The CFO And Income Smoothing

A study on income smoothing, CFO compensations and CFO characteristics

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The influence of the CFO on earnings smoothing decision.

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Abstract

This study analyses the relation between firms that consciously decide to smooth their income and the role of the chief financial officer (CFO) in this decision. The latter aspect is determined on the one hand based on the compensation he/she receives and on the other hand his/her identity characteristics, such as age, educational background, and gender. The income smoothing is determined by the correlation between the change in pre-discretionary income and the change in discretionary accrual proxy. Hereby I classified firms with a negative correlation for five years or more as smoothing firms.

The Security Exchange Commission (SEC) has been extending its regulation regarding the compensation executives receive, such as the CFOs, in order to further mitigate the possibilities that companies decide to manage their earnings (SEC, 2006). This study attempts to show the effectiveness of the disclosing regulation, which might be relevant for other enforcement boards to consider introducing or expanding their disclosing regulation.

The sample size in this research consists of 619 US firms, from which 421 are classified as smoothing firms. Based on this sample I found evidence that CFOs do smooth the earnings of their firm in order to increase their salary and bonuses. Likewise, I found evidence regarding the characteristics of these CFOs. Those who are 62 and older are more eager to do income smoothing than their counterparts. This is similar to the results obtained for male CFOs, as CFOs who are more settled in their current function and the ones with a higher education. Considering the evidence found in this research, I recommend the SEC expanding their current disclosure regulation with the CFO's identity characteristics as described in this study.

Key words: **Income smoothing, Earnings management, Executive, CFO, Compensation, and Characteristics.**

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1. Introduction

1.1. Research Question

In 2006 the SEC introduced a new regulation that focused on the disclosure of the CFO compensation. The SEC determined that the role and influence of the CFO regarding the preparation and justification of the financial statements is significant. Following this line of thought, the SEC considered the importance to amend a disclosure regulation regarding the CFO compensation as mentioned above (SEC, 2006). Thereby, the firms' expectations regarding the responsibilities of the CFO, which continuously changes, also demands such regulation in order to protect investors. In recent years, the CFO has been held responsible in many more fraud cases for his actions and role in these types of cases (Collins et al., 2009).

Therefore, my research will focus on the role the CFO has in determining the earnings outcome of the report. This leads to the following research question: '*Which incentives influence the CFO's decision to smooth earnings?'*. The influence of the CFO is derived from the received compensation. Other aspects that might have an influence on his/her decision are the characteristics of the CFO, such as age, tenure and education.

As indicated by the chief auditor of the PCAOB, the CFO is no longer hired for his expertise in financial services and/or as the preparer of the financial statement. Companies expect more from the CFO in the form of value creation for the company (Jagadison et al., 2005). This change in the CFO role has increased the pressure on his position over time. Mintz and Morris (2016) account that an increase in pressure to maintain the job is equal to an increase in incentive to commit fraud. Company managers have the ability and ample opportunity to commit fraud or manipulate the company's performance. They can achieve this by either adjusting financial outcomes or manipulate the accounting policies. However, the CFO, as an expert in financial principles, can manipulate figures within the rules of accounting standards (Davidson et al., 1975). The cookie jar reserve, as Levitt (1998) described it, is one of the accounting principles used to 'manipulate'.

Cookie jar reserves can be created for example when management applies accounting rules in a conservative way. Conservative accounting is defined as the relative recognition of bad news, like setbacks, as losses compared to good news as gains. Thus, this accounting type therefore increases the expenses and the related reserves, also called accruals (Palepu et al., 2013). By creating these kinds of reserves, management makes it possible to reverse these

reserves in the future, possibly when the expected financial goals are not met. Another possibility a CFO has when using conservative accounting is to smooth the earnings, which makes the company less volatile (Palepu et al., 2013). Income smoothing is proven by Michelson et al. (1995) to generate benefits for the company due to lower risk premium and risk factors, which leads to higher stock prices.

Most prior studies have focused on the role of the CEO in relation to the company's performance. The role and influence of the CFO are considered limited due to the lower hierarchical position of the CFO in the organization compared to the CEO. However, recent research such as Jiang et al. (2010) shows that the CFO has more equity incentive to manipulate the earnings than the CEO. At the same time, their study provided sufficient evidence that the CFO has an independent role when preparing the financial statements. Therefore, it is interesting to analyse which incentives influence the CFO's decision to smooth the earnings of the firm. These incentives, for example, could be character based, compensation based or a combination of these factors.

1.2. Motivation

On November 7th, 2006 the SEC implemented a new rule regarding the disclosure of compensations of the CFO (SEC, 2006). As previously indicated, the CFO is considered to have a significant position in the preparation of the financial statements. The SEC considered that the disclosure of compensations the financial officer receives, adds value to the investors and stakeholders (SEC, 2006). Their concerns are related to the CFO compensation and the incentives to engage in earnings management, which led to amending such regulations (Jiang et al., 2010). The disclosure regulation regarding the executive compensation is important considering the continuous improvements and extensions by regulators. For example recently, on April 29th, 2015, the SEC extended the disclosed components for the CEO (SEC, 2015).

Moody's (2007) underlines the importance to disclose the compensation of the executives. Evidence of the study suggests that managers consider their compensation a component of the decision-making process. These managers also consider that investors can derive, based on the compensation disclosed, whether the board is dealing with weaknesses or that the decision-making process is qualitatively low. Therefore, this study will answer the question, which incentives influence the CFO to smooth the earnings. This study provides a better insight for investors into the behaviour of the CFO based on characteristics and compensations.

Continuing with Moody's (2007) research, they conclude that although the existing gap between enforcement boards of transatlantic countries became slightly smaller, the gap still exists. This gap refers to the regulation regarding the disclosure of executive compensation between the North American countries and the Western European countries.

Besides the transatlantic differences, they also found that the quality and the information provided regarding the compensation paid to the executives also differs in some countries significantly from other countries within Europe. While the SEC in the US is continuously amplifying its requirements, Europe is still divided (Moody's, 2007).

In 2014 Curcio and Latham (2014) announced that the EU introduced new disclosure requirements in the new 'Companies Act'[1]. The new disclosing regulation was put in place to improve the disclosing standards. These standards provide a more uniform disclosure in order to improve the information provided to the shareholders. Despite the adjustments and extensions, the regulation is not compulsory and compared to the SEC concept more moderate.

Therefore, this study tends to mainly provide European enforcement boards, like the European equivalent of the SEC, with information on whether their current disclosing regulation is effective and whether a further extension of the disclosing regulation is desired. The extension in question may not be limited to compensation solely, but could also include personal information of the CFO.

Lastly, this study provides auditors and supervisory boards with a better insight into what they can expect from company executives. The supervisory board might therefore be incentivised to gather better insight before hiring an executive and under what terms such hiring should take place.

1.3. Methodology

The association between the dependent variable, income smoothing, and the independent variables, CFO determinants, is conducted using a regression analysis. The CFO determinants, in this case, are the compensations and characteristics of the CFO as previously mentioned. Due to the extensive researches that have been conducted with respect to earnings management, and more specifically income smoothing, this thesis wilt built forth on the models and variables used in these studies. It is worth mentioning that this thesis does not simply replicate previous studies, but complements them. This thesis focuses on the interaction between the changes in compensation and characteristic determinants from the CFO's

[1] See the following link: (http://tinyurl.com/jf6n5px).

perspective in relation to income smoothing. The relation between these aspects has yet to be researched. The associated construct variables are operationalised in the Libby box, as can be seen in figure 1.

Income smoothing, as the dependent variable, is measured using the accrual components. According to the empirical correlation done by Tucker & Zarowin (2006), *"income smoothing is measured by the negative correlation between the change in discretionary-accruals proxy (ΔDAP) and the change in pre-discretionary income (ΔPDI)"*, which is consistent with prior research done by Leuz et al. (2003). The discretionary accruals proxy can be measured by using the modified Jones model of Dechow et al. (1995), which was used by inter alia Barua et al. (2010). This data is gathered via COMPUSTAT for the period of 2000 to 2014. This period is sufficient to distinguish the income-smoothing companies from the non-smoothing companies.

The independent variables are the CFO's compensation change and his personal characteristic data. These dates are gathered via the COMPUSTAT, Capital IQ, and BoardEx databases. The CFO compensation change is split into cash and bonus changes, equity incentive compensation change and total compensation change. The personal characteristics, on the other hand, are measured based on the personal information of the CFO, like age, education, tenure, ethnicity and gender information.

1.4. Findings

I considered two different sample sizes for this study. The first sample, which consists of 7,672 observations, is used to regress the first hypothesis, while the second hypothesis is based on 619 observations. Despite the large difference in observations, the differences in results are fairly insignificant. The only difference found regards the change in cash and bonus compensation. While the first hypothesis shows that the CFO does not smooth earnings in order to increase his cash compensation, the second hypothesis does provide this evidence.

Before I continue with the findings of the second hypothesis, I will evaluate the first hypothesis. The first hypothesis studies the possible effects compensation change might have on income smoothing. This implies whether there is sufficient evidence to consider a change in CFO's compensation as an influential incentive for the CFO to smooth earnings of the firm. As indicated previously, the change in cash compensation is not related to the decision to smooth income. However, this is in line with expectations from hypothesis 1a, mainly because the incentive component is not incorporated in this compensation type. Unfortunately, the

expectations regarding the effect of the total compensations have not been met. There is not sufficient evidence to conclude that total compensations do influence the CFO's choice to smooth earnings. The reason might not be sought in the cash component, but in the equity incentive component.

In hypothesis 2 I found, as previously indicated, more evidence for possible incentives for the CFO to smooth earnings. In hypothesis 2 I researched the relation of compensation combined with the personal characteristics of the CFO as described in paragraph 1.3. I found a significant cash compensation change for this regression. This means that cash compensation change is a component of the decision-making for the CFO when considering smoothing the earnings. In addition, the gender, tenure, and age are related with earnings smoothing. In other words, mostly male CFOs who are 62 or older and the CFOs who have more years of experience in their current position at the company, conduct more earnings smoothing. This is in line with the expectation of alternative hypothesis 2a. On the other hand, the results obtained for hypothesis 2b are not in line with expectations. There is not sufficient evidence to conclude that the total compensation change is an incentive for the CFO to smooth earnings. Even though this result is consistent with the first hypothesis, it provides a different conclusion compared to other studies. Regarding the characteristics, I found similar conclusions as hypothesis 2a. Additionally, I found that a higher educated CFO does more smoothing compared to their less experienced colleagues.

Summarizing these findings, I can conclude that cash compensation change is an incentive for the CFO to smooth earnings. Furthermore, there is sufficient evidence to conclude that a 62 year or older male CFO with a certified public accountant (CPA) title, is more likely to do smooth earnings than their counterparts. Regarding the tenure variable, I found evidence that the longer the CFO works in its current position, the greater the chance he/she will be able or minded to smooth earnings compared to their less experienced colleagues. Lastly, I can conclude that the difference between Western CFOs and the non-Western is non-significant. This can be interpreted as a lack of sufficient evidence to provide that the origin or nationality of the CFO does matter when considering to smooth the earnings.

1.5. Contribution

The findings as described above are in line with previous studies. In addition, the findings extend the results from the previous studies. Furthermore, it provides a contribution to three groups of interest.

First, this study attempts to establish the relation between income smoothing and the CFO's compensation and characteristics. Research done by Bergstresser and Philippon (2006) and Hoitash et al. (2012) provided evidence that equity incentive compensation for executives is related to earnings management and internal control weaknesses. This study, however, extends this information by providing evidence that a change in cash compensation is a determinant to smooth earnings rather than the equity incentive compensation changes. This study also focuses on the limitations of the Jiang et al. (2010). Their study was limited due to the relation they considered between the CFO and CEO incentives.

The previous researchers considered the effects of income smoothing, but none of these studies focused on the relation between compensation and smoothers. It is applicable for dividing the sample into two groups; namely the smoothers and non-smoothers. Furthermore, this study strengthens the findings of previous studies done by for example Barua et al. (2010) regarding the gender. Male CFOs are more inclined to smooth earnings compared to their female colleagues. This research adds value because there has not been a research that combined all of these characteristics with compensations. Therefore, it paves a new way within the academic literature regarding the role of the CFO.

Lastly, it is also important to mention that I regressed a new variable in this investigation, namely ethnicity. Even though there is no sufficient evidence to answer the main question in this study, it underlines the current discussions regarding immigrants and differences in cultures and gives incentives for future research.

1.6. Implications

This thesis might pique the interest of the enforcement boards, auditors and investors. First of all, the SEC disclosure regulation is essentially based on the results presented in prior studies. Additionally, the results presented in this study suggest the importance to further extend the SEC disclosure regulation. This could be valuable to other regulators as well, like the West European enforcement boards. This research provides evidence that the information disclosed to the users is effective. The CFO compensation does matter for the outcome of the financial statement. If enforcement boards around the world apply uniform policies when considering the disclosing regulation, it increases the possibilities for the worldwide investors to compare firms and compensations around the world. Comparability is one of the assertions of financial statement and thus relevant for the investor. By comparing, the investor can determine how the firm performs compared to its benchmark. Furthermore, he can derive whether the firm is

managing the earnings or not, as Moody's (2007) concluded.

Secondly, this research provides information that the disclosing rule in 2006 was valuable as it reduced the possibilities to smooth earnings for personal gain. At the same time, I found evidence that stated that an extension of the current disclosing regulation regarding the compensation is necessary. This regulation should be extended with personal information of the CFO. Investors and stakeholders will need this information to make their decision in order to mitigate future losses, as they are now not able to determine whether a firm manages its earnings or not. Jiang et al. (2010) for example underline this problem by stating that the SEC strongly believes it is important to lower income smoothing in order for companies to provide a well-defined income.

Thirdly, no further research has been done on the relation between compensation, executive characteristics and income smoothing. This might provide auditors a better insight into management activities and interests. This could lead to less earnings managed if income smoothing is considered not desired.

1.7. Structure

This study will focus on the following aspects. Chapter two discusses the previous researches on the subject. The main focus of this chapter is the theoretical framework of income smoothing, the position and influence the CFO has in its role as financial expert. Chapter three focuses on the development of the hypotheses based on the literature study in the previous chapter. The fourth chapter focuses on the research methodology used to conduct the aforementioned hypotheses. Chapter five contains the results, analysis and the implications these findings have for the research in question. The final chapter gives a conclusion of the findings and analyses if, based on these findings, there is sufficient evidence to answer the stated research question.

2. Theoretical background

2.1. Introduction

This research is based on three constructs that have been researched on many occasions, but not in the same interaction. The first stream is income smoothing, which is one of the classifications of earnings management. The effect of earnings management is determinant when judging whether the quality of the reported earnings is high or not. In section 2.2 I will focus on the general effects of earnings management and more specifically on the role income smoothing has in the financial world in the present day.

The second stream of this research is CFO compensation. Determining whether compensation incentives motivate an executive to manage his earnings is something that has been researched frequently, although the focus is constantly shifted on specific aspect of the compensation. This stream is discussed in paragraph 2.3.

Lastly, paragraph 2.4 elaborates on the CFO characteristics. A person can be described by his characteristics and personality (Mintz and Morris, 2016). The decision a person takes can be age related or gender based. Therefore, it is interesting to determine whether the decision of the CFO is related to his/her identity.

In this chapter, I will further elaborate on existing theories and past literature research that have been conducted based on the streams introduced above.

2.2. Income smoothing

Earnings management (EM) is a well and extensively discussed topic. Whereas some researchers consider it positive, most of them define it in a negative way. Hence, Beneish (2001) considered three different definitions of EM as relevant for its study. These definitions were based on the studies done by Healy and Wahlen (1999), Schipper (1989) and Davidson et al. (1982).

Healy and Wahlen (1999, p.368) classified earnings management as: "*Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers*." However, Schipper (1989, p.92) provides a different definition and view on EM, namely: "*A purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain.*" Furthermore they

define EM as: *"A minor extension of this definition would encompass "real" earnings management, accomplished by timing investment or financing decisions to alter reported earnings or some subset of it"*. Lastly, Davidson et al. (1975) defined earnings management in their book as the possibilities management have, due to a wide variation in reporting, by seeking the borders of generally accepted accounting principles to bring about the desired level of reported earnings.

However, while Beneish (2001) considers that there are two perspectives of earnings management, Ronen and Yaari (2008) divide the definitions into three groups, namely a white, grey and black group. The white group stands for the advantages of earnings management, whereby the management provides the users with a true and fair view of the firm's position. The grey group is based on management that attempts to increase their maximum utility, but also the firm's utility. Lastly, the black group is based on the firms that provide the users with an incorrect view of the firm and were possible fraudulent activities takes place.

The aforementioned definitions and groups show that earnings management cannot be solely related to bad or fraudulent activities, but might also provide the user with a better view of the company. This sheds a more positive light on the infamous EM. Concluding, this indicates that earnings management can be seen as both a positive and negative aspect of financial reporting. The positive aspect is confirmed by Dechow (1994) as she concluded, based on her findings, that accruals are more informative than cash flows when it comes to most earnings information. This indicates that earnings are more valuable to investors than cash flow in their decision-making.

Accruals are mainly based on two accounting principles, the revenue recognition principle and the matching principle. These principles must mitigate the timing and matching problem from the cash flow statements (Dechow, 1994). The study also considers accruals to be the providers of relevant and valuable information to users, which has been managed by the management. Accruals are considered valuable when the aggregation by the management, would lead to a better view or understanding of the company by providing its actual financial position.

On the other hand, this same tool can be used in a negative connotation. Management can control the financial information in order to, as Healy & Wahlen (1999) indicated, mislead the user to obtain personal gain. Healy (1985) indicated that earnings are being managed in order to meet bonus targets, while Arya et al. (1998) discovered that management manipulates or manages earnings in order to protect their job. One other reason that might give incentives

to manage earnings is beating the analyst forecasts by managing earnings upwards or downwards (Burgstahler and Eames, 2006).

The management can manipulate the earnings by either doing real earnings management or using accruals, discretionary accruals in this specific case (Graham et al., 2005). Accruals consist of two components, namely discretionary and non-discretionary accruals. Discretionary accrual is defined as: *"accruals that arise from transactions made or accounting treatments chosen in order to manage earnings."* (Ronen and Yaari, 2008, p. 372). Non-discretionary accruals is defined as: *"accruals that arise from transactions made in the current period that are normal for the firm given its performance level and business strategy, industry conventions, macroeconomic events, and other economic factors"* (Ronen and Yaari, 2008, p. 372). Simplistically described, non-discretionary accruals are the unmanaged part, while the discretionary accruals are the managed part.

Another possibility management has in his power to manage earnings, as indicated previously, is by applying one of the many 'real earnings management' techniques. Some example techniques are: reducing discretionary spending, delay starting new projects or draw down on reserves previously set aside in order to meet the targets (Graham et al., 2005). Research done by Dichev et al. (2013) reflects the position CFOs have regarding the view on earnings. In a questionnaire, they indicate that there is speaking of earnings quality when earnings are sustainable, repeatable and that the information helps to predict future performance. Which also gives them the incentives to manage earnings.

Earnings management, however, is the general term of the many manipulations the management has in his power. As Levitt (1998) indicated, management can manage earnings based on one of the five illusions, namely: "big bath" restructuring charges, creative acquisition accounting, "immaterial" misapplications of accounting principles, the premature recognition of revenue and "cookie jar reserves". Based on these illusions Ronen and Yaari (2008) regrouped them as truth-telling, 'taking a bath', income minimization, income maximization and income smoothing techniques.

Income smoothing is out of the five techniques on a longer term possible. The repeatability character of income smoothing makes it a desirable practice for CFOs, which is consistent with the Dichev et al. (2013) findings.

Other than when management decides to maximise the earnings for example, income smoothing will have less effect on the future earnings of the company. For example, when the management wants to practice earnings management by maximizing the earnings, it might and

will lead to reversals on the long-run (Ronen and Yaari, 2008). Reversals are defined as accruals used in the prior years for different transactions, which were accounted too soon or too late. This implies that earnings that have been recognised too soon, will lead to lower earnings in the future and so negatively influence the earlier decision taken (Ronen and Yaari, 2008). Consequently, they conclude that earnings managed are on average zero and thus, reversal limits the possibilities to manage earnings.

However, recalling the previously mentioned techniques to manage earnings, Palepu et al. (2013) indicates that management who practices conservative accounting, is not considered as bad, but neither can it be seen as a good approach. Bushman and Piotroski (2006) defined conservative accounting as the relative recognition of bad news as losses versus good news as earnings. Basu (1997) considers the incremental aspect of recognition important. Palepu et al. (2013) consider that the reserves this type of accounting approach produces will lead to the 'cookie-jar reserves' technique. The management reduces the volatility of the firm's performance when they use the aforementioned technique to smooth the earnings (Graham et al., 2005). Therefore, conservatism might be misleading and not providing the user with the actual insight on the firm performance. Palepu et al. (2013) consider that investors are not being able to detect the flaws and underperformances of the company in a fair way and in a timely matter when this type of accounting is being used.

Earnings management is mostly given a negative connotation due to its misleading characteristics and possible managements' personal interest as stated previously. However, CFOs do see sufficient reason to smooth income. They believe that investors do see income smoothing as a positive signal towards continuity (Graham et al., 2005). Income smoothing, defined by Ronen and Yaari (2008), is the levelling of high and low earnings in order to mitigate fluctuations, sustainable differences, which will match the average economic income on the long-term. This can be achieved with the natural or the intentional smoothing (Dascher and Malcolm, 1970; Eckel, 1981; Michelson et al., 1995).

Natural smoothing persists due to the income process, which delivers a smooth stream, while the intentional are caused by the actions of the management, which can be artificial or based on real adjustments. Horwitz (1977) considers that real income smoothing is the only type to influence cash flow from operations, while the artificial type is not able to do this. Barnea et al. (1976) considers three types of artificial earnings management that the management can use, such as events occurrence and/or recognition, like selling products or closing a new contract. Furthermore, managed earnings through time allocation or

classification are also types of artificial EM.

First of all, when I consider natural smoothing, I find that the management does not have influence on this natural aspect. The smoothing exists in this case due to other factors not related to the management's action. Therefore, this type of smoothing will pertain undetected in this research based on the model used. Richardson et al. (2005) confirm this statement by indicating that deducting the operating cash flow from the net income can derive the previously mentioned accruals. Therefore, differences in income and accruals due to natural flow of the company, will not lead to discretionary accruals. This is also applicable for real smoothing, as Horwitz (1977) indicated. He considered that real smoothing influences cash flow from operations and therefore the impact on accruals is limited. Consequently, the only income smoothing type that will lead to a higher discrepancy between the earnings and cash is the artificial income smoothing.

Michelson et al. (1995) concluded based on other research and findings that only intentional management can be taken into account when considering smoothing. Eckel (1981) elaborate that the reason can be found in the decision taken. While one decision might lead to smoothing of income due to accounting procedures, other procedures used can lead to less income smoothing, so more volatility. In his consideration Eckel (1981) leaves out other income smoothing types, as he considers that the management is the one who performs the smoothing and thus it requires a managerial input in order to reach the desired smoothing. Taking all these into consideration, this study will not furtherly split the types of income smoothing, as this is regulated in the research model.

But why would the management be interested in smoothing incomes? In a study done by Iñiguez and Poveda (2003), they find that mainly the firms that smooth income also yields a higher stock return than the non-smoothing firms. This indicates that investors do appreciate income smoothing. Graham et al. (2005) further confirm these positive effects of income smoothing, as they found in their research that managers prefer smoothing the income, they believe that the stock markets dislike surprises and that earnings should be persistent and predictable. CFOs also believe that investors perceive smooth earnings as less risky, which makes predictions about future earnings easier to determine for analyst (Graham et al., 2005). This in turn, leads to more stability; which at its turn helps to decrease the returns (Iñiguez and Poveda, 2003). Michelson et al. (1995) concede these findings as they find that income smoothing lowers the risk of a firm when the earnings are stable and consistent. Consequently, investors perceive lower returns. Lower expected returns and lower risk, leads to higher market

values.

On the contrary, CFOs believe that the fluctuations that exist from the non-smoothing firms, lead to unpredictable occasions which lead to earnings surprises when targets are not met (Graham et al., 2005). Earnings surprises make the information gathered useless, which at its turn lead to the wrong decision or riskier decision-makings. Consequently, it lowers the stock return (Skinner and Sloan, 2002). So, income smoothing might be a positive tool that might help the investors in taking useful decisions.

It would also be at the management's best own interest to increase the stock market return by smoothing the income. Therefore, I will not focus on earnings management in general, which has been done in extensive quantity of studies, but in this particular and peculiar earnings management type, income smoothing.

As the executive compensation might have a great incentive to smooth income, the second stream of this research will, therefore, focus on management compensation.

2.3. CFO compensation

As indicated by Healy (1985), there is a strong relation between firm performance and the accruals a manager uses, when they do receive bonus compensations that are based on firm performances. The management will try to maximise their compensation value in such situations.

However, little evidence was found for the association between compensation and incentives to manipulate earnings. Armstrong et al. (2010) for example even provide evidence that there is no positive relation between executive compensation and manipulations based on incidence of accounting irregularities. Instead, they even provide evidence of a negative relation.

On the other hand, Bergstresser and Philippon (2006) did conclude that the introduction of compensation related to the company's performance, increases the accruals used and at the end increased manipulation. These inconsistent findings make it interesting to determine what effect might be found when investigating compensations in relation with income smoothing.

The management is appointed by order of the shareholders. However, the management might have its own interests in the company (Donaldson and Davis, 1991). This problem is indicated as the agency problem. Eisenhardt (1989) describes it as the problem that arises when it is hard for the principal, the shareholders, to verify whether the management, the agent, align its desires and goals conform the agreements of the shareholders. This verification process is costly, as a third person is needed to determine the alignment while being objective. Also, the

risk approach might differ between the groups, which might lead to conflicts as parties give other priorities to existing risks (Eisenhardt, 1989). A corporate governance structure might limit this problem and increases the chance to reach the optimum shareholders value and increasing value.

The management tries to mitigate this problem by voluntarily disclosing more information, and so limiting the information asymmetry (Graham et al., 2005). However, possible scrutiny by stockholders and bondholders limits the scope of the voluntary disclosure. The latter might not help to decrease the gap that exists between the agent and the principal and thus the problem will pertain.

The aforementioned gap leads as a result, to other problems for the investors. Because the costs to control the management are high, the management might consider engaging in riskier practices. The management, in this case, considers the investment not to be as its own investment money and thus worth it a try. This is defined as the theory of moral hazard (Holmstrom, 1982). Although they might consider other parties interests as relevant, their own interest is always set in the first place. Another problem is the adverse selection theory. It refers to the situation where the stakeholders are aware of the selection made by the management, but are unable to judge whether the decision taken can be classified as the best decision due to lack of knowledge (Holmstrom, 1982).

In order to mitigate these problems, various researchers found that linking the compensation of the executive with his/her actions and decision-making, will help in reducing the agency problem (Gjesdal, 1982; Eisenhardt, 1989; Donaldson and Davis, 1991). Gjesdal refers this reduction as the Pareto-efficient decision-making. Which implies, the alignment of the management and investors' perception and view on the company's mission by linking the performance with compensation. Bergstresser and Philippon (2006) however cite the already mentioned pros and contras against these types of compensation. Namely, resolving the agency problem might lead to more manipulation of reported earnings. Coughlan and Schmidt (1985) on the other hand found that firms that do not compensate their management based on the shareholders interest incentives would have higher costs and lower performance in shareholders' interest.

Hoitash et al. (2012) best express the performance compensation. They consider incentive compensation, such as stock options, to be the compensation part provided to the management in order to obtain the desired alignment of the principal with the agent, in order to guarantee a sustainable firm performance and growth.

Many researchers, such as Bergstresser and Philippon (2006), focused in their research on the relation between manipulations, as earnings management, and compensation of the principal chief officer (CEO). The CEO is responsible for the firm's performance. As the power of the CEO is large, researchers considered that its influence on the reported earnings would also be large. However, the responsibilities regarding the financial statements lie in other hands. The CFO is the assigned person to control and prepare the financial statements following the General Accepted Accounting Standards (GAAP) (Jagadison et al., 2005).

Hoitash et al. (2012) indicate that due to the SOx-act the regulators are able to have both the CEO and the CFO held responsible for the ineffective internal control system procedure. However, Jagadison et al. (2005) cite on the other hand that the CFO in most of the cases is the one leading and responsible for the financial statement. Hoitash et al. (2012) also remark that despite the CFO responsibilities it still needs to report to the CEO. This makes it possible for the CEO to monitor the CFO's activities. Nonetheless, the effectiveness is small when the CEO has little or no financial knowledge.

Graham et al. (2005) considers the CFO as the most important executive and therefore based their interview research on the CFO and the financial accounting decisions taken. However, it must be said that they control for possible influence the CEO might have on the financial outcome. Mian (2001) underlines the position of the CFO as ultimate responsible in her research. It also considers based on the US regulation that the CFO determines how earnings are presented and the decisions regarding the accounting policies to present the firm performance. The CFO also has other key responsibilities to consider him/her a decision maker.

Furthermore, looking back in time, CFOs were hired as the financial specialist. They had the experience and knowledge of the accounting principles. They were also assigned to provide the company's financial aspects in a correct way. Furthermore, the CFO is the assigned person to detect and report flaws in the internal control to the enforcement boards of the firm (Jagadison et al., 2005). However, they conclude that the role of CFO is changing, in the perception of companies. They refer to a commentary made by Doug Carmichael, chief auditor for PCAOB[2]. He stated that CFOs nowadays are hired to help the company increase the earnings.

With a change in the expectations regarding the function and position CFOs have within the company, the pressure and the responsibilities also increases. Jiang et al. (2010)

[2] PCAOB stands for Public Company Accounting Oversight Board

consider based on the many fraud cases and prosecutions, that the CFO has an important and determinant role in financial misleading. They manage earnings in an aggressive way. At the same time, Collins et al. (2009) conclude that the post-SOx[3] period led to more CFOs being prosecuted and held responsible for the manipulations.

Considering the increasing role of the CFO, what does give the CFO incentive to manipulate the earnings? First, we can recall the job uncertainty (Arya et al., 1998). Mian (2001) for example researched that poorly performing firms, will dismiss their CFO faster than other firms.

Secondly, Healy (1985) indicated that managers might be triggered to manage earnings to meet bonus targets. Taking this into consideration and the agency problem, which can be resolved with equity incentives, provides the CFO with sufficient incentives to manage earnings.

Research shows that the CFO is compensated based on the same compensation conditions as the CEO (Indjejikian and Matejka, 2009). Although the compensation was decreasing, there is still speaking of bonus incentives. Research done by Jiang et al. (2010) provides evidence that CFOs have more and increasing equity incentives than CEOs and are therefore more willing to manage earnings to their benefit.

Recall the Graham et al. (2005) study were they found that CFOs believes that investors consider earnings and the benchmarks as the most important components of the financial statements. Therefore, the CFO will help to enlarge the firm's reputation and influence the stock prices in a positive way. Considering these remarks, the CFO also has its own interest in considering the earnings figures to be optimum. And even though the CEO has its power in the company and the CEO can influence the CFO, Jiang et al. (2010) conclude that there is no relation between the CEO and CFO equity incentives to manipulate the earnings. In other words, the CFO is independent of the CEO.

The Security and Exchange Commission (SEC) also aware of the role the CFO has been playing, amended in 2006 the following: *"As we noted in the Proposing Release, we believe that compensation of the principal financial officer is important to shareholders because, along with the principal executive officer, the principal financial officer provides the certifications required with the company's financial statements and other financial information"*. Furthermore, the SEC considers: *"Like the principal executive officer,*

[3] SOx stands for Sarbanes-Oxley Act, where the internal control system is centralised.

disclosure about the principal financial officer will be required even if he or she was no longer serving in that capacity at the end of the last completed fiscal year" (SEC, 2006, p.117). Also with the acceptance of an extension of the disclosing rule in August 2015, The SEC underlines the importance of the disclosing regulations, although this extension is focused on the CEO rather than the CFO. The SEC considers such disclosure as transparent which consequently provides the investors with better insights on the potential link between the compensation that the CFO is entitled to and the firm performance.

Therefore, when I take all of the previous research done and the developments regarding the function the CFO has in a company, I do not further consider the CEO in this study as an influential component.

The CFO is triggered by his compensation to manipulate the earnings as described in the paragraphs 2.1 and 2.2. However, the CFO takes a decision on moral and ethical bases. The third stream is an elaboration on the CFO personal characteristics.

2.4. CFO characteristics

As previously argued, researchers focused on many of their research on the compensations executives receive in order to mitigate the agency problem. On the other hand, as the fraud triangle presented by for example Mintz and Morris (2016) indicates, fraud arises when there are three components available. These three components are incentives, opportunity and rationalization. Mintz and Morris (2016) consider incentives to be related to financial triggers, such as losing jobs or bonus incentives (Healy, 1985). These can be related to the earlier discussed compensation in 2.3. Opportunity however, can be related to the internal control system. Recalling that Hoitash (2012) found evidence that the weak internal control on the side of the CEO is big when the CEO has no or little financial knowledge. The control mechanism is in this case not optimum and thus makes it possible for the CFO to prepare the financial statements in its own best interest.

Mintz and Morris (2016) consider the last component, the rationalization, as a decision based on moral and ethical decisions. They consider for example the rationalization of showing off what you are able to do (expertise). Another example of rationalization is when executives argue that it is a one-time case. The Enron fraud case, for example, emphasises this rationalization. In this case, the CFO together with other executives constructed business structures in order to deceive the public. The Economist (2012) shows how the executives were triggered to engage in unethical practices and afterwards to rationalise their actions.

Before proceeding with the fraud triangle, I first need to determine what is classified as fraud. Beneish (2001) considered the National Association of Certified Fraud Examiners definition as the best definition, which can be described as: bringing financial disadvantages to other be using misleading practices intentionally. Mintz and Morris (2016, p.131) describe it as “misusing one's position or influence in an organization for personal gain”. While we consider these definitions, Dechow et al. (2011) and Degeorge et al. (1999) both consider the possibility and most importantly the flexibility the management has within the generally accepted accounting principles (GAAP) to manipulate the earnings. Dechow et al. (2011) acknowledge that it will lead to poor earnings quality, which results in lower stock prices on the long-run.

On the other hand, the definition of deceiving persons and personal gain links with the previously arguments that CFO might manage the earnings for personal gain, even though it might not be classified as fraudulent. Lastly, Klein (2002, p.376) cites the SEC definition of earnings management, which defines it as the effort put in providing a biased view of the company’s performance, by manipulating with the financials of the company.

Hence, I consider the definition given by Mintz and Morris, to be related to the characteristics of a person. These characteristics influence the decision taken in order to deceive others. Therefore, it is relevant to consider these characteristics as key components, when evaluating the CFO’s decision making. Rest’s Model for example, shows that our behaviour is based on our moral development (Mintz and Morris, 2016). The Integrated Model of Ethical Decision Making by Linda Thorne compliment Rest’s Model in this situation by showing that our behaviour is influenced by our ethical character, which initiates when we identify dilemmas (Mintz and Morris, 2016). How the CFO or executive actually reacts to financial ethical dilemmas, depends on his cognitive development. Cognitive development is the decision the CFO takes when issues are presented, such as bankruptcy or fraud detection, and how he copes with the situation (Mintz and Morris, 2016). Kohlberg considers that our decisions depend on the times we deal with dilemma and priorities. Additionally our education and experience will influence our decision as well.

Jagadison et al. (2005) confirm Kohlberg’s statement by providing evidence that experience and education do matter in decision-making or error avoidance. They investigate whether the experience of the CFO would reduce the sum of financial restatements a company must make. They took into consideration whether the CFO already had experience as a CFO at other companies. Further, they considered whether the CFO has a high degree of education

and the effect this has on the quantity and range of restatements. They find sufficient evidence that education and experience lead to fewer restatements, which might lead to higher earnings quality. If I recall that Iñiguez and Poveda (2003) found evidence that income smoothing provides higher stock returns, it might be taken into consideration that investors consider income smoothing as high earnings quality.

Naranjo-Gil et al. (2009) analysed the influences CFO characteristics have on innovation by the management. They considered the CFO as the executive with the dominant role in this process. They also considered the effects CFO experience and education have on the decisions it takes. Though, Naranjo-Gil et al. (2009) evaluated the influence of the age of the CFO. They conclude that younger CFOs with little experience and more knowledge of the industry, instead of firm-specific knowledge, are more willing to innovate. Also, Habib and Hossain (2013) researched how the CFO and CEO influence the quality of the financial statements by researching their characteristics. They considered overconfidence a relevant issue, as it might lead to a decline in turnover due to the optimistic approach in uncertainties. Remarkably, they were not able to find evidence that the gender, talent and overconfidence are related to the quality of reports.

In contrast Barua et al. (2010), did find evidence that the gender of the CFO does influence the quality of accruals. Their focus is equivalent to the financial statement quality research done by Habib and Hossain (2013). Barua et al. (2010) found that female CFOs are more likely to produce financial statements that are of higher quality by using less accrual. Along with this finding, they also concluded that the accruals used by female CFOs are of higher quality. Huang et al. (2012) also were able to find sufficient evidence that the age of a CEO is positively correlated with higher accrual quality and thus higher financial reporting quality.

Therefore, consistent with these studies, the characteristics might be influential to the CFO when he/she is preparing the financial statements and the outcome of the reported earnings. On the other hand, it is questionable whether these characteristics also have an influence on the compensation. Chahyadi and Abusalim (2011) for example did research the influence tenure, experience and education have on the compensation CFO receives. The results are mixed, as education and experience have no influence, the tenure does matter. This provides evidence that the researched variables are possibly related.

A new component that will be regressed in this research is the ethnicity. On July the 6th, 2015 Donald Trump made some detailed statements regarding the immigrants of Mexico

in the US, such as criminal immigrants (Walker, 2015). The World Post, on the other hand, reported in September 2015 a list of countries in the European continent that does not desire to welcome more refugees (Frej, 2015). The guardian reports in December of 2015, that the young black community in the US killed by a white officer has increased significantly (Swaine et al., 2015). All these developments show that ethnicity is becoming an issue, where people are dividing themselves into groups based on beliefs, colour and origin.

Moizer et al. (1986) studied the reliance of the main auditor on the work done by the component auditor. They found that mainly when the component auditor had a Western-European, North American or Australian appearance, that their work would not be revised by the main auditor compared to the auditors from other regions. Although this study is based on auditors, the main results can be extended to other professions as well. This makes it relevant for this study to investigate whether a difference between the CFO ethnicity matters. Therefore, I will consider the CFOs with a Western-European, North American or Australian nationality as Western CFOs and the other group as non-Western CFOs.

2.5. Conclusion

When considering the three streams of this research, I conclude that many types of research are linked to theories. This empowers these theories. Consider for example the discussed model by Linda Thorne and the link it has with previous research done, such as compensation and age or quality of accruals in relation to the gender. They provide sufficient evidence that these three constructs, as discussed above, do have an effect on each other, without prejudice to the research and the findings. Although they might influence each other, there are possibilities to investigate whether they are actually related. Merely, when I consider all the components of these constructs as relevant for the investigation.

3. Hypothesis Development

3.1. Introduction

This chapter builds forth on the previously studied theories and researches. These theories and researches focused on the three streams of this study, income smoothing, the compensation received and the personal characteristics of the CFO. Based on these theories and past researches I will analyze which determinants are relevant for this study. Based on the selected theory, I can formulate the relevant hypotheses in order to conduct my research and gather sufficient evidence for my research question. The research question is dimensional. Therefore, this research will be based on two hypotheses, which I will discuss next.

3.2. Hypothesis 1

The importance of the compensation executives receive is underlined by the amendments presented by the SEC, which requires firms in the US to disclose executives' compensation. It confirms that compensation might have a significant influence on the earnings reported. Enforcements boards around the world should consider whether executive disclosures are necessary and that it would contribute to more transparency.

Moody's research (2007) on the effects of compensation and the disclosure gap provides evidence that executive compensation does influence how executives behave. In this regard, it determines the power executives have. Compensation for executives nowadays consists of the base salary, which is the salary and bonus, and the incentive components, such as options, shares and other equity-related compensation (Bushman et al., 1996). Recall Healy (1985) and Arya et al. (1998) were they discovered that management might get pressurised or see the incentives to manage earnings, in order to keep their job or to meet bonus goals. Even though the executives might not have the intention, intellectual virtue[4], the pressure and opportunity as described in the fraud triangle makes it possible. The latter type of behaviour is called the cognitive dissonance (Mintz and Morris, 2016). People might even adjust their own beliefs and behaviour, from being honest and integer, to manipulate others for their own interest. These findings are in line with the fraud definition given by Mintz and Morris (2016).

As aforementioned the management has the opportunity to manage earnings for its own benefit. The management, which has a significant role in the agency problem, is responsible

[4] Intellectual virtue is the indirect influence on the individual's intention to exercise professional judgment, such as integrity, honesty (Libby and Thorne, 2007).

for reporting the company's performance by quantifying the periodic performance. These numbers and figures are prepared based on the GAAP.

Earnings, as Ball & Brown (1968) already indicated, is an important source for investors, mainly stockholders, in determining their investments and returns. However, the pressure on the management to meet targets, such as the stock market price, can potentially lead to earnings management. These managed earnings are be based on one of the five illusions Levitt (1998) mentioned. Out of these five illusions, the "cookie jar reserves" is the most related to smoothing income.

Income smoothing makes persistence and predictability of reported earnings more valuable (Subramanyam, 1996). One of the cookie jar reserves accounting type that make income smoothing possible, is conservative accounting. Palepu et al. (2013) discouraged this type of accounting, as it classifies bad news as losses earlier than good news as gains. They do not consider it a good management approach. As conservative accounting creates more accruals, Tucker and Zarowin (2006) for example used the Modified Jones model to measure the excessive part. Accruals are the non-cash aspects of the financial statement (Palepu et al., 2013). Discretionary accruals, as a component of accruals, are the managed part of the accruals which has no economic explanatory (Ronen and Yaari, 2008). This is also called the artificial income smoothing.

Geiger and North (2006) concluded that the company uses significantly less discretionary accruals when a new CFO is hired. This indicates that the CFO with time will tend to meet or beat its targets more often by making use of accruals (Graham et al., 2005). Jiang et al. (2010) also provide evidence that the role of the CFO regarding earnings management is increasing, more than those of the CEO. So when income is smoothed, stock prices tends to go up (Iñiguez and Poveda, 2003), which amplifies the possibility of the CFO to get personal gain out of these firm and market performances.

Due to the aforementioned agency problem, the shareholders tend to compensate their management to boost the company to a higher level. A study by Cheng (2004) found evidence that CEO equity compensation leads to lowering R&D expenditures, while cash compensation does not have this influence. Lowering R&D expenditures is considered a type of real earnings management. These findings underline the Jiang et al. (2010) study.

Besides these findings, Jiang et al. (2010) also found evidence regarding the equity incentives of executives. They conclude that CFO equity incentives appear to be much higher

than the CEO equity incentives. Also, the independence aspect of the CFO regarding managing earnings is proven in their study.

Therefore, considering the influence compensation has on the decision of the management to smooth income, and the pressure to meet stock investors, a reassurance of previous studies is necessary. The following hypotheses underline the previously conducted research.

H1a: There is no relation between the change in CFO's cash compensation and the incentive to smooth earnings.

On the other hand, the equity incentive compensation is considered a determinant for the CFO to manage earnings. The equity incentive compensation usually has a higher value than cash compensation. Therefore, I expect that the CFO's total compensation is largely determined by the equity incentive compensation. So the following alternative hypothesis can be formulated:

H1b: There is a relation between the change in CFO's total compensation and the incentive to smooth earnings.

3.3. Hypothesis 2

A research conducted by for example Barua et al. (2010) provides evidence that besides compensation, other determinants might also be relevant for the CFO to smooth earnings. Finkelstein and Hambrick (1989) determined based on the John Child formula, that the components such as tenure, age, and other demographic variables do influence the executive's strategic choice. Naranjo-Gil et al. (2009) perceive that individual executive characteristics have their own impact on decisions. Rather than the study done by Finkelstein and Hambrick (1989), Naranjo-Gil et al (2009) focused on the collective impact. They also focused on the CFO characteristics, like age, tenure, and educational background.

The importance of these characteristics is shown by the research review done by Habib and Hossain (2013). They consider age, gender, experience, confidence and education important determinants in the financial reporting outcomes, although they did not find sufficient evidence for gender, education, and overconfidence.

However, Barua et al. (2010) were able to find evidence that female CFOs provide the

firm with a higher quality of accruals. This implies that they are less aggressive in taking abnormal accruals and the estimations errors are lower. So it does matter for the earnings outcome whether a female or a male prepares the financial statement. On the other hand, by only using gender as a proxy, the researchers could not determine whether other incentives could have been of influence, such as compensation. Therefore, it might be necessary to not just limit this study to the compensation aspect only nor to individual characteristics of the CFO. Extending the previous studies by incorporating all of these characteristics might provide a better view on the incentives that influence the decision of the CFO to smooth the income.

Huang et al. (2012) for example, like other studies, found that an older executive delivers a higher quality of financial information than their younger colleagues. The ethical decisions between the two groups have a determinant role. Elder executives are more conservative when they prepare the financial statements.

The study done by Chahyadi and Abusalim (2011) shows that larger firms have more CFOs with an all-around degree, such as an MBA degree. On the other hand, medium firms hire more specific knowledge based CFOs, such as the master in accounting or a Certified Public Accountant (CPA). However, they were not able to find a relation how the education and experience of CFOs affect the compensation. Due to these mixed findings and as the compensation might be influenced by personal characteristics, it does trigger me to perform an integrated research on these two components.

After all, when taking the previous studies done, I can conclude that a lot of research focused only on earnings management or executives compensation or executive characteristics, but no research have been done on all the three streams at the same time. A small part of these researches were conducted on the CFO and the relation it has with earnings management.

Hence, many of the aforementioned characteristics were studied in relation to the quality of financial information and the earnings reported. However, there is currently no research that combined compensation, executive characteristics, and income smoothing together. Following this line of thought, the second hypothesis follows.

H2a: There is a relation between the CFO's personal characteristics in combination with the change in cash compensation and the incentive to smooth earnings.

H2b: There is a relation between the CFO's personal characteristics in combination with the change in total compensation and the incentive to smooth earnings.

3.4. Conclusion

Based on the managed accruals, I can determine whether a firm smoothens their income or not. It will be determined based on the negative correlation of the accruals and net income. Compensation, on the other hand, consists of different components. Because the compensation proxy might get too complex, I therefore mitigate the complexity by separating the compensation in three groups. The first group is the total cash compensation; the second group is the total incentive and third group the total compensation. By regressing these variables, I can determine whether it aligns with prior studies. Lastly, in hypothesis two I consider the characteristics as the age of the executive, gender, educational background and tenure, as important. I also add a new component, ethnicity, considering the current ethnic discussions. These personal characteristics of the CFO are measurable compared to emotion or more specifically personality of each individual.

4. Research design

4.1. Introduction

This research will be based on regression analyses for the income smoothing and CFO determinants. Considering that these streams have been researched in multiple studies, this research builds forth on the models and variables used in these previous studies. It is worth mentioning that this research does not simply replicate previous researches, but complements prior studies. This research focuses on the interaction aspect between the compensation and characteristics determinants of the CFO in relation with income smoothing, which has not been researched yet.

The following step in this research is to determine how to operationalise the previously outlined theoretical background of the smoothing patterns. This chapter provides insight in the operationalization of the independent variables, which in this study are the compensation variables and the personal characteristic variables, and the dependent variables, income smoothing. Also, the related control variables, the sample period and the databases that I will use, are discussed.

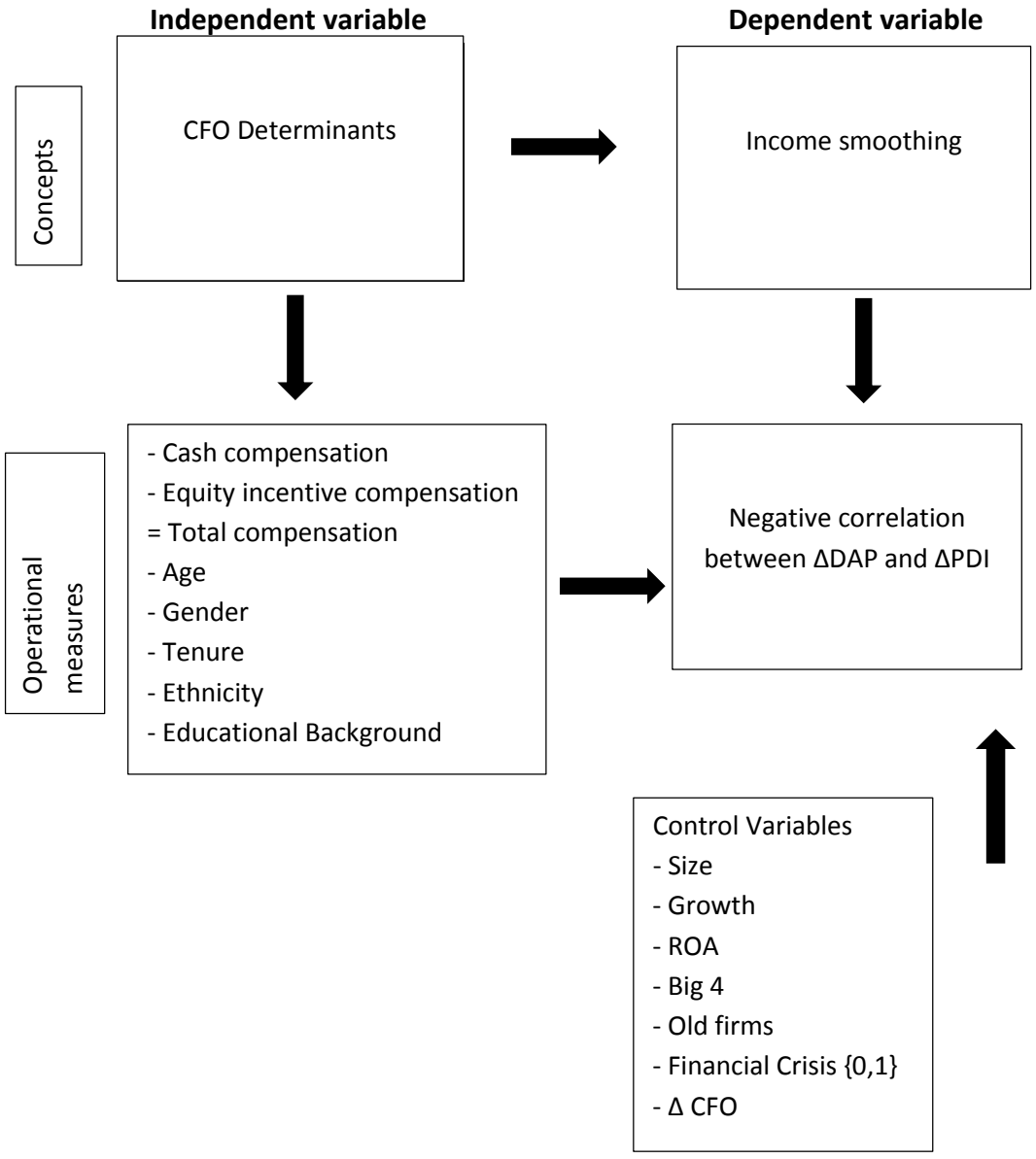
These construct variables are operationalized in the Libby box, which is presented in figure 1. The variable definitions combined with the measurements are summarised in Table 1 in paragraph 4.6 and a full overview of the regression variables regarding hypothesis 1 and 2 are presented in the Appendix table 1 and 2, respectively. Table 3 in the Appendix is a regression measurement overview.

4.2. Income smoothing

There are lots of researches that focused on earnings management, like Burgstahler & Dichev (1997) and Jacob & Jorgensen (2007). Many of these researches are related or measured using different variables and or models. However, as previously discussed, earnings management can be divided into a couple of categories (Levitt, 1998). It is necessary to divide the accruals of the company into two groups, namely the discretionary and non-discretionary accruals. Based on these classifications I can determine whether a company uses earnings management in their financial statements (Ronen & Yaari, 2008).

The discretionary accruals are considered to be the managed aspect, without economic justification. Therefore, the discretionary accruals are centralised in many studies (Jones, 1991; Dechow et al., 1995; Kothari et al., 2005; Jiang et al., 2010). The Jones Model created

Figure 1 – Libby Box (Operationalization of construct variables)



by Jones (1991) and the modified Jones model by Dechow et al. (1995) are one of the most common models to measure the discretionary. Jackson and Liu (2010)'s study is one of the limited studies that focused on specific accruals instead of the aggregated accruals. They considered the Jones Model to be too noisy to determine the discretionary accruals.

Income smoothing is measured by using an analysis of accruals. The empirical study done by Tucker & Zarowin (2006) provides this analysis in order to determine income smoothing. They measured income smoothing as the negative correlation between ΔDAP and ΔPDI. This analysis is based on prior researches done by Leuz et al. (2003) and Myers and Skinner (2007). For an overview of the operationalization, see figure 1.

As above indicated, many are the researchers that applied the Jones model or the modified Jones model of Dechow et al. (1995) in their study in order to measure the discretionary accruals. The discretionary accrual is based on the total accruals deducted by the nondiscretionary-accruals (NDA). The modified Jones model is as follows (Dechow et al., 1995):

$$TA_{it} = \beta 0 + \beta 1*(1/A_{it-1}) + \beta 2*(\Delta REV_{it} - \Delta REC_{it}) + \beta 3*PPE_{it} + \varepsilon_{it} \quad (1)$$

Where:

TA	= Total accruals;
A_{t-1}	= Lagged total assets;
ΔREV_t	= Change in revenue in year t deducted by lagged revenue and deflated by the lagged total asset;
ΔREC_t	= Change in net receivables in year t deducted by lagged net receivables and deflated by lagged total asset;
PPE_t	= the gross amount of property, plant and equipment in year t and deflated by the lagged total asset.
i	= stands for each firm;
t	= stands for year;
$\beta 0, \beta 1, \beta 2, \beta 3$	= firm-specific parameters
ε_{it}	= Error term.

This model captures the short-term accrual changes and the long-term accrual changes. Tucker & Zarowin (2006) however adds return on asset (ROA) as an extra control variable, arguing that firm performance is not captured in the model. In order to determine whether this influences the outcomes of the regressions (3) and (4), I will capture both model versions in my research. The latter one is regressed as an additional test in paragraph 5.7.

Further, the NDA is necessary in order to determine the discretionary part, which is measured as:

$$NDA_t = \beta 0 + \beta 1*(1/A_{it-1}) + \beta 2*(\Delta REV_{it} - \Delta REC_{it}) + \beta 3*PPE_{it} \quad (2)$$

Taking these two equations into consideration, I can conclude that the DAP is based on the deviations of the total accruals. The PDI proxy, on the other hand, can be derived by reducing the deflated net income by the DAP proxy.

In order to measure income smoothing, Tucker & Zarowin (2006) uses five observations. These observations are equal to five years of the annual report. Therefore, it is necessary that a wide sample period is taken into consideration. Data from 2000 till 2014 is used as sample to determine the income smoothing. The accrual information is collected based on annual earnings. Jacob and Jorgensen (2007) concluded that the fourth quarter earnings reported differ for most firms to the prior quarter earnings in that same year. Also in anticipation of the compensation variables, whose data provision is annually based, limits the use of quarterly earnings.

The firms will be classified into industry levels based on the 2-digit SIC code (Subramayam, 1996; Kothari, 2005; Tucker and Zarowin, 2006). The firms' annual financial performance information will be gathered in COMPUSTAT based on the model criteria, for variable specific information consult the Appendix Table 3.

4.3. Compensation

Compensation for executives consists of the base salary component on one hand, and stock and other equity compensation on the other hand. The latter one is mostly indicated as the equity incentive component (Bushman et al., 1996). Finkelstein and Hambrick (1989) were more specific in what it considered as compensation. They consider the salary, bonuses, deferred or stock options and pensions as the components of compensation that are provided to the executive.

However, in this study I will focus on the cumulative components of compensation. I consider the base salary and the bonus as non-risk components (Finkelstein and Hambrick, 1989), while the incentive compensation as the risk components (Bushman et al., 1996). This aligns also with research done by Mehran (1995).

Considering that compensation itself will have no effect, due to its cumulative character, I will consider the change over the year of these components (Mehran, 1995). The

model used to measure this compensation effect is consistent with Mehran's compensation valuing (1995). As indicated the compensation will be split into cash compensations and equity compensations. The latter one will be measured using the total compensation as disclosed to the SEC less the cash compensation parts.

I collected the data regarding the compensation in the COMPUSTAT dataset of Capital IQ and ExecuComp. The data gathered is based on annual compensation paid to the executives. As aforementioned, the disclosure of this compensation is a requirement of the SEC, which needs to be reported in a 10-K filing. The databases contain information for more executives than the CFO solely. Therefore, I will base the criteria on the executive information on the CFOann-variable and profunctionid-variable. I will consider the titles such as treasurer, controller, chief financial officer or other financial related titles as the CFO of the company.

4.4. Characteristics

Thorne's integrated Model of Ethical decision-making states that the approach a CFO chooses when setting up the financial statements is based on his/her ethical character. The combination of intellectual and instrumental virtues determines in this consent whether an executive's approach is more conservative for example or more optimistic. An example of intellectual virtue is age. Naranjo-Gil et al. (2009) found that younger CFOs are more optimistic and willing to invest than elder CFOs.

Besides compensation incentives to manage earnings, many researchers focused on the executive characteristics. They found evidence that characteristics such as age, tenure, experience, education and gender are related to the decision financial accounting decisions (Jagadison et al., 2005; Chahyadi and Abusalim, 2011; Huang et al., 2012; Pavlatos, 2012). Therefore, I will use these characteristics to find out whether there exists a possible relation between these characteristics and income smoothing. Age is considered the year of CFO, tenure the years of the CFO in the current function, experience is the previous work done by the CFO, education is based on MBA degrees and other financial post-graduation titles followed by the CFO and finally, the gender variable distinguishes between the female from the male CFOs. Regarding the new variable measured, it will be measured based on the ethnicity of the CFO. Whether the CFO has a Western or a non-Western background.

I will collect these data in COMPUSTAT. Capital IQ via WRDS is the leading database. Furthermore, some data are gathered from other databases such as ExecuComp in WRDS and BoardEx. The latter requires in some cases hand collection, as the data cannot be

merged.

4.5. Regression models

In the previous paragraphs 4.2 – 4.4 I described the operationalization of the construct variables. An ordinary least square regression model is employed to analyse whether the CFO's compensation and personal characteristics influence the decision to smooth earnings. All the variables in the regression models are described in Table 1. These regressions are set up based on the hypotheses. The regression model I use to determine the relation regarding H1a and H1b, in the equations (3) and (4) respectively, is:

$$SMOOTHINGFIRMS = \beta0 + \beta1*TOTCASHCH + y^*FIRMSIZE + y^*FIRMGROWTH + y^*ROA + y^*BIG4 + y^*OLDFIRM + y^*CRISIS + y^*LEV. \quad (3)$$

$$SMOOTHINGFIRMS = \beta0 + \beta1*TOTCOMPCH + y^*FIRMSIZE + y^*FIRMGROWTH + y^*ROA + y^*BIG4 + y^*OLDFIRM + y^*CRISIS + y^*LEV. \quad (4)$$

The cash compensation is tested separately in order to determine whether it would lead to a different result compared to the total compensation. Hence, the splitting the regression models makes it possible to research whether cash has a negative correlation with income smoothing and total compensation, on the other hand, has a positive effect on these accruals.

Hypotheses 2a and 2b are reflected in the equations (5) and (6) respectively:

$$SMOOTHINGFIRMS = \beta0 + \beta1*TOTCASHCH + \beta2*EDU + \beta3*TEN + \beta4*GENDER + \beta5*AGE + \beta6*ETNIC + y^*FIRMSIZE + y^*FIRMGROWTH + y^*ROA + y^*BIG4 + y^*OLDFIRM + y^*CRISIS + y^*LEV + y^*CFOCH. \quad (5)$$

$$SMOOTHINGFIRMS = \beta0 + \beta1*TOTCOMPCH + \beta2*EDU + \beta3*TEN + \beta4*GENDER + \beta5*AGE + \beta6*ETNIC + y^*FIRMSIZE + y^*FIRMGROWTH + y^*ROA + y^*BIG4 + y^*OLDFIRM + y^*CRISIS + y^*LEV + y^*CFOCH. \quad (6)$$

So, summarizing the measurements of the variables, I follow Mehran (1995) who regressed the change in compensation in the study done. Also, Hoitash et al. (2012) follow this line. The smoothing firms are the firms with a negative correlation between DAP and PDI (Tucker and Zarowin, 2006). In order to be classified as smoothers, the firms must have five or more observations with this negative correlation.

Researchers as Coughlan and Schmidt (1985), Bergstresser and Philippon (2006), Barua et al. (2010) and Jiang et al. (2010) found sufficient evidence of endogeneity problems

with regard to income smoothing. Therefore, it is necessary to control for these variables, as they might bias the results. These control variables are the size of the firm, the growth, return on asset (ROA), Big 4 and debt-equity ratio.

The size of the firm is required in order to distinguish between larger firms from smaller firms. S&P 1500 contains larger and smaller firms (Francis et al., 2013). The growth of a firm determines the growth in accruals. Therefore, I cannot solely relate the increase in discretionary accruals of a firm with compensation and characteristic of the CFO. Controlling for ROA as elaborated in paragraph 4.2, will be used interchangeable. This implies that the ROA will be controlled in the main regressions as it is the case in the additional test. However, in the additional test it will be included in the modified Jones model.

Big 4[5] firms are the four largest auditor companies, which are KPMG, PwC, EY and Deloitte. A company audited by these firms is considered to have less discretionary accruals. Controlling for debt-equity ratio also called leverage, implies controlling for the leverage aspect of the firms. The higher the leverage, the smaller the independence of the firm, which will lead to less influence on reported earnings. Jiang et al. (2010) controlled for old firm, in their case for firms that exists for 20 years or more. They followed Bergstresser and Philippon (2006), which concluded that elder firms are more experienced when considering the accruals. Furthermore, I consider the financial crises in the US in 2000 and 2007 till 2009 as relevant. This is controlled using a dummy variable. Finally, I consider controlling for the change in CFO during the years. Mian (2001) found evidence that new CFOs useless accruals in their first year compared to their successor. However, the change in CFO is only regressed for the 2nd hypotheses. However, the change in CFO is only regressed for the 2nd hypotheses.

4.6. Sample

First of all, it is important to notice that the characteristic-variable 'experience' is dropped due to missing data in COMPUSTAT and other financial databases. Despite the collection of CFO information, this data is not collected. Most CFO experience data collection in the past researches were gathered using the interview and inquiries techniques.

Table 2 Panel A reflects the sample for hypothesis 1. The data is split considering the lower data available for the characteristic variables, which causes a larger drop of data. Considering that hypothesis 1 is more a reassurance of prior researches, I separate this from

[5] Although the variable is classified as BIG4, considering the current situation, the data also reflects the period before merging of the BIG8. Data selected based on the BIG8 information.

TABLE 1: Variable Definition

Variable	Definition	Measured as
	Dependent Variables	
TA	Total Accruals	COMPUSTAT ANNUAL Dataset: (ib-oancf) deflated by lagged assets
NDA	Non-Discretionary Accrual Proxy	The Jones model specified in section 4.2.
DAP	Discretionary Accrual Proxy	TA-NDA
ISDAP	The Change in DAP	DAP -/- lagged DAP
Dev_ni	Net Income deflated	Net income change deflated by lagged total asset.
PDI	Pre-Discretionary Income	Dev_ni reduced by DAP.
ISPDI	The Change in PDI	PDI -/- lagged PDI
SMOOTHINGFIRMS	Firms with a negative correlation =>5 years	Negative Pearson's correlation between ISDAP and ISPDI
	Independent Variables	
(LN)TOTCASHCH	(The log of) the total cash compensation change.	Capital IQ dataset: Log of (ctype1 + ctype 2 -/- lagged ctype1 and ctype 2 deflated by lagged ctype1).
(LN)TOTEQCH	(The log of) the total equity compensation change.	Log of (Ctype8 + ctype16 + ctype17 + blkshval -/- lagged function deflated by lagged ctype1).
(LN)TOTCOMPCH	(The log of) the total compensation change.	Log of (Ctype23 – lagged 23 deflated by lagged ctype1).
EDU	Education dummy	Qualification: MBA, CPA or CA generates 1 otherwise 0.

AGE	Age dummy	Age or year born: If a CFO is 62 or older, it generates 1 otherwise 0.
TEN	Log of the Tenure	In function: The fiscal year minus the year the CFO went in function.
ETNIC	Ethnicity dummy	Nationality: If the CFO has a non-Western nationality it generates 1 otherwise 0.
GENDER	Gender dummy	Gender: If the CFO is a female it generates 1 otherwise 0.
	Control Variables	
LEV	Leverage	Total Liability deflated by Total Assets
(LN)ROA	(Log of) Return On Assets	Log of operating income deflated lagged total assets.
BIG4	Dummy Big4 for KPMG, Deloitte, PwC or EY	If audited by Big 4 firm after and before merging it generates 1 otherwise 0.
(LN)GROWTH	(Log of) the firm growth	Log of the book value (total asset-total liability) deflated by market value (stock price finish * outstanding shares).
OLDFIRM	Dummy of old firms	If a company is 20 years or more in COMPUSTAT registered, than 1 otherwise 0.
CRISIS	Crisis years 2000, 2006-2009	If the fiscal year coincidence 2000, 2006 till 2009, it will generates a 1 otherwise 0.
CFOCH	Change in CFO	If the CFO changes during the observation years, it generates a 1 for that year, otherwise 0.
FIRMSIZE	Proxy for the size of the firm	Log of the lagged assets.

the sample for hypothesis 2.

For hypothesis 1 I started with the data from COMPUSTAT-Capital IQ in the period January 1st, 2000 till December 31st, 2014. The sample is limited till 2015, to prevent the possibility that information regarding the fiscal year 2015 still has not been collected. The data

regarding compensation gathered is over 2.5 million data (not reported in the table). However, by selecting the CFO based information and United States firms' information, the observations are reduced to 92,010 observations.

Furthermore, firms are dropped from the sample due to differences between structure for financial institutions and the applicable accounting rules. I also dropped duplicates in the combination of firm and year in order to reduce the possibility of biased information. This improves the information gathered and the analysis of the relation per firm per year. The reason for these duplicates is unknown. There exists a possibility of double salary. However, this is not desired in this study. The merging of the dataset of COMPUSTAT annually for North America and the previously discussed dataset of Capital IQ also leads to losing observations. The company range of COMPUSTAT is smaller, which causes a loss in data of more than 52,000 observations. Lastly, it is worth mentioning that I removed firm observations that contained less than five or three years of DAP data. This is consistent with study from Tucker and Zarowin (2006). The final sample is divided into two groups, namely total sample and smoothers. The latter groups refer to the firms that smooth earnings according to the negative correlation for three or five years and more.

The reason I use a three-year approach is due to subjectivity approach of Tucker and Zarowin (2006) when classifying a firm as smoother. They considered a five-year period time as smoothing. This triggered the question what results I will obtain when a user of the financial statements has different criteria. Would a three-year period provide other results compared to a five-year period?

Regarding the Panel B sample size, its initial sample is similar to the initial sample of Panel A. Also the data processing for both samples is in the initiation the same. However, the data is merged with three other datasets instead of one. This leads to more observations being lost, namely more than 70,000 observations. The different criteria used to obtain the desired information, the lower data availability and the hand collection, negatively influence the sample observation. Furthermore, some observation were deleted due to missing values. The variables selected in the different databases are described in Table 1. For both samples, the group of smoothers is larger than the non-smoothing firms.

4.7. Conclusion

I will build my research on the modified Jones model conducted by Dechow et al. (1995). This study focuses on the firms in the United States. A total of 7,672 firms is regressed for

TABLE 2: Sample Selection Process

Panel A: Hypothesis 1		
	Nfirms-5	*Nfirms-3*
Number of observations in the initial sample (US & CFO)	92,010	92,010
Less: financial institutions	(4,778)	(4,778)
Less: duplicate firm-year observations	(19,144)	(19,144)
Less: industries with less than 5/3 years of observations	(755)	(284)
Less: Capital IQ dataset merged with COMPUSTAT dataset	(52,426)	(52,426)
Less: missing values for variables in merged dataset	(4,375)	(4,439)
Less: Firms with less than 5/3 years of ISDAP	(2,860)	(1,063)
Final sample	**7,672**	**9,876**
From which Smooths Earnings	**4,396**	**4,630**

Panel B: Hypothesis 2		
	Nfirms-5	*Nfirms-3*
Number of observations in the initial sample (US & CFO)	92,010	92,010
Less: financial institutions	(637)	(637)
Less: duplicate firm-year observations	(19,257)	(19,289)
Less: industries with less than 5/3 years of observations	(657)	(332)
Less: Capital IQ dataset merged with ExecuComp dataset	(58,786)	(58,786)
Less: Capital IQ dataset merged with BoardEx dataset	(0)	(0)
Less: Capital IQ dataset merged with COMPUSTAT dataset	(11,282)	(11,282)
Less: Firms with less than 5/3 years of ISDAP	(382)	(112)
Less: missing values for variables in merged dataset	(390)	(464)
Final sample	**619**	**1,108**
From which Smooths Earnings	**421**	**579**

The tables summarises the sample selection process for the Hypothesis 1 (Panel A) regarding DAP and CFO compensation. Panel B is regarding Hypothesis 2 based on DAP, CFO compensation and CFO personal characteristics. The sample period runs from 2000 to 2014. The second and the third column refers to the unique firm observations regarding five years and three years of negative correlation respectively.

hypothesis 1, which is based on the change in total compensation. Considering that the DAP and the PDI are deflated, a regression with absolute values of compensation might generate a

biased result. Therefore, the change in compensation is used to measure the relation with income smoothing.

The characteristics education, age and gender are classified as dummy variables, along with the ethnic variable. Lastly, tenure is measured as a log of the years in function. The sample of hypothesis two is smaller due to the merging of databases and the CFO information limitation. The sample is reduced from over the 7,600 observations to 619 observations. Also, missing observations contributed to fewer observations. Still, I consider this quantity of observations sufficient to gather the evidence needed.

5. Empirical results and analysis

5.1. Introduction

This chapter discusses the results obtained based on the regressions discussed in paragraph 4.5, reflecting the hypotheses 1 and 2. To analyse the results obtained, a good understanding of the data is necessary. Therefore, it is necessary to discuss if the data has been corrected for biased information, which I will present in paragraph 5.2. Furthermore, the smoothers in comparison with non-smoothers are reflected in the descriptive statistics in paragraph 5.3. The correlations between the independent and dependent variables are explained in paragraph 5.4. The correlations are based on the Pearson and Spearman rank's correlation models. Paragraph 5.5 reflects the results obtained from the regressions and the implication of these results. Also, the consequences these results have for the hypotheses are discussed in this paragraph. Subsequently, the limitations the study encountered and the impact of the limitations on the results obtained are reflected in paragraph 5.6. Based on these limitations, possible future research is proposed. Lastly, paragraph 5.7 provides some additional test and the related implications these results have for the main regressions.

5.2. Data correction

Before starting with regressing the hypotheses, it is necessary to control the data for possible outliers. Some studies remove these outliers, such as Tucker & Zarowin (2006), while others winsorise the data (Geiger and North, 2006; Collins et al., 2009). Despite the inconsistency between the studies, I consider every data as relevant. Each might be meaningful for the study. Therefore, all continuous variables are winsorised to mitigate the impact. If observations are smaller or greater than 1% or 99% than the data range, I adjust them to the value of 1 and 99%. However, these values might still be extreme. However, due to the winsorizing, the effects on the results are limited.

Moreover, I consider the possibility that the regression variables are too heavy correlated, which causes multicollinearity. Fortunately, all the variables stayed below the 10 percent rule of thumb following the variance inflation factor. This means that the regressions are free of the collinearity issue. Another test I consider relevant for my study is the linearity of the data, the data appeared not to significantly deviate.

Furthermore, it was necessary to control the variables for heteroscedasticity by using the robust function. This function corrected the data errors which influence the outcome of the t-value. The data appeared to be significantly heteroskedastic before the robust test.

Additionally, I controlled for skewness in the data, as some variables were not normally distributed. Therefore, it was necessary to apply the log function for some of these variables, see Table 1 for variable definition. Other studies like Finkelstein and Hambrick (1989) and Hoitash et al. (2012) also applied these log function for compensation. After controlling for all these issues, I consider the data as unbiased.

5.3. Descriptive statistics

Table 3 Panel A, the descriptive table, contains the most valuable variables for this study. Nonetheless, only a small part of these variables are discussed in this section, namely the variables that have a higher meaning in answering the research question. The distinction between the smoothing firms and non-smoothing firms is made based on the negative correlation between DAP and PDI for five or more years.

First of all, I consider the ISDAP, the change in DAP over a year. It shows an insignificant result between the smoothers and non-smoothers. This is remarkable as the literature review expectation differs from these findings. The thought behind the expectation is that smoothing firms would use more accruals to smooth their earnings compared to non-smoothing firms. The mean indicate that the change in discretionary accruals is higher for non-smoothing firms than smoothing firms. However, the difference between the two groups in DAP-value is significant. This implies that the smoothing firms apply more discretionary accruals than non-smoothing firms. These results align with the expectations.

Furthermore, the TOTCASHCH is non-significant with a value of 0,764. So, although the change in salary and bonuses is higher for smoothing companies than non-smoothing, the difference between the two groups is relatively small. This is also applicable for the change in total equity compensation. Unfortunately, the expectations were not met, as a significant difference was expected for equity compensation between the two groups. They would receive higher equity compensation due to the stock price increases. This is based on the literature review study done in paragraph 2.3. As a consequence, also the total compensation change, TOTCOMPCH, is non-significant. While the changes in compensation are non-significant, the compensations in absolute values, on the contrary, are strong significant at a level of <0,001.

Continuing with Panel B of the descriptive statistic the following needs to be considered. While the sample of H1 led to a significant difference between the DAP, the difference in the second hypothesis is insignificant. Surprisingly, the smoothers appear to have a positive discretionary proxy that is declining over the years and the contrary is the case for the non-smoothers. Further, the TOTCOMPCH, TOTCASHCH, and TOTEQCH reflect no difference

between the two groups that are of significance. This is also the case for the absolute values of compensations. An interesting point is the means of the changes in compensations from the non-smoothing group. The changes for this group are larger compared to those of the smoothing group.

Further analysis of the descriptive statistics with regard to the CFO characteristics, I find no significant difference between the values of the two groups with regard to the tenure variable. This means that the years a CFO works for the company in its current function is almost equally between the smoothing and non-smoothing firms. With respect to the education, at a 10% significance level, smoothing firms appears to have higher educated CFOs compared to non-smoothing firms.

While the difference in females between the two groups is non-significant, the age characteristic is significant for the smoothers. This implies that smoothing firms have more CFOs of 62 years and older. Lastly, when I consider the difference in ethnicity, the group of smoothing firms hires more non-Western CFOs than the non-smoothing firms. These findings are interesting for the possible influences these variables might have on the decision to smooth earnings, which is discussed further on in this paper.

5.4. Correlation analysis

Table 4 Panel A is a correlation regression based on Pearson's correlation model and the Spearman rank correlation model. The correlation shows the intensity between two variables. In table 4 the independent and dependent variables are correlated, to determine whether they influence each other. There is no correlation between the compensation change variables and income smoothers. The ranking however, provides a negative significant correlation between the cash changes. Even though the Spearman rank shows a relation, I expected a stronger correlation between these variables. Further correlation possibilities, such as the log variables, provides no significant changes. On the other hand, the correlation matrix indicates that the correlation between the compensation components is highly significant. This confirms the expectation that the compensations are related to each other.

The correlation matrix provided in Table 4 Panel B endows a significant correlation between smoothing firms and the change in DAP. The relation between smoothing firms and the tenure also appears to be of significant value. Meaning that CFOs who are longer in their current function are more willingly to smooth the earnings. This finding is in line with the expectation. On the other hand, the correlation between TEN and cash compensation change is

TABLE 3 PANEL A: Descriptive Statistics Regression Variables (COMPENSATION)

	SMOOTHERS				NON-SMOOTHERS				P-value
Variable	**N**	**Mean**	**Median**	**σ**	**N**	**Mean**	**Median**	**σ**	**t-test**
ISDAP	4396	0.005	-0,000	0.253	3276	0.017	-0,001	0.005	0.108
DAP	4396	0.043	0.043	0.181	3276	0.028	0.030	0.234	0.002
TOTCASHCH	4370	0.471	0.045	8.843	3230	0.429	0.046	2.643	0.764
TOTEQCH	4370	1.881	0.178	26.358	3230	1.610	0.137	13.799	0.562
TOTCOMPCH	4370	2.335	0.266	34.410	3230	2.012	0.212	15.112	0.581
SALARY	4396	290,083	275,000	124,646	3276	264,182	250,000	137,446	<0.001
BONUS	4396	74,089	0	181,090	3276	62,434	0	174,182	0.004
TOTCASH	4396	515,945	412,245	448,783	3275	462,335	337,923	534,927	<0.001
TOTEQ	4396	2,160,660	813,383	4,297,724	3276	1,549,505	543,452	3,144,387	<0.001
TOTCOMP	4396	2,528,279	1,192,191	4,391,451	3276	1,878,652	869,866	3,233,820	<0.001
BIG 4	4396	0.841	1	0.366	3276	0.727	1	0.446	<0.001
FIRMSIZE	4396	5.924	5.877	1.667	3276	5.271	5.240	1.925	<0.001
ROA	4396	0.017	0.061	0.243	3276	-0.077	0.024	0.371	<0.001
FIRMGROWTH	4094	35.909	0.404	2,114	3037	1.854	0.418	73.328	0.303
LEV	4380	0.507	0.462	0.414	3258	0.657	0.487	1.202	<0.001
OLDFIRM	4396	0.654	1	0.476	3276	0.561	1	0.496	<0.001
CRISIS	4396	0.190	0	0.392	3276	0.187	0	0.174	0.735

N and σ denote the number of firm-year observations and the standard deviation respectively. The sample period run is from 2000-2014 with 4,396 observations for SMOOTHERS and 3,276 for the NON-SMOOTHERS after winsorizing. All variables are defined as in table 1. The final column denotes the p-values from the t-test for the difference between the group means. The null hypothesis of no difference was tested against a two-sided alternative hypothesis. The t-test was performed based on unequal variances.

TABLE 3 PANEL B: Descriptive Statistics Regression Variables (COMPENSATION & CHARACTERISTICS)

	SMOOTHERS				NON-SMOOTHERS				P-value
Variable	**N**	**Mean**	**Median**	**σ**	**N**	**Mean**	**Median**	**σ**	**t-test**
ISDAP	421	-0.002	-0.001	0.069	198	0.005	0.001	0.093	0.405
DAP	421	0.002	0.004	0.055	198	-0.003	0.008	0.070	0.400
TOTCASHCH	421	0.074	0.038	0.590	198	0.215	0.032	1.753	0.270
TOTEQCH	421	0.341	0.100	1.886	198	0.638	0.161	3.954	0.315
TOTCOMPCH	421	0.409	0.183	2.072	198	0.858	0.243	5.448	0.264
EDU	421	0.715	1	0.452	198	0.636	1	0.482	0.055
GENDER	421	0.100	0	0.300	198	0.080	0	0.273	0.436
TEN	421	1.457	1.386	0.651	198	1.402	1.386	0.638	0.318
AGE	421	0.055	0	0.228	198	0.005	0	0.071	<0.001
ETNIC	421	0.119	0	0.324	198	0.005	0	0.071	<0.001
BIG 4	421	0.903	1	0.297	198	0.884	1	0.321	0.488
FIRMSIZE	421	6.568	6.382	1.202	198	6.458	6.238	1.314	0.317
ROA	421	0.113	0.109	0.102	198	0.082	0.081	0.155	0.014
FIRMGROWTH	418	0.509	0.392	0.586	196	0.645	6.238	1.314	0.072
LEV	419	0.394	0.369	0.225	196	0.507	0.442	0.556	0.006
OLDFIRM	421	0.696	1	0.461	198	0.126	0	0.333	0.226
CRISIS	421	0.138	0	0.345	198	0.106	0	0.309	0.692
CFOCH	421	0.100	0	0.294	198	0.106	0	0.309	0.673

N and σ denote the number of firm-year observations and the standard deviation respectively. The sample period run is from 2000-2014 with 421 observations for SMOOTHERS and 198 for the NON-SMOOTHERS after winsorizing. All variables are defined as in table 1. The final column denotes the p-values from the t-test for the difference between the group means. The null-hypothesis of no difference was tested against a two-sided alternative hypothesis. The t-test was performed based on unequal variances.

TABEL 4 PANEL A: Correlation Matrix of the Main Dependent and Independent Variables – Hypothesis 1

Pearson (Spearman rank) correlation below (above) the diagonal

	SMOOTHING	ISDAP	SALARYCH	BONUSCH	TOTCASHCH	TOTEQCH	TOTCOMPCH
SMOOTHING	1	-0.006	-0.039**	-0.025	-0.035**	-0.011	-0.013
ISDAP	0.003	1	0.019*	-0.010	0.012	-0.011	−0.009
SALARYCH	-0.012	0.002	1	0.058***	0.614***	0.250***	0.307***
BONUSCH	-0.014	-0.001	0.670***	1	0.698***	0.268***	0.331***
TOTCASHCH	-0.014	0.001	0.948***	0.871***	1	0.374***	0.465***
TOTEQCH	-0.009	0.010	0.711***	0.813***	0.818***	1	0.985***
TOTCOMPCH	-0.011	0.008	0.794***	0.856***	0.891***	0.990***	1

***** $p < 0.10$**, ****$p < 0.05$**, ***** $p < 0.01$**. I only report correlations between the main regression variables. SMOOTHING is the abbreviation for SMOOTHINGFIRMS. The other variables are defined in Table 1.**

TABEL 4 PANEL B: Correlation Matrix of the Main Dependent and Independent Variables – Hypothesis 2

Pearson (Spearman rank) correlation below (above) the diagonal

	SMOOTHER	ISDAP	TOTCASH	TOTEQ	TOTCOMP	EDU	AGE	TEN	GENDER	ETNIC
SMOOTHER	1	0.027	-0.007	0.054	0.063	0.008	0.089*	0.098*	-0.065	0.054
ISDAP	0.128**	1	0.004	-0.037	-0.042	-0.048	-0.010	0.002	-0.029	0.070*
TOTCASH	0.038	0.022	1	0.316***	0.431***	-0.005	0.006	0.129***	-0.009	0.002
TOTEQ	-0.003	0.008	0.626***	1	0.977***	-0.009	0.013	-0.021	-0.020	-0.018
TOTCOMP	0.011	0.013	0.797***	0.969***	1	0.001	0.015	-0.046	-0.016	-0.024
EDU	0.019	-0.066	0.038	0.041	0.043	1	0.044	0.135***	-0.024	0.412***
AGE	0.085	-0.011	-0.011	-0.012	-0.012	0.044	1	0.040	0.136***	0.027
TEN	0.117**	0.007	-0.098**	-0.031	-0.053	0.128***	0.031	1	-0.094**	-0.059
GENDER	-0.107**	-0.016	-0.023	-0.032	-0.034	-0.024	0.136***	-0.090**	1	-0.021
ETNIC	0.066	0.046	-0.013	-0.033	-0.030	0.412***	0.027	-0.067	-0.021	1

***** $p < 0.10$**, ****$p < 0.05$**, ***** $p < 0.01$**. I only report correlations between the main regression variables. SMOOTHER is the abbreviation for SMOOTHINGFIRMS, TOTCASH is equal to TOTCASHCH, TOTEQ is equal to TOTEQCH and TOTCOMP is equal to TOTCOMPCH. The other variables are defined in Table 1.**

negative. So the longer the CFO is in function, the less hard the compensation will change compared to the prior years.

Furthermore, TEN is related to education, gender, and ethnicity. The higher the education, the longer the tenure, while being a female CFO and a non-Western CFO, will lead to lower tenure compared to their counterparts. The Spearman rank correlation matrix provides similar correlations between the main variables.

5.5. Results analysis

5.5.1. Hypothesis 1 Regression 1

Table 5 provides the regression of hypotheses 1a, which measures the relation between the total cash compensation and the income smoothing. I obtained the following information:

With a low but positive 'adjusted R2-value' of 0.02, the 1st regression (5-year smoothers) indicates that the total change in cash compensation does not have an influence on the CFOs decision to smooth earnings. This indicates that bonuses or the salary of executives do not give an incentive to the executive to manipulate earnings by smoothing the income. This result aligns with previous studies done by inter alia Hoitash et al. (2012), although their research focused on other compensation relations. It also rejects the null hypothesis from hypothesis 1a. Controlling for endogeneity problems, provides no significant relation with income smoothing, except for firm size. The time-effect variables also provide insignificant values in this relation.

When I regress the cash compensation change in relation to firms that smooth earnings for three years, I find similar results. The result indicates that total cash compensation change is not related to income smoothing.

5.5.2. Hypothesis 1 Regression 2

The second regression has a model specification of 0.02, which is equal to the previous regression. Even though this value is low, which is probably caused by the large sample size, it does give sufficient insight into the relations studied. The influence equity incentive compensation has on the decision of the CFO to smooth income is non-significant. This result is surprising considering prior studies. An explanation is hard to find. With the exemption of the ROA control variable, none of the control variables influence the outcome to smooth earnings significantly. Controlling for time-effects is also non-significant for this regression.

TABLE 5: Results Hypothesis 1 (Compensations)

SMOOTHINGFIRMS = β0 + β1*COMPENSATION VARIABLES + y´* CONTROL VARIABLES

	5-YEAR SMOOTHERS						3-YEAR SMOOTHERS					
VARIABLE	βk	p-value	βk	p-value	βk	p-value	βk	p-value	βk	p-value	βk	p-value
Constant	-0.12	<0.00	-0.12	<0.00	-0.12	<0.00	-0.12	<0.00	-0.12	<0.00	-0.13	<0.00
1. LNTOTCASHCH	**-0.00**	**0.990**					**0.00**	**0.90**				
2. LNTOTEQCH			**0.00**	**0.27**					**0.00**	**0.31**		
3. LNTOTCOMPCH					**0.00**	**0.23**					**0.00**	**0.28**
FIRMSIZE	-0.00	0.16	-0.00	0.31	-0.00	0.20	-0.00	0.22	-0.00	0.65	-0.00	0.50
LNROA	-0.01	<0.00	-0.01	0.00	-0.01	<0.00	-0.01	<0.00	-0.01	0.00	-0.01	0.00
LNGROWTH	-0.00	0.72	-0.00	0.75	-0.00	0.70	-0.00	0.76	-0.00	0.76	-0.00	0.69
LEV	-0.01	0.50	-0.00	0.83	0.00	0.96	-0.01	0.54	-0.01	0.71	-0.00	0.91
BIG4	0.02	0.10	0.01	0.37	0.01	0.18	0.01	0.18	0.01	0.48	0.01	0.25
OLDFIRM	0.02	0.01	0.01	0.15	0.01	0.09	0.02	0.01	0.01	0.24	0.01	0.15
CRISIS	0.01	0.81	0.00	0.80	0.01	0.67	0.01	0.63	0.01	0.64	0.01	0.54
N	**1,617**		**1,458**		**1,465**		**2,630**		**2,630**		**1,564**	
Pseudo R^2	0.02		0.02		0,02		0,02		0,02		0,02	

All the variables used above are defined in Table 1 with their respective measurements. For these hypotheses the time-effects are insignificant and therefore not presented in the table. The N stand for the number of observations used for the regressions, the actual number might deviate compared to the other regressions and the sample size, due to missing values, which STATA sort out. Pseudo R^2 is the model specification power. Due to the negative character of the dependent character and the log of the changes of the dependent variable, the R^2 is smaller than usual. The numbers 1 till 3 stand for the regression number.

The regression regarding firms that smooth income, adjusted for the three year period criteria, provides a non-significant relation with equity incentives. So, regardless of the expectations and the results obtained in the regression above, no difference is observed when using different criteria. Finally, I can conclude that these results provide evidence that equity incentive compensation changes are not a reason for the CFO to adjust the earnings of the company by smoothing it.

5.5.3. Hypothesis 1 Regression 3

The log of total compensation change for smoothing firms is consequently non-significant, based on the findings in sections 5.5.1 and 5.5.2. Not tabulated is the relation of non-smoothed earnings and compensation, which is also non-significant. This indicates that compensations do not influence the choices of the CFO at all. Whether other factors might have an influence on the smoothing decision, is researched in section 5.5.4 to 5.5.6. Therefore, I can conclude that executives do not manage earnings by smoothing the income in order to obtain personal gain. Despite these findings, which are not in line with the expectations, they do reveal that executives might consider it relevant to smooth earnings in order to reflect a better view of the company. This confirms the so-called white group defined by Ronen and Yaari (2008).

With these findings, the null hypothesis of hypothesis 1b is accepted against expectation. It is interesting because it reflects that compensation information is not necessarily informative for the investors. This is in line with the findings of Armstrong et al. (2010).

Regression three from the three-year smoothers concisely provides a non-significant relation. Considering these findings, the null hypothesis of hypothesis 1b is accepted. This is inconsistent with my expectations, as already indicated. My expectations were based on the literature review from other researchers such as Bergstresser and Philippon (2006). The reason for the difference in results might lie in the components considered as equity incentive and total compensation compared to their research. Also regressing the change in compensation instead of the absolute value might have an influence. The latter possibility is tested in the additional test in section 5.7. These tests determine the robustness of the model used.

5.5.4. Hypothesis 2 Regression 1

First of all, I recall the 2nd hypothesis (2a): *There is a relation between the CFO's personal characteristics in combination with the change in cash compensation and the incentive to smooth earnings.* Secondly, Compared to the regressions from hypothesis 1, the skewness and

heteroscedasticity of the second hypotheses sample are insignificant. Therefore, it is not necessary to control for them by using the log function.

Table 6 provides information regarding the first regression of hypothesis 2. The adjusted R^2 is low, but higher than the model specification values from hypothesis 1. At a 5% significance level, GENDER and TOTCASHCH are significant determinants of income smoothing. In this relation, a male CFO will smooth the earnings more than his female colleagues. This is consistent with the findings of Barua et al. (2010). Along with the evidence found that bonus and salary changes are incentives for the CFO to smooth the earnings. This contradiction in findings is caused by the extension of the regression model. Therefore, it can be considered that the characteristic variables have a determinant role in this relation tested.

At a 10% significance level, the variables AGE and TEN are significant. This can be interpreted as CFOs at an age of 62 and older are more likely to smooth the earnings than their younger colleagues. This is inconsistent with Huang et al.'s study (2012), where they considered that higher quality of financial statements is related to elder executives. On the other hand, one might argue that earnings smoothing is a method to increase earnings quality. With regards to tenure, I find that the longer the CFO stays in his position, the greater the chance of smoothing income.

Hence, based on these findings I can say that there is sufficient evidence to reject the null-hypothesis of hypothesis 2a. This means that an older and wiser male CFO will proceed to smooth earnings faster in order to increase his cash compensation compared to its counterparts. This is consistent with the expectations.

The three-year criteria regression provides a different result than the above-discussed regression. While the five-year criteria regression provides a significant result for the total cash change, the three-year criteria does not provide this result. However, it provides a new relation, namely the education variable with income smoothing. The tenure and age are also significant in this regression. Time effects starting from 2006, the year the SEC introduced the regulation, can also be considered as important. This implies that introduction of the compensation disclosure might have played a significant role in how the relation between smoothing and compensation incentive has changed.

With this result, the hypothesis would have been accepted compared to the conclusion taken above. Therefore, I can conclude that different criteria in years will lead to a different conclusion regarding firms that smoothen income.

TABLE 6: Results Hypothesis 2 (Compensations & Characteristics)

SMOOTHINGFIRMS = β0 + β1*COMPENSATION VARIABLES + β2*CHARACTERISTICS VARIABLES+ γ* CONTROL VARIABLES

	5-YEAR SMOOTHERS						**3-YEAR SMOOTHERS**					
VARIABLE	βk	p-value	βk	p-value	βk	p-value	βk	p-value	βk	p-value	βk	p-value
Constant	-0.20	0.13	-0.17	0.18	-0.18	0.16	-0.27	0.00	-0.27	0.00	-0.27	0.00
1. TOTCASHCH	**0.02**	**0.03**					**-0.00**	**1.00**				
2. TOTEQCH			**0.00**	**0.47**					**0.00**	**0.58**		
3. LNTOTCOMPCH					**0.00**	**0.21**					**0.00**	**0.48**
TEN	**0.04**	**0.06**	**0.03**	**0.11**	**0.03**	**0.09**	**0.04**	**0.01**	**0.04**	**0.02**	**0.04**	**0.01**
EDU	**0.03**	**0.37**	**0.04**	**0.29**	**0.04**	**0.30**	**0.05**	**0.07**	**0.05**	**0.06**	**0.05**	**0.06**
GENDER	**-0.07**	**0.04**	**-0.07**	**0.04**	**-0.07**	**0.05**	**-0.04**	**0.18**	**-0.04**	**0.19**	**-0.04**	**0.19**
AGE	**0.07**	**0.09**	**0.07**	**0.09**	**0.07**	**0.09**	**0.08**	**0.03**	**0.08**	**0.03**	**0.08**	**0.03**
ETNIC	**0.05**	**0.45**	**0.05**	**0.42**	**0.05**	**0.43**	**-0.04**	**0.57**	**-0.03**	**0.61**	**-0.03**	**0.61**
FIRMSIZE	-0.01	0.25	-0.01	0.20	-0.01	0.21	-0.02	0.03	-0.02	0.04	-0.02	0.04
ROA	0.04	0.71	-0.05	0.71	0.04	0.73	-0.01	0.92	-0.00	0.97	-0.00	0.98
FIRMGROWTH	0.01	0.46	0.01	0.55	0.01	0.55	0.03	0.08	0.03	0.10	0.03	0.10
LEV	-0.03	0.67	-0.03	0.69	-0.03	0.66	-0.02	0.72	-0.02	0.75	-0.02	0.75
BIG4	-0.05	0.15	-0.05	0.17	-0.05	0.18	-0.00	0.89	-0.01	0.68	-0.01	0.69
OLDFIRM	0.04	0.14	0.04	0.11	0.04	0.11	0.02	0.01	-0.00	0.89	-0.00	0.88
CRISIS	0.10	0.42	0.08	0.49	0.09	0.48	0.13	0.14	0.12	0.16	0.12	0.17
CFOCH	0.02	0.83	0.02	0.83	0.02	0.83	0.10	0.14	0.10	0.13	0.10	0.13
Dummy year												
2009-2010 & 2006 & 2012								<0.05		<0.05		<0.05
2013-2014 & 2003								<0.01		<0.01		<0.01
N	**343**		**343**		**343**		**469**		**469**		**469**	
Pseudo R^2	0.04		0.03		0,03		0,03		0,03		0,03	

All The variables used above is defined in Table 1 with their respective measurements. Only time-effects with a p-value of <0.05 is presented in this table. The N stand for the number of observations used for the regressions, the actual number might deviate compared to the other regressions and the sample, due to missing values, which STATA sort out. Pseudo R^2 is the model specification power. Due to the negative character of the dependent character and the log of the changes of the dependent variable, the R^2 is small. The numbers 1 till 3 indicates the regression numbers.

5.5.5. Hypothesis 2 Regressions 2

Table 6 provides the regression of the total equity compensation and characteristics. The evidence found is insignificant. This implies that the equity compensation aspect cannot be considered as an incentive for the CFO to smooth the income. Then again, as discussed in section 5.5.4, GENDER and AGE do have a significant influence on income smoothing.

These findings are remarkable as I considered, like it was the case in hypothesis 1, that compensations that are based on equity incentives would increase the decision to smooth. A difference in the components used for compensation might be an explanation for the difference in findings. Also, the possibility that the incentives are cashable on a longer run compared to cash compensation itself provides possible explanations on why salary and bonuses give more incentives than equity compensation. As concluded in hypothesis 1, the conclusion of Armstrong et al. study (2010) holds, as it aligns with this study.

As is the case with the compensation of equity incentives using the five-year criteria, the three-year criteria underline these findings. On the other hand, tenure, education and the age of the CFO variables provide a significant positive coefficient. This means that mostly CFOs longer in their current position, with a higher education and older than 61 years smooth the earnings of the firm more than other CFOs. A CFO with a combination of these characteristics is ranked higher as an earnings smoother than his counterparts. As the education and tenure provide a significant coefficient, it indicates that the CFO has gained sufficient knowledge to manipulate the data within GAAP. This in order to either present a fair value of the company or for other reasons.

5.5.6. Hypothesis 2 Regressions 3

Lastly, the regression regarding total compensation change is also insignificant in relation to income smoothing. As expected the variables TEN, GENDER and AGE do influence the decision of the CFO to smooth income. However, when considering all the findings and the formulation of hypothesis 2b, it leads to the acceptance of the null hypothesis. There is no sufficient evidence to conclude that total compensation change and the cumulative characteristics do influence the executive's choice to smooth earnings. As indicated in section 5.5.5, the result does not align with the expectations. The expectations were based on the different studies done and the related findings. Therefore, I can conclude that the delayed character of equity compensation and its cumulative effects limit the effective triggers on the

CFO. CFOs might also consider that smoothing is relevant in order to provide the investors and stakeholders with the true and a fair value of the firm.

As is the case, the three-year criterion has not resulted in a more significant value for total compensation change. The characteristics on the other hand, are more associated with the decision of the CFO to smooth earnings. Considering the results of hypothesis 1 and these results, the conclusion as previously drawn can be held as true.

5.6. Limitations & future research

Unfortunate, most studies, even the most qualified ones, do have their limitations, and so does this study. Not only data wise, which limits the research, but also possible effects that might have influence on the results obtained. I considered based on previous research that the influence of the CEO might be present although research like Jiang et al. (2010) showed the independence of the CFO regarding its incentives to manipulate the earnings. The CEO might have influence on the hiring process of a CFO, by selecting a CFO with specific characteristics. Furthermore, the CEO might be the assigned person to determine the compensation level of the CFO. The CEO might also put pressure on the outcome of the financial statements. Because the power of the CEO is hard to measure in this research, it might need to be considered in future research. Despite the conclusions and results obtained, a valuable research possibility is to investigate whether the different governance structures do influence the compensation, characteristics and incentives to manage earnings.

Another limitation that might influence the outcome of the results obtained is the way income smoothing is defined. In this study, a three-year and five-year criteria are applied. This number is relatively taken, as others might consider this period too long or too short. Also, the correlation method might be questionable as the PDI is the sum of the net income and DAP itself. Future research might consider an alternative measure to determine income smoothing.

Lastly, it is also considerable for future research to determine the differences between the industries for smoothers and non-smoothers. Considering that a certain industry might tend to smooth earnings more frequently than others when it comes to compensation increases.

5.7. Additional tests

In Chapter two I discussed the different theories and researches that were conducted on income smoothing, compensation and characteristics. During my research on the theory, I found variances in measuring the modified Jones model and the compensations. Therefore, I consider

some additional tests by using these new variables. I only test these variances for the first hypothesis, as the target is to determine whether they would influence the results.

1. ROA controlled in modified Jones model

Tucker and Zarowin (2006) indicated in their research that the return on asset variable does influence the model and the outcome. The modified Jones model does not cover the effect of firms that perform above and below average. Therefore, I consider it relevant to include this proxy in the Modified Jones Model I used following Dechow et al. (1995).

The relevant table, Table 4, is reflected in the Appendix. When comparing the regression information with hypothesis 1, I find a significant negative coefficient in the regression between the smoothing firms and cash compensation changes. This result is surprisingly considering that both the three-year and five-year smoothing criteria showed an insignificant result. However, the coefficient is negative, which is in line with the expectations. Regarding the other two regressions, I find no significant result. Therefore, including the ROA in the Modified Jones Model is not relevant for this study, despite the results of cash compensations.

2. Absolute values of discretionary accruals and compensation

Furthermore, I consider it relevant to extend my research by studying the effects of absolute values. While the main test focuses on the changes in compensation, the descriptive statistics provided a significant difference for the absolute values of compensation between smoothers and non-smoothers. Therefore, it is necessary to determine whether these absolute values will lead to a different conclusion. This test follows the Jiang et al. (2010) regression model, which focused on the absolute values of discretionary accruals and compensation.

In order to determine the absolute discretionary accruals (ABSDACC) per firm, I use the DAP, as a proxy, in relation to the total accruals. The latter one is measured based on the net income reduced by the operational cash flow, as indicated in Table 1. Furthermore, the correlation between the ABSDACC and the pre-managed income will be based on the absolute value rather than on the change. Finally, the compensations as a matter of fact will also be based on the absolute value. Hoitash et al. (2012) however indicated that the use of the natural log would be necessary in order to lower the skewness of the data. Therefore, the natural log of the compensation variables is regressed.

The results are reflected in Table 4 in the Appendix. The results obtained do not align with the conclusions of Jiang et al. (2010). The table provides insignificant results for all the

compensation types in relation with income smoothing. This is consistent with the previous findings from hypothesis 1, which provides evidence that the model used in the main test is robust.

5.8. Conclusion

I find no relation between the total compensation change and income smoothing. This is not in line with the expectations regarding the compensation, mainly the incentive compensation. Meaning that a change in the total compensation of the CFO is not sufficient to influence the CFO to decide to smooth their firm's earnings. This indicates that there might be other incentives for the CFO to smoothen income rather than compensation. The CFO might consider to actually provide their users with a fair and good view of the firm's performance, following the white group of Ronen and Yaari (2008).

Excluding the cash compensation changes in combination with the CFO characteristics, I can conclude that the compensation changes are of none significant level. When considering these results, equity incentive compensations, therefore, do not trigger CFOs to manage income to a smoother pattern. However, CFO characteristics do have influence on the smoothing decision. The higher the education, the more earnings are smoothed. The same is applicable for the tenure of the CFO in its current function. The longer the CFO stays at the firm, the greater the chance he will switch to smoothing earnings. Also elder CFOs, 62 and older, and male CFOs tend to smooth the earnings more compared to their counterparts. Lastly, the ethnicity of the CFOs has not shown to be of a meaning. The background aspect of the CFO does not influence its decision in this regard.

The additional tests improve the robustness of the models used. The findings confirm the results obtained, exempt the ROA test for cash changes, although, it does not influence the conclusion for the related hypothesis.

Another evidence provided in this study is the significant difference between the three-year and five-year criteria used to classify the smoothers. The results provide evidence that different criteria might lead to different results and conclusions. This in terms of decision usefulness, does matter for the users, as the criteria used can be compared with materiality. As a different materiality will lead to different decision-making, so it is the case for the critical investors. They might come to a different conclusion than other investors, which might have influence on their investing decisions. Therefore, it is necessary that the disclosing rule is

maintained and probably expanded with more information regarding the CFO's personal information.

6. Conclusion

The aim of this study is to provide more insight into the announced earnings by the firm's executives and the influence the CFO has on these outcomes. The SEC and the EU boards are demanding more disclosing rules regarding the compensation of the executives, which is an answer to the changing role of the CFO in the financial world. Therefore, this study focusses on the relation between the CFO's compensation and his personal characteristics on the decisions to smooth earnings. This research tends to provide enforcement boards with information regarding the effectiveness of the disclosing rules, based on the relation test. The related research question is: *'Which incentives influence the CFO's decision to smooth earnings?'*.

Based on the modified Jones model and the negative correlation between the change in discretionary accruals and the change in pre-discretionary accruals, I found that CFOs do not smooth earnings for compensation purposes. There is no sufficient evidence to conclude that the CFO's smooth their earnings in order to increase their total compensation.

However, I found sufficient evidence that a CFO considers his increases in salary and bonuses as relevant incentives to smooth the firm's earnings. This when taken its characteristics, such as gender, into consideration. I found that there is sufficient evidence to conclude that male CFOs do smooth earnings more often compared to their female colleagues. The same can be concluded for higher educated CFOs, for example, a CFO with a CPA title. Furthermore, I found sufficient evidence to conclude that the longer the CFO works in his current function at the firm, the greater the smoothing of earnings. Lastly, I found with regard to the age of CFOs sufficient evidence that elder CFOs do smooth earnings in a more aggressive way compared to younger CFOs. A CFO is classified as old when he reaches the age of 62.

Regarding the new variable introduced in this research, the nationality of the CFO, there is no sufficient evidence. This means that there is no evidence to support the statement that a non-Western or a Western CFO do more earnings smoothing than their counterparts.

The results obtained are relevant and of value, as the findings might be used by the enforcement boards. The relation between income smoothing, compensations and characteristics is new and therefore relevant. In this study, it has been shown that the enforcement boards will need to consider expanding the information required in the disclosure regulation by amplifying it. CFO information regarding age, tenure, gender, titles and ethnicity

are of added value. Considering the significance of the other characteristics, the undefinable characteristic of experience should also be added to the disclosing regulation.

Besides the practical contribution, this study also adds value to the literature. As most studies linked earnings management with compensation, this study found evidence that the role compensation plays on the CFO's decision to smooth earnings, is minimum.

Despite these findings, this study also has its limitations which might influence the results. The legwork for CFOs is limited. Therefore, it would be valuable to expand the current disclosing rule, which increases the transparency for the users. Furthermore, the influence a CEO might have on the CFO has been neglected based on the conclusions of prior studies. However, his role might be significant. Therefore, it is of interest to investigate these findings in relation to different governance structures. These structures might capture the influence of the CEO.

Another limitation is the measurement technique used to determine income smoothing. Considering that the correlation is based on two related components, these might influence each other too much. Also, the choice for the five-year period might be too subjective as the results provide evidence that a three-year criterion might generate other results. Lastly, future research should consider investigating the differences between the industries. This would increase the knowledge on which industries tend to present their earnings in a smoothed way and which are based on the financial officer's compensation.

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Appendix

Tables

Appendix Table 1 – Variables Regression model overview Hypothesis 1

	Discretionary accrual = β0 + β1 Compensation + γ' controls + ε			Regressions		
	Independent Variables		Defined as	Regression 1	Regression 2	Regression 3
1.	Compensation (non - risk)	=	Salary, cash bonuses	1.		
2.	Compensation (risk)	=	Deferred compensation, stock options, stock appreciation right and pension contribution		2.	
3.	Total Compensation (risk + non-risk)	=	1. + 2.			3.
	Control variables					
A.	Firm Size	=	Log of Total Asset (lagged)	**A.**	**A.**	**A.**
B.	Firm Growth	=	Book-to-Market ratio ==> ratio Book value equity to market value equity	**B.**	**B.**	**B.**
C.	ROA	=	Ratio operating income to lagged Asset	**C.**	**C.**	**C.**
D.	BIG 4	=	Dummy --> Audited by a Big 4	**D.**	**D.**	**D.**
E.	Old Firms	=	Dummy --> Firms > 20 years in Compustat	**E.**	**E.**	**E.**
F.	Financial Crisis	=	Dummy --> year between 2007-2014	**F.**	**F.**	**F.**
G.	Leverage	=	Total liability deflated by Total Asset	**G.**	**G.**	**G.**
H.	Δ CFO	=	Dummy --> change in CFO name			

Appendix Table 2 – Variables Regression model overview Hypothesis 2

	Discretionary accrual = β0 + β1 Compensation + β2 Characteristics + γ' controls + ε			Regressions		
	Independent Variables		Defined as	Regression 1	Regression 2	Regression 3
1.	Compensation (non - risk)	=	Salary, cash bonuses	1.		
2.	Compensation (risk)	=	Deferred compensation, stock options, stock appreciation right and pension contribution		2.	
3.	Total Compensation (risk + non-risk)	=	1. + 2.			3.
4.	Characteristics	=	CFO: Educational background, Tenure, Gender, Age, Etnicity	4.	4.	4.
	Control variables			**A.**	**A.**	**A.**
A.	Firm Size	=	Log of Total Asset (lagged)	**B.**	**B.**	**B.**
B.	Firm Growth	=	Book-to-Market ratio ==> ratio Book value equity to market value equity	**C.**	**C.**	**C.**
C.	ROA	=	Ratio operating income to lagged Asset	**D.**	**D.**	**D.**
D.	BIG 4	=	Dummy --> audited by a Big 4	**E.**	**E.**	**E.**
E.	Old Firms	=	Firms > 20 years in Compustat	**F.**	**F.**	**F.**
F.	Financial Crisis	=	Dummy --> year between 2007-2014	**G.**	**G.**	**G.**
G.	Leverage	=	Total liability deflated by Total Asset	**H.**	**H.**	**H.**
H.	Δ CFO	=	Dummy --> change in CFO name			

Appendix Table 3 – Data collection overview Independent & Dependent variables

	Independent variables	Components	Measured	Database	Period	Exclusions	Testing
1.	**Compensation (risk)**						**Log used for total compensation**
1.1.		Deferred Compensation	Annual measured as other	Compustat-Capital IQ	2000-2014		
1.2.		Stock options	Annual based on the Black and Scholes model	Compustat-Capital IQ	2000-2014		
1.3.		short term	Annual total short term	Compustat-Capital IQ	2000-2014		
1.4.		long term	Annual total long term	Compustat-Capital IQ	2000-2014		
2.	**Compensation (non - risk)**						
2.1.		Salary	Annual	Compustat-Capital IQ	2000-2014		
2.2.		Cash bonuses	Annual	Compustat-Capital IQ	2000-2014		
3.	**Characteristics**						
3.1.		Educational Background	Dummy variable for titles of master degree and higher	Compustat-Capital IQ	2000-2014		
3.2.		Tenure	Log of the number of years served as the CFO	Compustat-Capital IQ	2000-2014		**Log limits deviation**
3.3.		Gender	Dummy variable for Female	Compustat-Capital IQ	2000-2014		
3.4.		Age	Dummy variable for CFOs with age of 62 or >	Compustat-Capital IQ	2000-2014	SIC 6000-6999	**Log possibilities**
3.5.		Etnicity	Dummy variable for non-American/Western-European CFO	BoardEx-Capital IQ	2000-2014		

	Dependent variables (Inc. Smoothir	Components	Measured	Database	Period	Exclusions	Testing
4.	**Total Accruals**			Compustat	2000-2014		
4.1.		Non-Discretionary accruals	**Lagged Total asset**, **ΔREC** = (Net Receivables -/- Net Receivables lagged)/ lagged TA, **ΔREV** = (REV t -/- REV t-1)/ TA t-1, **PPE** = Gross PPE/TA t-1	Compustat	2000-2014	6000-6999 (SIC)	-3 Standard deviations - Lagged TA prevents heteroskedacity
4.2.		Discretionary accruals	4. -/- 4.1. (= ε)	Compustat	2000-2014		
5.	**Net Income**		Net Income before extraordinary items	Compustat	2000-2014		
6.	**Pre-discretionary income**		5. -/- 4.2.	Compustat	2000-2014		

	Control variables	Components	Measured	Database	Period	Exclusions	Testing
A.	**Firm Size**		Log of Total Asset (lagged)	Compustat	2000-2014		
B.	**Firm Growth**		Book-to-Market ratio ==> ratio Book value equity to market value equity	Compustat	2000-2014		
C.	**ROA**		Ratio operating income to lagged Asset	Compustat	2000-2014		
D.	**BIG 4**		Dummy --> audited by a Big 4	Compustat	2000-2014		
E.	**Old Firms**		Firms > 20 years in Compustat	Compustat	2000-2014		
F.	**Financial Crisis**		Dummy --> year between 2007-2014	Compustat	2000-2014		
G.	**Leverage**		Total liability deflated by Total Asset	Compustat	2000-2014		
H.	**Δ CFO**		Dummy --> change in CFO name	Compustat	2000-2014		

Appendix Table 4: Additional tests

SMOOTHINGFIRMS = β0 + β1*COMPENSATION VARIABLES + γ*´ CONTROL VARIABLES

	ROA						ABSDACC					
VARIABLE	βk	p-value	βk	p-value	βk	p-value	βk	p-value	βk	p-value	βk	p-value
Constant	-0.08	<0.00	-0.08	<0.00	-0.08	<0.00	-0.10	0.11	-0.01	0.83	-0.00	0.94
1. LNTOTCASHCH	**-0.00**	**0.09**					**0.00**	**0.34**				
2. LNTOTEQCH			**0.00**	**0.23**					**-0.00**	**0.15**		
3. LNTOTCOMPCH					**-0.00**	**0.21**					**-0.00**	**0.22**
FIRMSIZE	-0.00	0.07	-0.00	0.14	-0.00	0.14	0.00	0.29	0.01	0.03	0.01	0.03
LNROA							0.00	0.94	0.00	0.72	0.00	0.73
LNGROWTH	-0.00	0.38	-0.00	0.99	0.00	0.11	-0.01	0.02	-0.01	0.01	-0.01	0.01
LEV	-0.02	0.13	-0.02	0.31	-0.15	0.31	-0.04	0.00	-0.04	0.00	-0.04	0.00
BIG4	0.01	0.01	0.02	0.07	0.02	007	0.00	0.76	0.00	0.59	0.00	0.61
OLDFIRM	0.01	0.06	0.01	0.03	0.01	0.03	0.02	0.00	0.01	0.01	0.02	0.01
CRISIS	0.00	0.84	0.00	0.90	0.00	0.84	-0.01	0.57	-0.00	0.83	-0.00	0.78
N	**2,152**		**1,957**		**1,980**		**2,064**		**2,065**		**2,065**	
Pseudo R^2	0.01		0.01		0,01		0,02		0,02		0,02	

All the variables used above are defined in table 1. The test is described in section 5.7. For this hypothesis time-effect is insignificant and therefore not presented in the table. The N stands for the number of observations used for the regressions, the actual number might deviate compared to the other regressions and the sample size, due to missing values, which STATA sort out. Pseudo R^2 is the model specification power. Due to the negative character of the dependent character and the log of the changes of the dependent variable, the R^2 is smaller than usual. The numbers 1 till 3 are the regression numbers.