ERASMUS UNIVERSITY ROTTERDAM
Erasmus School of Economics

Master Thesis Accounting & Auditing

Conservative accounting and clawback provisions

Abstract

This thesis researches whether there is an association between clawback provisions and conservative accounting. The results show that there is neither a positive nor a negative association between (un)conditional conservative accounting and clawback provisions. The measurement of conditional conservatism is based on the timeliness of bad news on net income. The measurement of unconditional conservatism is based on the market-to-book ratio. The higher the market-to-book ratio the more conservative a firm is. Users of financial statements, that are interested in how a firm limits management behaviour, need to look at both conservatism and clawbacks.

Keywords: Conservative accounting, clawback provision, association.

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1 Introduction

Information available in the financial statements is often analysed to form expectations about a company's future result. Standard setters such as the Financial Accounting Standards Board (FASB) and International Accounting Standard Board (IASB) dictate some of the rules companies must comply to regarding the financial statements. However, some information may be presented slightly different per company, so there is a need for intended users of the financial statements to distinguish between those differences per company. Subjects that can affect the results of the company and which have a certain amount of freedom are conservative accounting and clawback adoptions. The intention of this thesis is to investigate whether there is an association between clawback provisions on the conservative accounting level of firms. This leads to the following research question:

> *What is the effect of clawback provision policies on the level of conservative accounting for firms in the United States?*

The FASB and ISAB want to leave conservatism more behind and have more neutral accounting policies. Watts (2003a) argues that the FASB's effort to ban conservatism can result into consequences that the FASB do not know the effects of. Watts argues that there could be changes in the behaviour of management which leads to consequences for the investors or other stakeholders. Meanwhile Gigler, Kanodia, Sapra and Raghu (2009) conclude that accounting conservatism also has negative effects. For example, it decreases efficiencies in the debt contracting which is the opposite of what Watts implies. There are advantages and disadvantages for accounting conservatism, but conservative accounting may well have to be reduced in the future. If the FASB in fact reduces conservative accounting and only wants neutral accounting policies, it is still necessary for firms to know how to constrain managers' behaviour to not extract company value to themselves at the costs of share- and debtholders. Watts (2003a) also argues that conservatism is a way to constrain managers' behaviour because they have a short tenure and restricted liability for unfairly gained compensation. Clawbacks are also a way to discourage this behaviour by management (Chan, Chen, Chen and Yu, 2012).

In this research it is investigated what the association between clawbacks and conservative accounting is, whether it is positive, negative or neither. Prior literature shows that both conservatism and clawbacks are mechanisms to control managers' behaviour regarding their

actions. Based on this literature the hypothesis is that clawbacks and conservatism are complementary. The relevance of answering this question is to gain insight in whether regulation reduces accounting conservatism and if there are other possibilities to constrain managers' behaviour. The results of this thesis are interesting to users of financial statements. They can use the outcome to determine whether they should consider the level of conservative accounting or present clawback policies, or both, to base their investment decisions on. Conservative accounting is not directly measurable. This thesis looks at proxies for conditional conservatism based on the timeliness of bad news on net income. For unconditional conservatism the market-to-book ratio is used to measure the over- or understatement of market value in comparison to the book value. The results show that there is neither a positive association, nor a negative association between clawbacks and conditional or unconditional conservatism.

The contribution made in this thesis is that there is no association between clawbacks and conservatism. Users of financial statements that are interested in how firms constraint their management, should look at both conservatism and clawbacks. The limitations are that it is not possible to establish a causal relationship because it is uncertain whether clawbacks influence conservatism or vice versa.

The main result is that users of financial statements interested in finding out how companies limit their managers with possible fraudulent acts, should look at both the conservative accounting level and whether clawback provisions are in use.

2 Literature review and the contribution

This section first discusses separately current contribution made in the literature of conservative accounting and clawback provisions, and thereafter summarizes the joint contributions.

2.1 Conservative accounting

Accounting conservatism is defined as the immediate recognition of losses and recognition of profits only when they are in fact realized (Watts, 2003; Lafond and Roychowdhury, 2008) (i.e. recognize no profit but anticipate all the losses). Watts and Zimmerman (1978) review the positive accounting theory of the past years. In this research, it is reasoned how managers have choice in applying accounting procedures. Applying conservatism is a method for shareholders to restrict managers in opportunistic self-interest behaviour.

The concept of conservative accounting is to be reluctant in recognizing profits. Profits will be recognized when they are received. The opposite is true for expenses, these are recognized as soon as possible and when there is uncertainty about the future outcome.

2.1.1 Literature review

There are several reasons for firms to use conservative accounting. Reasons for accounting conservatism are contracting, shareholder litigation, taxation and regulation (Watts 2003a). The contracting explanation is most prevailing for conservatism as it improves the measure of earnings as a way of firm performance. Share- and debtholders prefer timely information of business performance so they can intervene as soon as possible. Verifiability means that accounting numbers only can be reflected if they are real. This mitigates unreliable positive expectations. The asymmetric verifiability leads to a better protection of share- and debtholders. In the case of debtholders, the asymmetric verifiability reduces the possibility for shareholders to pay dividend to themselves, which makes sure there is enough money to pay back debtholders. For shareholders the asymmetric verifiability ensures that managers cannot make unrealistic prospects about future incomes because income needs a higher degree of verifiability than costs do. The contracting explanation of conservatism is based on the reason that contracts are less likely to be violated. Because the timely information flow that is caused by an increase in verifiable information that comes from early recognition of losses, and recognition of profits only when they are in fact realized. Shareholder litigation may increase conservatism because the likelihood of litigation increases when accounting

figures are overstated and not when understated. Higher litigation costs, or the costs associated with lower accounting figures, result in a trade-off that managers have incentive to understate accounting figures more often (Watts, 2003a). The taxation motivation for conservatism is based on the reason that firms want to pay less taxes and can postpone the present value of tax payments by lowering current earnings through conservatism. Concerning the regulatory motive for conservatism it is argued that there is more political oversight on losses compared to gains. Overvalued accounting figures that result in losses are better observable, than gains from undervalued accounting figures (Watts, 2003a).

Incentives for conservatism are thus based on agency problems between share- and debtholders and management (Watts, 2003a, 2003b). Agency problems are defined by the agency theory. The agency theory defines a relation between principals (shareholders), and agents (managements) that run the company for the shareholders. Agency problems come from the fact that managers may have self-interest instead of serving the shareholders (Hill and Jones 1992). This comes from information asymmetry between managers and shareholders. Because managers run the business, they have more information available than shareholders to base decisions on. The literature about conservative accounting discusses how these agency problems can be mitigated.

Lafond et al. (2008) empirically investigates the relation between conservatism and the level ownership by managers and concludes that conservative accounting reduces agency problems that arise from greater differences between ownership and control. Managers have limited liability and tenure in a firm in comparison to other stakeholders. Conservatism reduces managers' opportunities to extract company value to themselves. Ahmed and Duellman (2008) first research that accounting conservatism reduces agency problems by finding a negative relation between inside ownership and conservatism and a positive relation between outside ownership and conservatism. A few years later Ahmed and Duellman (2012) extended their research in the accounting conservatism field and conclude that overconfident managers use less accounting conservatism to overestimate future returns. Hui, Matsunaga and Morse (2009) argue that accounting conservatism reduces possible litigation and decreased information asymmetry. Khan and Watts (2009) find similar results as Hui et al. (2009). Namely that conservatism is a reaction to situations where there are more information asymmetry and litigation risks. Francis, Hasan and Wu (2013) find that shareholders benefit from

conservative accounting. In economical unfavourable times conservatism results into smaller reported losses. Conservatism is an effective control mechanism that reduces information asymmetry and controls for agency problems. Not only shareholders benefit from conservatism but participants in the debt market such as lenders can better assess the risk associated with lending money. The benefit for lenders comes from the fact that through timely signals the violation of covenants arises more quickly. In return firms receive a lower interest rate (Zhang, 2009). Conservatism restricts managers' abilities to show better results and conceal bad news. This reduced information asymmetry leads to lower future stock price crashes (Kim and Zang, 2016). This corresponds to the contracting explanation for conservatism explained by (Watts, 2003a)

The conservative accounting literature indicates that conservatism gives a possibility to counter agency problems that occur from self-interest opportunities for management.

2.2 *Unconditional and conditional conservatism*
In the previous section the general concept and incentives for conservative accounting have been discussed but researchers make a distinction between unconditional and conditional conservatism. Unconditional conservatism implies that predetermined accounting policies are applied in advance to understate assets. The opposite is true for conditional conservatism, because it is not based on predetermined accounting policies, but can be used when new relevant information appears. In situations when unfavourable market circumstances lead to a decrease in book values these can be written-down, but those book values will not be written-up under favourable circumstances. Unconditional conservatism is news independent, and conditional conservatism is news dependent (Beaver and Ryan, 2005). Ball and Shivakumar (2005) argue that most of the prior literature is based on conditional conservatism, because conditional conservatism uses timely loss recognition that is news dependent. This is the case for Basu's (1997) asymmetric recognition of profits and losses model. Most of the conservatism literature is based on this conditional conservatism model. Basu (1997) reasons that conservatism leads to earlier recognition of bad news in the financial statements compared to good news, this leads to an asymmetrical recognition of earnings. Financial markets are in theory efficient; therefore they should reflect the changes in bad or good news in stock prices. The indicator for conservatism according to Basu is that bad news is incorporated faster in earnings compared to good news. To measure whether firms apply

conservatism, the bad news should be immediately noticeable in a lower earnings number. The disadvantage of using Basu's measure of conservatism is that it relies on merely one variable: the stock return. Some researches question the legitimacy of this research design and wonder if there are other factors influencing the results. This prior research about the research design is discussed in the methodology in section 4.2. However, most of the conservative literature uses some implication of this conditional conservatism model. Khan et al. (2009) extend Basu's model to capture the conservatism level per firm. The timeliness of bad news model from Basu is extended with measures for good news, size, market-to-book ratio and leverage to measure conservatism.

In this thesis both conditional and unconditional conservatism are researched. Conditional conservatism is captured by the change in stock prices through timely loss recognition in earnings based on the model of (Basu 1997; Khan et al., 2009). The benefit of conditional conservatism is that news regarding earnings can be directly captured by stock returns. The timely loss recognition aspect of conditional conservatism leads to better contracting efficiency (Watts, 2003a; Ball and Shivakumar, 2005).

Zhang (2008) discusses the contracting benefits from accounting conservatism in the debt market. A commonly used measure of unconditional conservatism is the market-to-book ratio. The market-to-book ratio measures the understatement of assets because firms that apply conservatism have lower value of assets in comparison if they had not. At the beginning point of a firm the value of equity is equal to the book value thus market-to-book ratio is 1. Over time when earnings are recognized with a delay and losses are immediately recognized there will be a discrepancy between the market-to-book ratio. Thus, over time book values are more understated for conservatism firms (Roychowdhury and Watts, 2007). Zhang (2008) and Francis, Hasan and Wu (2013) measure unconditional conservatism based on the market-to-book ratio. Therefore, unconditional conservatism is captured by the market-to-book ratio. The disadvantage of unconditional conservatism is that unconditional conservatism is inefficient for contracting reasons, because if users know the application of conservative accounting standards, they will keep this bias in mind and revert it (Ball et al. 2005).

2.3   Clawback provision

As the literature on conservatism is established, the other part of interest is clawback provisions. Clawback provisions were first established by the Security Exchange Commission

(SEC) in the Sarbenes-Oxley Act (SOX) in 2002 in section 304. With this new regulation the SEC may undo any bonus or other compensation gained by a manager if the company is to issue a restatement due to material non-compliance because of misconduct. In other words, a clawback provision is a way to recover money or any other forms of compensation from managers if they initiated incorrect accounting practices. In 2003, only 3% of the 500 largest firms of the United States adopted a clawback provision but it increased to 83% in 2010 (Csuite, 2011). Since mostly managers are also compensated with bonuses, managers may want to extort some of the money from share- or debtholders to themselves. This is possible if there are situations when managers know more than shareholders, clawbacks can be adopted. Clawback provisions are measures to counter agency problems that arise from information asymmetry between management and shareholders.

2.3.1 Literature review

Clawbacks have the potential to improve financial reporting quality. This leads to an increase in accounting quality and reduced auditor risk. Firms that adopt clawbacks have a lower occurrence of restatements of the financial statements and have higher stock valuations (Chan et al. 2012). Firms that had to restate the financial statements in the past, had the largest benefits from adopting clawbacks. Clawbacks are effective in reducing earnings management (Chan et al., 2012; Dehaan, Hodge and Shevling, 2013). Iskander-Datta and Jia (2012) argue that clawback provisions reduce the information asymmetry between shareholders and management. This is because clawbacks curb the motives for managers to manipulate earnings to transfer wealth from shareholders to their own. However, to capture the difference between firms that do adopt a clawback and firms that do not there may be a difficulty in measuring financial reporting quality because companies have freedom in adopting and designing clawbacks. The voluntary adoption of clawbacks could also indicate self-selection bias. This self-selection bias can be driven by other factors such as differences in corporate governance measures influencing the decision to adopt. Because clawbacks can differ per firm, they might not have the same effects. Other factors than clawbacks adoption could drive the improvement in financial reporting quality (Erkens, Gan and Yurtogly, 2018).

The adoption of clawbacks could lead to other undesirable effects. Chan, Chen, Chen and Yu (2015) find that after the voluntary adoption of clawbacks managers reduce costs at the

expense of long-term profits. This indicates that managers find a way for real earnings management.

2.4   Contribution

Watts (2003a) and Lafond et al. (2008) argue that a manager's short tenure and restricted liability are a reason for conservatism. However, unfairly gained compensations are hard to recover. With clawbacks in place it is easier for firms to recover the excess payment to managers. Thus, it is interesting to research the association between conservative accounting and clawbacks. Conservatism and clawbacks have similarities in reducing agency problems between managers and shareholders that arise from information asymmetry. As previously discussed in the agency theory, the principal (shareholders) and agents (management) have different interests. Managers having a short tenure create incentives to achieve as much short-term profits to have higher stock values or compensations in the form of bonuses. Since management is also limitedly liable, the pay-off of this behaviour could be beneficial to the manager at the expense of the firm. Firstly, conservatism could reduce those agency problems because it is difficult to overstate accounting figures under conservatism. However, this has no effect on the limited liability of management. Secondly, when clawback provisions are adopted, this limited liability concern for shareholders is addressed, because managers have to pay back their unfairly gained profits in the form of stock profits or other bonuses. This shows that both concepts reduce agency problems.

In the theoretical framework it is discussed whether clawback provision strengthens the level of conservative accounting, or whether clawback provisions decrease the level of conservative accounting.

3   Theoretical framework

Conservative accounting and clawback provisions should, in theory, have the same effect to reduce the agency's problems between managers and share- and stakeholders. With conservative accounting it is harder for managers to overstate earnings and with the prospect of a clawback provision managers would be less hesitant to overstate earnings (Watts, 2003a; Chan et al., 2012). Literature about the existence of a relationship between conservatism and clawbacks are related is scarce. But, when considered individually, it is possible to relate them to each other. Watts (2003a) explains that under the contracting, litigation, taxation and regulation explanations it is possible to counter moral hazard that come from information asymmetry by conservative accounting. This is also acknowledged by (Lafond et al., 2008; Ahmed et al., 2008; Hui et al., 2009; Khan et al., 2009). For clawback provisions it is argued that it reduces information asymmetry and improves financial reporting quality (Chan et al., 2012; Iskander-Data et al., 2012; Dehaan et al., 2013). However, the number of researches about the combination of conservatism and clawbacks remains scarce. Iwasaki, Otomasa and Shiiba (2018) research Japan, where clawback provisions are non-existent. The monitoring of managers in Japan is weaker compared to the United States. This gives more opportunity for managers to engage in wrongful accounting practices. If earnings-based compensation plans increase there is more conservatism. This setting indicates that conservative accounting is used in monitoring managers' behaviour.

Both accounting conservatism and clawback provision reduce the information gap between management and shareholders. There is not a lot of prior literature on these subjects combined. On the one hand conservatism and clawbacks could be complementary; on the other hand, they could be substitutes.

3.1   Theory of clawbacks and conservatism combined

Most of the literature argues that conservatism and clawbacks reduce agency problems. Whether they are a substitute or complementary to each other is not made clear. Under conservative accounting managers report lower accounting figures compared to non-conservative accounting. This still leads to an incentive to misreport under conservatism, because conservative accounting numbers can still be manipulated. However, shareholders benefit from these timely accounting signals. Under conservatism, managers are less likely to accept projects with a negative net present value that they perhaps would consider without

conservatism to boost short term earnings because of a short tenure. With a theoretical model Chen and Deng (2012) predict that firms with good measurable and informative accounting figures (information asymmetry decreases) are more likely to adopt a clawback provision. If a clawback is adopted there is more sensitivity on the bonus payment of the manager. This increase in sensitivity leads to better accounting signals. If there is less information asymmetry there is less need for conservatism, thus conservatism decreases. But instead of clawbacks leading to less conservatism Addy and Yoder (2011) find the opposite. Firms that apply conservative accounting have less reason to use clawback provisions. On the other hand, some research indicates that it does appear that managers who are constrained by a clawback are more conservative, careful and diligent (Babenko, Bennett, Bizjak and Coles, 2017).

3.2   Hypothesis

This thesis researches the association of clawback provisions on the level of conservative accounting. The reasoning for this, is that a definition of conservative accounting goes back to early 1900 (Bliss, 1924). Meanwhile clawback policies are more present since the early 2000 and increased considerably in the following years (CSuite, 2011). Thus, it makes more sense to research the effect the newly installed clawback provisions have on the level of conservatism. When firms are more conservative, there may be less need for clawbacks or the opposite if firms adopt clawbacks there may be less desire to be conservative. Another possibility is that conservative firms adopt clawbacks to be more reserved. This suggests a complementary association.

This leads to the following hypothesis:

Hypothesis 1: Clawback provisions are complementary for conservative accounting.

Based on the agency theory, conservatism and clawbacks have both the potential to reduce agency problems. These agency problems arise from differences in information available to managers and shareholders. Prior literature investigates both conservatism and clawbacks and there is no indication that the two concepts are neither a substitute nor complementary for each other. Based on reasoning from Watts (2003a) and Lafond et al. (2008) that managers have a short tenure and limited liability I expect a positive association between clawbacks and conservatism. This is because conservatism makes it harder to overstate accounting figures reducing the consequences of a short tenure. Clawback provision addresses the problem of limited liability that managers have.

Therefore, a positive association between clawbacks and conservatism is expected. If a clawback provision is present the level of conservatism will be higher compared to firms without a clawback. The hypothesis is stated in the alternative form; the null form would be that clawback provisions have no association with the level of conservative accounting.

4 Research design

The data needed for this thesis is available through databases from Wharton Research Data Services (WRDS). Compustat is used in combination with CRSP to gather data on a firm-year level regarding the United States. Most importantly, the data has to correspond with the available data on clawback provisions. The amount of data on clawback provisions is limited because information on clawback provisions is not widely available in big databases. The more variables are added, the higher the probability of missed values is. Therefore, it is carefully considered which control variables are necessary based on prior literature.

4.1 Sample selection

The clawback provision sample is based on 1.500 firms. These observations are computed over time to see whether a firm adopts a clawback provision and in which year the provision is adopted. Table 1 provides information on new adopters. Firms started to adopt clawbacks since 2007 onwards to 2016. In 2016, 876 of 1500 (58%) firms adopted a clawback provision.

The value clawback (CB) is a binary variable that takes on the value 1 for firms that adopt a clawback at any point in time and 0 otherwise. However, because firms adopt a clawback in different years shown in Table 1 there needs to be another variable to have a specific measure after the adoption. The data in Table 1 needs to be transformed to a binary value 1 if a firm adopts a clawback after their specific adoption year and 0 otherwise. For example, a firm that adopts a clawback in 2011 does not have the value 1 for the whole study. The years prior to 2011 the value is 0 and the years afterwards is 1. Therefore, first an indicator variable is coded to give insight in when a clawback is adopted. It is calculated by the value of the measured year minus the adoption year. This value is negative (-1, -2, -3, etc.) for years before the clawback adoption and positive (1, 2, 3, etc.) after. Subsequently, negative values are coded as 0 for the pre-clawback adoption period, and values are 1 if the period is during or after the adoption year. This results into the after variable. This new binary variable is named $After$ and takes on value 1 from when a firm adopts a clawback and is 0 before the adoption year and non-adopters. Table 2 in the appendix shows all the main and control variables.

Table 1

Descriptive Statistics Clawback adopters

Adoption-year	Number of adopters	Non adopters	Cumulative adoption %
2007	139	1361	9%
2008	96	1265	16%
2009	114	1151	23%
2010	110	1041	31%
2011	64	977	35%
2012	90	887	41%
2013	111	776	48%
2014	24	752	50%
2015	87	665	56%
2016	41	624	58%
Total	876	624	876

Table 3 shows the sample selection procedure. The 1500 firms with available information about the clawback information from Table 1 will be matched to firm-year observations from 2005 until 2019 based on the Committee on Uniform Securities Identification Procedures (CUSIP) codes.

The firm-year observations are available in the merged databases Compustat-CRSP available from WRDS. After matching the respective data from Compustat-CRSP with clawback data 1451 matched firms remain, resulting in 18.790 firm-year observations. Thereafter, missing values are excluded resulting in 15.999 observations available with 1413 different firms. Finally, years prior to 2006 are necessary in computing some of the variables, but are dropped resulting in 14.993 observations. Finally, all continues variables are winsorized on the top and bottom 1% to mitigate outliers.

Table 3

Derivation of the sample

Selection process of the data	#
General process of data collecting and cleaning	
Compustat observations based on 1.500 firms and yearly observations from 2005-2019	18790
Matching the clawback observation with data from Compustat 1453	18790
Minus missing values	15999
Dropping years before 2007	14993
Final sample	**14993**

4.2 Methodology

To further understand which proxies to use in this thesis for accounting conservatism, it is necessary to investigate prior research about measurement of conservative accounting and its advantages and disadvantages. As indicated earlier, with conservatism firms recognize losses immediately and profits are only recognized when they are in fact realized. Most of the literature is based on Basu's model. However, this model has only one variable for conservatism, which is stock return. Much research is done to determine the validity of this method of conservatism.

Dietrich, Muller and Riedl (2007) research the bias in the measurement of conservatism with the Basu method, which investigates the differences between bad and good news recognition related to earnings. They find a bias in sample selection which comes from non-random sampling indicating that there are more firms in the bad news group compared to the good news group. Thus, this research design is biased to reject the existence of non-conservatism in favour of conservatism. Dietrich et al. (2007) do not propose a solution for this bias.

More research indicates that there is a bias in the measurement of conservatism using differential timeliness proxy. The weakness of the differential timeliness shows when the relation between current news and past earnings is investigated. The authors find that earnings from the previous year are still influenced by the current news. These past earnings are known before the news that should influence the indicator good or bad news. Therefore, past earnings should not be influenced by current earnings. This suggests that the differential timeliness measure is biased and not fully reliable (Patatoukas and Thomas, 2011). However, Ball, Kothari and Nikolaev (2013) argue in favour of the Basu (1997) model. They analyse the effect of information shocks to firm value. In the end it is a total analysis of news and its effect on earnings. The shock factors that are of interest for the researchers are unexpected returns that immediately get recognized in earnings, unexpected returns that are immediately recognized or with a delay, and unexpected returns that are always recognized with a delay. The third information component is based on information such as rents or growth options that are not shown in the financial statements. These three different unexpected return components are good determinants according to Ball et al. (2013), because these three information components are assumed to be expressed in stock prices even when they are not recognized in earnings. They conclude that Basu's model provides valid economic implications

for conservative accounting. The differences between Ball et al. (2013) and opponents of the Basu model come from the differences in research objective. It is necessary to control certain characteristics that influence the timeliness of information. The operating cycle, the investment cycle and information not reflected in the financial statements are good examples of characteristics influencing the timeliness. The unspoken information content such as growth opportunities is something intangible and is not visible in the financial statements. However, it does impact the firm value measurable in stock prices. To control for asymmetric timeliness of earnings and stock prices it is necessary to incorporate the market-to-book ratios in the model. When conservatism is applied, the change in earnings and market-to-book ratios should both be symmetrically recorded with a delay (Ball et al., 2013).

The research design that considers these characteristics is from Khan et al. (2009). Based on Basu's (1997) model they improve it to reflect both timeliness of good news and bad news in earnings, thus they make a distinction between the two. This design from Khan et al. (2009) controls for firm characteristics such as size, market-to-book ratio and leverage. This improved Basu's model leads to a better measurement of conditional conservatism.

In the Khan et al. (2009) measure of conditional conservatism the market-to-book ratio is used as a control variable for the conservatism score. However, the market-to-book ratio can also be used as a proxy for unconditional conservatism. Zhang (2008) and Francis et al. (2013) measure of unconditional conservatism is based on the market-to-book ratio. Therefore, in this thesis, unconditional conservatism is captured by the market-to-book ratio.

For an overview of the research design the Libby Boxes and used variables are defined in the appendix. There are multiple options to measure (un)conditional conservatism. In this thesis two options are discussed. The first one is to use other variables that are a proxy for conservatism and have an interaction effect with clawbacks. The second option is to create a new variable that defines conservatism and subsequently researches the interaction with clawbacks adopters.

4.3   *Propensity score matching*
This research investigates the association between clawbacks and conservatism. Because firms can voluntarily adopt clawbacks, there are differences in timing and reasons regarding the adoption of clawbacks. To mitigate endogeneity from time trends a difference-in-difference design is used to compare the differences between clawback adopters and non-

adopters over time. However, firms have different reasons for adopting a clawback. This voluntary adoption for a firm is not random and could therefore lead to endogeneity concerns. Erkens, Gan and Yurtoglu (2014) indicate a possible self-selection bias in adopting a clawback. It is necessary to control firms that do not adopt clawback provision. By matching non-adopting firms with clawback-adopting firms based on specific characteristics it is possible to assign them a random adoption year of clawbacks. This makes the firms comparable and therefore the results of the difference-in-difference more credible (Biddle, Chan and Joo, 2018). This is called the propensity score matching.

Propensity score matching uses information from firms that do not adopt a clawback and relates it to firms that do adopt clawbacks. This creates a similar match for an adopter and a non-adopter. The matching procedure is applied in the following manner. Adopting and non-adopting firms are first matched based on firm characteristics at t_0. Then, if an adopting firm adopts a clawback on t_1 the matched control firm from t_0 will have the same adoption year as the adopting firm. The propensity score matching happens based on nearest neighbour without replacement. Thus, if a non-adopting firm is matched to an adopting firm in a specific year it will not be matched again in later firm-years. The matching happens through a logistic regression with characteristics that influence the decision to deploy a clawback to reduce the endogeneity concerns (Iskander-Datta et al. 2013). Prior literature implies that firm characteristics which influence the decisions to adopt a clawback are based on company size, market-to-book ratio, return on assets and Tobin's Q to capture the firm's growth opportunity (Ball et al. 2013). The reporting quality in the past is based on discretionary accruals. Lastly, industry-fixed effects are also relevant based on the two digit- Standard Industrial Classification (SIC) code (Iskander-Datta et al. 2013; Biddle et al., 2018). However, the data must satisfy the balancing property to match non-clawback adopters correctly to clawback adopters. Considering the previous literature in this research the $Size$ of the company, the $Market-to-book\ ratio\ (MB)$ and the $Leverage\ (LEV)$ are relevant.

The propensity score matching is done based on a logistic regression. This regression is performed annually to match firms based on the treatment effect (clawback adoption) and control variables influencing the decisions to adopt a clawback to receive an outcome which is a matched adoption year for non-adopters. The following formula specifies the propensity score model to match non-adopters with adopters:

$$\text{Pr}(clawback) = \beta_0 + \beta_1 \cdot Size + \beta_2 \cdot MB + \beta_3 \cdot Lev + \varepsilon \qquad \text{(1)}$$

In this propensity score matching logistic regression the variable clawback is a binary variable equal to 1 for firms that adopt a clawback at any specific time and 0 otherwise. Table 4 shows the propensity score matching sample selection procedure. The full sample of clawback adopters consists of 876 firms with 11,742 firm-years available. After removing values that are missing the sample for clawback adopters reduces to 825 firms with 9,495 firm-years available. The non-clawback sample consist of 584 firms with 5,498 firm-years available after dropping missing values. This leads to a total available sample for the propensity score matching procedure of 1,409 firms with 14,993 firm-years available. The matching happens based on the firm-years prior to the clawback adoption. Table 4, Panel B shows 269 matched firm-pairs. 269 firms that adopt a clawback, the treatment group, are matched with 269 firms that are non-clawback adopters, the control group. These non-adopting firms are matched to a firm that adopts a clawback in the next year. Therefore, these matched firms from the control group are given the clawback adoption-year that is the same as their respective matched pair. Firms which are not similar to the treatment group remain unmatched.

Table 4

Panel A: Propensity score matching sample selection

	# Firm	# Firm-years
Full sample of clawback adopters	876	11,742
Minus missing values	*- 51*	*- 2,247*
Clawback adopters		
Available sample clawback adopters	825	9,495
Non-clawback adopters		
Subsample of firms that are non-clawback adopters	584	5,498
Sample available for propensity score matching	1,409	14,993

Panel B: Matching procedure based on logistic regression equation 1

Propensity score matched sample		
Matched adopting firms	269	269
Matched non-adopters	269	269

For the remainder of the thesis the propensity score matched sample will be used to measure the association between conservatism and clawback provision. This matched sample reduces endogeneity concerns of self-selection bias whether firms adopt a clawback or not.

Table 5 shows the descriptive statistic for the propensity score matching procedure. Panel A shows the full descriptive statistics, Panel B shows the logistic regression run for the propensity score matching to see which variables are positively and negatively associated with clawbacks and Panel C shows a covariate balance analysis between the matched pairs for clawback adopters and matched non-clawback adopters.

The descriptive statistics in Panel A show that the treatment and control group seem similar at a fist glance. In addition to that, Panel C confirms this with a covariate balance analysis. Panel B shows that size and leverage are significant and positively associated with the decision to adopt a clawback. Meanwhile the market-to-book ratio is significantly negatively associated with the decision to adopt a clawback. The logistic regression results into an R-square that is 10.08%. This indicates that this model has a small explanatory power.

The results in Panel C indicate that the matched pairs of clawback adopters with non-clawback adopters are the same because the coefficients from size, market- to book ratio and leverage are not significantly different from each other. Altogether this covariate analysis shows that the matched sample is based on similarities in the control variables for firm characteristics. These results imply that the balancing property between the matched and control sample is satisfied.

Table 5

Propensity score matching

Panel A: Descriptive statistics for the propensity score matching.

Variable	Full sample		Clawback		No clawback	
Name	*Mean*	*Std.Dev.*	Mean	Std. dev.	Mean	Std. dev.
Size	7.290	1.726	7.721	1.691	6.544	1.521
MB	3.105	5.020	3.118	5.043	3.082	4.980
Lev	0.842	1.282	0.923	1.344	0.700	1.153
Observations	14.993		9.495		5.498	

Panel B: Logistic regression for the propensity score matching.

Variable name	coefficient	Z-statistic	P-value
Intercept	-3.283	-35.50***	0.000
Size	0.515	40.41***	0.000
MB	-0.016	-4.30***	0.000
Lev	0.277	16.84***	0.000
Observations	14.933		
R-Squared	0.109		

Panel C: Covariate balance between the matched pairs of clawback adopters and non-adopters

Variable	Mean clawback adopters	Mean non clawback adopters	T-statistic	P-value
Size	7.297	6.972	0.97	0.000
MB	3.110	1.860	1.42	0.159
Lev	0.774	1.230	-1.29	0.202
Observations	269	269		

*Z-statistic * p<0.1, ** p<0.05 ***p<0.01, T-statistic * p<0.1, ** p<0.05 ***p<0.01*

4.4 Difference- in difference design

The difference-in-difference design is necessary to measure the effect of the treatment on the control group. It measures the effect of clawback adoption on conservative accounting by comparing the difference in the outcome variable (conservatism) over time between the treatment group and control group. The treatment group is defined by adopting a clawback 1 and non-adopters 0. The $After$ variable is 1 after the adoption of a clawback and 0 before the adoption this controls for time trends.

The standardised difference-in-difference regression equation used to capture the effect of clawback adoption on conservatism is the following:

$$Conservatism\ proxy = \beta_0 + \beta_1 \cdot CB + \beta_2 \cdot After + \beta_3 \cdot CB \cdot After$$
$$+\beta_4 \cdot Mve + \beta_5 \cdot Tobins'Q + \beta_6 \cdot ROA + \beta_6 \cdot DA + FE_{year} + FE_{industry} + \varepsilon \quad (2)$$

The specific difference-in-difference regression equations for the conservatism proxies are specified in section 4.5.1, 4.5.2 and 4.7. Conservatism proxy is a proxy for (un)conditional conservatism. Clawback (CB) is a binary variable equal to 1 if a firm adopts a clawback and 0 otherwise. $After$ is equal to 1 for firm-years after the adoption of a clawback and 0 otherwise. $CB \cdot After$ is the interaction effect of the clawback and after dummy variables. Coefficient β_1 measure the difference between adopters and non-adopters on the level of conservatism. Coefficient β_2 captures the time trend effect. Coefficient β_3 captures the interaction effect of

clawback adopters versus non-adopters on the outcome variable the level of conservatism. It measures the effect of clawback adopting firms in comparison to before the adoption, and non-adopting firms. Coefficient β_3 is the main variable of interest which explains the association between clawbacks and conservatism.

Control variables

Control variables required for the association of clawbacks and conservatism are based on existing literature. Relevant control variables control firm characteristics such as industry factors, corporate governance structure, ownership. This thesis focuses more on the industry characteristics as control variables due to the limitation in size of the data set to avoid too many missing variables. Ramalingegowda and Yu (2012) measure the effect of ownership on conservatism and use measures to control for firms' characteristics and some are also relevant for clawbacks. Market value of equity (MVE), Tobin's Q (TobinsQ) measure to capture the firm's growth opportunity. Return on assets (ROA) is net income divided by total assets to capture the firm's effectiveness of investments and discretionary accruals (DA) to capture the reporting quality. Lastly, time trends are controlled by using year-fixed effects and industry-fixed effects are added to control specific industries (Babenko, Bennett, Bizjak, Coles and Sandvik, 2019).

4.5 Conservatism proxies
4.5.1 Conditional proxy (Basu, 1997)
Conservatism will be measured by three proxies of conservatism. First the Basu (1997) measure for conditional conservatism is applied. Subsequently, Khan et al.'s (2009) measure is used for conditional conservatism. Lastly, the market-to-book ratio will be used as the proxy for unconditional conservatism.

The first measure of clawbacks on conditional conservatism is a basic difference-in-difference regression based on the model of Basu (1997). It measures conservatism by the effect of asymmetric timeliness of earnings indicating that bad news is faster reflected in earnings than good news. Guay and Verrecchia (2006) Lafond et al. (2008) specify the following regression based on Basu (1997):

$$Net\ income = \beta_0 + \beta_1 \cdot NEG + \beta_2 \cdot RET + \beta_3 \cdot RET \cdot NEG \qquad (3)$$

Thereafter the variables that indicate the adoption of clawback provisions are clawback, $After$ and interaction effect are added to Basu's (1997) regression model. This is done to capture the effect of clawbacks on net income, the proxy for conservatism:

$$
\begin{aligned}
Net\ income = {} & \beta_0 + \beta_1 \cdot NEG + \beta_2 \cdot RET + \beta_3 \cdot RET \cdot NEG + \beta_4 \cdot CB \\
& + \beta_5 \cdot CB \cdot RET + \beta_6 \cdot CB \cdot NEG + \beta_7 \cdot CB \cdot NEG \cdot RET \\
& + \beta_8 \cdot After + \beta_9 \cdot CB \cdot After \cdot NEG \cdot RET + \beta_{10} \cdot Controls \\
& + \varepsilon
\end{aligned}
\tag{4}
$$

Net income (NI) is before extraordinary items deflated by the previous year's market value of equity, returns (RET) captures the stock return measured by annual returns, negative (NEG) is a dummy variable equal to 1 for when returns are smaller than 0 and is 0 otherwise. Coefficient β_3 $Return \cdot Negative$ indicates how fast bad news is visible in comparison to good news. However, since the association with clawbacks is researched, the interaction effect of clawbacks and the $After$ variable are added to the regression. The effect of this is explained in section 4.4. Coefficient β_9 is this interaction effect that indicates how fast bad news is visible in comparison to good news when clawbacks are adopted. When coefficient β_9 is positive it indicates a positive association between conservatism and clawback provisions. Meanwhile, when it is negative it indicates a negative association. Control variables used for equation 4 are defined in section 4.4.

4.5.2 Conditional proxy (Khan et al., 2009)

Regression equation 4 is a simple way to observe the association between conservatism and clawbacks to further investigate it and look at a more specific model specified by (Khan et al., 2009). This model generates a firm specific good news-score and a bad news-score. This bad news-score is a proxy for conservatism because it indicates the timeliness of bad news in earnings. The higher the outcome from the bad news-score is, the more conservatism is applied. The model from Khan et al. (2009) is based on Basu's (1997) model that is specified in equation 3.

The control variables: market-to-book ratio, size and leverage are added to Basu's model to create the Khan et al. (2009) measure of conservatism. Market-to-book ratio is related to conservatism because of the differential timeliness recognition of profit and losses the market-to-book will be understated. Size affects the information asymmetry in firms; larger firms have less asymmetry compared to smaller firms. However, larger firms are more prone

to litigation risk and may therefore have more desire for conservatism. Size is measured as the natural logarithm of equity to reduce outliers. The market value of equity is calculated by multiplying outstanding shares with the closing share price (CSHO*PRCC_F). Leverage is the total debt divided by the market value of equity.

Basu's model specified in equation 3 is used to form the Khan et al. (2009) model to capture conservatism. Equation 5 is β_2 from equation 3 with size, market-to book ratio and leverage added as control variables. β_2 is an indicator for the good news score. Equation 6 is B_3 from equation 3 with size, market-to book ratio and leverage added as control variables. B_3 is an indicator for how conservative a firm is (Khan et al., 2009). Both these measures indicate how returns are captured in net income:

$$Good - Score = \beta_2 = \varphi_0 + \cdot \varphi_1 \cdot Size_i + \varphi_2 \cdot MB_i + \varphi_3 \cdot Lev_i + \varepsilon \qquad (5)$$

$$Cons - Score = \beta_3 = \eta_0 + \cdot \eta_1 \cdot Size_i + \eta_2 \cdot MB_i + \eta_3 \cdot Lev_i + \varepsilon \qquad (6)$$

Equations (5) and (6) are substituted into equation (3) resulting in equation (7):

$$Net\ income = \beta_0 + \beta_1 \cdot NEG_i + RET_i \cdot (\varphi_0 + \cdot \varphi_1 \cdot Size_i + \varphi_2 \cdot MB_i + \varphi_3 \cdot Lev_i) + NEG_i \cdot RET_i (\eta_0 + \cdot \eta_1 \cdot Size_i + \eta_2 \cdot MB_i + \eta_3 \cdot Lev_i) + (\emptyset_1 \cdot Size_i + \emptyset_2 \cdot MB_i + \emptyset_3 \cdot Lev_i + \emptyset_4 \cdot NEG_i \cdot Size_i + \emptyset_5 \cdot NEG_i \cdot MB_i + \emptyset_6 \cdot NEG_i \cdot Lev_i + \varepsilon \qquad (7)$$

In the regression equation i stands for the specific firm measured. The second part of the regression ($\emptyset$) controls for firm specific characteristics separately. Equation 7 is regressed cross sectionally to have a firm-specific conservatism score that is indicated by β_3. This firm-specific conservatism score is necessary to subsequently measure the association with clawback provisions.

4.6   Results conservatism score

The results of regression equation 7 are shown in Table 6, Panel A. The variables $Return + Return \cdot (Size + MB + Leverage)$ are the measurement for the $Good\ news - score$. The variables $Negative \cdot Return + Negative \cdot Return \cdot (Size + MB + Leverage)$ are the variables of interest because those are the measurement for the conservatism score. The coefficient from $Negative \cdot Return$ is positive and significant which corresponds with the results of Khan et al. (2009). $Negative \cdot Return \cdot (Size + MB + Leverage)$ are negative and

significant. For $Size$ and MB this corresponds with the prior research, but the $Leverage$ coefficient is negative and is positive in the prior research. Panel B shows the conservatism score ($Cons\_score$) and the difference in $Cons\_score$ between adopters and non-adopters. The full sample $Cons\_score$ is computed, and a distinction is made between the score for firms that adopt a clawback at any point in time and firms that do not. The average for the $Cons\_score$ is 0.133 which seems consistent with Khan et al.'s (2009) conservatism score of 0.105. The only odd result is from the year 2019 where the $Cons\_score$ is different from the other years. It should not influence the results because this phenomenon occurs in both groups. A t-test for the difference in means between the $Cons\_score$ of adopters and non-adopters show that the difference in cons is 0.033 and is significant at the 1% level. This indicates that non-clawback adopters have a higher $Cons\_score$ compared to adopters. However, these results should be interpreted with caution, because time trends are not controlled and it is uncertain whether the $Cons\_score$ is only affected by the clawback adoption or other variables. Section 5.2 discusses this in more depth.

Table 6

Panel A: Measure of conservative score based on (Khan et al., 2009)

Variables	Coefficient	T-stat
Intercept	-0.085***	-8.88
Negative	0.167	0.80
Return	-0.001***	-4.16
Return · Size	0.000	2.14
Return · MB	0.000	1.27
Return · Lev	-0.000**	-1.78
Negative · Return	0.343***	6.15
Negative · Return · Size	-0.037***	-4.40
Negative · Return · MB	-0.001**	-2.16
Negative · Return · Lev	-0.007***	-6.05
Size	0.019***	15.32
MB	-0.002***	-6.70
Lev	-0.030***	-13.81

Negative · Size	-0.002	-0.81
Negative · MB	-0.000	-1.50
Negative · Lev	-0.007***	-6.58
Adjusted R-squared		0.226

Panel B: Conservatism score per year

Year	Conservatism score full sample (1)		Conservatism score clawback adopters (2)		Conservatism score non-clawback adopters (3)	
	Mean	SD	Mean	SD	Mean	SD
2006	0.083	0.132	0.064	0.120	0.116	0.146
2007	0.123	0.081	0.121	0.099	0.128	0.034
2008	0.023	0.253	-0.033	0.256	0.116	0.220
2009	0.398	0.265	0.461	0.264	0.296	0.234
2010	-0.017	0.248	-0.080	0.244	0.086	0.220
2011	0.154	0.089	0.131	0.090	0.192	0.074
2012	-0.244	0.616	-0.277	0.651	-0.187	0.545
2013	0.151	0.306	0.145	0.288	0.160	0.336
2014	0.254	0.362	0.260	0.369	0.245	0.350
2015	-0.052	0.194	-0.100	0.176	0.032	0.196
2016	0.078	0.129	0.056	0.102	0.120	0.158
2017	-0.031	0.234	-0.084	0.227	0.066	0.215
2018	-0.036	0.166	-0.065	0.176	0.019	0.130
2019	1.257	0.835	1.392	0.804	1.000	0.834
Observations	14.858		9.449		5.409	
Average	**0.133**	**0.450**	**0.121**	**0.483**	**0.154**	**0.384**
Difference between adopters and non-adopters				0.033		
P -value on difference				0.000***		

*T-statistic * p<0.1, ** p<0.05 ***p<0.01*

With this firm specific conservative score the association between clawbacks and conditional conservatism can be researched. Ahmed et al. (2013) test managerial overconfidence on conservatism and use the previous defined model to generate a measure for conservatism. Based on their research design and the variable of interest 'overconfidence' is replaced with clawback variable to measure the interaction effect of clawbacks on accounting conservatism. This leads to the following equation:

$$Cons\_score = \beta_0 + \beta_1 \cdot CB + \beta_2 \cdot After + \beta_3 \cdot CB \cdot After + \beta_4 \cdot Controls + FE_{industry} + \varepsilon \tag{8}$$

Coefficient β_3 is the interaction effect of clawback adopters and measures the effect of clawback adopters in comparison to before firms adopted a clawback, and non-adopters. The higher the $Cons\_score$ is, the more conservative a firm is. Therefore, a positive interaction effect indicates a positive association between clawbacks and conservatism, and a negative interaction effect indicates the opposite. The same control variables as previously defined in section 4.4 are used.

4.7 Unconditional proxy market-to-book ratio

Unconditional conservatism will be measured by market-to-book ratio. Market-to-book ratio is often used as a measure of unconditional conservatism. It captures the understatement of assets in comparison to the market value (Roychowdhury et al., 2007; Zhang, 2008; Francis et al., 2013). The following formula will be used to measure the effect of clawbacks on the market-to-book ratio:

$$Market-to-book\ ratio = \beta_0 + \beta_1 \cdot CB + \beta_2 \cdot After + \beta_3 \cdot CB \\ \cdot After + \beta_4 \cdot Controls + \varepsilon \tag{9}$$

As in the previous measure of conservatism coefficient B_3 captures the interaction effect of clawback adopters on the market-to-book ratio. A positive coefficient implies that firms that adopt a clawback have a higher market value in comparison to the book value of non-adopters i.e. more conservatism. A negative coefficient implies that firms that adopt clawbacks have a lower market-to-book ratio, which is an indication of less conservatism. The same control variables as previously defined in section 4.4 are used.

With this research design and multiple proxies for conservatism it is possible to evaluate hypothesis 1; the association between clawbacks and conservatism. However, the limitation of this research is that it not possible to make any causal inferences because it is unsure whether clawbacks influence conservatism or whether the opposite is true. Therefore, the association between the two concept is researched.

5 Results

In this section the research design is discussed. First, descriptive statistics are presented and thereafter results from the association between clawbacks and different conservatism proxies are presented. A distinction is made between two conditional conservatism proxies and an unconditional conservatism proxy.

5.1 Descriptive statistics

Table 7 shows the descriptive statistics, and descriptions of the variable are shown in Table 2 of the appendix. Firms from the original clawback sample are matched to their respective yearly observations between 2006-2019. 63.30% of the firms adopt a clawback and result into 54.44% firm-years where a clawback is adopted. The $Cons\_score$ is given again but is already discussed in section 4.6. Net income deflated by the market value of equity is positive. Stock returns are negative (positive) 26.66% (73.34%) of the time for firm-year observations. Panel B shows the difference in descriptive statistics between the treatment and control group.

Table 7

Descriptive Statistics

Panel A: Descriptive statistics full sample with median min. and max.

Variable	Mean	Std.Dev.	Median	Min.	Max.
Clawback	0.633	0.481	1	0	1
After*	0.544	0.498	1	0	1
Conservatism score	0.133	0.450	0.109	-0.992	2.243
Net income	0.006	0.150	0.0431	-0.848	0.297
Return	3.174	10.238	0.423	-0.759	75.044
Negative	0.266	0.441	0	0	1
Size	7.290	1.729	7.152	3.544	11.822
Market-to Book ratio	3.105	5.020	2.239	-16.823	31.022
Tobins'Q	1.533	1.444	1.079	0.097	8.540
Return on assets	0.016	0.150	0.044	-0.751	0.317
Leverage	0.842	1.282	0.433	0.017	8.845
Discretionary accruals	0.002	0.059	-0.002	-0.200	0.144
Observations	14.993				

Panel B: Descriptive statistics sample split between adopters and non-adopters

Variable	Full sample		Clawback		No clawback	
Name	Mean	Std.Dev.	Mean	Std. dev.	Mean	Std. dev.
Clawback	0.633	0.481	1	0	0	0
After*	0.554	0.497	0.661	0.474	0.342	0.243
C_score	0.133	0.450	0.121	0.484	0.154	0.385
Net income	0.006	0.150	0.018	0.138	-0.014	0.169
Return	3.174	10.238	4.410	12.334	1.041	3.936
Negative	0.266	0.441	0.231	0.421	0.326	0.469
Size	7.290	1.729	7.721	1.690	6.544	1.520
MB	3.105	5.020	3.118	5.043	3.081	4.980
Tobins'Q	1.533	1.444	1.415	1.312	1.737	1.639
Roa	0.016	0.150	0.032	0.120	-0.012	0.189
Lev	0.842	1.282	0.923	1.344	0.700	1.152
DA	0.002	0.059	0.003	0.058	0.000	0.060
Observations	14.993		9.495		5.498	

After is from the matched sample

The results regarding conditional conservatism with the Basu (1997), Khan et al. (2009) measures and the unconditional conservatism measure with the market-to-book ratio are broken down into multiple models. Model 1 measures the interaction effect of clawbacks on the conservatism proxy without any control variables. In model 2, control variables are added to show the effect the control variables have on the dependent variable and whether the results are valid. In model 3, year-fixed effects are added and in model 4 industry-fixed effects are added based on the 2 digit SIC-code. This break-down of the regression equation in multiple models visualizes what happens when control variables, year and industry-fixed effects are added to the model. Ultimately, the results are based on model 4, because this is the most extensive model. The hypothesis whether clawbacks and conservative accounting are complementary is discussed per conservatism proxy in the next sections.

5.2 Conditional conservatism

Table 8 shows the results from regression equation 4 based on Basu (1997) to measure the association between conditional conservatism and clawback provisions. The dependent variable in this model is $net\ income$. Basu (1997) argues that bad news is recognized earlier in the financial statement compared to good news. This is measured through net income. Therefore, if the timeliness of bad news has a positive effect on net income there is more conservatism. When the interaction effect of timeliness of bad news with clawbacks is

positive, it indicates that clawbacks are associated with conservatism. The coefficient of interest is $\beta_9 \, CB \cdot after \cdot Return \cdot Negative.$ This captures the interaction effect of the timeliness of bad news captured in net income in combination with the adoption of a clawback provision.

Model 1 shows a significant effect from coefficient β_9 the interaction effect on *net income*. When the control variables are added, model 2 shows that the significance level of coefficient β_9 on net income decreases from the 1% to the 10% level. Furthermore, model 2 shows that the addition of the control variables improves the explanatory power of the model measured in the R-squared. This is mainly due to the return on assets which can be explained by the fact that return on assets are related to net income. Model 3 and 4 with added year-fixed effects and industry-fixed effects show that the interaction effect is 0.049 and significant on a 5% level. The interaction effect of coefficient β_9 is positive which indicates that when firms have adopted a clawback, they have more timely bad news measurable in net income compared to non-adopters. The positive interaction effect coefficient indicates a positive association between clawbacks and conservatism for this model based on (Basu, 1997). The results from regression equation 4 show that the hypothesis should not be rejected. Based on the Basu (1997) model for conditional conservatism, the association with clawbacks is complementary.

Table 8

Results regression equation (4) based on (Basu, 1997)

Net income	(1)	(2)	(3)	(4)
Intercept	0.007**	-0.011	-0.008**	-0.009**
	(2.51)	(-4.16)	(-2.20)	(-2.33)
Negative	-0.033**	0.006*	0.006*	0.006*
	(-2.32)	1.75	(1.70)	(1.69)
Return	0.000	-0.000	-0.000	-0.000
	(0.45)	(-0.81)	(-0.72)	(-0.67)
Negative · Return	0.107**	0.024***	0.023***	0.022***
	(2.44)	(4.18)	(4.36)	(4.35)
Clawback	0.023***	0.009***	0.009***	0.009***
	(7.41)	(4.19)	(3.98)	(3.99)
Clawback · Return	0.000	0.000***	0.000***	0.000***
	(1.31)	(4.28)	(4.23)	(4.13)
Clawback · Negative	0.043***	-0.002	-0.003	-0.003
	(2.80)	(-0.31)	(-0.58)	(-0.58)

Clawback · Return · Negative	0.109**	0.054***	0.045**	0.045**
	(2.23)	(2.76)	(2.25)	(2.25)
After	0.002	-0.004**	-0.002	-0.002
	(0.89)	(-2.00)	(-0.96)	(-0.93)
CB · After · Return · Negative	**0.094***	**0.043***	**0.049***	**0.049***
	(3.54)	**(1.94)**	**(2.20)**	**(2.20)**
MVE		-0.000***	-0.000***	-0.000***
		(-4.87)	-(4.54)	(-4.55)
Tobins'Q		0.005***	0.004***	0.004***
		(5.27)	(5.04)	(5.04)
ROA		0.681***	0.676***	0.676***
		(52.77)	(52.59)	(52.69)
DA		0.017	0.018	0.017
		(1.11)	(1.15)	(1.11)
Yearly FE	No	No	Yes	Yes
Sic dummies	No	No	No	Yes
R-Squared	0.083	0.495	0.499	0.499
# observations	14.993	14.993	14.993	14.993

*T-statistic is given in parentheses * p<0.1, ** p<0.05 ***p<0.01*

Table 9 shows the results of regression equation 8. Here, the association between conditional conservatism and clawbacks is also examined. Table 6, Panel B of section 4.6. showed the descriptive statistics of the $Cons\_score$. It indicated that non-clawback adopters have a higher $Cons\_score$ compared to adopters. However, time trends and other variables where not considered. $Cons\_score$ is the dependent variable. A positive $Cons\_score$ indicates more conservatism and a negative $Cons\_score$ indicates that firms are less conservative. Coefficient β₃ $CB \cdot After$ is the coefficient of interest in this case. For model 1 and 2 the interaction effect is positive and significant at the 5% level. However, for both models the R-squared is extremely low with an explanatory power of 0.2% and 0.8%. When additional variables are added such as the year-fixed effects in model 3 the explanatory power increases to 46.9%. This indicates the model has a good explanatory power, because the variance in the $Cons\_score$ is for 47.0% explained through the explanatory variables. Model 4 adds industry-fixed effects and this results into an R-squared of 47.0% and similar results of the variables. The effect of the interaction effect $CB \cdot After$ on the $Cons\_score$ is -0.004. This resembles a

negative association between clawbacks and conservatism. However, the results are insignificant. Based on the association between the $Cons\_score$ from Khan et al. (2009) and the interaction effect of clawbacks there is no association between the two concepts in these models based on regression equation 8. The $Cons\_score$ measure indicates that the hypothesis should be rejected because the results are insignificant. Clawbacks and conditional conservatism are neither complementary nor substitutes.

Table 9
Results regression equation (8) based on (Khan et al., 2009).

Cons_score	(1)	(2)	(3)	(4)
Intercept	0.152***	0.180***	0.147***	0.137***
	(28.40)	(24.01)	(19.63)	(14.46)
Clawback	-0.057***	-0.056***	-0.030***	-0.030***
	(-7.65)	(-7.40)	(-4.46)	(-4.42)
After	0.005	0.006	-0.010	-0.009
	(0.39)	(0.47)	(-0.98)	(-0.91)
CB · After	**0.035****	**0.035****	**-0.004**	**-0.004**
	(2.34)	**(2.33)**	**(-0.29)**	**(-0.33)**
MVE		-0.000	-0.000***	-0.000
		(-0.92)	(-3.32)	(-3.31)
Tobins'Q		-0.017***	-0.022***	-0.022***
		(-4.85)	(-8.42)	(8.43)
ROA		-0.124***	-0.092***	-0.094***
		(-5.14)	(-3.71)	(-3.81)
DA		0.162**	0.066	0.063
		(2.44)	(1.34)	(1.28)
Yearly FE	No	No	Yes	Yes
Sic dummies	No	No	No	Yes
R-Squared	0.002	0.008	0.470	0.470
# observations	14.993	14.993	14.993	14.993

*T-statistic is given in parentheses * p<0.1, ** p<0.05 ***p<0.01*

5.3 *Unconditional conservatism*
Now that the conditional conservatism proxies have been discussed, the unconditional proxy is examined subsequently. Table 10 shows the results from regression equation 9. In this equation the $market-to-book\ ratio$ is the dependent variable. A higher market-to-book

ratio implies that there is more conservatism because the market value is higher than the book value. The coefficient of interest is the same as in the previous section and is $\beta_3 \; CB \cdot After$. Model 1 shows insignificant results and has a low explanatory power. In model 2, with the addition of control variables, the explanatory power increases to 20.20%. The cause of this is the addition of Tobins'Q which relates to the market-to-book ratio because it measures the firm's growth based on assets. When the year-fixed effects and the industry-fixed effects are added to model 3 and 4 the results do not differ. Coefficient β_3 is positive, thus implying a positive association, but the results are insignificant. Based on the association between the $market-to-book\ ratio$ and the interaction effect of the conservatism score there is no association between the two concepts in these models based on regression equation 9. The $market-to-book\ ratio$ measure indicates that the hypothesis should be rejected because the results are insignificant. Clawbacks and unconditional conservatism are neither complementary nor substitutes.

Table 10
Results regression equation (9)

Market-to-book ratio	(1)	(2)	(3)	(4)
Intercept	3.115***	0.299***	0.323**	0.169
	(37.24)	(3.03)	(2.24)	(1.03)
Clawback	-0.118	0.371***	0.482***	0.486***
	(-1.03)	(3.64)	(4.78)	(4.81)
After	-0.099	0.178	0.079	0.091
	(-0.70)	(1.41)	(0.60)	(0.69)
CB · After	**0.281**	**0.155**	**0.007**	**0.001**
	(1.61)	**(1.00)**	**(0.05)**	**(0.01)**
MVE		0.000**	0.000**	0.000**
		(2.43)	(2.20)	(2.21)
Tobins'Q		1.560***	1.539***	1.538***
		(30.73)	(30.05)	(30.04)
ROA		-0.209	-0.175	-0.210
		(-0.43)	(-0.36)	(-0.43)
DA		0.499	0.436	0.394
		(0.87)	(0.75)	(0.69)
Yearly FE	No	No	Yes	Yes
Sic dummies	No	No	No	Yes

R-Squared	0.0002	0.202	0.204	0.204
# observations	14.993	14.993	14.993	14.993

T-statistic is given in parentheses * p<0.1, ** p<0.05 ***p<0.01

5.4 Robustness test

Two robustness tests are conducted to measure whether the results are affected by the chosen research design. Firstly, the consequences are examined with firms not being matched to each other, thus without using propensity score matching. Secondly, the validity of the $Cons\_score$ is evaluated because the final year 2019 deviates from the other years.

5.4.1 Propensity score matching

The sample without matching clawback adopters to non-adopters is used to capture in what way the results in regression equations 4, 8 and 9 hold. As discussed earlier, the disadvantage of using the sample without matching is that potential self-selection bias cannot be controlled. The results in section 5.2 and 5.3 measure the interaction effect that clawback adopters have after a clawback has been adopted. The variables measuring the interaction effect were $CB \cdot After \cdot Return \cdot Negative$ for equation 4 and, $CB \cdot After$ for equations 8 and 9. Since the sample for the robustness test is without matching, it is not possible to research the interaction effect, but only the $After$ variable that measures firm-years after the adoption of a clawback. For equation 4 the coefficient of interest is $After \cdot Return \cdot Negative$, and for equation 8 and 9 the coefficient is $After$.

The robustness results are presented in Table 11, Panel A. The results show that the findings remain the same. The magnitude and significance level for equation 4 is almost the same in magnitude and significance and for equation 8 and 9 the results remain insignificant. The robustness test shows that the results in this thesis are not driven by the specific research method applied and are therefore robust.

5.4.2 Cons_Score

In section 5.4 it appears that the $Cons\_Score$ deviates in the year 2019 from the average. Regression equation 8 is rerun without the year 2019 to control the possibility that the results are driven by this deviation. The outcome of this test is presented in Table 11, Panel B. The results remain the same that coefficient β_3 $CB \cdot After$ remains insignificant. Thus, the results of the association between clawbacks and conditional conservatism measured by the $Cons\_Score$ is not driven by this deviation in the data.

Table 11

Robustness test

Panel A: Robustness test for regression equations 4, 8 and 9.

Equation	(4)	(8)	(9)
Y	Net income	Cons_score	Market-to-book ratio
Intercept	-0.009**	0.135***	0.188
	(-2.24)	(14.28)	(1.17)
Negative	0.006*		
	(1.73)		
Return	-0.000		
	(-0.69)		
Negative · Return	0.022***		
	(4.37)		
Clawback	0.009***	-0.027***	0.460***
	(3.09)	(-4.14)	(4.92)
Clawback · Return	0.000***		
	(4.14)		
Clawback · Negative	-0.003		
	(-0.59)		
Clawback · Return · Negative	0.044**		
	(2.18)		
After	-0.001	**-0.012**	**0.082**
	(-0.30)	**(-1.52)**	**(0.79)**
After · Return · Negative	**0.050****		
	(2.23)		
MVE	-0.000***	-0.000***	0.000
	(-4.60)	(-3.33)	(2.24)
Tobins'Q	0.004***	-0.022***	1.537***
	(5.08)	(8.39)	(30.04)
ROA	0.675***	-0.096***	-0.197
	(52.73)	(3.87)	(-0.41)
DA	0.017	0.062	0.403
	(1.11)	(1.26)	(0.070)
Yearly FE	Yes		
Sic dummies	Yes		
R-Squared	0.499	0.470	0.204
# observations	14.993		

Panel B: Robustness test for the validity of the *Cons_score* without the year 2019.

Cons_score	(4)
Intercept	0.178***
	(21.29)
Clawback	-0.038***
	(-6.00)
After	-0.11***
	(1.33)
CB · After	**-0.017**
	(-1.36)
MVE	-0.000
	(-10.24)
Tobins'Q	-0.037***
	(-15.36)
ROA	-0.215***
	(-10.29)
DA	0.030
	(0.75)
Yearly FE	Yes
Sic dummies	Yes
R-Squared	0.306
# observations	14.993

*T-statistic is given in parentheses * p<0.1, ** p<0.05 ***p<0.01*

6 Conclusion

This thesis studies the association between clawback provisions and conservative accounting. There is not much prior literature in which these two concepts combined are researched and it is not researched in the prominent literature altogether. Based on the two concepts alone prior literature argues that conservative accounting reduces agency problems that arise from differences in information available between agents and principals. However, managers are frequently not liable for any irregularities they cause. Clawback provisions address the issue of limited liability of managers because when accounting irregularities are committed, unfairly gained profits must be returned. The thought process in this thesis is that these two concepts are complementary because conservative accounting makes it harder to overstate accounting numbers. Clawback provisions address the problem of the limited liability that managers have. These two concepts led to the research question of this thesis:

> *What is the effect of clawback provision policies on the level of conservative accounting for firms in the United States?*

The results in section 5 show that the hypothesis is rejected and that there is no positive association between the concepts. Nor does the opposite appear; there is no negative association between clawback provisions and conservative accounting. In addition, there is no difference between conditional and unconditional conservatism on the association of clawbacks. The conditional conservatism results are significant on the 10% level for Basu's, (1997) model for differential in timeliness of earnings. The results of the more extensive conditional conservatism measure based on Khan et al. (2009) are insignificant. The results of unconditional conservatism based on the market-to-book ratio are also insignificant. In prior literature there is an ongoing discussion about the validity of the model from (Basu, 1997). It can be concluded that the hypothesis that clawbacks and conservatism are complementary should be rejected. There is no positive association between clawback provisions and conservative accounting regarding firms in the United States. Thus, conservative accounting and clawback provisions are not complementary. The results also do not suggest a negative association between conservative accounting and clawback provisions, so they are not substitutes.

Contributions made in this thesis are the following. Since there is a lack of prior research investigating the association between conservatism and clawbacks, the results could be of

interest for users of financial statements that are interested in whether firms apply conservatism, clawbacks or both in constraining managements behaviour. Because the results show that there is no association between the two, users should look at both concepts in the financial statements.

The limitations in this thesis are that the strength of a clawback provision is not taken into consideration and whether clawback provisions are even being applied when necessary. Measuring if a clawback is really applied is difficult because first management must commit accounting irregularities and it must also be reported as fraud by an authority. It is also not possible to investigate a causal relationship because it is uncertain whether conservatism influences clawbacks or whether the opposite is applicable. For further research it is interesting to investigate what the relationship between conservatism and clawbacks is and how the two affect each other.

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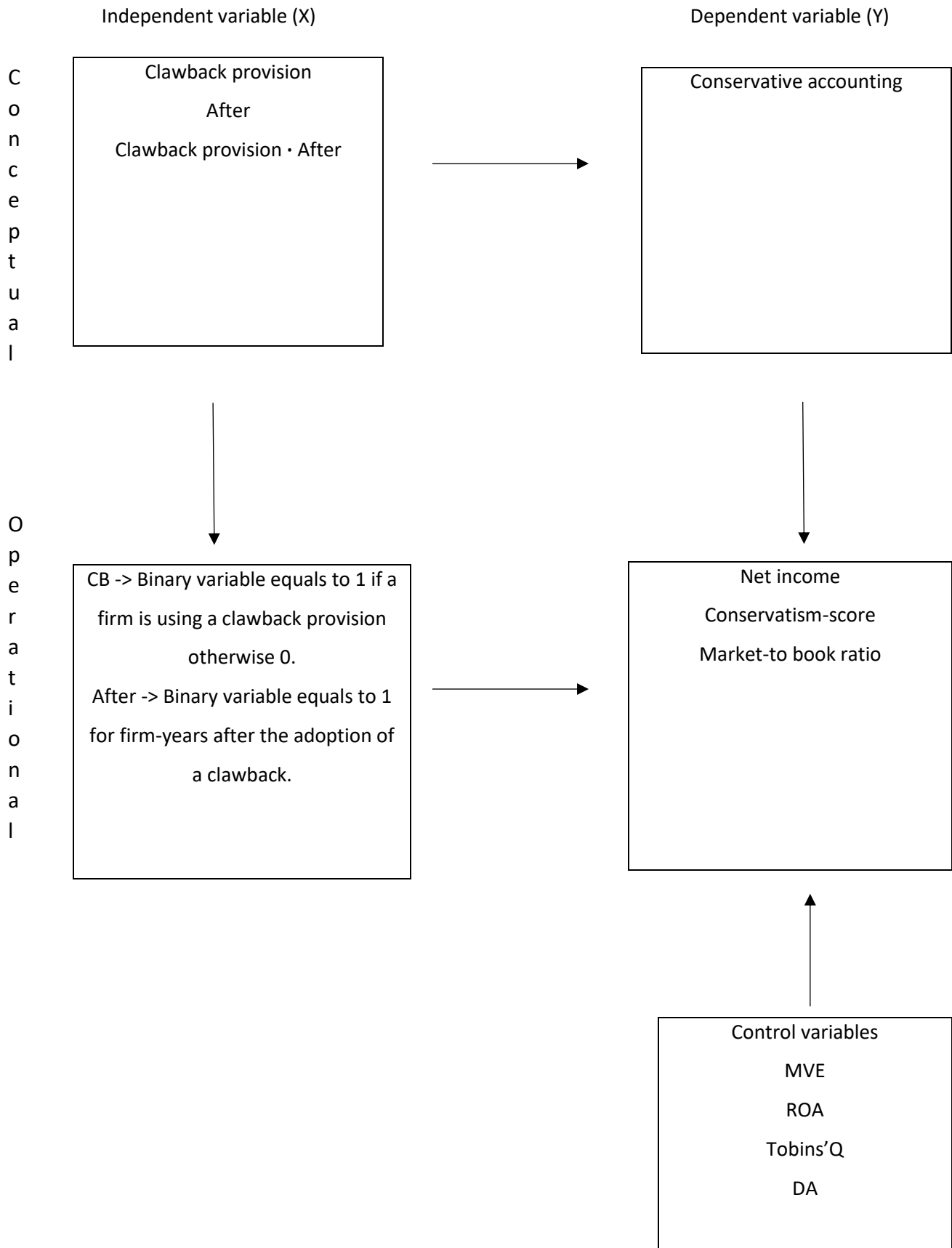
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A Appendix

Independent variable (X)   Dependent variable (Y)

Conceptual

Clawback provision
After
Clawback provision · After

→

Conservative accounting

Operational

CB -> Binary variable equals to 1 if a firm is using a clawback provision otherwise 0.
After -> Binary variable equals to 1 for firm-years after the adoption of a clawback.

→

Net income
Conservatism-score
Market-to book ratio

↑

Control variables
MVE
ROA
Tobins'Q
DA

Table *2*

Variable Information

Variable	Description
Dependent variable	
Net income	*Is net income before extraordinary items deflated by the lagged market value of equity (Khan et al., 2009).*
Cons-score	*Firm specific conservative measure based on (Khan et al., 2009). The higher the conservative score is, the more conservative a firm is.*
Market-to-book ratio	*Measured by dividing the market value of equity by the book value. The higher the market-to-book ratio is, the more conservative a firm is.*
Independent variable	
Clawback (CB)	*Binary variable which takes on the value 1 if a firm adopted a clawback at any time or 0 otherwise.*
After	*Binary variable which takes on the value 1 if a clawback provision in the specific firm-year is in place. It takes on the value 0 for firm-years without a clawback.*
Good-score	*Indicator of how timely good news is processed in the accounting numbers. (Khan et al., 2009)*
Return (RET)	*Stock return based on ((stock price t_0 – stock price T_{-1}) + dividend $_t$) / stock price T_{-1} (Khan et al., 2009).*
Negative (NEG)	*Dummy variable which is 1 for negative returns and 0 for positive returns.*
Control variables	
Size	*Natural logarithm of the market value of equity (Khan et al., 2009). (CSHO*PRCC_F).*
Market-to-book ratio (MB)	*Measured by dividing the market value of equity by the book value (Khan et al., 2009).*
Leverage (LEV)	*Defined as total liabilities divided by the market value of equity (Khan et al., 2009).*
Tobin's Q (TOBQ)	*Captures firm's growth opportunity calculated as the market value equity divided by total assets.*
Return on assets (ROA)	*Net income divided by total average assets.*
Discretionary accruals (DA)	*Accruals calculated based on the modified Jones model based on (Dechow and Sloan, 1995). Discretionary accruals are calculated by computing total accruals minus non-discretionary accruals.*
Industry	*Based on 2-digit SIC code.*