing and the incoming CFO surrounding a turnover event by proposing the following research question:

"How has the relationship between a CFO turnover event and Earnings Management evolved in Sweden over the years 2001 to 2017?"

The first part of the question asserts upon the existence of a relationship between the CFO turnover event and earnings management based on the prior literature. Researchers over time have demonstrated a sustained interest over the determinants behind the incentives of executives (Datta & Iskandar - Datta, 2014) that are, most obviously, seen to come into play surrounding turnover events. Accounting, in the context of this thesis, has been observed as a dynamic process, influencing and being influenced by individuals (Hopewood, 1998). The development of IFRS has been with the motivation to facilitate the economic decision-making of the users of accounting information. However, the focus has largely remained on implementation and many have argued over the greater flexibility offered that has led to a greater degree of earnings manipulation practices (Ormrod & Taylor, 2004). Such claims have led to the second part of the research question this thesis addresses: the timeline. With a greater flexibility offered post adoption of IFRS, a time period beginning from the year 2000 was deemed fit to be tested for accommodating the pre-adoption effects, if any. Furthermore, to ensure the evolving role over time of the CFO is fully captured, the timeline being tested was extended to the year 2017.

The initial sample employed consists of 201 firms which have been manually patrolled to handpick the turnover events. All these sample firms are listed on NASDAQ OMX Stockholm, thus possessing ample amount of public information that was necessary to compile the sample set. In total, 240 CFO Turnover observations are found and put through further tests by executing univariate and multivariate regression analyses for detecting the existence of earnings management. To test the changing role, a *Time Model* is employed which investigates the relative results of DA between two time periods. Time spans of four years each, $time_1$ (denoting the beginning of time, 2001-2004) and $time_2$ (denoting the end of time, 2014-2017), are used along with a MIDDLE period (2005-2013) for comparison purposes. Separate regressions with cluster are conducted for the three periods surrounding a turnover event (t_{-1}, t, t_{+1}). An equality test of coefficients is performed to test if there are any differences between $time_1$ and $time_2$, hence reflecting how the CFO's relationship with earnings management has evolved over time.

A sub-sample based on NASDAQ OMX Stockholm's Top 30 listed companies is employed to test for any for any plausible influences a CFO might have on DA surrounding the turnover event. The sub-samples classify the outgoing CFO and the incoming CFO transition into four further broad categories: *Departure, Origin, Gender and Education*. Further regressions with cluster are conducted on a further division of the transition in these categories.

This research contributes to the existing research by assessing whether the appointment of a CFO is associated with discretionary accruals under the rules and regulations imposed by Sweden and finds no evidence for the phenomenon. Furthermore, it also adds to the existing research by putting to test changing role of a CFO in Sweden and how it has not evolved over the time period under consideration, as evidence by the results achieved.

The remainder of this thesis is structure as follows. Section 2 presents a background of the literature surrounding earnings management and the evolving role of a CFO, whereas Section 3 states the hypotheses developed to answer the research question in light of the relevant literature. Section 4 presents an overview of the methodology employed and a description of the data. Section 5 presents the empirical findings which are followed by further tests in Section 6. Lastly, Section 7 discusses and concludes the results and presents suggestions for future research along with the limitations that were encountered during the course of this thesis.

2. Background

This section identifies literature relevant to the progression of a CFO's role over time, following a turnover event, in terms of their impact on earnings management. The concept of information asymmetry, as put forward by Jensen and Meckling (1976), is first used to build up to the phenomenon that is earnings management which is further developed within the context of Sweden. It then proceeds to evaluate CFOs as managers of the firm in terms of their discretion towards accounting choices which result in earnings management and concludes by chalking out hypotheses that shall put to test the relevant concerns that arise as a result the turnover event over the years 2001 to 2017.

2.1. Information asymmetry and earnings management

As stated by Ghazali (2015), the primary purpose of reporting financial statements is to deliver the company's financial information to both external and internal stakeholders in a reliable and timely manner. Following this premise, accounting researchers have been particularly interested in the characteristics and behaviors of the preparers and users. The ultimate objective of this literature stream is to identify the factors that determine the quantity and quality of this accounting information being provided by the preparers and also evaluate its usefulness for the ultimate user (Runesson, 2015). Most studies have concluded that managers make accounting choices with an objective of influencing valuations or outcomes that are beneficial either to themselves or the firms (Healy & Wahlen, 1999).

Given the information asymmetry that exists between the managers and external uses of accounting information as presented by the agency theory (Jensen & Meckling, 1976), there comes an opportunity for the CFOs to use discretion and manipulate the statements for their personal benefits or to influence the users' perception concerning the financial position of the firm through various means such as smoothening or even falsifying the financial data. This use of discretion in preparing and reporting accounting information is what has taken on the umbrella term of '*Earnings Management*' (Ghazali, Shafie & Sanusi, 2015). Earnings management has been a concept widely under investigation since the 1980s, when it started evolving into a critical ethical issue concerning all stakeholders and has since been defined in various ways which leads to the reflection that researchers have different perceptions and contexts when it comes to the interpretation and definition of this phenomenon. In its simplest form, Schipper (1989) defined it as 'a purposeful intervention in the external financial reporting process with the intent of obtaining one private gain'. Davidson et al. (1987) described earnings management as 'the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings. Amongst the newer research, a fairly conclusive definition for earnings management goes as 'the choice of accounting policies or actions that can affect earnings in order to achieve a specific objective' (Scott, 2015). Regardless of the definition, studies have illustrated this area as a framework that provides managers with incentives to manipulate earnings or minimize fluctuations in order to show better or more stable results (Healy & Wahlen, 1999). Whilst most corporate executives have been observed to exhibit responsible behavior in reporting results, there is always risk that some executives might turn to measures that misrepresent financial data for achievement of their own personal goals (Kellogg & Kelogg, 1991).

2.2. Earnings Management in a Swedish context

During the 1980s, the Swedish accounting legislation left most specific issues for accounting practice to be resolved by following the Good Accounting Practices as put forward by Swedish Accounting Standards Board (Hellman, 2011). The boom of multinational firms during this period led to a pressure for international accounting harmonization in various areas such as tax reserves, goodwill etc. (Jönsson, 1994). As a result, in the years to come, the Swedish Financial Accounting Standards Council (SFASC) began its journey of softly adopting IAS and IFRS. This meant that the IFRS adoption via SFASC took place within the limits of the

Swedish legislations which gave flexibility by letting firms obey the law without having to fully comply with the SFASC recommendations. From the period 2005 onwards, the hard adoption of EU-regulated IFRS led to material increases in both the net profits and balance sheet numbers which can be attributed to the national level forces that had worked pre-2005 towards preserving the Swedish accounting tradition of balance sheet conservatism and have empirically been proven to be used for earnings management purposes through the use of discretion (Hellman, 2011).

In terms of corporate governance, Sweden has much in common with how corporate governance has developed over an international level. Apart from the common ground, it is also found to differentiate in certain significant areas from the one-tier and two-tier structures of supervisory and management boards which prevail in much of the continental Europe (Swedish Corporate Governance Board, 2019). However, despite these measures, Sweden's history is not free from scandals that have depicted the abuse of Good Accounting Practices. Cases like Fermenta, Prosolvia, ABB and Skandia are evidence of how top management has been involved in acts that resulted in a loss of investors' confidence through fraud, misleading disclosures and fuzzy reporting (Rimmel & Jonäll, 2012). Despite being regarded as a country with strong enforcements and high quality of legal standards, the accounting traditions along with the soft adoption of IFRS during the periods 1991-2004, gave firms the discretion that raises the possibility of earnings management.

2.3. Types of Earnings Management

Further building on earnings management as a phenomenon, the positive accounting theory brought around by Watts and Zimmerman suggests that executives of a firm that has an earnings-based compensation system in place, are more prone to using measures that will lead to higher earnings in order to earn higher rewards (Watts & Zimmerman, 1978). Essentially, literature broadly identifies two channels that are undertaken to engage in earnings management: Accruals Management and Real Activities Manipulation. The focus on Accruals Management has been the most prevalent in earlier studies done on Earnings Management to arrive at the conclusion as to whether the earnings have been altered due to opportunistic behavior or not. In line with the positive accounting theory, Healy and Wahlen (1999) have been one of the first ones to put to paper the concept behind using DA to detect earnings management through examining management decisions where there is evidence of selecting accounting procedures which lead to higher executive compensations. Accruals manipulation does not generally involve altering operations themselves but, instead misrepresents the firm's underlying operating performance (Kothari, Mizik & Roychowdhury, 2016). Real activities manipulation, on the other hand, is much harder to measure as it entails departure from normal operations with the intent to mislead some stakeholders into believing that the reported financial performance has been achieved in the normal course of operations (Roychowdhury, 2006). It has more profound impacts on operational cash flows and research in this domain is primarily based on trying to capture the real operations and differentiate from the manipulated outcomes.

In accruals-based earnings management, the prime area of concern of this thesis, executives intervene in the financial reporting process by exercising discretion and judgment regarding accounting choices. Importantly, accruals management misrepresents the firm's underlying operating performance, but does not generally involve altering operations themselves (Kothari, Mizik & Roychowdhury, 2016). One of the most studied literature works on earnings management is the one by Jones (Jones, 1991). It presents a different approach on 'Accruals Management' by studying a narrower channel of discretionary accruals which excludes the non-discretionary accruals and provides a newer insight into the development of literature on this topic. One possible explanation to exclude non-discretionary accruals could be that since non-discretionary accruals are used to reflect business conditions (subject to firms' condition and sales growth), they cannot be controlled by the management and hence, need to be excluded from the studies (Islam, Ali & Ahmed, 2010). In the context of Sweden,

the work of (Callao & Jarne, 2010) is highly relevant as it concludes that there was evidence found of earnings management in Sweden as a result of increasing discretionary accounting especially following the adoption of IFRS in 2005.

2.4. The progression of the role of CFOs over time

Looking at the CFOs as managers in the context of the agency theory, they can be recognized as active financial 'goalkeepers' that retain the primary responsibility for managing the companies' finances, which includes financial planning, management of financial risks, record keeping and financial reporting (Mian, 2001). Together with the board of directors, the CEO, the audit committee, and auditors, CFOs play a particularly important role in the annual financial reporting process examined by regulatory bodies (Geiger & North, 2006; Mian, 2001; GE, Matsumoto & Zhang, 2011). There is no denying that with the passage of time, the role of a CFO has become increasingly crucial in terms of crafting and executing corporate strategy and they are arguably being said to be the next most important member of the top management team, after the CEO (Datta & Iskandar - Datta, 2014).

Based on a report by Deloitte (2016), the role of CFOs today has evolved to encompass four diverse and challenging roles because of the never-ending pressure they face as a result of the growing economic uncertainty, increased regulatory requirements and an increased investor scrutiny. The first two roles, as stated in the report, are based on the traditional duties that are required of them: being a *steward* and an *operator*. In order to fulfill these, they are expected to ensure a sound reporting of the financial position of the company to the internal and external stakeholders and put their capabilities and talent to fulfill the organization's core responsibilities efficiently. However, with the latter two roles as *strategists* and *catalysts*, they are expected to help in setting the future direction of the company in order to enhance business performance along with assisting in stimulating behaviors across the organization to achieve the strategic and financial objectives (Deloitte Report, 2016). The BearingPoint Institute conducted a study on CFOs from the European Fortune Global 500 over the period 2004-2013 and concluded that the CFO to CEO transition rate was 26% higher than expected, indicating how the role of CFO has been transformed to become a true business partner and co-pilot of the enterprise (BearingPoint Institute, 2014).

Amidst these rising responsibilities and strategic alliance of the CFOs, the great accounting scandals of the early 2000s attracted a great deal of attention regarding fraudulent earning practices in order to meet the market expectations and hide reality. They brought to the spotlight the role executives, especially CFOs, have now taken on in impacting accounting accuracy and earnings quality. The work of Chava and Purnanandam (2010) researched on similar lines and concluded that CFOs also played a significant role in some aspects of corporate financial decision making, the results of which can eventually be termed as earnings management decisions.

When it comes to financial decision making, the accounting standards give the executives a certain degree of flexibility in terms of exercising judgement thus reflecting their opportunistic behavior. Geiger and North (2006) present evidence of the importance of the role of a CFO in financial reporting by showing how DA decrease significantly surrounding the appointment of a new CFO and conclude that CFOs exercise independent influence on the final reporting outcomes of a firm. Working on a similar line of thought, (R., 2008) establish that CFO turnover has been observed to decrease following a failure in meeting earnings benchmarks. Evidence has been found that CFOs are seen to engage in the most aggressive forms of earnings management which has been especially brought to attention following corporate fraud scandals such as Enron and WorldCom (Jiang et al., 2010).

2.5. CFO's involvement over time with EM

Based on a survey of 169 public companies, Dichev et al. (2013) concluded that more than 90% of CFOs agreed that inside pressures to hit earnings benchmarks played a pivotal role in

the motivation behind engaging in earnings management. In terms of internal pressures, one strand of literature presents empirical evidence and suggests that the pressure from the CEOs is considered to be a key factor when it comes to CFOs undertaking misreporting decisions (Feng, Ge & Luo, 2011). Feng et al. (2011) have demonstrated that being the superiors and prime decision makers, CEOs are able to directly influence a CFO's compensation and tenure which allows them to exert pressure on the CFOs and manipulate earnings for their own personal benefits. More recently, Bishop, DeZoort & Hermanson (2017) also concluded that CEOs can greatly influence a CFO's accounting choices.

On the other hand, a few research papers consider the financial incentives of CFOs from a newer perspective and conclude that the magnitude of earnings management is more sensitive to CFO's incentives rather than to those of CEO's, who have previously been the focus of most mainstream studies (Jiang, Petroni & Wang, 2010). Balsam, Bartov & Marquardt (2012) reached similar observations and found that CFOs were given higher bonuses when their firms were successfully able to meet the earning benchmarks, hence leading to the conclusion that CFOs are being rewarded with incremental bonuses as a result of their successful management of the earnings expectation or by putting to use DA in a way that they assisted the company in achieving or exceeding its annual targets.

Graham, Li & Qui (2008) present another argument that the inner pressure that originates from beating earnings benchmarks is a key driving force for creating smoother earning patterns. Achieving these financial benchmarks that have been set in place for CFOs is not only important for their careers and compensation, but also for their integrity and goodwill (Dichev et al., 2013). Mergenthaler Rajgopal and Srinivasan (2008) further support these types of CFO incentives by pointing out a common phenomenon that the increasing CFO turnover rate often comes after the failure to meet a desirable earnings level.

Regardless of its kind, it can be expected that these incentives can serve to be a root cause for the rise of a CFO turnover event. Either following the fulfillment of their personal targets or the inability to achieve earnings benchmarks, the CFOs are likely to either resign or be laid off. Being the ultimate responsible person for the financial system of the firm, the turnover serves as a key event for this study with an expectation that the financial statements shall be affected as a result of the incentives that served as a reason for this event.

2.6. Impact of the CFO's turnover on EM

Having established the importance of the turnover event, it is worth noting that the examination of CFO turnovers and their impact on earnings management has been a topic that has been scarcely discussed in academia, possibly because the role of the CFOs was not considered more than that of a steward and an operator before the early 2000s. Only a few scholars have since then taken a closer look at the phenomenon and conducted quantitative analysis to validate their thoughts. The research conducted by Geiger and North (2006) is one of the most cited ones in this area. Using a sample of companies that appointed a new CFO during 1994 to 2000, they investigated the link between the action of appointing a new CFO and the corresponding changes in the company's reported DA surrounding this turnover event. Deploying the Jones Model as modified by Kothari et al. (2005), Geiger and North (2006) quantified DA. Based on that, they found that the hiring firms reported significantly higher DA in the year before the CFO turnover took place and the values were found to be much lower in the year after the CFO turnover, compared to non-hiring firms during the same period.

At the same time, Geiger and North (2006) also assessed whether the results were, to any extent, driven by the concurrent appointment of a new CEO but were unable to find any correlation. After confirming the possibility of changes in DA being caused by a changing CFO, the authors dig deeper by classifying incoming CFOs into internally hired and externally hired types. The test results indicated that only externally recruited CFOs are

associated with the great reductions in DA. This paper lays a great foundation and plays a significant role in CFO turnovers and earnings management studies.

Since Geiger and North (2006) published their research, a few scholars have continued developing upon this topic. Vähämaa (2014) researched from the angle of the executive's gender. Similar to Geiger and North (2006), the author deployed cross sectional panel regressions to examine a sample of S&P 1500 firms during 2004-2006. Vähämaa (2014) reported findings in line with Geiger and North's (2006) studies about CFO's turnover influence on income increasing earnings management. On top of that, focusing on the gender factor, the author also introduced a variable indicating the gender of the original CFO and the successor. The research results depicted that the degree of DA becomes milder when a male CFO is replaced by a female, while in other cases where the successor is a male, there tends to be a more aggressive earnings management behavior. This finding also corresponds to the previous studies where female executives have been found to have more conservative earnings management strategies (Peni & Vähämaa, 2010).

3. Theoretical Framework and Hypotheses Development

Several studies have shed light on the choice and replacement of CEOs which is particularly relevant following periods of weak performance or when there are incentive based compensation systems in place (Parrino, 1997). However, as established by the literature in the preceding sections, the role of a CFO has evolved over time and they have the power now to significantly influence the development and execution of the corporate strategy and be primarily responsible for the management of the financial system of the firm (Mian, 2010).

3.1. Hypotheses Development

In line with similar studies on CEOs, CFOs today also face the disciplinary systems in place and hence are prone to engaging in earnings management for various reasons. In the research conducted by Mian (2001), evidence is found for the hypothesis that CFO turnovers are disciplinary following declining financial performance over the preceding three-year period. His findings further establish that the newly appointed executives tend to decrease earnings in their first year of appointment with an intention of blaming it on the predecessor. With these reasonings, it can be safely established that the CFOs have reasons for engaging in earnings management through a reduction in DA in the transition year of the new CFO (Geiger & North, 2016). Hence, the first hypothesis being put to test shall be as following:

H1: Companies that appoint a new CFO report significant reductions in DA compared to other non-hiring firms.

Furthermore, considering the changing role of CFOs, the implementation of IFRS in Sweden in the year 2005 and the rise of global accounting scandals from the early 2000s, the year 2001 is deemed to be a reasonable starting point for this thesis to ensure the changing role is fully captured in the earnings management study that this thesis shall undertake. Hence, to capture this *changing role*, the second hypothesis is built up on the first one as follows:

H2: Companies that appoint a new CFO during 2014-2017 report greater reductions in DA compared to those appointing a new CFO during 2001-2004.

3.2. Further Analysis

In order to further research on the first hypothesis based on prior research conducted on various circumstances and characteristics of executives, further analysis was conducted of tests during the course of this thesis to further investigate a CFO's influence upon the eventual earnings management that takes place. A brief background of the prior literature used in the selection of these characteristics is presented in the following sections.

3.2.1. Types of Departure

Back in 1987, Vancil classified the different kinds of top executive changes into two broad categories: routine and nonroutine, or in some cases, also referred to as voluntary and forced. The difference between these two types lies in the succession process. Routine executive changes, in short, are described as a well-planned succession process while the nonroutine changes often refer to an unplanned turnover in which companies tend to promote an internal person as acting executive due to the short notice period (Vancil, 1987).

Following this classification method, a considerable number of studies have studied the relationship between senior executives' turnover and discretionary accounting choices (Hazarika, Karpoff & Nahata, 2012; Pourciau, 1993). An important development as result of these studies was the conclusion that nonroutine executive turnover is usually found to be positively linked to the firm's earnings management. It has been reasoned that taking advantage of the situation, the incoming executives tend to deploy write-offs and other methods to decrease the earnings in the year of turnover and later increase the earnings again in the following year (Hazarika, Karpoff & Nahata, 2012; Pourciau, 1993;Wells, 2002).

3.2.2. Types of Origin

A considerable number of studies have paid attention to whether the executives are insiders or outsiders in investigating the earnings management phenomenon. Kotter (1982) provided several reasons explaining why firms are more inclined towards appointing an insider in the executive position. He argues that internally promoted employees have firm specific and industry specific knowledge as well as the social networks within the firm. In this regard, some studies also look into the difference between internally recruited executives and the external ones. Marsters-Stout, Costigan and Lovata (2008) found clear evidence for executives promoted within the company behave differently from those external ones, especially when it comes to the goodwill topic. Compared to the externally recruited executives who hold a more objective attitude, the internal ones are much more easily biased and affected by their personal view of the company, thus impairing lesser goodwill.

Choi, Kwak and Choe (2014) are one of the first scholars who looked into the direct relationship between the executive's origin and type of departure and earnings management. They included four types of executives in their research design depending on whether the departure of the executive is peaceful or forced and whether the incoming executive is recruited from within or outside the firm during the period of 2001-2010 for large Korean companies. They only found earnings management when the executive departure is forced, and the new executive is promoted from within the company (Choi, Kwak & Choe, 2014). This is in line with the finding that Geiger and North (2006) had previously presented evidence upon, which concluded that externally appointed CFOs are associated with decreases in DA. Engel, Gao and Wang (2013) also looked into details about the financial performance consequences surrounding CFO turnovers. They pointed out that companies normally hire an external CFO after the current one is forced to leave. Their research results also suggest that externally recruited CFOs are often proved to have positive correlations with financial reporting quality.

3.2.3 Gender

The gender of the executive is examined to have great impact when it comes to the decision-making process, conservatism, and even more specifically, accruals. There has been a considerable body of studies which research on the influence of gender differences on companies' financial performance. For instance, Campbell and Minguez-Vera (2008) discovered that firms with higher percentage of females sitting on the board of directions tend to have more positive impact on firm value.

Peni and Vahamaa (2010) are among the first ones to suggest that female executives are following a more conservative earnings management strategy. Using a sample of 391 U.S. firms, the authors investigated both the CEO's and the CFO's correlation with DA. However, the finding of the studies only shows that female CFOs undertake more cautious financial reporting policies compared to male CFOs, while no significant relation is detected between female CEOs and male CEOs. Barua et al. (2010) also discovered similar results. Deploying four different models to measure accounting quality, they found that female executives tend to be associated with higher quality of accruals, indicating that female executives prefer to take more conservative accounting methods.

3.2.4. Educational Background

In the last decade, a body of literature has emerged that has proceeded to analyze the CFO role based on his educational background and their core competencies. Aier et al. (2005) tested how CFO-specific factors explain a firm's accounting errors by using accounting restatements as a proxy and reached a conclusion that CFOs with recognized qualifications such as an MBA or CPA were empirically observed to be less-likely to restate their results and hence, less susceptible to accounting errors (Aier et al., 2005). They also document that the accounting expertise of a CFO positively impacts restatements. As per one school of thought,

it was assumed that highly qualified executives can lead to better estimation of accruals as a result of their superior knowledge along with a more conservative attitude (Datta & Iskandar - Datta, 2014).

Working along the same line of thought, Bamber, Jiang and Isabel (2010) show that executives holding MBA degrees are more conservative, yet accurate with their disclosures and thus are able to report a higher quality earnings (Bamber, Jiang & Isabel, 2010). Similarly, Demerjian et al. (2013) examine managerial ability and earnings quality and conclude that management executives who demonstrated more capability were able to decrease earnings management and improve earnings quality through the better estimation of accruals (Demerjian et al., 2013). Inspired by these studies, this thesis will examine the impact of a well-qualified CFO on Earnings Management with the expectation that CFOs with a MSc or an MBA are able to exhibit a greater deduction in DA over the passage of time. The choice of these top two qualifications is based on the empirical observation of Swedish data.

4. Method

This section starts off with a description of the research model employed which forms a basis for our regression models that are executed. Section 4.2 gives a description of the sample that is used to empirically address our research question.

4.1. Research Model

Earnings Management has evolved significantly over time as an area of research. Healy (1985) was the first one to document the suggestion where accruals were divided into discretionary and nondiscretionary parts. While it has been acknowledged that estimating accruals is a difficult practice, it remains to be the most common approach in researching this phenomenon (McNichols, 2000). This study employs and evaluates two accrual models to estimate non-DA: Modified Jones Model as developed by Dechow and Sloan (1995) upon the Jones (1991) Model and the Kothari et al. (2005) Model.

Jones (1991) methodology of using DA was much more precise. Her model defined the accruals process as a function of sales growth and property, plant and equipment. They were taken to be reasonable drivers of firm value and proven through her study to have a correlation with the firm's accruals and characteristics. This model was developed further by (Dechow & Sloan, 1995) who found a weakness in the Jones Model and proposed that since revenue changes are being considered discretionary, any impact of sales manipulation is not being incorporated in the final measure of the DA. Hence, they came up with a slight modification to provide a more powerful test for earnings management by also detecting sales-based manipulations. The model is conducted in four steps in order to estimate the DA:

Step 1: As a starting point, total accruals (TA) need to be determined which are computed following the Jones 1991 methodology. They primarily seek to cater for the changes in working capital, such as inventory, accounts receivables and accounts payable in the year t, scaled by total assets at the year-end t_{-1} ,hence forming the equation below:

$$TA = \big((\Delta CA_t - \Delta Cash_t) - (\Delta CL_t) - (Depreciation_t + Impairments_t)\big) / A_{t_{-1}}$$

ΔCA_t = The change in current assets in the year t

ΔCL_t = The change in current liabilities in the year t

A_{t-1} = Total assets at the end of t_{-1}

Step 2: Once the total accruals have been determined, the next step is to determine the industry specific parameters. This step is calculated by a cross sectional model, where the coefficients are measured cross sectionally each year using all firm-year observations falling under the same two-digit SIC category.

$$TA = \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \alpha_2\,(\Delta REV_{it}) + \alpha_3\,(PPE_{it}) + \varepsilon$$

$\alpha_1, \alpha_2, \alpha_3$ = Industry-specific parameters

A_{t-1} = Total assets at the end of t_{-1}

ΔREV_{it} = The change in revenues for firm i in $year_t$ scaled by total assets as t_{-1}

PPE_{it} = The gross property, plant and equipment for firm i in $year_t$ scaled by total assets as t_{-1}

ε = The residual

Step 3: To arrive at the non-discretionary accruals, the firm specific parameters from step 2 are now applied in the model, in order to estimate the non-discretionary accruals.

$$NDA = \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \alpha_2 \left(\Delta REV_t - \Delta REC_t\right) + \alpha_3 \left(PPE_t\right)$$

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

A_{t-1} = Total assets at the end of t_{-1}

ΔREV_t = The change in revenues for firm i in $year_t$ scaled by total assets as t_{-1}

ΔREC_t = The change in net receivables for firm i in $year_t$ scaled by total assets as t_{-1}

Step 4: Total accruals from step 1 and the nonDA from step 2 and 4 are now used to estimate the DA as follows:

$$DA = TA_t - NDA_t$$

4.2. Data Sources and Sample Selection

The first step of data collection was to identify newly appointed CFOs in Sweden with an investigation period from 2001 to 2017. To consider the impact of soft IFRS adoption in Sweden which received great emphasis in the early 2000's, 2001 was deemed to be a suitable fit as a starting year of this research project. Moreover, with an aim of fully capturing the effects of the changing role of the CFO, this thesis works on DA up to the year 2017.

Due to a lack of relevant information on CFO turnovers in the Compustat Database, a manual research was conducted following the active companies listed on NASDAQ OMX Stockholm. The research identified a list of 376 companies for which announcements of CFOs were to be searched upon[1]. Ensuring consistency with prior discretionary accrual studies, due to idiosyncratic and industry-specific financial reporting issues, financial services (SIC Code 60-69) and utilities industry firms (SIC Code 49) were excluded (Geiger & North, 2006). Companies without financial data for consecutive four years in Compustat surrounding the year of turnover along with those with a presentation currency in other than SEK were also taken out, which led to a final sample of 201 companies[2]. Furthermore, to conduct a more categorical analysis of the characteristics of the CFOs, a sub-sample set was employed in Section 5.5.

Whilst recording observations for CFO turnovers, cases where there was a turnover event observed in two consecutive years, the first event was left unrecorded based on the premise that the CFO has been in power for less than a year and, hence, cannot be expected to cause a significant level of earnings management. Furthermore, turnovers in year 2001 and 2017 were excluded based on the need to gather data of the preceding (t_{-1}) and proceeding years (t_{+1}) around the year of turnover (t_0) to ensure the conditions of the research model are satisfied. Based on these exclusions a final sample set of 240 observations from a list of 201 listed companies was identified, a descriptive analysis of which follows in Table 1. Looking at

[1] The research excluded all interim and acting CFOs based on the temporary nature of their role as a result of employment between the outgoing and incoming permanent CFOs.

[2] To calculate DA as per the Modified Jones Model (1995), data on the preceding year is a requirement. Hence, to calculate DA for the three years surrounding the turnover event, data for four years was employed.

the latter period in Panel A, we can observe an increasing frequency in the turnovers with almost 50% of the turnover samples concentrated in the last five years. This is possibly due to the rising importance of the role of a CFO in the past decade that has led to a higher number of CFOs being employed and thus, as a result, a higher number of turnovers (Mian, 2001). Panel B gives an overview of the industrial classification of the chosen sample set and shows that the highest concentration is of manufacturing firms.

Table 1 - CFO Turnover Distribution

This table presents a distribution of the CFO turnover events that were observed in the sample employed across years as well as industries. The sample is based on 240 observations from 201 companies in the period 2001-2017.
**Note that due to prior and former period requirements of the model, years 2001 and 2017 have been excluded*

Panel A: Yearly distribution of the CFO turnover event

Year	Observations	
2001	-	0,0%
2002	6	2,5%
2003	4	1,7%
2004	13	5,4%
2005	10	4,2%
2006	12	5,0%
2007	11	4,6%
2008	15	6,3%
2009	12	5,0%
2010	17	7,1%
2011	27	11,3%
2012	17	7,1%
2013	24	10,0%
2014	19	7,9%
2015	27	11,3%
2016	26	10,8%
2017	-	0,0%
Total	**240**	**100,0%**

Panel B: Distribution as per the two-digit SIC Code

		CFO Turnover		No CFO Turnover	
SIC Codes	**Industry**	**Observations**		**Observations**	
10-19	Mining and Construction	5	2,1%	106	3,7%
20-39	Manufacturing	129	53,8%	1509	53,4%
40-48	Transportation	16	6,7%	126	4,5%
50-59	Wholesale and Retail	23	9,6%	382	13,5%
70-89	Services	67	27,9%	705	24,9%
	Total	**240**	**100,0%**	**2828**	**100,0%**

5. Empirical Findings

This section initially gives an overview of the descriptive statistics regarding the company characteristics in Section 5.1 and continues to present the univariate results on the full sample in Section 5.2. Section 5.3 focuses on the multivariate regressions that are employed to provide additional evidence for other controls factors impacting accruals whereas in Section 5.4, a *Time Model* is used to gather further evidence regarding the *changing* role of a CFO that has evolved considerably over time, as claimed by prior literature. Finally, Section 5.5 takes into account the plausible characteristics of a CFO to further monitor their impact on DA by conducting a sub-sample analysis.

5.1 Descriptive Statistics

Based on the research procedure and identification of the sample list, Table 2 presents an overview of the descriptive statistics for the years 2001 to 2017 primarily focusing on various firm characteristics.

Table 2 – Descriptive Statistics

This table presents a profile of the turnover sample companies employed during this research through the years 2001-2017 for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the CFO turnover at time *t*. It provides statistics regarding the companies in the sample of the 'CFO turnover *(n=240)*' and 'CFO non-turnover *(n=2825)*' firm-observations for this time period. The data is collected from the Compustat – Global database. Total assets represent the natural logarithm of lagged *Total Assets*. *Current Ratio* represents Current Assets/Current Liabilities. *Debt/Asset* represents debt scaled by total assets. *ROA* is as net income divided by lagged total assets. *CFFO* is measured as cash flow from operations scaled by lagged total assets. *Sales Growth* is measured as sales this year divided by lagged sales minus one.

Descriptive Statistics

	Time (t_{-1})		Time (t)		Time (t_{+1})	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
TURNOVER (n=240)						
Ln Total Assets	7,426	7,273	7,518**	7,300*	7,616***	7,375***
Current Ratio	2,203	1,540*	2,081*	1,533**	2,283	1,547**
Debt/Assets	0,514	0,547	0,512	0,534	0,516	0,553
ROA	0,013	0,038***	0,013	0,037**	0,037	0,047
CFFO/Total Assets	0,040	0,067	0,044	0,073	0,043	0,069
Sales Growth	0,190	0,065	0,204	0,064	0,124**	0,067
	Time (t_{-1})		**Time (t)**		**Time (t_{+1})**	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
Non-TURNOVER (n=2825)						
Ln Total Assets	7,187	7,068	7,180	7,055	7,171	7,043
Current Ratio	2,341	1,636	2,351	1,636	2,334	1,636
Debt/Assets	0,514	0,543	0,514	0,545	0,514	0,543
ROA	0,022	0,054	0,022	0,054	0,020	0,053
CFFO/Total Assets	0,035	0,075	0,034	0,075	0,034	0,075
Sales Growth	0,356	0,077	0,355	0,076	0,362	0,076

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*
p-values were calculated using two tailed t-tests (Wilcoxon rank sum tests) for differences in means (medians).

Analyzing the descriptive statistics presented in Table 2, the *Total Assets* of the CFO turnover firms present a higher value than those of the non-CFO turnover firms with the means being statistically significant at 5% for t along with a median significance at 10%. This observation can be backed by (Barton & Simko, 2002) who conclude that larger firms are more susceptible to external pressures and to meet or beat the analysts' expectations and hence, can be expected to be more likely engaged in earnings management surrounding a CFO turnover event. Similarly, based on the evidence regarding *ROA* that shows how most high income-decreasing accruals are concentrated in firms with low *ROA* (Sun & Rath, 2008), it can be observed that the median is statistically significant for the year of turnover as well as for t_{-1} and is lower for all three years surrounding the turnover.

In terms of firm liquidity, the medians of the *Current Ratio* show statistical significance throughout the three years. It can also be observed that the CFO turnover firms are demonstrating a lower *Current Ratio* with a mean of 2,081 at a 10% significance level at point *t* as opposed to a mean of 2,351 for the non-CFO turnover firms. The conclusions by (Barton & Simko, 2002) play a relevant role here in explaining that since larger firms have a higher probability of keeping a larger amount of current assets, they have a higher ability to manoeuvre the wide range of accounting treatments available and thus, exercise discretions through working capital accruals. Considering this higher ability of exercising discretions, a turnover event could be considered sensitive to these discretions as demonstrated by the significance levels of turnover firms at the time of turnover (*t*).

Sales Growth and accruals have been established to be fundamentally related. The model developed by (Dechow, Kothari & L. Watts, 1998) concluded that firms that depicted higher sales growth required higher investments in their working capital. McNichols (2000) further researched on this area and found that firms with greater expectations of future growth were more prone to greater income-increasing accruals by undertaking measures such as inventory build-ups, etc. However, no conclusions in this context could be drawn from the statistics presented above.

5.2. Univariate Analysis – H1

The analysis is driven across the three years surrounding a CFO Turnover: the year before turnover(t_{-1}), the year of turnover (t_t) and the year after the turnover (t_{+1}). The descriptive statistics on DA, as presented in Panel A of Table 3, provide an overview of the DA levels for the three periods surrounding a CFO turnover to gather evidence if the DA has significantly changed around this event. The Panel B in Table 3 presents the change of DA between Time(t_{+1}) and Time (t_{-1}) to further validate the results derived in Panel A.

Table 3 – Descriptive Statistics on DA

This table compiles the description of the DA of the full sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time *t*. The significance level in Panel A represents the comparison between t_{+1} and t_{-1} to evaluate if the DA level has substantially changed before and after TURNOVER both the TURNOVER and non-TURNOVER observations. The significance level in Panel B represents the comparative results of the change in DA (ΔDA) between the TURNOVER and non-TURNOVER observations.

Panel A: DA (DA) – By Time

	Time (t_{-1})		Time (t)		Time (t_{+1})	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
TURNOVER (n=231)						
DA	– 0,015	– 0,018**	– 0,003	– 0,005	– 0,013	– 0,005
	(0,883)	*(0,049)*				
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
Non-TURNOVER (n=2503)						
DA	– 0,004	– 0,006	– 0,005	– 0,007	– 0,004	– 0,007
	(0,928)	*(0,524)*				

Panel B: Changes in DA (ΔDA) – *Time(t_{+1})* – Time (t_{-1})

	Mean	**Median**
TURNOVER (n=227)		
ΔDA	– 0,002	0,009**
	(0,876)	*(0,012)*
	Mean	**Median**
Non-TURNOVER (n=2059)		
ΔDA	0,002	– 0,003

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*
p-values were calculated using two tailed t-tests (Wilcoxon rank sum tests) for differences in means (medians).

Panel A in Table 3 reports a mean of the DA at a level of -1,5%, -0,3% and -1,3% of total assets for time t_{-1}, time t, and time t_{+1} respectively. It demonstrates insignificant results ($p=,883$) between time t_{+1} and time t_{-1} implying that the DA levels around this time period do not differ substantially. The control samples demonstrate insignificant results similarly. This finding appears to be inconsistent with the evidence that past literature has presented on the use of DA in the last reporting year of the former CFO and the first reporting year of the incoming CFO, which has suggested that CFOs attempt to employ income increasing measures to maximize their compensation levels and income decreasing measures to blame the predecessor, respectively (Geiger & North, 2006).

Panel B in Table 3 presents a comparison on the change in DA between the TURNOVER and the non-TURNOVER samples by depicting a mean of -0,2% and 0,2%, respectively. No significance levels are detected between the difference of the means of these two groups implying that the results between them do not differ significantly which hampers this research in reaching any concrete conclusions regarding the impact of a CFO turnover on DA.

To gather evidence on the DA and their relationship with the TURNOVER event, a univariate analysis is initially performed as presented in the Panel A of Table 4. Panel B demonstrates the relationship of the change in DA with the TURNOVER event to further support the results derived in Panel A.

Table 4 – Univariate Analysis (Full Sample)

This table compiles the description of the univariate test that is performed on the DA on the sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time t. Panel A provides descriptive information regarding the DA across three years. Panel B presents data regarding the changes in DA over time for the TURNOVER and non-TURNOVER sample. The changes in DA are from time (t_{+1}) to time (t_{-1}). The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA (DA): By Year

Variables	Time (t_{-1})	Time (t)	Time (t_{+1})
TURNOVER	0,010	– 0,002	0,009
	(0,102)	(0,814)	(0,687)
Constant	– 0,025**	– 0,002	– 0,022
	(0,038)	(0,920)	(0,610)
n=	2 735	2 735	2 735
Prob>F	0,102	0,814	0,687
R^2	0,000	0,000	0,000

Panel B: Changes in DA (ΔDA): (t_{+1}) – (t_{-1})

Variables	ΔDA
TURNOVER	– 0,008
	(0,345)
Constant	0,017
	(0,299)
n=	2 286
Prob>F	0,345
R^2	0,000

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

Regression with cluster is performed on a firm-level in this context because of the presence of stickiness amongst the performances of different reporting years within one particular firm. More specifically, former year's performance can have a deciding impact on the next year's performance, which makes the observations inter-connected to each other. Therefore, clustering has been considered necessary during the course of this research.

The results from the univariate analysis conducted are reported in Table 4 where the significance level for all three periods (time t_{-1}, time t, and time t_{+1}) comes out to be p>,1. These reveal that the TURNOVER sample failed to demonstrate any significant differences

over time in comparison to the non-TURNOVER observations. These results are not expected as there has been strong theoretical evidence which concludes how the departing CFOs have a tendency to increase DA as a camouflage for their poor performance or as a means of gaining higher benefits (Geiger & North, 2006). After the year of turnover, based on the extensive research that has been conducted on the behavior of newly appointed executives in general (Murphy & Zimmerman, 1993; Pourciau, 1993), it was considered reasonable to assume how lower levels of income would be observed in the initial years of appointment in TURNOVER firms to show more substantial growth over the periods to come and blame the predecessor upon their arrival. However, to further investigate if any plausible control factors have impacted these results, a Multivariate Regression Analysis is executed in the following sections.

5.3. Multivariate Analysis - H1

Building on the Univariate Regression Analysis, a Multivariate Regression Analysis is now conducted to further test the results presented above and various control factors have been employed as controls which prior research identified to be associated with DA. The analysis is driven across the three years surrounding a CFO Turnover: the year before turnover(t_{-1}), the year of turnover (t_t) and the year after the turnover (t_{+1}). DA (DA) are identified as the dependent variable whereas TURNOVER represents the independent variables driving results. Hence, following the inspiration given by Geiger and North (2006), the following Multivariate Model has been employed:

$$DA = a + b_1 TURNOVER + b_2 TA + b_3 DEBT + b_4 ROA + b_5 CFFO + b_6 GROWTH$$

Where:

DA	= DA as estimated from the cross-sectional Jones Model (1995)
TURNOVER	= 1 if there has been a CFO Turnover, 0 otherwise;

And the control variables employed are:

TA	= Natural logarithm of Total Assets;
Debt	= Debt divided by Total Assets;
ROA	= Return on Assets from the prior year;
CFFO	= Cash flow from Operations divided by Total Assets;
GROWTH	= Percentage growth in Sales.

The independent variable was TURNOVER which took the value of 1 in case of a CFO-turnover event and 0 otherwise. Following prior research, this model employs Total Assets (*TA*) as an indicator of the firm's size which is expected to be negatively related to DA based on the theory that larger firms are more susceptible to external pressures and their managers are more prone to undertaking income-smoothing activities. The second control employed is a measure of leverage based on the evidence that financial health is negatively associated with DA mainly because an increase in financing leads to an increased scrutiny of the lenders which results in a negative relationship between this control and DA (Jensen, 1986). *ROA* has been included to ensure control for prior performance and has been proven to be positively related to DA (Geiger & North, 2006).

Furthermore, based on various studies conducted regarding firm performance and its relative sensitivity to DA, cash flow from operations (*CFFO*) is being employed as a control with an expectation of a negative relationship (Dechow & Sloan, 1995). Lastly, based on the work by Menon and Williams (2004), *GROWTH* is employed to control for the relationship between DA and sales growth with an expectation of them being positively related. In consistency with Geiger and North (2006), an additional control variable of the reported DA level at time t_{-1} is taken into consideration for the ΔDA Model to cater for reversals of DA that are likely to take

place during the year of turnover. There is an expectation of a negative relationship between the DA at t_{-1} and the change in DA.

Table 5 below presents the results of the multivariate analysis that was performed on the full sample of CFO-turnover firms during the period 2001-2017. Regressions with cluster were run for the three periods (t_{-1}, t and t_{+1}) with DA as the dependent variable in Panel A, followed by another regression capturing the change in DA in Panel B.

Table 5 – Multivariate Analysis (Full Sample)

This table compiles the results of the multivariate test that is performed on the full sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time *t*. Panel A provides descriptive information regarding the DA across three years. Panel B presents data regarding the changes in DA over time for the TURNOVER and non-TURNOVER sample. The changes in DA are from time (t_{+1}) to time (t_{-1}). TURNOVER is a test variable that equals 1 if there is a CFO turnover event, and 0 otherwise. *DA(t_{-1})* represents the discretionary accrual level from the prior year. *Total Assets* is measured as the natural logarithm of lagged total assets. *Debt/Asset* is debt scaled by total assets. *ROA* (t_{-1}) is measured as net income divided by lagged total assets. *CFFO* is measured as cash flow from operations scaled by lagged total assets. *Sales Growth* is the percentage increase in sales over the year. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: Discretionary Accruals (DA): By Year

	Expected Sign	Time (t_{-1})	Time (t)	Time (t_{+1})
Variable				
TURNOVER	+/x/-	0,008	0,002	0,012
		(0,252)	(0,807)	(0,573)
Controls				
Total assets	–	0,002	0,002	0,002
		(0,137)	(0,140)	(0,125)
Debt/Assets	+	– 0,045**	– 0,046**	– 0,046**
		(0,035)	(0,035)	(0,034)
ROA (t_{-1})	+	0,080**	0,081**	0,080**
		(0,017)	(0,017)	(0,016)
CFFO/TA	–	– 0,117***	– 0,117***	– 0,117***
		(0,007)	(0,007)	(0,007)
Sales growth	–	0,000	0,000	0,000
		(0,854)	(0,843)	(0,869)
Constant	x	– 0,001	0,002	– 0,019
		(0,560)	(0,903)	(0,639)
n=		2295	2295	2295
Prob>F		0,010	0,059	0,045
R^2		0,022	0,022	0,023

Panel B: Changes in Discretionary Accruals (ΔDA): By Time

	Expected Sign	Time (t_{-1})
Variable		
TURNOVER	+/x/–	– 0,008
		(0,511)
Controls		
DA t_{-1}	–	0,046
		(0,657)
ΔTotal assets	–	0,017
		(0,694)
ΔDebt/Assets	+	– 0,208***
		(0,006)
ΔROA	+	0,014
		(0,910)
ΔCFFO/TA	–	– 0,261**
		(0,012)
ΔSales growth	–	0,001
		(0,123)
Constant	x	0,017
		(0,512)
n=		1853
Prob>F		0,000
R^2		0,069

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

The results from the multivariate analysis conducted are reported in is table 5 where the significance level for all three periods (time t_{-1}, time t, and time t_{+1}) comes out to be p>,1 along with a similar significance level for ΔDA. As reported in Table 5, no statistically significant differences are found between the TURNOVER and the non-TURNOVER samples which is consistent with the univariate results. These findings are contradictory to prior research and present evidence on how the role of a CFO in the Swedish context is yet to take over as a lever of the financial goals and a strategy setter for the company to be at par with what the western world has researched and presented evidence upon.

Accordingly, the results from both the univariate and the multivariate analysis are unable to form a concrete basis for accepting H1 regarding a CFO turnover event causing significant reductions on the DA.

5.4. The Time Model – H2

This model intends to detect the changing impact caused by the CFO turnover events on DA over the sample years 2001 to 2017. It tests H2 as follows:

$$DA = a + b_1 \text{ TURNOVER} + b_2 \text{ time}_1 + b_3 \text{ time}_2 + b_4 \text{ TURNOVER} * \text{time}_1 + b_5 \text{ TURNOVER} * \text{time}_2$$

Where:

DA	= DA;
TURNOVER	= 1 if a CFO turnover event takes place, otherwise 0;
$time_1$	= 1 if it refers to the period 2001-2004, otherwise 0;
$time_2$	= 1 if it refers to the period 2014-2017, otherwise 0.

The sample timeline is split into two periods, where $time_1$ and $time_2$ stands for the beginning and the end of the sample time period, respectively. As previously mentioned, it takes at least four consecutive reporting years to calculate DA for three consecutive years (t_{-1}, t_t and t_+) using the Modified Jones Model (1995). To capture the changing role, two timeline periods of four years each are identified as $time_1$ and $time_2$, i.e., 2001 - 2004 and 2014 - 2017, respectively. To be more precise, amongst the 240 TURNOVER observations identified in the years under consideration, 23 took place during 2001-2004 whilst 72 occurred between 2014-2017. For comparison purposes, the years 2005-2013 are employed (hereafter, referred to as the MIDDLE period).

As the Time Model presents, the first variable TURNOVER takes the value of 1 when there is a TURNOVER event during MIDDLE, where both $time_1$ and $time_2$ are inactive. As a result, coefficient b_1 illustrates the relationship between TURNOVER and the DA in the MIDDLE. Coefficients b_2 and b_3 depict the correlation between $time_1$ and $time_2$, and their respective DA levels. Two interaction variables corresponding to both $time_1$ and $time_2$ are included. The coefficient of these two variables can only be used to interpret the relativity of the reaction caused by the TURNOVER on DA in $time_1$ and $time_2$ to the MIDDLE rather than the actual level.

Separate regressions with cluster are initially conducted for each of the three years surrounding the TURNOVER (t_{-1}, t_t, t_{+1}), and then an equality test of coefficients is performed to see if the variable TURNOVER * $time_1$ is significantly different from the variable TURNOVER* $time_2$. Panel A of Table 6 shows the regression results from the separate time periods t_{-1}, t_t and t_{+1} for the full sample of all firms.

For the period t_{-1} which represents the final full reporting year of the outgoing CFO, there is a significantly ($p< ,05$) negative relationship found between the CFO turnover events and the DA. This means during MIDDLE, the companies hiring new CFOs exhibit significant reductions in DA for the year before the turnover (t_{-1}) under the leadership of the former

leaving CFO. However, the difference of this reaction between the MIDDLE and *time₁* is not significant (*p=,653*), nor is the difference between the MIDDLE and *time₂* (*p=,530*).

Table 6– Regression Analysis of the Time Model

The Time Model has been employed to detect the changing impact of the CFO Turnover events on DA over the sample years 2001-2017. TURNOVER equals 1 if a CFO turnover event takes place, otherwise 0; time1 takes the value of 1 if it refers to the period 2001-2004, otherwise 0; time2 takes the value of 1 if it refers to the period 2014-2017, otherwise 0. An equality test is conducted between TURNOVER*time₁ and TURNOVER*time₂. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Variables	Time (t_{-1})	Time (t)	Time (t_{+1})
TURNOVER	-0.015**	-0.002	0.006
	(0.019)	(0.832)	(0.535)
Time₁	-0.007	-0.007*	-0.006
	(0.110)	(0.093)	(0.213)
Time₂	0.006	0.009	0.015**
	(0.513)	(0.367)	(0.031)
Turnover*time₁	-0.009	0.025	0.009
	(0.653)	(0.162)	(0.690)
Turnover*time₁	0.011	-0.005	-0.048
	(0.530)	(0.775)	(0.423)
Constant	-0.005**	-0.007***	-0.007***
	(0.028)	(0.004)	(0.003)
n=	2,735	2,735	2,735
Prob>F	0.136	0.386	0.147
R2	0.002	0.001	0.004
Equality test between TURNOVER * Time₁ and TURNOVER * Time₂			
P-value	(0.439)	(0.239)	(0.371)

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

The additional equality test on these two groups also reports no significant differences (*p=,439*), which indicates that in time t_{-1}, the turnover effect on the years *time₁* is not significantly different from that of *time₂*. Nevertheless, the signs of the variable TURNOVER**time₁* and TURNOVER**time₂* are in line with the initial expectations. In the year before the TURNOVER, a reduction in DA for *time₁* is observed in comparison to MIDDLE whilst *time₂* demonstrates an increase. This supports the premise that with the passage of time, CFOs have started becoming more crucial in the upper echelons of the organization in terms of crafting and executing the corporate strategy (Datta & Iskandar - Datta, 2014). However, it is acknowledged that there is no evidence of significant results here, so no conclusions can be directly drawn.

The year of turnover, time *t*, during the period *time₁* exhibits a significantly negative relationship with the DA (*p< 0.1*). However, similar to t-1, the level of CFO turnover impact differs between MIDDLE and *time₁* as well as *time₂,* are turns out to be insignificant (*p= ,162; p= ,775*). Furthermore, the equality test results between these two interaction groups also report no significant differences (*p=,439*). In comparison to time t-1, the sign of the relative turnover impact in *time₁* is positive which changes to being negative in *time₂*. However, this potential observation is not supported by any statistical significance, and therefore cannot be reported.

The time t_{+1} result in Table 6 indicates *time₂* has a significant positive impact on the DA level (*p<,05*). Meanwhile, there is no strong evidence of the differences of the turnover impacts between the two groups – the relative CFO turnover impact level of *time₁* compared to year MIDDLE (*p=,690*), and that between MIDDLE and *time₂* (*p=,423*). No significant difference is found between these two comparison groups either (*p=,371*). On the other hand, the signs of

these two relative level groups go from being positive in $time_1$ to negative in $time_2$. With t+1 being the first year of control of the incoming CFO, it can be reasoned with the passage of time and the rising recognition of the CFO role, the incoming CFOs have started to be more concerned about their reputation and try to blame the predecessors, whilst paving way for demonstrating future growth (Geiger & North, 2006). However, yet again, it is acknowledged that the findings show no significant proof.

5.5. Sub-sample Analysis

Upon reaching evidence of the lack of involvement of the role of a CFO as an important driver of the company in Sweden, this thesis attempts to further dig the characteristics of CFOs. This is done to gather evidence of any characteristic that plays an important role in bringing to the surface the role a CFO in managing the earnings of a company through impacting the DA. Prior research has discussed various attributes and how they can contribute towards the actions that executives eventually undertake.

Table 7 – Descriptive Statistics for the Sub-sample Analysis

This table presents a description of DA for NASDAQ OMX Stockholm's Top 30 Companies sub-sample set for the period 2001-2017 preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time *t*. The significance level in Panel A represents the comparison between t_{+1} and t_{-1} to evaluate if the DA level has substantially changed before and after TURNOVER both the TURNOVER and non-TURNOVER observations. The significance level in Panel B represents the comparative results of the change in DA (ΔDA) between the TURNOVER and non-TURNOVER observations. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: Horizontal changes in DA – By Time

		Time (t_{-1})		Time (t)		Time (t_{+1})	
DA	**n**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
DA-nonTURNOVER	241	– 0,004	– 0,006	– 0,005	– 0,007	– 0,004	– 0,007
DA-TURNOVER	29	– 0,010	– 0,017	– 0,017	– 0,009	– 0,009	– 0,003
DA by Departure - *Voluntary*	27	– 0,012	– 0,017	– 0,014	– 0,008	– 0,008	– 0,003
DA by Departure - *Forced*	2	0,003	0,003	– 0,061	– 0,061	– 0,041	– 0,041
DA by Origin - *Internal by Internal*	18	– 0,010	– 0,018	– 0,020	– 0,013	– 0,010	– 0,003
DA by Origin - *Internal by External*	11	– 0,011	– 0,016	– 0,014	– 0,003	– 0,014	– 0,003
DA by Gender - *Male by Male*	24	– 0,005	– 0,016	– 0,020	– 0,011	– 0,010	0,000
DA by Gender - *Male by Female*	3	– 0,053	– 0,059	– 0,005	– 0,003	– 0,016	– 0,018
DA by Gender - *Female by Male*	2	– 0,008	– 0,008	– 0,003	– 0,003	– 0,003	– 0,003
DA by Education - *MSc by MSc*	8	– 0,010	– 0,016	– 0,019	– 0,008	– 0,006	– 0,004
DA by Education - *MSc by BSc*	5	– 0,015	– 0,018	– 0,035	– 0,009	– 0,034	– 0,041
DA by Education - *BSc to MSc*	5	0,037	0,024**	– 0,009	– 0,003	– 0,016	– 0,018
DA by Education - *BSc to BSc*	11	– 0,030**	– 0,037**	– 0,011	– 0,013	0,001	0,003

Panel B: Changes in DA (ΔDA) – *Time(t_{+1})* – Time (t_{-1})

	n	**Mean**	**Median**
ΔDA-nonTurnover	205	0,004	0,000
ΔDA-TURNOVER	26	0,002	0,003
ΔDA by Departure - *Voluntary*	25	0,001	0,001
ΔDA by Departure - *Forced*	1	0,005	0,005
ΔDA by Origin - *Internal by Internal*	16	0,001	0,006
ΔDA by Origin - *Internal by External*	10	0,003	– 0,001
ΔDA by Gender - *Male by Male*	21	– 0,005	0,001
ΔDA by Gender - *Male by Female*	3	0,036	0,030
ΔDA by Gender - *Female by Male*	2	0,022	0,022
ΔDA by Education - *MSc by MSc*	6	0,007	– 0,009
ΔDA by Education - *MSc by BSc*	4	– 0,021	– 0,055
ΔDA by Education - *BSc to MSc*	5	– 0,053	– 0,027**
ΔDA by Education - *BSc to BSc*	11	0,032**	0,022**

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*
p-values were calculated using two tailed t-tests (Wilcoxon rank sum tests) for differences in means (medians).

Hence, a sub-sample univariate and multivariate analysis was compiled based on the TURNOVER observations in NASDAQ OMX Stockholm's Top 30 Companies for the years 2001-2017, an overview of which has been presented in Table 7. To ensure consistency with the full sample employed initially, all financial services and utilities firms were excluded along with those that had a foreign currency presentation which led to a final sample of 17 companies. To ensure that the effects of the change of the CFO are fully captured and the characteristic of the leaving CFO are acknowledged, an analysis of the transitioning characteristics of the outgoing versus incoming CFOs was conducted on this sub-sample through 4 broad categorical classifications that are being presented in the upcoming sections, namely *Departure, Origin, Gender and Education* to test for any plausible influences. In total, 241 non-TURNOVER and 29 TURNOVER observations were found for this sub-sample.

When observing the transitions of the CFOs through the DA levels from t+1 to t-1, a significance of 5% for the median was observed for the BSc to MSc category and a significance of 5% for both the mean and the median for the BSc to BSc category. This was further supported by the significance levels of the change in DA in Panel B where the TURNOVER sample was compared to the non-TURNOVER. A deeper analysis of the categories in Table 7 is presented in the proceeding sections.

5.4.1. Voluntary and Forced Departures

Various studies that have discussed the impact of the difference in succession processes on earnings management were used to form a basis for the subset of 'Voluntary CFO Departures (Panel A)' versus a subset of 'Forced CFO Departures (Panel B)'. The results presented in Table 8 and Table 9, however, are insignificant which restrains this research from forming concrete conclusions. One of the key important factors that has restricted in attaining a conclusive result could be the lack of information that surrounds a forced departure. Companies refrain from openly announcing events of such turnovers which makes it harder to capture these events and thus accurately analyzing them. Prior literature has established that post forced departures, a significant improvement in earnings is observed (Denis and Denis 1995), however, based on the insignificance of results and the limited sub-sample, such a conclusion cannot be drawn from the empirics stated.

Table 8 – Univariate Analysis (Sub-sample based on types of departure)

This table compiles the results of the univariate test that is performed on the sub-sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time t for the Voluntary vs Forced category. It provides descriptive information regarding the DA across three years as well as the changes in DA over time for the TURNOVER and non-TURNOVER sample, of this specific category. The changes in DA are from time (t_{+1}) to time (t_{-1}). The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - Voluntary Turnovers

Variables	Time (t_{-1})	Time (t)	Time (t_{+1})	Variables	ΔDA
TURNOVER	0,001	– 0,001	0,006	TURNOVER	– 0,003
	(0,869)	(0,811)	(0,420)		(0,841)
Constant	– 0,013***	– 0,013***	– 0,013***	Constant	0,004*
	(0,000)	(0,001)	(0,001)		(0,064)
n=	268	268	268	n=	231
Prob>F	0,869	0,811	0,420	Prob>F	0,841
R^2	0,000	0,000	0,002	R2	0,000

Panel B: DA - Forced Turnovers

Variables	Time (t_{-1})	Time (t)	Time (t_{+1})	Variables	ΔDA
TURNOVER	0,017	– 0,048	– 0,014	TURNOVER	0,001
	(0,649)	(0,193)	(0,163)		(0,669)
Constant	– 0,013***	– 0,013***	– 0,013***	Constant	0,004*
	(0,001)	(0,001)	(0,001)		(0,064)
n=	243	243	243	n=	207
Prob>F	0,649	0,193	0,163	Prob>F	0,669
R^2	0,001	0,010	0,001	R2	0,000

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

Table 9 – Multi-variate Analysis (Sub–sample based on types of departures)

This table compiles the results of the multivariate test that is performed on the sub-sample set of the Top 30 Nasdaq Stockholm's listed companies for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time *t* time *t* for the Voluntary vs Forced Category. TURNOVER is a test variable that equals 1 if there is a CFO turnover event, and 0 otherwise. *DA(t_{-1})* represents the discretionary accrual level from the prior year. *Total Assets* is measured as the natural logarithm of lagged total assets. *Debt/Asset* is debt scaled by total assets. *ROA* (t_{-1}) is measured as net income divided by lagged total assets. *CFFO* is measured as cash flow from operations scaled by lagged total assets. *Sales Growth* is the percentage increase in sales over the year. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - Voluntary Turnovers

	Exp. Sign	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**		**Exp. Sign**	**ΔDA**
Variables					**Variables**		
TURNOVER	+/x/–	– 0,002	– 0,004	0,007	TURNOVER	+/x/–	0,002
		(0,806)	(0,502)	(0,345)			(0,768)
Controls					**Controls**		
Total assets	–	– 0,001	– 0,001	– 0,002	DA (t_{-1})	–	– 0,894***
		(0,706)	(0,710)	(0,637)			(0,000)
Debt/Assets	+	– 0,023*	– 0,022*	– 0,026**	ΔTotal assets	–	0,040**
		(0,087)	(0,062)	(0,042)			(0,026)
ROA (t_{-1})	+	0,217***	0,217***	0,222***	ΔDebt/Assets	+	– 0,039
		(0,003)	(0,003)	(0,003)			(0,319)
CFFO/TA	–	– 0,313***	– 0,315***	– 0,317***	ΔROA	+	– 0,022
		(0,004)	(0,004)	(0,003)			(0,787)
Sales growth	–	0,054*	0,054*	0,054*	ΔCFFO/TA	–	– 0,174*
		(0,080)	(0,086)	(0,085)			(0,099)
Constant	x	0,036	0,035	0,040	ΔSales growth	–	0,015
		(0,464)	(0,460)	(0,385)			(0,484)
					Constant	x	– 0,011***
							(0,001)
n=		242	242	242	n=		201
Prob>F		0,035	0,005	0,006	Prob>F		0,000
R^2		0,156	0,157	0,159	R^2		0,477

Panel B: DA - Forced Turnovers

	Exp. Sign	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**		**Exp. Sign**	**ΔDA**
Variable					**Variable**		
TURNOVER	+/x/–	– 0,005	– 0,002	0,001	TURNOVER	+/x/–	– 0,021
		(0,890)	(0,727)	(0,959)			(0,172)
Controls					**Controls**		
Total assets	–	– 0,002	– 0,002	– 0,002	DA (t_{-1})	–	– 0,836***
		(0,586)	(0,591)	(0,582)			(0,000)
Debt/Assets	+	– 0,033**	– 0,033**	– 0,033**	ΔTotal assets	–	0,038**
		(0,016)	(0,016)	(0,018)			(0,038)
ROA (t_{-1})	+	0,218***	0,217***	0,217***	ΔDebt/Assets	+	– 0,044
		(0,007)	(0,007)	(0,009)			(0,273)
CFFO/TA	–	– 0,312***	– 0,311**	– 0,311**	ΔROA	+	– 0,029
		(0,010)	(0,011)	(0,013)			(0,749)
Sales growth	–	0,056*	0,056*	0,056*	ΔCFFO/TA	–	– 0,221*
		(0,092)	(0,091)	(0,092)			(0,069)
Constant	x	0,051	0,051	0,051	ΔSales growth	–	0,017
		(0,341)	(0,343)	(0,340)			(0,459)
					Constant	x	– 0,010***
							(0,002)
n=		217	217	217	n=		178
Prob>F		0,048	0,000	0,011	Prob>F		0,000
R^2		0,148	0,148	0,148	R^2		0,430

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

5.4.2. Internal and External Replacements

As put forward by Engel, Gao and Wang (2013), firms have been proven to possess an inclination towards appointing an external CFO primarily due to their objective attitude and their proven positive correlation with the financial reporting quality. On the contrary, an opposing view was presented by Kuang, Qin and Wielhouwer (2014), who proposed that a hike in income-increasing manipulation activities is observed for executives recruited from outside because of their stronger desire to demonstrate their abilities in the initial years of appointment. However, to fully capture the effects of the CFO characteristics, which can be best illustrated by analyzing closely the transitions. Thus, every CFO turnover event in the sub-sample was further researched and categorized into whether it was a transition from an 'Internal to External CFO', 'Internal to Internal CFO', 'External to External CFO' or from an 'External to Internal CFO'. These categories were further limited based on the perception that an executive shall possess internal traits after their employment with the company regardless of being an internal or external hire. Based on this limitation, all old CFOs were considered as internal hires and a univariate and a multivariate regression analysis was performed by interacting following two categories in this sub-sample: 'Internal by External Replacements (Panel A)' and 'Internal by Internal Replacements (Panel B)'.

The results of these tests are presented in Table 10 and 11 which depict only a small, insignificant change on the interaction of the two sample subsets with the TURNOVER variable. The results found were inconclusive when compared to Geiger and North (2006) as no statistical significance was observed for the tendency of the external CFO to engage in earnings manipulation when put against comparison to their predecessor. An important point to notice here is the small sub-sample employed which could be one of the reasons for the lack of results.

Table 10 – Univariate Analysis (Sub-sample based on types of origin)

This table compiles the results of the univariate test that is performed on the sub-sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time t for the origins category. It provides descriptive information regarding the DA across three years as well as the changes in DA over time for the TURNOVER and non-TURNOVER sample, of this specific category. The changes in DA are from time (t_{+1}) to time (t_{-1}). The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - An Internal by Internal Replacement

Variables	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**	**Variables**	**ΔDA**
TURNOVER	0,003	– 0,007	0,003	TURNOVER	– 0,003
	(0,859)	(0,422)	(0,744)		(0,876)
Constant	– 0,013***	– 0,013***	– 0,013***	Constant	0,004*
	(0,001)	(0,001)	(0,001)		(0,064)
n=	259	259	259	n=	221
Prob>F	0,859	0,422	0,744	Prob>F	0,876
R^2	0,000	0,002	0,000	R2	0,000

Panel B: DA - An Internal by External Replacement

Variables	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**	**Variables**	**ΔDA**
TURNOVER	0,002	– 0,001	– 0,001	TURNOVER	– 0,001
	(0,850)	(0,890)	(0,890)		(0,939)
Constant	– 0,013***	– 0,013***	– 0,013***	Constant	0,004*
	(0,002)	(0,001)	(0,001)		(0,064)
n=	252	252	252	n=	215
Prob>F	0,850	0,890	0,890	Prob>F	0,939
R^2	0,000	0,000	0,000	R2	0,000

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

Table 11 – Multivariate Analysis (Sub-sample based on types of origin)

This table compiles the results of the multivariate test that is performed on the sub-sample set of the Top 30 Nasdaq Stockholm's listed companies for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time *t* time *t* for the types of origin. TURNOVER is a test variable that equals 1 if there is a CFO turnover event, and 0 otherwise. *DA(t_{-1})* represents the discretionary accrual level from the prior year. *Total Assets* is measured as the natural logarithm of lagged total assets. *Debt/Asset* is debt scaled by total assets. *ROA* (t_{-1}) is measured as net income divided by lagged total assets. *CFFO* is measured as cash flow from operations scaled by lagged total assets. *Sales Growth* is the percentage increase in sales over the year. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - Internal by Internal Replacements

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Variable					**Variable**		
TURNOVER	+/x/–	– 0,007	– 0,006	0,006	TURNOVER	+/x/–	0,000
		(0,608)	(0,520)	(0,505)			(0,965)
Controls					**Controls**		
Total assets	–	– 0,002	– 0,002	– 0,003	DA (t_{-1})	–	– 0,875***
		(0,576)	(0,563)	(0,489)			(0,000)
Current ratio	+	– 0,025*	– 0,025**	– 0,029**	ΔTotal assets	–	0,037**
		(0,055)	(0,025)	(0,029)			(0,036)
ROA (t_{-1})	+	0,222***	0,218***	0,221**	ΔCurrent ratio	+	– 0,033
		(0,003)	(0,003)	(0,003)			(0,401)
CFFO/TA	–	– 0,330***	– 0,327***	– 0,330***	ΔROA	+	– 0,024
		(0,003)	(0,004)	(0,002)			(0,772)
Sales growth	–	0,058*	0,057*	0,058*	ΔCFFO/TA	–	– 0,171
		(0,074)	(0,079)	(0,074)			(0,113)
Constant	x	0,048	0,049	0,054	ΔSales growth	–	0,021
		(0,364)	(0,344)	(0,273)			(0,342)
					Constant	x	– 0,011***
							(0,001)
n=		287	287	287	n=		192
Prob>F		0,000	0,000	0,000	Prob>F		0,000
R^2		0,129	0,132	0,131	R^2		0,469

Panel B: DA - Internal by External Replacements

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Independent Variable					**Independent Variable**		
TURNOVER	+/x/-	0,005	– 0,007	– 0,007	TURNOVER	+/x/–	0,003
		(0,617)	(0,351)	(0,351)			(0,787)
Controls					**Controls**		
Total assets	–	– 0,002	– 0,002	– 0,002	DA (t_{-1})	–	– 0,850***
		(0,672)	(0,684)	(0,684)			(0,000)
Current ratio	+	– 0,032**	– 0,031**	– 0,031**	ΔTotal assets	–	0,041**
		(0,039)	(0,035)	(0,035)			(0,027)
ROA (t_{-1})	+	0,222***	0,220***	0,220***	ΔCurrent ratio	+	– 0,051
		(0,008)	(0,009)	(0,009)			(0,207)
CFFO/TA	–	– 0,310**	– 0,311**	– 0,311**	ΔROA	+	– 0,024
		(0,012)	(0,012)	(0,012)			(0,787)
Sales growth	–	0,055*	0,056*	0,056*	ΔCFFO/TA	–	– 0,225*
		(0,086)	(0,081)	(0,081)			(0,054)
Constant	x	0,043	0,042	0,042	ΔSales growth	–	0,012
		(0,409)	(0,409)	(0,409)			(0,608)
					Constant	x	– 0,011***
							(0,002)
n=		226	226	226	n=		187
Prob>F		0,025	0,006	0,006	Prob>F		0,000
R^2		0,146	0,147	0,147	R^2		0,440

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

5.4.3. Male and Female Replacements

With the rising research on the impact of an executive's gender upon the decision-making processes and reported earnings (Peni & Vähämaa, 2010), there has been evidence found which suggests that females tend to undertake more conservative accounting methods and hence, are able to exhibit a higher quality of DA. In the categorization of the sub-samples, similar reasoning as the preceding section was employed to perform interactions on subsets classified by gender and based on the transitioning characteristics of the incoming and outgoing CFOs. Three categories were found to exist in the sub-sample set employed: 'Male by Male Replacement (Panel A)', 'Male by Female Replacement (Panel B)', and 'Female by Male Replacement (Panel C)' which were tested univariately and multivariable as show in the Table 12 and 13 below, respectively[3].

The results from these analyses also demonstrate inconclusiveness and insignificance to a large extent, except for the outcome at t_{-1} in Panel B of both the tables, which is the year before the TURNOVER event for an outgoing male CFO and an incoming female CFO. The results demonstrate a negative relationship at a significance level of 5% which is contrary to the evidence presented by relevant literature, which stated that the outgoing male executives would show more aggression in a last attempt to save their jobs or take bigger credit as compared to outgoing female executives (Wei & Xie, 2015).

Table 12 – Univariate Analysis (Sub-sample based on gender)

This table compiles the results of the univariate test that is performed on the sub-sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time t for the gender Forced category. It provides descriptive information regarding the DA across three years as well as the changes in DA over time for the TURNOVER and non-TURNOVER sample, of this specific category. The changes in DA are from time (t_{+1}) to time (t_{-1}). The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - Male by Male Replacement

Variables	Time (t_{-1})	Time (t)	Time (t_{+1})	Variables	ΔDA
TURNOVER	0,009	– 0,007	0,004	TURNOVER	– 0,009
	(0,404)	(0,258)	(0,576)		(0,556)
Constant	– 0,014***	– 0,013***	– 0,014***	Constant	0,004*
	(0,001)	(0,001)	(0,001)		(0,064)
n=	265	265	265	n=	226
Prob>F	0,404	0,258	0,576	Prob>F	0,556
R^2	0,004	0,002	0,001	R2	0,002

Panel B: DA - Male by Female Replacement

Variables	Time (t_{-1})	Time (t)	Time (t_{+1})	Variables	ΔDA
TURNOVER	– 0,041**	0,007	– 0,004	TURNOVER	0,032
	(0,041)	(0,723)	(0,552)		(0,161)
Constant	– 0,012***	– 0,013***	– 0,013***	Constant	0,004*
	(0,002)	(0,001)	(0,002)		(0,064)
n=	244	244	244	n=	208
Prob>F	0,041	0,723	0,553	Prob>F	0,161
R^2	0,010	0,000	0,000	R2	0,005

Panel C: DA - Female by Male Replacement

Variables	Time (t_{-1})	Time (t)	Time (t_{+1})	Variables	ΔDA
TURNOVER	0,004	0,010	0,010	TURNOVER	0,017
	(0,751)	(0,646)	(0,646)		(0,642)
Constant	– 0,013*	– 0,013***	– 0,013***	Constant	0,004*
	(0,001)	(0,001)	(0,001)		(0,064)
n=	243	243	243	n=	207
Prob>F	0,751	0,646	0,646	Prob>F	0,643
R^2	0,000	0,000	0,000	R2	0,001

[3] The category of Female by Female replacement of CFOs did not exist in the sub-sample employed.

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

Digging further into the plausible controls as illustrated by Panel B of Table 13, it can be seen that earnings management for this TURNOVER event was negatively and significantly impacted by sales growth whereas positively and significantly impacted by leverage. Opposed to prior evidence, the results demonstrate a decrease in DA at t-1. This raises the question of how much influence a turnover event can have on DA, and if there are other factors responsible that are disturbing the empirics from their expected levels. Furthermore, based on the small sub-sample employed, no concrete conclusions can be drawn.

Table 13 – Multivariate Analysis (Sub–sample based on gender)

This table compiles the results of the multivariate test that is performed on the sub-sample set of the Top 30 Nasdaq Stockholm's listed companies for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time *t* time *t* for the gender category. TURNOVER is a test variable that equals 1 if there is a CFO turnover event, and 0 otherwise. *DA(t_{-1})* represents the discretionary accrual level from the prior year. *Total Assets* is measured as the natural logarithm of lagged total assets. *Debt/Asset* is debt scaled by total assets. *ROA (t_{-1})* is measured as net income divided by lagged total assets. *CFFO* is measured as cash flow from operations scaled by lagged total assets. *Sales Growth* is the percentage increase in sales over the year. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - Male by Male Replacement

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Variable					**Variable**		
TURNOVER	+/x/-	0,004	– 0,009	0,005	TURNOVER	+/x/–	0,000
		(0,716)	(0,176)	(0,566)			(0,990)
Controls					**Controls**		
Total assets	–	– 0,002	– 0,001	– 0,002	DA (t_{-1})	–	– 0,879***
		(0,642)	(0,745)	(0,624)			(0,000)
Debt/Assets	+	– 0,029**	– 0,027**	– 0,029**	ΔTotal assets	–	0,039**
		(0,028)	(0,030)	(0,021)			(0,030)
ROA (t_{-1})	+	0,207***	0,207***	0,211***	ΔDebt/Assets	+	– 0,042
		(0,004)	(0,004)	(0,004)			(0,298)
CFFO/TA	–	– 0,315***	– 0,320***	– 0,318***	ΔROA	+	– 0,016
		(0,004)	(0,005)	(0,003)			(0,841)
Sales growth	–	0,061*	0,058*	0,060*	ΔCFFO/TA	–	– 0,180
		(0,056)	(0,069)	(0,060)			(0,104)
Constant	x	0,043	0,037	0,044	ΔSales growth	–	0,017
		(0,381)	(0,440)	(0,350)			(0,435)
					Constant	x	– 0,011***
							(0,001)
n=		238	238	238	n=		197
Prob>F		0,0251	0,005	0,013	Prob>F		0,000
R^2		0,162	0,165	0,162	R^2		0,471

Panel B: DA - Male by Female Replacement

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Variable					**Variable**		
TURNOVER	+/x/–	– 0,039**	0,006	0,003	TURNOVER	+/x/–	0,004
		(0,042)	(0,652)	(0,730)			(0,730)
Controls					**Controls**		
Total assets	–	– 0,003	– 0,003	– 0,003	DA (t_{-1})	–	– 0,841***
		(0,499)	(0,546)	(0,540)			(0,000)
Debt/Assets	+	– 0,029**	– 0,033**	– 0,033**	ΔTotal assets	–	0,037**
		(0,028)	(0,017)	(0,019)			(0,039)
ROA (t_{-1})	+	0,223***	0,227***	0,227***	ΔDebt/Assets	+	– 0,043
		(0,007)	(0,007)	(0,007)			(0,280)
CFFO/TA	–	– 0,319***	– 0,321***	– 0,322***	ΔROA	+	– 0,030

		(0,010)	(0,010)	(0,010)			(0,734)
Sales growth	–	0,055*	0,054*	0,054*	ΔCFFO/TA	–	– 0,215*
		(0,094)	(0,098)	(0,098)			(0,069)
Constant	x	0,057	0,055	0,055	ΔSales growth	–	0,018
		(0,302)	(0,315)	(0,310)			(0,436)
					Constant	x	– 0,010***
							(0,002)
n=		218	218	218	n=		180
Prob>F		0,021	0,058	0,065	Prob>F		0,000
R^2		0,163	0,152	0,152	R^2		0,436

Panel C: DA - Female by Male Replacement

	Exp. Sign	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**		**Exp. Sign**	**ΔDA**
Variable					**Variable**		
TURNOVER	+/x/–	0,002	0,003	0,003	TURNOVER	+/x/–	0,017
		(0,939)	(0,899)	(0,899)			(0,586)
Controls					**Controls**		
Total assets	–	– 0,002	– 0,002	– 0,002	DA (t_{-1})	–	– 0,843***
		(0,579)	(0,581)	(0,581)			(0,000)
Debt/Assets	+	– 0,031**	– 0,031**	– 0,031**	ΔTotal assets	–	0,038**
		(0,027)	(0,026)	(0,026)			(0,037)
ROA (t_{-1})	+	0,226***	0,226***	0,226***	ΔDebt/Assets	+	– 0,039
		(0,008)	(0,008)	(0,008)			(0,328)
CFFO/TA	–	– 0,315**	– 0,314**	– 0,314**	ΔROA	+	– 0,031
		(0,012)	(0,012)	(0,012)			(0,732)
Sales growth	–	0,054	0,054	0,054	ΔCFFO/TA	–	– 0,216*
		(0,103)	(0,103)	(0,103)			(0,071)
Constant	x	0,051	0,051	0,051	ΔSales growth	–	0,016
		(0,357)	(0,359)	(0,359)			(0,485)
					Constant	x	– 0,011***
							(0,002)
n=		217	217	217	n=		179
Prob>F		0,085	0,086	0,086	Prob>F		0,000
R^2		0,147	0,147	0,147	R^2		0,431

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

5.4.4. BSc and MSc Replacements

With an ever-growing demand of an increasingly educated human capital by companies, education was considered to be a critical factor that could impact the earnings quality during the analysis conducted. Research was conducted to determine the education levels of the outgoing and incoming CFOs in the sub-sample employed and sorted into two categories: Equivalent to Bachelors (referred to as BSc) and Equivalent to Masters (referred to as MSc). Based on this categorical classification, a univariate (Table 14) and a multivariate analysis (Table 15) on four sub-sample sets was further drawn depicting the transition of education levels of CFOs as follows: 'MSc by MSc Replacement (Panel A)', 'MSc by BSc Replacement (Panel B)', 'BSc by MSc Replacement (Panel C) and 'BSc by BSc Replacement (Panel D)'.

As a start, the univariate analysis presented in Table 14 illustrates an increase in DA at a significance level of 5% for the BSc by MSc Replacement category (Panel C). Table 15 (Panel C) builds on these observations by considering the plausible control factors and demonstrates a significantly positive impact of sales growth and a significantly negative impact of leverage on earnings management. Based on both these tables and the 10% significance level for ΔDA, it can be seen that at t_{-1} an increase in DA was observed which implies that the outgoing BSc CFO engaged in earnings management which fits the expectation of both theories; the incentives an outgoing CFO in general has to engage in such measures for personal benefits

and how a relatively lower education takes away the conservatism and pushes them to engage in such behavior.

The univariate analysis in Table 14 for Panel D (BSc by BSc Replacement) demonstrates a negative significance level of 5% at t_{-1} which is further validated by the multivariate analysis (Table 15) along with an additional positive DA result at time t_{+1} at 10% significance. Based on the similar qualifications of both the outgoing and the incoming CFOs, the results are contradictory. The insignificance level of ΔDA further demonstrates that significance levels at t_{+1} and t_{-1} can be distorted by the lack of sufficient sample set, as mentioned previously. This explains why no significance level detected on ΔDA for Panel D, whereas significance has been observed at t_{+1} and t_{-1} for the same category.

Comparing Panel C and Panel D, it can be observed for both similarly qualified outgoing CFOs, their association with DA shows contradictory results (in t_{-1}) and no conclusions based on the prior literature can be made based primarily on the sample size chosen which resulted in a lack of significant results in all categories.

Table 14 – Univariate Analysis (Sub-sample based on education)

This table compiles the results of the univariate test that is performed on the sub-sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time t for the education category. It provides descriptive information regarding the DA across three years as well as the changes in DA over time for the TURNOVER and non-TURNOVER sample, of this specific category. The changes in DA are from time (t_{+1}) to time (t_{-1}). The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - MSc by MSc Replacement

Variables	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**	**Variables**	**ΔDA**
TURNOVER	0,003	– 0,007	0,007	TURNOVER	0,003
	(0,873)	(0,526)	(0,652)		(0,845)
Constant	– 0,013***	– 0,013***	– 0,013***	Constant	0,004*
	(0,001)	(0,001)	(0,001)		(0,064)
n=	249	249	249	n=	211
Prob>F	0,873	0,526	0,652	Prob>F	0,845
R^2	0,000	0,001	0,001	R2	0,000

Panel B: DA - MSc by BSc Replacement

Variables	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**	**Variables**	**ΔDA**
TURNOVER	– 0,002	– 0,022	– 0,021	TURNOVER	– 0,025
	(0,940)	(0,209)	(0,209)		(0,620)
Constant	– 0,013***	– 0,013***	– 0,013***	Constant	0,004*
	(0,001)	(0,001	(0,002)		(0,064)
n=	246	246	246	n=	209
Prob>F	0,940	0,209	0,209	Prob>F	0,620
R^2	0,000	0,005	0,004	R2	0,004

Panel C: DA - BSc by MSc Replacement

Variables	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**	**Variables**	**ΔDA**
TURNOVER	0,051**	0,003	– 0,003	TURNOVER	– 0,057*
	(0,048)	(0,797)	(0,648)		(0,062)
Constant	– 0,014***	– 0,013***	– 0,013***	Constant	0,004*
	(0.000)	(0,001)	(0,002)		(0,064)
n=	246	246	246	n=	210
Prob>F	0,048	0,797	0,648	Prob>F	0,062
R^2	0,027	0,000	0,000	R2	0,025

Panel D: DA - BSc by BSc Replacement

Variables	**Time (t_{-1})**	**Time (t)**	**Time (t_{+1})**	**Variables**	**ΔDA**
TURNOVER	– 0,019**	0,001	0,015	TURNOVER	0,028***
	(0,031)	(0,795)	(0,159)		(0,004)
Constant	– 0,012***	– 0,013***	– 0,013***	Constant	0,004*
	(0,002)	(0,001)	(0,001)		(0,064)
n=	252	252	252	n=	216
Prob>F	0,031	0,795	0,159	Prob>F	0,005
R^2	0,008	0,000	0,005	R2	0,013

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

Table 15 – Multivariate Analysis (Sub–sample based on education)

This table compiles the results of the multivariate test that is performed on the sub-sample set of the Top 30 Nasdaq Stockholm's listed companies for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time *t* time *t* for the education. TURNOVER is a test variable that equals 1 if there is a CFO turnover event, and 0 otherwise. *DA(t_{-1})* represents the discretionary accrual level from the prior year. *Total Assets* is measured as the natural logarithm of lagged total assets. *Debt/Asset* is debt scaled by total assets. *ROA (t_{-1})* is measured as net income divided by lagged total assets. *CFFO* is measured as cash flow from operations scaled by lagged total assets. *Sales Growth* is the percentage increase in sales over the year. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: DA - MSc by MSc Replacement

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Variable					**Variable**		
TURNOVER	+/x/-	– 0,005	– 0,008	0,003	TURNOVER	+/x/–	– 0,002
		(0,705)	(0,627)	(0,775)			(0,931)
Controls					**Controls**		
Total assets	–	– 0,003	– 0,003	– 0,003	DA (t_{-1})	–	– 0,846***
		(0,496)	(0,491)	(0,512)			(0,000)
Debt/Assets	+	– 0,029**	– 0,029**	– 0,030**	ΔTotal assets	–	0,038**
		(0,046)	(0,035)	(0,033)			(0,034)
ROA (t_{-1})	+	0,228***	0,228***	0,227***	ΔDebt/Assets	+	– 0,040
		(0,007)	(0,007)	(0,008)			(0,298)
CFFO/TA	–	– 0,324***	– 0,325***	– 0,326***	ΔROA	+	– 0,036
		(0,008)	(0,008)	(0,007)			(0,687)
Sales growth	–	0,060*	0,059*	0,059*	ΔCFFO/TA	–	– 0,209*
		(0,075)	(0,076)	(0,079)			(0,065)
Constant	x	0,057	0,058	0,056	ΔSales growth	–	0,015
		0,306	(0,306)	(0,311)			(0,499)
					Constant	x	– 0,011***
							(0,002)
n=		222	222	222	n=		182
Prob>F		0,030	0,058	0,052	Prob>F		0
R^2		0,159	0,160	0,159	R^2		0,427

Panel B: DA - MSc by BSc Replacement

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Variable					**Variable**		
TURNOVER	+/x/–	0,000	– 0,014	– 0,006	TURNOVER	+/x/–	– 0,012
		(0,988)	(0,440)	(0,751)			(0,604)
Controls					**Controls**		
Total assets	–	– 0,002	– 0,002	– 0,002	DA (t_{-1})	–	– 0,879***
		(0,645)	(0,673)	(0,682)			(0,000)
Debt/Assets	+	– 0,032**	– 0,031**	– 0,031**	ΔTotal assets	–	0,038**
		(0,021)	(0,030)	(0,025)			(0,038)
ROA (t_{-1})	+	0,229***	0,228***	0,224***	ΔDebt/Assets	+	– 0,043
		(0,005)	(0,007)	(0,006)			(0,278)
CFFO/TA	–	– 0,320***	– 0,322***	– 0,316***	ΔROA	+	– 0,026
		(0,007)	(0,008)	(0,007)			(0,773)
Sales growth	–	0,054*	0,051	0,055*	ΔCFFO/TA	–	– 0,178
		(0,066)	(0,127)	(0,071)			(0,127)
Constant	x	0,046	0,044	0,044	ΔSales growth	–	0,022
		(0,382)	(0,397)	(0,419)			(0,359)
					Constant	x	– 0,011***
							(0,002)
n=		220	220	220	n=		181
Prob>F		0,053	0,000	0,057	Prob>F		0
R^2		0,156	0,159	0,157	R^2		0,455

Panel C: DA - BSc by MSc Replacement

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Variable					**Variable**		
TURNOVER	+/x/−	0,039**	− 0,014	− 0,006	TURNOVER	+/x/−	− 0,014*
		(0,023)	(0,375)	(0,520)			(0,059)
Controls					**Controls**		
Total assets	−	− 0,002	− 0,002	− 0,002	DA (t_{-1})	−	− 0,838***
		(0,567)	(0,614)	(0,611)			(0,000)
Debt/Assets	+	− 0,033**	− 0,029**	− 0,029**	ΔTotal assets	−	0,037**
		(0,018)	(0,018)	(0,021)			(0,036)
ROA (t_{-1})	+	0,197***	0,207***	0,202***	ΔDebt/Assets	+	− 0,043
		(0,010)	(0,008)	(0,008)			(0,277)
CFFO/TA	−	− 0,293**	− 0,316**	− 0,309***	ΔROA	+	− 0,028
		(0,013)	(0,011)	(0,010)			(0,747)
Sales growth	−	0,053*	0,054	0,054	ΔCFFO/TA	−	− 0,219*
		(0,084)	(0,101)	(0,104)			(0,065)
Constant	x	0,050	0,048	0,048	ΔSales growth	−	0,019
		(0,338)	(0,365)	(0,364)			(0,365)
					Constant	x	− 0,010***
							(0,002)
n=		220	220	220	n=		182
Prob>F		0,008	0,011	0,044	Prob>F		0
R^2		0,159	0,143	0,141	R^2		0,464

Panel D: DA - BSc by BSc Replacement

	Exp. Sign	Time (t_{-1})	Time (t)	Time (t_{+1})		Exp. Sign	ΔDA
Variable					**Variable**		
TURNOVER	+/x/−	− 0,020***	0,002	0,017*	TURNOVER	+/x/−	0,013
		(0,007)	(0,617)	(0,096)			(0,210)
Controls					**Controls**		
Total assets	−	− 0,001	− 0,002	− 0,003)	DA (t_{-1})	−	− 0,820***
		(0,753)	(0,598)	(0,466)			(0,000)
Debt/Assets	+	− 0,032**	− 0,035**	− 0,036**	ΔTotal assets	−	0,036**
		(0,019)	(0,014)	(0,012)			(0,042)
ROA (t_{-1})	+	0,221***	0,224***	0,227***	ΔDebt/Assets	+	− 0,040
		(0,006)	(0,007)	(0,006)			(0,334)
CFFO/TA	−	− 0,311**	− 0,316***	− 0,319***	ΔROA	+	− 0,016
		(0,011)	(0,010)	(0,008)			(0,852)
Sales growth	−	0,056*	0,056*	0,057*	ΔCFFO/TA	−	− 0,216*
		(0,084)	(0,088)	(0,083)			(0,068)
Constant	x	0,040	0,051	0,058	ΔSales growth	−	0,016
		(0,451)	(0,334)	(0,242)			(0,481)
					Constant	x	− 0,010***
							(0,001)
n=		287	287	287	n=		188
Prob>F		0,000	0,000	0,000	Prob>F		0
R^2		0,129	0,132	0,131	R^2		0,428

, **, * denotes significance at the 10%, 5% and 1% levels, respectively.*

6. Further Tests

This section presents the additional tests that were conducted. It begins with testing alternate assumptions through the sensitivity analysis in Section 6.1, followed by testing the potential issues in linear regression models in section 6.2.

6.1. Sensitivity Analysis

Three tests are conducted to analyze if the results achieved are sensitive to other alternative assumptions. Section 6.1.1 tests the DA and compares them to the original Modified Jones Model (1995) by deploying a different version as presented by Kothari et al., 2005. Section 6.1.2 proceeds to test the time period of the *Time Model* by employing a different time span. Lastly, Section 6.1.3 builds on prior literature on concurrent CEO turnover and puts the sub-sample to test.

6.1.1. Kothari Model

Prior papers have pointed out that accrual estimation models, for instance the Modified Jones Model, may not be the most accurate when being deployed to calculate the DA level for firms that are sustainably different in financial performance (Kothari et al., 2005). As a result, performance matching on return on assets (*ROA*) is proposed as a control for the effect of performance on measured DA (Kothari et al., 2005). Therefore, ROA is added to the Modified Jones Model when calculating DA. A t-test is conducted to test whether there are statistically significant differences between DA based on Modified Jones Model (1995) and DA using Kothari Model (2005). No significant evidence is found which suggests that these two groups of DA values differ from each other. Thus, the test results demonstrate that the two groups of DA are similar and do not depict any differences. Appendix C presents the results.

6.1.2. Testing the Time Model

In addition, building on the Time Model employed in Section 5.4, the time period is put to test by using a 5-year test period in both the beginning and the end of the total timeline, instead of the 4 years and it is found that it does not substantially change the results. This has been illustrated in Appendix D. When applying this test, the period is set to be 5 years which changes the years for $time_1$ and $time_2$ to year 2001-2005 and 2013-2017, respectively. In this scenario, 33 and 96 CFO turnover events separately took place during $time_1$ and $time_2$, respectively. Further, the results from the regression tests with clusters in year before turnover (t_{+1}), year of turnover (t) and year after turnover (t_{-1}) show no significance evidence relating to the relative level of the CFO turnover impact in $time_1$ and $time_2$, compared to the MIDDLE (2006-2012). Similar to the original four-year period test, the equality test between these two groups exhibit no significant differences from each other ($p > .10$).

6.1.3. Concurrent CEO Turnovers

There has been considerable research focusing on the impact caused by the CEO turnovers on earnings management (Murphy & Zimmerman, 1993). Therefore, the concurrent CEO turnovers are added as a control variable in the multivariate analysis. Due to the time limit, only the data for the sub sample is collected and tested. Out of the 29 CFO TURNOVER observations in total between 2001 to 2017, there are in all 10 concurrent CEO turnovers. Regressions are conducted for all three time periods (t_{+1}, t and t_{-1}) and Appendix E presents the regression results when CEO turnover is included in the multivariate regression model. Consistent with the results from the original model without a concurrent CEO turnover, there is no significant evidence that proves how hiring a new CFO brings changes in the DA level in time t_{+1}, time t and time t_{-1}. The coefficient sign of the independent variable TURNOVER in different time periods remains the same as before. In time t_{-1} which is the last full reporting year under the former CFO, a significant negative relationship between the concurrent CEO turnover and DA level is discovered ($p = ,06$). However, at the same time, due to the small sub sample size, no conclusion can be drawn, and further tests are needed.

6.2. Robustness

Multicollinearity refers to the situation when independent variable in a multiple regression model are highly intercorrelated. This could lead to less reliable statistical results of the since the independent variables may not be used most effectively to predict the effect. Tolerance levels and Variance Inflation Factors (VIF) are used to measure the impact of the multicollinearity level, and are presented in Appendix F. From a conservative aspect, a VIF value below four is generally considered to not have a big impact (O'Brien, 2007). Appendix F shows the test results of the main models used in the thesis for both the full samples and the sub samples across all time periods. VIF value for all the variables across time periods is reported to be below 2. Therefore, it can be concluded that the model is not significantly impacted by multicollinearity.

7. Conclusion

Section 7.1. discusses and concludes the results presented in the preceding section. Section 7.2 presents the limitations that were encountered during the execution of this research study. Finally, 7.3 provides suggestions for future research.

7.1. Discussion

This study attempts to fill the gap that exists on literature surrounding CFO turnover events by conducting an analysis of a sample of 240 turnover events over the 2001-2017 sample period and addressing the following research question:

'How has the relationship between a CFO turnover event and Earnings Management evolved in Sweden over the years 2000 to 2017?'

Two hypotheses are formulated to answer this research question:

H1: Companies that appoint a new CFO report significant reductions in DA compared to other non-hiring firms.

H2: Companies that appoint a new CFO during 2014-2017 report greater reductions in DA compared to those appointing a new CFO during 2001-2004.

Based on the research conducted on the involvement of CFOs in earnings management and a further characteristic analysis, the results rejected both the hypotheses.

The study was initiated by employing the Modified Jones Model (1995) and performing univariate and multivariate analyses on the three years surrounding a turnover event. In comparison to prior research that had mainly been conducted in the context of U.S., the results revealed inconsistency and no evidence of earnings management surrounding a turnover event was deduced, hence resulting in the rejection of H1. These results were further analyzed by conducting a sub-sample analysis on categorically classifying the transition of the incoming and the outgoing CFOs in light of their individual characteristics to identify any plausible factors that could have played a role in the level of DA. These revealed no significance in the types of departure, and origin categories. Significant levels were detected for the gender and education categories, however, based on the contradictions and lack of a sufficient sub-sample size, no concrete conclusions could be made. Furthermore, a *Time Model* was employed to capture the changing role of a CFO by testing the differences in the relative DA levels between the beginning (2001-2004) and the end of the time period (2014-2017). However, consistent with H1, the results also revealed insignificant results, hence resulting in a rejection of H2.

A number of plausible factors can be reasoned for this lack of evidence. Sweden, as a country, has been ranked high on transparency ratios and places much emphasis on ensuring that appropriate disclosures are made (CPI Index, 2018). The Swedish way of working has evidenced how managers here are more likely to engage in an egalitarian management style (Iskasson, 2008) where they put their company and their business group first, as opposed to the common perception in the U.S where institutions tend to encourage managers to focus on the competition between individuals. Thus, such strong governance rules can be perceived to play an important role in restraining executives from engaging in manipulation activities in Sweden, and hence could be one of the main reasons for the lack of results.

Another important factor that could play a role towards the lack of results, is how the role of a CFO has only started evolving in Sweden and can be expected to show behavior that demonstrates earnings management in the years to come. This reasoning is backed by Table 1 which shows an overview of the observations of turnovers in the full sample set. It demonstrates a hike in the latter years of the time period under consideration which

demonstrates how companies have started focusing on hiring/replacing them in pursuit of better leadership of their companies. This implies that the role of a CFO has started emerging and could reach up to the level that has been evidenced in other studies which were conducted on empirics from the U.S (Datta & Iskandar - Datta, 2014).

7.2. Limitations

It is pivotal to note that this research conducted was based on a Swedish sample of firms during the years 2001-2017. Thus, this is not directly comparable to the studies that have taken U.S. data into consideration and have been subject to different governance and regulations with different inclinations towards earnings management.

Another important factor to consider is the concurrent CEO turnover. Research has shown that the CFOs alone are not responsible for managing earnings in a company. Evidence has been gathered which demonstrates the pressure that the CEOs can impose over them and can further use their authority to change the management team, especially the CFO (Mian, 2001). In such an event, the outgoing CFO would not be able to show the typical behavior as evidence by various research papers. However, it must be noted that a sub-sample concurrent CEO turnover analysis was conducted during this study, which did not reveal and significant results primarily due to the small size of the sub-sample data employed.

An important limitation that was faced during the execution of this thesis was the lack of data. With Sweden being a relatively new area of concern for researchers, the CompuStat data base could not accommodate with the required statistics and a manual research was conducted. Apart from the possibility of human errors, the data sample was restricted and not up to par to that of other researches. After executing the univariate and multivariate analysis on the full samples, a sub-sample was formed further testing the categorical abilities of CFOs which could be subject to bias because of the small number of companies employed for this sub-sample analysis.

Furthermore, this research employed the Modified Jones Model (1991) whereas there is always possibility that other accrual-based models can provide better results in the context of Sweden. Moreover, the control factors employed could not take into account all possible determinants that can affect DA, hence always leaving room for further improvements and controls.

Lastly, it should be acknowledged that all plausible factors could not be considered when forming the tests and controls in the multivariate analysis. The recent years have seen economic instability and can contribute in various ways for the motivations behind or against earnings management.

7.3. Areas for future research

Due to a lack of time, the research sample was restricted which could have impacted the final results. It is suggested that a bigger sample is employed for the years under consideration which could help in reaching concrete decisions. Similarly, based on the ample amount of research that has been conducted on executive characteristics and their subsequent impacts on the final reporting of the company, the sub-sample set needs to be enlarged to fully capture any possible effects in the Swedish market which can be compared, at least on the sample size level, with the U.S. markets.

Another important notion that our thesis identifies is the constant research needed by researchers to figure out new and improved methods to detect earnings management rather than presenting add-ons to existing models, as has been the case with the various versions of the Jones Model (1991). As proposed by McNichols and Stubben (2008), establishment of a

significant relationship with DA is not enough to establish existence of earnings management.

8. References

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9. Appendices

APPENDIX A – Full Sample-set Firms

1	*TELEFONAKTIEBOLAGET LM ERICS*
2	*VOLVO AB*
3	*SKF AB*
4	*SCA-SVENSKA CELLULOSA AB*
5	*ELECTROLUX AB*
6	*ATLAS COPCO AB*
7	*SANDVIK AB*
8	*MTG-MODERN TIMES GROUP AB*
9	*HOLMEN AB*
10	*SWEDISH MATCH AB*
11	*SKANSKA AB*
12	*TRELLEBORG AB*
13	*BILIA AB*
14	*BERGMAN & BEVING AKTIEBOLAG*
15	*NCC AB*
16	*HENNES & MAURITZ AB*
17	*HALDEX AB*
18	*JM AB*
19	*SSAB CORP*
20	*AF AB*
21	*BEIJER REF AB*
22	*ROTTNEROS AB*
23	*LINDAB INTL AB*
24	*SECURITAS AB*
25	*ACANDO AB*
26	*CONSILIUM AB*
27	*GUNNEBO AB*
28	*MEDIVIR AB*
29	*NOLATO AB*
30	*PRICER AB*
31	*PEAB AB*
32	*ACTIVE BIOTECH AB*
33	*CONCORDIA MARITIME AB*
34	*AAK AB*
35	*BEIJER ALMA AB*
36	*BERGS TIMBER AB*
37	*BONG AB*
38	*ENEA AB*
39	*FAGERHULT AB*
40	*AXFOOD AB*
41	*SEMCON AB*
42	*OEM-INTERNATIONAL AB*
43	*ORTIVUS AB*
44	*PANDOX AB*
45	*XANO INDUSTRI AB*
46	*VBG AB*
47	*GRANGES AB*
48	*SAS AB*
49	*CATELLA*
50	*TELIA COMPANY AB*
89	*NILORNGRUPPEN AB*
90	*NIBE INDUSTRIER AB*
91	*EMPIR GROUP AB*
92	*NET INSIGHT AB*
93	*NEW WAVE GROUP AB*
94	*MYCRONIC AB*
95	*PROBI AB*
96	*ANOTO GROUP AB*
97	*MULTIQ INTERNATIONAL AB*
98	*STARBREEZE AB*
99	*VITEC SOFTWARE GROUP AB*
100	*BIOTAGE AB*
101	*ENIRO AB*
102	*FINGERPRINT CARDS AB*
103	*BEIJER ELECTRONICS GROUP AB*
104	*PRECISE BIOMETRICS AB*
105	*MEKONOMEN AB*
106	*FEELGOOD SVENSKA AB*
107	*BETSSON AB*
108	*SENSYS GATSO GROUP AB*
109	*ACADEMEDIA AB*
50	*TELIA COMPANY AB*
51	*DORO AB*
52	*ELANDERS AB*
53	*ELEKTA AB*
54	*SINTERCAST AB*
55	*GETINGE AB*
56	*VIKING SUPPLY SHIPS AB*
57	*TELE2 AB*
58	*SAAB AB*
58	*SAAB AB*
49	*CATELLA*
50	*TELIA COMPANY AB*
51	*DORO AB*
52	*ELANDERS AB*
53	*ELEKTA AB*
54	*SINTERCAST AB*
55	*GETINGE AB*
56	*VIKING SUPPLY SHIPS AB*
57	*TELE2 AB*
58	*SAAB AB*
59	*ASSA ABLOY AB*
60	*RAYSEARCH LABORATORIES AB*
61	*ELOS MEDTECH AB*
62	*STOCKWIK FORVALTNING AB*
63	*LAMMHULTS DESIGN GROUP AB*
64	*SWECO AB*
65	*ADDNODE GROUP AB*
66	*IAR SYSTEMS AB*
67	*SKISTAR AB*
68	*PROFILGRUPPEN AB*
69	*ICTA AB*
70	*BIOGAIA AB*
71	*CLAS OHLSON AB*
72	*CTT SYSTEMS AB*
73	*IMAGE SYSTEMS AB*
74	*HIQ INTERNATIONAL AB*
75	*MIDSONA AB*
76	*VENUE RETAIL GROUP AB*
77	*SVEDBERGS I DALSTORP AB*
78	*SOFTRONIC AB*
79	*KARO PHARMA AB*
80	*KNOWIT AB*
81	*LIFCO AB*
82	*SECTRA AB*
83	*PROACT IT GROUP AB*
84	*PREVAS AB*
85	*MALMBERGS ELEKTRISKA AB*
86	*POOLIA AB*
87	*TRENTION AB*
88	*NOVOTEK AB*
139	*CHERRY AB*
140	*A3 ALLMANNA IT*
141	*WISE GROUP AB*
142	*NEDERMAN HOLDING AB*
143	*ODD MOLLY INTL AB*
144	*CELLAVISION AB*
145	*OASMIA PHARMACEUTICAL AB*
146	*HMS NETWORKS AB*
147	*SYSTEMAIR AB*
148	*EWORK GROUP AB*
149	*HEXPOL AB*
150	*LOOMIS AB*
151	*CLOETTA AB*
152	*MICRO SYSTEMATIONS AB*
153	*NETENT AB*
154	*HANSA BIOPHARMA AB*
155	*NEUROVIVE PHARMACEUTICAL AB*
156	*NGS GROUP AB*
157	*C-RAD AB*
158	*BYGGMAX GROUP AB*
159	*MQ HOLDING AB*

110	*ADDTECH AB*	160	*QLIRO GROUP AB*
111	*LAGERCRANTZ GROUP AB*	161	*KAROLINSKA DEVELOPMENT AB*
112	*BIOINVENT AB*	162	*DEDICARE AB*
113	*BTS GROUP AB*	163	*G5 ENTERTAINMENT AB*
114	*VITROLIFE AB*	164	*BULTEN AB*
115	*BILLERUDKORSNAS AB*	165	*MOBERG PHARMA AB*
116	*RNB RETAIL AND BRANDS AB*	166	*CONCENTRIC AB*
117	*INTRUM JUSTITIA AB*	167	*BOULE DIAGNOSTICS AB*
118	*ALFA LAVAL AB*	168	*EPISURF MEDICAL AB*
119	*NOBIA AB*	169	*XVIVO PERFUSION AB*
120	*AQ GROUP AB*	170	*SPORTAMORE AB*
121	*NOBINA AB*	171	*HEXATRONIC GROUP AB*
122	*NOTE AB*	172	*IMMUNICUM AB*
123	*FORMPIPE SOFTWARE AB*	173	*BUFAB HOLDING AB*
124	*ITAB SHOP CONCEPT AB*	174	*RECIPHARM AB*
125	*BJORN BORG AB*	175	*BESQAB AB*
126	*INDUTRADE AB*	176	*BACTIGUARD HOLDING AB*
127	*TRADEDOUBLER AB*	177	*SCANDI STANDARD AB*
128	*OREXO AB*	178	*INWIDO AB*
129	*KAPPAHL AB*	179	*CHRISTIAN BERNER*
130	*MOMENT GROUP AB*	180	*THULE GROUP AB*
131	*ELECTRA GRUPPEN AB*	181	*DUSTIN AB (PUBL)*
132	*HUSQVARNA AB*	182	*CANTARGIA AB*
133	*INVISIO COMMUNICATIONS*	183	*TOBII AB*
134	*SWEDOL AB*	184	*COOR SERVICE MANAGEMENT*
135	*OPUS GROUP AB*	185	*DOMETIC GROUP AB*
136	*SWEDISH ORPHAN BIOVITRUM AB*	186	*ATTENDO AB*
137	*BE GROUP AB*	187	*IMMUNOVIA AB*
138	*REJLERS AB*	188	*CAMURUS AB*
189	*ADDLIFE AB*	196	*ACTIC GROUP AB*
190	*HUMANA AB*	197	*MUNTERS GROUP AB*
191	*ALLIGATOR BIOSCIENCE AB*	198	*BOOZT AB*
192	*EDGEWARE AB*	199	*ESSITY AKTIEBOLAG*
193	*MIPS AB*	200	*BONESUPPORT HLG*
194	*AMBEA AB*	201	*MOMENTUM GROUP AB*
195	*SSM HOLDING AB*		

APPENDIX B – Sample of firms

This table identifies the eliminations that were made from the initial collection of NASDAQ OMX Stockholm's listed firms.

NASDAQ Initial List	375
Less: Utilities and Financial Companies	(135)
Less: Companies with NO CFO	(19)
Less: Companies with foreign currency presentation	(16)
Less: Companies without consecutive 4-year data	(4)
Final sample employed	**201**

APPENDIX C – Kothari (Sensitivity Analysis)

This table compiles the description of the DA calculated from both Modified Jones Model and Kothari Model. The data has been collected from the Compustat Global Database – Fundamentals Annual.

	n	Mean	Median
DA – Modified Jones Model	2735	-0,005	-0,006
		(0,429)	(0,477)
DA – Kothari Model	2503	-0,002	-0,005

*, **, *** denotes significance at the 10%, 5% and 1% levels, respectively.
p-values were calculated using two tailed t-tests (Wilcoxon rank sum tests) for differences in means (medians).

APPENDIX D – 5 Year Time Model (Sensitivity Analysis)

The Time Model has been employed to detect the changing impact of the CFO Turnover events on discretionary accruals over the sample years 2001-2017. TURNOVER equals 1 if a CFO turnover event takes place, otherwise 0; time1 takes the value of 1 if it refers to the period 2001-2005, otherwise 0; time2 takes the value of 1 if it refers to the period 2013-2017, otherwise 0. An equality test is conducted between TURNOVER*time1 and TURNOVER*time2. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Variables	**Time t_{-1}**		**Time t**	**Time t_{+1}**
TURNOVER	– 0,014	*	0,001	0,010
	0,058		0,921	0,346

$Time_1$	– 0,009	**	– 0,008	**	– 0,008	*
	0,035		0,049		0,076	
$Time_2$	0,003		0,005		0,011	*
	0,697		0,518		0,063	
TURNOVER*$time_1$	– 0,017		0,000		0,000	
	0,272		0,989		0,996	
TURNOVER*$time_2$	0,005		– 0,001		– 0,042	
	0,707		0,916		0,410	
Constant	– 0,004		– 0,005	*	– 0,006	**
	0,167		0,051		0,029	
n=	2 735		2 735		2 735	
Prob>F	0,106		0,418		0,094	
R2	0,002		0,001		0,004	
Equality test between TURNOVER*$time_1$ & TURNOVER*$time_2$						
P-value	0,268		0,951		0,433	

*, **, *** denotes significance at the 10%, 5% and 1% levels, respectively.

APPENDIX E – CEO Turnover (Sensitivity Analysis)

This table compiles the results of the multivariate test that is performed on the full sample set for the period 2001-2017 on for the preceding year (t_{-1}) and proceeding year (t_{+1}) along with the TURNOVER event at time t. Panel A provides descriptive information regarding the DA across three years. Panel B presents data regarding the changes in DA over time for the TURNOVER and non-TURNOVER sample. The changes in DA are from time (t_{-1}) to time (t_{+1}). TURNOVER is a test variable that equals 1 if there is a CFO turnover event, and 0 otherwise. DA(t-1) represents the discretionary accrual level from the prior year. CEO Turnover is 1 if there is a concurrent CEO turnover, otherwise 0. Total Assets is measured as the natural logarithm of lagged total assets. Debt/Asset is debt scaled by total assets. ROA (t_{-1}) is measured as net income divided by lagged total assets. CFFO is measured as cash flow from operations scaled by lagged total assets. Sales Growth is the percentage increase in sales over the year. The data has been collected from the Compustat Global Database – Fundamentals Annual.

Panel A: Discretionary Accruals (DA): By Year

Variables	**Time t_{-1}**		**Time t**		**Time t_{+1}**	
TURNOVER	– 0,056	***	0,003		– 0,003	
	0,004		0,658		0,832	
Controls	0,000		0,000		– 0,001	
	0,947		0,934		0,889	
	0,008	*	0,008		0,008	
CEO turnovers	0,076		0,122		0,127	
	0,168	**	0,188	**	0,186	**
Total assets	0,030		0,018		0,022	
	– 0,286	**	– 0,305	**	– 0,299	***
Debt/asset	0,011		0,012		0,009	
	0,057	*	0,059	*	0,060	*
ROA (t-1)	0,060		0,079		0,075	
	– 0,004		– 0,001		– 0,001	
CFFO/TA	0,934		0,983		0,988	
	243		243		243	
Sales growth	0		0		0,002	
	0,208		0,167		0,165	
Constant	– 0,056	***	0,003		– 0,003	
	0,004		0,658		0,832	
n=	0,000		0,000		– 0,001	
Prob>F	0,947		0,934		0,889	
R2	0,008	*	0,008		0,008	

Panel B: Changes in Discretionary Accruals (ΔDA): By Time

Variables		
TURNOVER	– 0,002	
	0,700	
Controls		
DA(t-1)	– 0,854	***
	0,000	
CEO turnovers	0,002	

	0,866	
ΔTotal assets	0,042	*
	0,009	
ΔDebt/asset	0,049	***
	0,001	
ΔROA	– 0,016	
	0,810	
ΔCFFO/TA	– 0,213	**
	0,026	
ΔSales growth	0,022	
	0,245	
Constant	– 0,010	***
	0,001	
n=	202	
Prob>F	0	
	0,5304	

*, **, *** denotes significance at the 10%, 5% and 1% levels, respectively.

APPENDIX F – Robustness Analysis

The table shows results from our tests for multicollinearity. VIF is the inverse of the tolerance level and a value below ten is generally seen as indicating limited effect from multicollinearity. Panel A describes the tolerance and VIF level for the full samples. Panel B provides the information for the full sub samples. Turnover is a test variable that equals one if there is a CFO turnover and zero otherwise. DA(t-1) is a control variable representing the discretionary accrual level from the prior year. Total assets is a control variable representing the natural logarithm of lagged total assets. Debt/asset is a control variable representing debt scaled by total assets. ROA is a control variable measured as net income divided by lagged total assets. CFFO is a control variable measured as cash flow from operations scaled by lagged total assets. Sales growth is a control variable measured as sales this year divided by lagged sales minus one.

Panel A: Full Sample

Variables	**Time t_{-1}**		**Time t**		**Time t_{+1}**		**ΔTime (t_{+1} and t_{-1})**	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
TURNOVER	1,00	1,00	1,00	1,00	1,00	1,00	0,99	1,01
DA (t_{-1})							0,98	1,02
Total assets	0,77	1,30	0,77	1,30	0,77	1,30	0,92	1,09
Debt/asset	0,83	1,20	0,83	1,20	0,83	1,20	0,91	1,10
ROA (t_{-1})	0,72	1,39	0,72	1,39	0,72	1,39	0,78	1,28
CFFO/TA	0,71	1,41	0,71	1,41	0,71	1,41	0,76	1,31
Sales growth	0,99	1,01	0,99	1,01	0,99	1,01	0,99	1,01

Panel B: Sub-sample

Variables	**Time t_{-1}**		**Time t**		**Time t_{+1}**		**ΔTime (t_{+1} and t_{-1})**	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
TURNOVER	0,97	1,03	0,97	1,03	0,97	1,03	0,97	1,03
DA (t_{-1})							0,87	1,15
Total assets	0,73	1,37	0,73	1,37	0,72	1,38	0,69	1,44
Debt/asset	0,84	1,19	0,84	1,19	0,84	1,19	0,76	1,31
ROA (t_{-1})	0,67	1,49	0,67	1,49	0,66	1,51	0,93	1,08
CFFO/TA	0,64	1,56	0,64	1,56	0,64	1,57	0,79	1,27
Sales growth	0,93	1,07	0,93	1,08	0,93	1,07	0,76	1,32