Master thesis

The effect of clawback adoption on director compensation

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Abstract

This study examines the association between the effect of clawback adoption and total director compensation for 300 U.S. firms from 2008 to 2016. The study finds a significant positive association between clawback adoption and director compensation, suggesting that clawback adoption leads to significantly higher total director compensation. In addition, the study investigates the effect of clawback adoption on the change of total director compensation if a CEO can be regarded as powerful. The results of this study find significant evidence that the change of director compensation is negatively affected by clawback adoption if a CEO is powerful.

Keywords: clawback provisions, director compensation, corporate governance, powerful CEO

Chapter 1. Introduction

This study investigates the association between the adoption of a clawback provision and total director compensation. The adoption of clawback provisions has become a hot topic in corporate governance, as it can potentially mitigate the risk of financial misreporting and misconduct by executives through recoupment of their compensation (Chen et al., 2015; Prescott & Vann, 2018; Huang et al., 2019; Velte, 2020). Subsequently, prior research has examined the effect of clawback adoption on CEO compensation (Chen et al., 2015; Dehaan et al., 2013). In addition, it appeared that CEO compensation is closely related to director compensation (Brick et al., 2006). Therefore, this study found the motivation to examine the association between the adoption of a clawback provision and director compensation. This study is the first to examine this association, which is of importance because of multiple observations. Prior studies provide evidence that the financial reporting is more reliable and improved after clawback adoption (Dehaan et al., 2013). Consequently, it creates a signal of enhanced efforts towards better corporate governance (Huang et al., 2019). However, extant literature indicates the presence of interlocking effects that impede the effective enforcement of clawback provisions by directors (Levitt, 2005). This raises concern about the potential influence of a powerful CEO on the monitoring behavior of directors.

This study uses datasets from various sources to examine 300 U.S. firms. The sample period ranges from 2008 to 2016, inclusive. This study examines the effect of clawback adoption on the director compensation by performing an Ordinary Least Squares (OLS) regression. Additionally, the study performs another OLS regression related to this effect on the change of director compensation while considering the potential influence of a powerful CEO. The results of the first OLS regression indicate a significant positive association between director compensation and clawback adoption, consistent with the literature. Therefore, this study suggests that clawback adoption by firms leads to significantly higher total director compensation. The results of the second ordinary least squares (OLS) regression demonstrate that the three-way analysis of variance (ANOVA) involving clawback, CEO duality, and CEO tenure impose a negative impact on the change in total director compensation. Additionally, this study finds that the implementation of clawback, while considering the other independent variables, has a negative effect on the change in total director compensation. These findings contribute to supporting the notion that a clawback provision is merely utilized for signaling strong corporate governance. This creates concern as the mere presence of clawback provisions may not necessarily result in enhanced monitoring effectiveness. However, the literature

review provides skeptical and different perspectives on this statement, thereby directly raising limitations of this study. This research fails to provide compelling evidence on the monitoring effectiveness of directors after clawback adoption, while controlling for the influence of a powerful CEO. Therefore, it is recommended to conduct future research on the monitoring effectiveness of directors after adoption of a clawback provision while also accounting for the influence of a powerful CEO. Furthermore, it is plausible that the impact of a CEO on director behavior in enforcing the clawback provision is also explained through different governing variables. Therefore, this study advises to examine different factors of power that are of influence on the director's behavior in enforcing the clawback. This is of importance to examine the tradeoff of motives that the directors experience. The results could contribute to more detailed knowledge of the effect of clawback adoption on the strength of corporate governance. Furthermore, this study acknowledges the limitation of not implementing the more sophisticated difference-in-differences (DID) design. During the research, it appeared that this approach would also be applicable and suitable to provide an answer for the research question. The DID approach would enable to assess the adoption of a clawback provision as 'treatment' on the treatment group of adopting firms and the control group of non-adopting firms. A time-series analysis of this approach can provide valuable insights into the effect of clawback adoption on total director compensation. Another recommendation for further research is to account for the distinction in a voluntary or mandatory adoption of the clawback provision. This could provide more concise and specific answers to the association as tested in this study.

The paper is outlined as follows. Chapter 2 continues with the literature review. Chapter 3 presents the development of the hypotheses and chapter 4 describes the study's research design. Subsequently, chapter 5 describes the sample selection and chapter 6 presents descriptive statistics. Chapter 7 addresses the empirical results of this study. Finally, chapter 8 provides the conclusion.

Chapter 2 Literature review

Section 2.1 Clawback provisions on the march

The origin of the concept clawback provision comes from the Sarbanes-Oxley (SOX) Act of 2002, which introduced the concept of clawbacks through Section 304. This section grants the Securities and Exchange Commission (SEC) the authority to chase recoupment of compensation from executives in case of financial misconduct (DeHaan et al., 2013). Up until 2005, it appeared that the concept was not widely used as only three percent of the board of directors in Fortune 100 firms have disclosed the clawback provision in the contracts of their executive compensation. This changed however, after the impact of the Global Financial Crisis in 2008. During this crisis, the global economy experienced the worst shock in more than 70 years. After the Global Financial Crisis in 2008, the trust in the quality of accounting and corporate governance has decreased substantially (Velte, 2020; Rezaee, 2018). Rezaee (2018) supports this claim, by expressing that the onset of the financial crisis and a series of financial scandals at the start of the twenty-first century reduced investor and public confidence in corporate governance and annual reporting packages.

The board of directors is the governing body responsible for the corporate governance (John & Senbet, 1998). The directors are charged with monitoring of the top executives and have the power to renegotiate the compensation contract of the executives. Velte (2020) highlights that the decline in trust led to concerns on the fostering of incentives that would stimulate individuals to engage in fraudulent financial activities, which originated from the terms pertaining to short-term compensation in the contract. From this worrisome perspective, stake- and shareholder activists, regulators and researchers have started digging into the relationship between executive compensation and long-term performance measures to diminish the risk of fraudulent financial. As a result, significant awareness has been raised towards the relatively new practice “clawback”, which the board of directors could use to tune executives’ incentives to the long-term performance as it allows firms to recover earlier granted incentive compensation in case of financial misconduct, like fraud, restatement, or misreporting (Chen et al., 2015; Prescott & Vann, 2018). Since the last decade, the concept of clawback provisions or compensation recovery provisions have become prominent as an innovative corporate governance instrument for public interest entities (Huang et al., 2019; Chan et al., 2013; Velte, 2020; Chen et al., 2015). The responsibility of invoking the clawback provision by recovering the excess pay lies at the directors, rather than the SEC (Denis, 2012).

Section 2.2 Improvement of accounting quality

As previously mentioned, Chen et al. (2015) find that the implementation of clawback provisions should lead to more focus on long-term objectives. Velte (2020) justifies that recognition of long-terms values and non-financial issues leads to a more sustainable way of development for firms. In addition, Chen et al. (2015) provide evidence that the voluntary implementation of clawback provisions by firms in executive compensation contracts results in a diminished amount of aggressive conduct in financial reporting. Multiple studies provide evidence for this cause, as Erkens et al. (2018) claim that multiple studies acknowledge absolute indications that firm-initiated clawbacks increase the effectiveness of stimulated financial reporting quality.

To strengthen this claim, Dehaan et al., (2013) provide indication of proof for this matter, as the results of the research suggest that unexplained audit fees are significantly lower for firms that have adopted clawback provisions. The paper also presents evidence for the effectiveness of clawback provisions because clawback provisions, that require repayment despite the cause, performed significantly better in terms of unexplained audit fees and financial reporting quality than clawbacks that only requisite reimbursement in case of intentional financial misconduct (Dehaan et al., 2013). This implies that after implementation of clawbacks, auditors are less likely to detect and report internal control flaws that might impact the financial reporting quality. The study provides evidence that audit fees and audit lags decrease after clawback implementation in comparison to the pre-adoption period and the non-adopting firms. Therefore, it indicates that enhanced internal control due to the inducement of clawbacks might allow the auditors to lower the level of associated risk (Chan et al., 2012).

Besides this, Erkens et al., (2018) find a positive response from shareholders and other stakeholders towards the adoption of clawback provisions. This response is also explained and supported by Iskandar-Datta & Jia (2013), who provided evidence that shareholders of firms with a record of misstatements perceive the implementation of clawback provisions in executive compensation agreements as a genuine ultimatum to executives and, thus, as a credible prevention measure against potential financial misconduct. This appears from an economically positive response expressed by enhanced firm value of those firms. Next to this, Iskandar-Datta & Jia (2013) also conclude that clawback provisions can also be beneficial towards shareholders as they lead to less information asymmetry between the executives, directors, and shareholders. Iskandar-Datta & Jia (2013) provide significant evidence that the implementation of clawback provisions imposes a positive effect on the long-term performance

by executives for firms, directors, and shareholders in terms of accounting quality and financial misreporting.

Section 2.3 Corporate governance

The likelihood of clawback adoption is among others dependable on the corporate culture and governance structure of firms (Addy et al., 2014). According to Addy et al. (2014), it appears from prior research that firms with recent restatements, firms that exhibit a reduced number of accruals, and larger firms have a higher likelihood of adopting clawback provisions. Based on this finding, it is suggested that the board of directors are experiencing less effort to adopt a clawback provision if the firm has relatively lower levels of information risk (Addy et al., 2014). Chen & Vann (2017) find support for the finding that larger firms are more likely to adopt a clawback. In addition, the study finds that firms with stronger corporate governance proxied by board independence and diligence experience a higher likelihood of adopting the provision. Likewise, weaker corporate governance expressed by management entrenchment indicates less probability of clawback adoption. This is indicted by factors as CEO duality and tenure (Chen & Vann, 2017). Adams et al. (2005) suggest that CEO duality increases the power of the CEO to influence the decision-making progress, even to the extent that the CEO beliefs that this duality status gives him the power to impede the clawback enforcement.

Section 2.4 Behavioral analysis

Addy et al. (2009) and Bao et al. (2018) point out that directors are motivated to be involved in actions that present their support in good governance, because shareholders pay attention to the quality of corporate governance. In addition, Srinivasan (2005) indicates that outside directors are more inclined to resign from their board position after the issuance of a restatement. Besides this, the outside directors may experience a reduction in the number of directorships they hold at other firms. On the other hand, it appeared that clawback adopting firms tend to exhibit governance practices that prioritize monitoring in their corporate governance (Addy et al., 2014). However, the study also find that these firms have a greater number of director interlocks. This is defined by the extent of being in multiple boards of directors (Davis, 1996). This type of relationship is addressed by Levitt (2005), who states that it is necessary to unravel the interlocking relationship between the CEO and board of directors. Specifically, it is worrisome that a CEO can be serving on the compensation committee of a board if the CEO also hold positions on boards that determine the compensation level of other

board members (Levitt, 2005). This allows the executive to have significant influence on the directors. Peng et al. (2022) find that this influence hinders the directors' ability to effectively moderate the opportunistic managerial practices. Next to this, the relationship can be influenced even more in case the CEO appoints the director to make compensation decisions that prioritize the interest of shareholders (Huang et al., 2019). It is possible that a director who owes their board position to a specific executive might feel a sense of disloyalty when subsequently proposing that the executive's compensation should be reduced or more based on performance. Furthermore, director compensation is often closely linked to CEO compensation, which could further exacerbate the director's sense of indebtedness (Brick et al., 2006). As a result, the director may feel indebted to the CEO or care about their relationship, making it hard for them to support efforts to reclaim excessive pay. Even though there might be financial benefits for the director in reclaiming this excessive pay, it is not likely to outweigh the costs of reclaiming it. Therefore, it is less likely that a board of directors with close ties to the CEO will take a clawback provision in place (Fried & Shilon, 2011; Huang et al., 2019).

Section 2.5 Directors' reluctance in enforcing the clawback

Huang et al. (2019) & Denis (2012) indicate that directors become more reluctant in monitoring and effectively enforcing the clawback provision. These study finds evidence that directors are not likely to invoke a clawback provision to reclaim the remuneration of the CEO due to interlocking or relational effects. This indication of reluctance in recoupment is also found by Fried & Shilon (2011), who state that directors are commonly influenced by psychological, social, and financial factors when it comes to favoring executives in compensation related issues. For example, the director wants to withhold a good relationship with the CEO for future business opportunities (Huang et al. 2019; Fried & Shilon, 2011). In addition. It is likely that the CEO initiates litigation, which could lead to revelation of certain facts about the service of the directors on the board. This indication of reluctance in recoupment is also found by Fried & Shilon (2011), who state that directors are commonly influenced by psychological, social, and financial factors when it comes to favoring executives in compensation related issues.

Also, it appears that when the CEO serves as both the CEO and Chairman of the board, they can exert their influence over the directors' monitoring function, thereby decreasing the probability of clawback enforcement (Addy et al. 2014). Therefore, Addy et al. (2014) propose that CEO duality acts as an obstacle to the bord of directors' effective monitoring and clawback enforcement. It appears that directors may use the endorsement of clawback adoption as a signal to the director labor market to showcase their dedication to board independence. Besides,

this way of signaling can also be an economical tactic to give a false imagination of good governance to investors (Denis, 2012; Huang et al., 2019).

Section 2.6 Agency theory

There is an evident presence of the agency theory on the board of directors that could lead to inefficient structures of director compensation (Ryan & Wiggins, 2004). This theory has been the most applied theoretical context of corporate governance related research (Seal, 2006). It elaborates on the issues that come to light when one party, the agent, is acting on behalf of another party, the principal (Velte, 2020). The principal is expected to guide, monitor, and correct the actions of the agent, while the agent is expected to provide services to the principal. The problem that arises is that all actions and corrections come at a cost, therefore, it is usually not remunerative to perform as perfectly as possible. This accounts both for the agent and for the principal (Mitnick, 2015). In this research, the shareholders/investors can be regarded as the principal, while the directors can be regarded as the agent. In an agency setting, the principal is focusing on maximizing the firms' value to obtain a higher residual claim of principals' stocks. While the agent is only incentivized to maximize his compensation with a certain amount of effort, which is out of scope of the shareholders. Therefore, information asymmetry is present, which can lead to moral hazard and financial misconduct, and the latter is exactly the opposite of the purpose of a clawback provision.

Section 2.7 Compensation after clawback adoption

Brick et al. (2006) find that directors' compensation is linked to their role in overseeing and exerting effort towards firm value maximization. Though, their findings present a significant indication that CEO compensation is positively associated to director compensation, while accounting for the monitoring proxies. Prior studies also provide a significant increase in total CEO compensation after adoption of a clawback provision (Chen et al., 2015; Dehaan et al., 2013). The studies explicitly find a higher total level of CEO compensation for clawback adopting firms in comparison to non-adopting firms. The positive relationship between director and CEO compensation could be attributed to unobserved firm complexity or excessive compensation of directors and managers in an environment with ineffective monitoring practices (Brick et al., 2006). As discussed earlier, these ineffective monitoring practices could be the result of director reluctance due to interlocking relationships between the directors and executives (Levitt, 2005). While it is inevitable that directors may experience these interests that conflict with those of the shareholders, it is found that independent directors usually

receive compensation structures that are more closely linked to the performance of the firms' stock price (Ryan & Wiggins, 2004). However, the equity stake that each director receives is only a fraction of the firms' outstanding shares (Fried & Shilon, 2011). Therefore, this does not lead to effectively form the director's incentives to the shareholders.

Chapter 3 Hypothesis development

In this section, the hypothesis of the research is provided. The prior literature in combination with applicable agency theory allows to develop this hypothesis.

The findings of Dehaan et al. (2013) and Chen et al. (2015) constitute to the nature of this research as it provides research to the tradeoff associated with clawback provisions and executive compensation. The findings of their research indicate that the total CEO compensation increases after clawback adoption, suggesting that an CEO can expect to receive higher total compensation when a clawback provision is adopted in their contract. This research continues here by addressing specifically the effect of clawback adoption for directors' compensation. The importance of this effect is highlighted through the study of Brick et al. (2006), as they find the relation between director compensation and CEO compensation worrisome. Their study indicates a positive association between director compensation and CEO compensation and find an explanation through excess compensation by inefficient monitoring. Besides this, prior studies indicate that the clawback is often seen as a signaling tactic to give a false imagination of good governance to investors (Denis, 2012; Huang et al., 2019). On the other hand, a clawback provision is regarded as a credible prevention measure against potential financial misconduct (Iskandar-Datta & Jia, 2013). Chen & Vann (2017) find that firms with stronger corporate governance are more likely to adopt a clawback. In support, Addy et al. (2014) find that clawback adopting firms prioritize monitoring on their corporate governance. Multiple studies provide evidence that the implementation of clawback provisions imposes a positive effect on accounting quality (Iskandar-Datta & Jia, 2013). This also gives reasonable indication that the director compensation is higher after clawback adoption because the firm value is enhanced (Iskandar-Datta & Jia, 2013).

Subsequently, on behalf of the findings of these studies, it allows this study to predict an unambiguous testable statement which entails:

H_1: The total director compensation is higher after adoption of a clawback provision.

Based on the literature review, there is reasonable indication that the directors' behavior in enforcing the clawback provision is influenced by the CEO. Denis (2012) & Huang et al. (2019) indicate that the relation between the director and CEO creates reason for reluctance behavior in effectively enforcing the clawback provision, because the director's personal costs involved do not outweigh the benefit of enforcing it. Financially speaking, since the compensation structure for directors typically consists of a significant portion of fixed pay rather than equity-based compensation, directors may not experience strong financial incentives to enforce clawback provisions (Fried & Shilon, 2011). The personal costs also consist of social or phycological costs imposed on the director, because the directors are tempted to withhold a good relationship with the CEO for future business opportunities (Fried & Shilon, 2011). Secondly, directors can experience a sense of loyalty to the CEO, which also makes them less tempted to enforce the clawback. In addition, it is likely that the CEO initiates litigation, which in turn can lead to the revelation of certain facts about the service of the directors on the board (Fried & Shilon, 2011). Chen & Vann (2017) indicate that the longer a CEO is in its position, the likelier the CEO has good relationship with the directors in the firm's board. This study notes that CEO tenure is an indicating variable of how long a CEO is in its position. Therefore, Fried & Shilon (2017) and Chen & Vann (2017) indicate that increased CEO tenure leads to less likely enforcement of the clawback provision (Huang et al, 2019).

Also, Adams et al. (2005) state that being the CEO and Chairman of the board of directors increases the influence of the CEO about the decision-making progress. It even appears that a CEO belief that its duality status can be able to impede with the enforcement of the clawback (Chen & Vann 2017). Subsequently, Addy et al. (2014) suggest that CEO duality forms a barrier to directors to monitor effectively. Hence, the CEO serving also as Chairman of the board of directors can influence the effective monitoring function of the directors and reduces the likelihood of clawback enforcement (Addy et al. 2014). The reduction in effective monitoring is most likely to lead in a decrease in director compensation. Therefore, it is expected that the hinder of clawback enforcement due to CEO tenure and CEO duality leads to reduced effectiveness of monitoring by the directors, which in turn will negatively affect the director's compensation. Due to this, the factors CEO duality and CEO tenure have been chosen as variables to indicate an influential CEO for this study. This is supported by Huang et al. (2019), who refer to this influential CEO as a powerful one. Therefore, this study will refer to a CEO to which both factors apply as powerful. This leads to the following hypothesis:

H_2: The effect of clawback adoption on the change of director compensation will be negative if a CEO can be regarded as powerful.

Chapter 4 Research Design

This chapter presents the research design to examine the following research question: "*What is the effect of the adoption of a clawback provision on total director compensation?*". To capture this effect, an operationalization of the dependent and independent variable is essential to estimate the interaction between the variables. In the first section, the establishment of the estimation models related to the hypotheses is explained. The second section of this chapter provides a detailed explanation and justification of each control variable that is presented and used in the estimation models.

Section 4.1 Ordinary Least Squares (OLS) regression models

The first hypothesis H_1 will be tested by the following Ordinary Least Squares (OLS) regression to estimate the effect of the adoption of a clawback provision on the total director's compensation. There has been chosen to perform an OLS regression in order to establish a straightforward approach to examine the relation between the dependent and independent variables. This method allows to effectively control for the effects of possible confounding variables on the dependent variable, thereby isolating the impact of the main independent variable. This enables to explicitly determine the isolated effect of clawback adoption on total director compensation. Therefore, the following OLS regression model has been formed:

$$DirectorComp_{i,t} = \beta_0 + \beta_1 Clawback_{i,t} + \beta_2 DirectorAge_{i,t} + \beta_3 Size_{i,t} + \beta_4 Lev_{i,t} + \beta_5 ROA_{i,t} + \beta_6 Sales_{i,t} + \beta_7 Volatility_{i,t} + \beta_8 TobinQ_{i,t} + \beta_9 BoardSize_{i,t} + \beta_{10} Restatement_{i,t} + \varepsilon_{i,t}$$

The dependent variable (DirectorComp) is reflecting the natural logarithm of total director compensation that is granted, provided by the dataset ISS Incentive lab. The dependent variable has been log-transformed to allow interpretation of the results in expected change per percentage point. The presence of a clawback is represented by the independent variable Clawback, which is used as a dummy variable that is coded as 1 in case a clawback provision is present in the director's compensation contract and 0 if this is not the case. The coefficient on the dummy variable Clawback is used to test the first hypothesis as it captures the effect of the presence of a clawback provision on the total director's compensation. Based on the hypothesis development of H_1, the expectation for the association is a value for β_1 significantly higher than 0, which in that case would suggest that the adoption of a clawback provision would lead to higher total director compensation.

For the second hypothesis H_2 this study makes use of an OLS regression model that estimate the change in the director's compensation package after clawback adoption when a CEO is powerful. The regression equation for the first model is represented by DirectorComp The second hypothesis H_2 will be considered by the following model:

$$\begin{aligned}\Delta DirectorComp_{i,t} = {} & \beta_0 + \beta_1 Clawback_{i,t} + \beta_2 DirectorAge_{i,t} + \beta_3 Size_{i,t} + \beta_4 Lev_{i,t} \\ & + \beta_5 ROA_{i,t} + \beta_6 Sales_{i,t} + \beta_7 Volatility_{i,t} + \beta_8 TobinQ_{i,t} + \beta_9 BoardSize_{i,t} \\ & + \beta_{10} Restatement_{i,t} + \beta_{11} CEOduality_{i,t} + \beta_{12} CEOtenure_{i,t} \\ & + \beta_{13} Clawback_{i,t} * CEOduality_{i,t} + \beta_{14} Clawback_{i,t} * CEOtenure_{i,t} \\ & + \beta_{15} CEOduality_{i,t} * CEOtenure_{i,t} + \beta_{16} Clawback_{i,t} * CEOduality_{i,t} \\ & * CEOtenure_{i,t} + \varepsilon_{i,t}\end{aligned}$$

where ΔDirectorComp is the change in total director compensation as composed of the original data related to the dependent variable of the first regression model DirectorComp. The dependent variable ΔDirectorComp is calculated as followed:

$$\Delta DirectorComp = \frac{(DirectorComp_{t+1} - DirectorComp_{t)}}{DirectorComp_t}$$

The regression makes use of a three-way ANOVA (Analysis of Variance) interaction term. Specifically, the interaction term investigates the relationship between the variables Clawback, CEOduality & CEOtenure and DirectorComp when all three control variables are considered together. The implementation of this interaction term is necessary to test for the effect of the combination of power factors after clawback adoption on the change in director compensation. This study chooses to also examine the individual influence of the power factors, as the literature review does not find significant connection between the CEO tenure and duality. This allows to provide more detailed analysis of the specific factors and determine possible distinction in influence. Therefore, there has not been established a power index that would combine both factors. The second hypothesis, based on the literature review, would indicate expectations of a decrease in the change of total director compensation after clawback adoption if the CEO can be regarded as powerful.

Section 4.2 Control variables

Based on prior studies, there is a strong indication that the impact of a clawback provision on the director's compensation could be significant. However, it is possible that the presence of various confounding variables may exert in an influence on the relationship between the director compensation and clawback provisions. This would raise concerns about

the validity of this study's results and underscores the importance of carefully controlling for potential variables that could impact the findings. Therefore, this study considers multiple control variables that are likely to be correlated with director compensation according to scientific literature. The variable descriptions are issued in table 1, which can be consulted in the appendix.

This study has chosen to take consistency into the implementation of control variables in three models as previously described in the research design, because the dependent variable is in every model a form of director compensation. According to Shiah-Hou & Cheng (2012), there is a significant association for compensation with director age (DirectorAge), firm size (Size), leverage ratio (Lev) and the firm growth (ROA). The director age indicates the experience of a director, as an older director usually has more years of experience. The firm size has been considered through the natural logarithm of total assets (Size) as well as by the natural logarithm of sales (Sales). Both variables are used as proxy for firm size. Lin & Lin (2014) find that firm size proxied through sales and total assets is positively associated to director compensation. Therefore, this study accounts for sales and total assets. The leverage ratio (Lev) takes the financial condition of a firm into account, by dividing total debt by total assets. Furthermore, the growth ratio is presented by the total return on assets (ROA) and indicates the growth rate of the firm. These factors are held as general control factors in previous research (Brick et al., 2006; Bhagat and Bolton, 2008).

According to Chen et al. (2015), less earnings volatility suggests that a firm is more likely to adopt a clawback. In addition, Aguir et al. (2014) & Fedaseyeu et al. (2018) find that stock return volatility is significantly associated to director compensation. Therefore, this study accounts for stock return volatility as proxy for earnings volatility through the control variable Volatility. Subsequently, the Tobin's Q (TobinQ) has been determined to consider how much the market values the firm, including unmeasured assets, relative to its existing exchangeable assets. A positive association with director compensation is found by Aguir et al. (2014). The Tobin's Q is a ratio between market value of the firm over the replacement cost of its assets and is calculated as followed:

$$TobinQ = \frac{\text{Size} + (\text{OutShares} * \text{ClosePrice}) - \text{OrdinaryEquity}}{Size}$$

Where, Size is again defined as the firm's total assets, OutShares as the Common Shares Outstanding, ClosePrice as the Closing Price per fiscal year, and OrdinaryEquity as Total Common/Ordinary Equity. Then, this study considers the governance variable the board of directors' size (BoardSize). The board size is found to be negatively associated with director compensation (Aguir et al., 2014). Subsequently, Restatement is another dummy variable that is coded as 1 if a restatement is present in the firm's prior year and zero otherwise. As deliberately debated in the research of Iskandar-Datta & Jia (2013), the presence of restatement in the year prior to the clawback, can impose different outcomes on the association between director compensation and clawback adoption. Therefore, the variable (Restatement) is addressed in the models as dummy variable. Finally, this study addresses CEO duality (CEOduality) and CEO tenure (CEOtenure) to account for the power of a CEO. In the regression models, CEOduality is a dummy variable, which is coded as 1 if the CEO is also the Chair of the board of directors. According to prior literature, the CEO being both the CEO and Chair of the board creates relational concerns with director as the executive is likely to be more powerful (Fedaseyeu et al. 2018; Aguir et al. 2014; Levitt, 2005). Subsequently, the variable CEOtenure is a control variable that indicates the years that a CEO is in position per firm-year. As stated by Chen et al. (2015), Chen & Vann (2017) and Ryan & Wiggins (2004), longer tenure is an indication that the CEO is more likely to be powerful. Besides this, tenure is expected to be significantly correlated to director compensation (Chen et al., 2015).

Chapter 5 Sample selection

The datasets in this thesis are obtained on United States (US) Firms from a variety of different sources. Table 2 outlines the procedure to the final sample selection. The sample period ranges from year 2008 until and including 2016. The data related to the dependent variable total director compensation have been obtained through the dataset ISS (Institutional Shareholder Services) Incentive Lab. Subsequently, the dependent variable change in director compensation have been obtained from transforming the total director compensation from the dataset ISS. The clawback-data based on 300 US firms have been received from Ying Gan (Associate Professor at Erasmus School of Economics Rotterdam). Subsequently, data related to total assets, return on assets, sales, volatility, and leverage have been obtained from Compustat Capital IQ. Further, the data related to the size of the board of directors and directors' age have been obtained from ISS. The data related to the variables that have been used to calculate Tobin's Q, are also obtained from Compustat Capital IQ. The data concerning the

dummy variable restatement have been retrieved from Audit Analytics. Finally, the data related to CEO Duality have been retrieved from BoardEx and the CEO tenure data have been obtained from the Execucomp database.

Table 2 *Sample Selection*

Full starting sample after merging all datasets (in firm-years)	9,426
Missing observations in the Audit Analytics database	(2,924)
Missing observations in the BoardEx database	(1,108)
Missing observations in the Compustat Capital IQ database	(384)
Missing observations in the Execucomp database	(156)
Missing observations in the ISS database	(63)
Missing observations in the ISS Incentive Lab database	(2)
Final sample for H_1	**4,789**
Missing observations after transformation of DirectorComp to ΔDirectorComp	(946)
Final sample for H_2	**3,843**

The table presents the process of sample selection to retrieve the final sample of firm-year observations used in the first hypothesis H_1 and secondly in the second hypothesis H_2. This study has obtained data from various sources. These sources include Audit Analytics, BoardEx, Compustat Capital IQ, Execucomp, ISS and ISS Incentive Lab. After merging the data sources, the incomplete observations have been omitted. This leads to the sample of 4,789 firm-year observations for H_1. Subsequently, this study transformed DirectorComp to the change in DirectorComp. This leads to the final sample size of 3,843 firm-year observations of H_2.

Chapter 6 Descriptive statistics

To enhance the accuracy and reliability of regression analyses and descriptive statistics, the effect of possibly spurious outliers needs to be addressed. One approach to tackle this issue is the implementation of winsorization, which involves replacing the most extreme observation values with less extreme ones. In this study, the values in the 1st percentile are replaced by the smallest value in the second percentile, while the values in the largest percentile are replaced by the 99th percentile. Through this process, the impact of outliers on statistical analysis is significantly reduced, resulting in more reliable and robust results.

Table 3 presents the descriptive statistics of the variables used in both hypotheses. The complete sample consists of 4,789 firm-year observations. For the second hypothesis H_2, the dependent variable DirectorComp have been transformed to the change in director compensation ΔDirectorComp. There has been lost firm-year observation in this process. The final sample amount for ΔDirectorComp are 3,843 firm-year observations. Specifically, the

firms in the sample are classified as a clawback adopting firm or non-adopting firm. The mean of the dependent variable ΔDirectorComp suggest that the total director compensation changes by 8% on average. It appears from table 3, that there is a clawback in place in 66% of the firm-year observations. The average age of directors in the sample is 60.45 years, with a minimum and maximum age of respectively 42 and 77 years. The board size differs per firm with an average of 10.64 members and between the 6 and 15 board members. The descriptive statistics presents diverse values in firm characteristics, but it appears that the firms in the sample are usually profitable based on the positive mean for ROA (0.07). However, some firms also experience relatively high volatility in their earnings, indicated by the maximum value of 21.94 of the variable Volatility.

Table 3 Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Median	Max
DirectorComp	4,789	12.25	0.59	9.90	12.34	13.58
ΔDirectorComp	3,843	0.08	0.44	-0.87	0.03	2.79
Clawback	4,789	0.66	0.47	0	1	1
DirectorAge	4,789	60.45	7.10	42	61	77
Size	4,789	9.06	1.14	6.48	8.96	11.46
Lev	4,789	2.36	4.68	-8.54	1.45	30.20
ROA	4,789	0.07	0.06	-0.18	0.06	0.25
Sales	4,789	8.88	1.19	6.18	8.78	11.82
Volatility	4,789	7.90	3.80	2.90	7.27	21.94
TobinQ	4,789	1.99	0.90	0.94	1.81	5.76
BoardSize	4,789	10.64	1.79	6	11	15
Restatement	4,789	0.15	0.36	0	0	1
CEOduality	4,789	0.49	0.50	0	0	1
CEOtenure	4,789	6.22	4.39	0.56	5.31	20.67

The table presents the descriptive statistics of all the variables used in the regression analyses based on a sample of 4,789 observations. The DirectorComp has been transformed to change in DirectorComp, leading to a final sample of 3,843 firm-year observations in the regression for the second hypothesis H_2. The table presents the mean value, standard deviation, the minimum value, median and maximum value of the variables within N. The variables are winsorized to account for outliers at the 1st and 99th percentile. DirectorComp is the natural logarithm of the distributed compensation amount in US dollars. The exact definitions are described in Table 1 located in the "Appendix".

It is also observable that 15% of the firm-year observations have issued restatements in the firm-year or prior to the firm-year observation. Next to this, table 3 shows that the CEO is also appointed as chairman of the board of directors for 49% of the firm-year observations. Finally, it appears through the mean value of CEOtenure (6.22) that on average a CEO remains in its position for the period of more than 6 years, so most CEOs possess the necessary capabilities to retain their position.

Table 4 presents the Pearson Correlation Matrix with all the variables used in the regressions. It is observable that there is a positive correlation between director compensation and the

Table 4 Pearson Correlation Matrix

	DirectorComp	*Clawback*	*DirectorAge*	*Size*	*Lev*	*ROA*	*Sales*	*Volatility*	*TobinQ*	*BoardSize*	*Restatement*	*CEOduality*	*CEOtenure*	*ΔDirectorComp*
DirectorComp														
Clawback	**0.085**													
DirectorAge	-0.033	**-0.052**												
Size	**0.233**	**0.232**	0.01											
Lev	0.025	**0.131**	0.016	**0.232**										
ROA	**0.065**	**-0.175**	-0.022	-0.018	**-0.216**									
Sales	**0.18**	**0.133**	-0.006	**0.829**	**0.277**	0.012								
Volatility	-0.026	**-0.108**	0.041	**-0.351**	**0.057**	**-0.211**	**-0.189**							
TobinQ	**0.205**	**-0.235**	-0.067	**-0.126**	**-0.108**	**0.356**	**-0.15**	**0.045**						
BoardSize	**0.077**	**0.266**	**-0.014**	**0.436**	**0.131**	**-0.064**	**0.294**	**-0.205**	**-0.114**					
Restatement	**-0.068**	0.008	**0.061**	**-0.157**	**-0.097**	0.015	**-0.193**	**-0.056**	0.008	-0.036				
CEOduality	**-0.09**	**0.177**	**0.093**	**0.117**	**0.134**	**-0.104**	**0.094**	-0.014	**-0.21**	**0.233**	-0.029			
CEOtenure	0.03	**-0.127**	**0.075**	**-0.071**	**-0.153**	**0.09**	**-0.076**	**-0.052**	**0.112**	**-0.157**	**0.158**	**0.192**		
ΔDirectorComp	**0.301**	-0.037	**-0.075**	0.016	-0.024	0.019	0.004	-0.016	-0.027	-0.020	**-0.043**	0.024	0.020	

The table shows the Pearson Correlation Matrix of coefficients between the variables used in the regression analyses. The rows and columns of the table represent all the different variables used. The correlation coefficients represent the strength and direction of the linear relationship between the pairs of variables. The correlation coefficient obtains a value of (-)1 in case of a perfect (negative)positive correlation, and a coefficient of 0 in case of no correlation between the variables. This table is presented to inform of the sole relation between variables. The bold amounts in the table are significant at the 0.05 significance level.

presence of a clawback. This implies that directors serving on the boards of firms with a clawback in place, receive significantly more compensation than those serving on boards in non-adopting firms. This is consistent with *H1*. Also, it appears that the age of directors (DirectorAge) is negatively correlated to director compensation and the presence of clawback. This indicates that older directors are less likely to adopt a clawback provision. The significant correlation between Size, Volatility & TobinQ with Clawback are consistent with the literature review about the likelihood of clawback adoption (Addy et al., 2014; Aguir et al., 2014; Fedaseyeu et al., 2018). However, an interesting observation is the insignificant correlation between restatements and clawback provisions. Whereas the literature suggests that firms with recent restatements are more likely to adopt clawback adoptions (Addy et al., 2014; Chen et al., 2015; Prescott & Vann, 2018). Consistent with H_2, table 4 shows that CEO duality is significant negatively correlated to director compensation. This is of importance as it demonstrates the influence of the power of a CEO. Also, it is observable that CEOtenure is significant negatively correlated to Clawback. This sole relationship indicates that the longer a CEO remains in its position, the smaller the likelihood of clawback adoption. Finally, table 4 presents that the change of director compensation is negatively correlated to the age of a director. To adequately confirm my hypotheses, it is insufficient to solely rely on singular correlation coefficients. Therefore, this study implements multivariate regression analysis to estimate the hypothesis.

Chapter 7 Empirical results

Section 7.1 Regression analysis H_1

Table 5 presents the results of the regression related to the first hypothesis H_1 to estimate the effect of clawback adoption on total director compensation. The univariate regression as presented in column 1 indicates a significant positive relationship between total director compensation and clawback adoption. This result corresponds to the results of table 4 Pearson Correlation Matrix and the first hypothesis H_1. Subsequently, table 5 presents the multivariate regression in column 2. This study performs the multivariate regression analysis through an Ordinary Least Squares regression to investigate whether the variance in total director compensation is explained through other factors rather than the adoption of the clawback provision. Column 3 presents the OLS regression while accounting for the industry- and year fixed effects. The purpose of this addition is to control for the potential effects of unobserved variables that may be specific to particular industries or years within the data. This leads to an improvement of the accuracy of the regression model. Finally, to further improve the accuracy of the regression, column 4 clusters the standard errors by firm. This is done to account for possible correlation of observations within firms, and results in more accurate standard errors to obtain more reliable statistical inferences. Therefore, this study interprets column 4 as it presents the most accurate results. However, the table indicates a statistically significant positive relationship between Clawback and DirectorComp in every column. Specifically, column 4 presents the most accurate estimation and indicates a positive relationship at a 5% significance level. This positive relationship suggests that if Clawback is equal to 1, then the value of DirectorComp is expected be 0.109 units higher compared to when Clawback is equal to 0. Since the dependent variable DirectorComp reflects the natural logarithm of director compensation, it can be suggested that the results indicate that the adoption of a clawback provision leads to 10.9% increase in director compensation, after controlling for the effects of other independent variables. This is result is in line with the first hypothesis H_1. It is also interesting to notice that Restatement presents a statistically at 5% significant negative relationship with DirectorComp. As it appeared form the literature review, directors, that are associated with a restatement, are experiencing negative consequences like reputational damage and reduced opportunities for further board positions (Srinivasan, 2005). This study continues here by indicating that directors can experience 11.3% less compensation after being associated with a restatement. The literature review provides support for this notion, as Bao et

Table 5 Regression Hypothesis 1

	Dependent variable:			
	DirectorComp			
	OLS		*felm*	
	(1)	(2)	(3)	(4)
Clawback	0.106***	0.120***	0.109***	0.109**
	(0.018)	(0.018)	(0.024)	(0.055)
DirectorAge		-0.001	-0.001	-0.001
		(0.001)	(0.001)	(0.002)
Size		0.150***	0.155***	0.155
		(0.014)	(0.045)	(0.112)
Lev		-0.003*	-0.002	-0.002
		(0.002)	(0.002)	(0.003)
ROA		0.051	0.395**	0.395
		(0.146)	(0.166)	(0.276)
Sales		-0.008	0.117**	0.117
		(0.013)	(0.046)	(0.106)
Volatility		0.011***	0.011***	0.011**
		(0.002)	(0.004)	(0.006)
TobinQ		0.163***	0.013	0.013
		(0.010)	(0.013)	(0.024)
BoardSize		-0.009*	-0.005	-0.005
		(0.005)	(0.007)	(0.015)
Restatement		-0.044*	-0.113***	-0.113**
		(0.023)	(0.025)	(0.047)
Constant	12.177***	10.640***		
	(0.014)	(0.112)		
Observations	4,789	4,789	4,789	4,789
R^2	0.007	0.123	0.286	0.286
Adjusted R^2	0.007	0.121	0.276	0.276
Residual Std. Error	0.585 (df = 4,787)	0.550 (df = 4,778)	0.499 (df = 4,723)	0.499 (df = 4,723)
F Statistic	35.086*** (df = 1; 4,787)	67.133*** (df = 10; 4,778)		

Note: *p<0.1; **p<0.05; ***p<0.01

*This table presents results from the regressions of clawback adoption on total director compensation. Column 1 presents the univariate results, using DirectorComp as dependent variable and Clawback as independent variable. Column 2 presents the multivariate results using the full set of control variables. Column 3 presents the addition of firm & year fixed effects. Finally, column 4 present the regression including firm & year fixed effects and clustered standard errors by firm. This column presents the most accurate results. See the appendix for the variable definitions. Robust standard errors are reported in parentheses. ***, **, and * indicate respectively 0.01, 0.05, 0.10 significance levels.*

al. (2018) state that clawback adopting firms prioritize stronger corporate governance, which in turn would lead to a lower chance of restatements. The evidence suggests that a lower likelihood on restatement results in higher director compensation. Therefore, consistent with

the main finding on the effect of Clawback on DirectorComp, clawback adoption can be seen as a way for firms to promote better corporate governance practices, and in turn leads to higher director compensation. Another interesting observation is that Size is significant at a 1% level in column 2 and 3 of the regression table. However, when the standard errors are clustered by firm in column 4, the significance of Size disappeared. This could mean that the relationship between DirectorComp and Size may have been spurious. Nevertheless, the adjusted R^2 value for column 4 is 0.276, which indicates that the independent variables explain about 27.6% of the variation in DirectorComp.

Overall, the regression results provide a strong and significant indication for a positive relationship between director compensation and clawback adoption. This finding is consistent with the literature and is also reflected through the finding on Restatement in combination with the literature review. Therefore, this study suggests that the effect of clawback adoption by a firm leads to significantly higher total director compensation.

Section 8.2 Regression analysis H_2

Table 6 present the results related to the regression of the second hypothesis H_2 to estimate the change in total director compensation after the adoption of a clawback when a CEO can be regarded as more powerful. Both columns in the regressions analysis in table 6 have included fixed effects for both firms and years. Additionally, the standard errors have been clustered by firms to account for potential correlation of error terms within firms. First, column 1 presents the multivariate analysis as specified in the first hypothesis H_1 expanded by the variables CEOduality and CEOtenure. This is done to obtain a better understanding of the individual relationship of both variables and ΔDirectorComp. Based on column 1, there is no significant evidence that the presence of a clawback provision affects the change of total director compensation, when accounting for CEO duality and CEO tenure. The coefficient holds an insignificant value of -0.073. When analyzing both CEOduality and CEOtenure to inspect the individual relationship with director compensation, it is observable, according to column 1, that both variables do not provide a significant effect on the change in director compensation after controlling for the effects of the other independent variables. This indicates that both CEO duality and tenure do not impose significant effect on the change in total director compensation. Both results on the factors that represent the CEO's power are consistent to the results in table 4. Another interesting observation is that DirectorAge with a coefficient of (-0.007) appears to be significant at the 1% level when considering the change in director compensation. This

Table 6 Regression Hypothesis 2

	Dependent variable:	
	ΔDirectorComp	
	(1)	(2)
Clawback	-0.073	-0.176**
	(0.047)	(0.071)
DirectorAge	-0.007***	-0.006***
	(0.002)	(0.002)
Size	0.013	0.045
	(0.071)	(0.076)
Lev	-0.003	-0.002
	(0.003)	(0.003)
ROA	0.001	0.133
	(0.442)	(0.409)
Sales	-0.054	-0.067
	(0.071)	(0.079)
Volatility	-0.001	-0.001
	(0.006)	(0.006)
TobinQ	-0.029	-0.027
	(0.022)	(0.022)
BoardSize	0.005	0.003
	(0.015)	(0.013)
Restatement	-0.051	-0.043
	(0.040)	(0.039)
CEOduality	0.073	-0.211
	(0.045)	(0.167)
CEOtenure	-0.001	-0.016***
	(0.004)	(0.006)
*Clawback*CEOduality*CEOtenure*		-0.033*
		(0.020)
*Clawback*CEOtenure*		0.015*
		(0.009)
*Clawback*CEOduality*		0.255
		(0.157)
*CEOduality*CEOtenure*		0.037*
		(0.020)
Observations	3,843	3,843
R^2	0.053	0.058
Adjusted R^2	0.037	0.041
Residual Std. Error	0.430 (df = 3,778)	0.429 (df = 3,774)

Note: *p<0.1; **p<0.05; ***p<0.01

*This table presents results from the regressions of the effect of clawback adoption on the change of total director compensation while controlling for a powerful CEO. Column 1 presents the multivariate results with firm and year fixed effects and clustered standard errors by firm. Column 2 presents the model of column 1 including the three-way ANOVA (Analysis of Variance). The three-way ANOVA deems to account for the presence of a clawback, CEO that also serves as the Chairman of the board of directors and an increase in the years that the CEO holds its position. See the appendix for the variable definitions. Robust standard errors are reported in parentheses. ***, **, and * indicate respectively 0.01, 0.05, 0.10 significance levels.*

entails that an increase in the age of a director significantly lowers the change in total director compensation by 0.7%. Subsequently, the study analyses the second column in table 6 which includes the three-way interaction term to the regression model of column 1. The results show that there is a significant relation between the change in director compensation and the presence of a clawback, a CEO that is also the chairman of the board of directors and a CEO that experiences an increase in tenure. Specifically, the results present a coefficient of -0.033 at a 10 % significance level. This suggests that the study finds evidence that the change in total director compensation is negatively affected by the adoption of a clawback provision if a CEO is powerful. An interesting observation is the significant coefficient of Clawback after considering the three-way interaction term. The results suggest that clawback adoption leads to a reduction of 17.6% in the change of total director compensation, while controlling for the independent variables and three-way ANOVA.

Overall, the regressions results find that the three-way ANOVA imposes a significant negative effect on the change of total director compensation, while controlling for the independent variables. Also, the study finds additionally, that clawback and CEO tenure negatively affect the change of director compensation. Therefore, the results are consistent with the second hypothesis H_2, indicating that this study finds evidence for a negative effect on change in total director compensation after clawback adoption if a CEO can be regarded as more powerful.

Chapter 8 Conclusion

The aim of this study is to provide evidence on the relation between director compensation and clawback adoption. Specifically, this research tries to provide an answer on the research question: "*What is the effect of the adoption of a clawback provision on the total director compensation?*". Moreover, this study performs additional analysis to account for this effect on the change of director compensation with interference of a powerful CEO.

In conclusion, this paper provides evidence that the adoption of a clawback provision imposes significant influence on the total director compensation. In particular, the evidence suggests that the adoption of a clawback provision leads to significantly higher director compensation. This can be the result of an improved signal of prioritizing stronger corporate governance in a firm. Therefore, implementation of the clawback is likely to create incentives to directors to actively participate in stronger corporate governance. The study also find evidence that restatements impose a significant negative effect on director compensation. This indicates as well that directors should participate in stronger corporate governance to ensure higher director

compensation. Based on this, it can be concluded that the adoption of clawback provision leads to higher total director compensation and thus this study leads to the acceptance of the first hypothesis H_1. As a deeper exploration, the study has tried to find evidence of the influence of a powerful CEO on the effect of clawback adoption on the change in total director compensation. The results present a significant negative effect on the change of total director compensation after clawback adoption if a CEO can be regarded as powerful. Overall, the study finds evidence to accept the second hypothesis H_2. Therefore, the results suggests that the CEO does impose significant influence on the director compensation through the power factors duality and tenure. As supported through literature (Addy et al. 2014; Fried & Shilon, 2011; Huang et al. 2019), this influence creates concerns on the enforcement of the clawback. If the directors do not enforce the clawback, it is debatable whether the clawback is still of actual influence. This also raises awareness about the prior finding that the provision is only used as signaling to shareholders and investors (Denis, 2012; Huang et al. 2019). Is it really credible?

Appendix

Table 1 Variable descriptions

Panel A: Dependent variable description

Variable		Description
DirectorComp	=	The natural logarithmic value of total compensation distributed to a director at firm *i*, in year *t*.
ΔDirectorComp	=	The percentual change in total director compensation between year *t+1* and year *t*.

Panel B: Independent variable description

Variable		Description
Clawback	=	A binary indicator variable that takes the value of 1 for the presence of a clawback at firm *i*, in year *t*, and 0 otherwise.
DirectorAge	=	The age of the director at firm *i*, in year *t*.
Size	=	The natural logarithmic value of the firm's assets in year *t.*
Lev	=	The ratio of total debt divided by total assets at firm *i*, in year *t*.
ROA	=	Return on assets at firm *i*, in year *t*.
Sales	=	The natural logarithmic value of total sales at firm *i*, in year *t*.
Volatility	=	The standard deviation of the monthly stock return over the previous fiscal year at firm *i*, in year *t*.
TobinQ	=	The ratio between the market value of firm *i* over the replacement cost of its assets in year *t*.
BoardSize	=	The number of directors that are seated in the board at firm *i*, in year *t.*
Restatement	=	A binary indicator variable that takes the value of 1 if a restatement is issued at firm *i*, in year *t* or year t_{-1}, and 0 otherwise.
CEOduality	=	A binary indicator variable that takes the value of 1 if the CEO is also chairman of the board at firm *i*, in year *t,* and 0 otherwise.
CEOtenure	=	The number of years that the CEO remained at its position at firm *i*, in year *t*.

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