UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

HOW DO OWNERSHIP CHARACTERISTICS AFFECT ACCOUNTING QUALITY IN THE BANKING SECTOR?

- A QUANTITATIVE STUDY OF US BANKS -

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ABSTRACT

This paper investigates the effect of ownership characteristics on US banks' accounting quality from a stakeholder perspective. The accounting quality within the banking industry is of major importance for the domestic financial stability as banks are the core of financial intermediations. Impairment of credit loans is an accounting area exposed to the subjective judgment of managers since the regulation for financial instruments is principle based, giving managers a leeway when determining the loan loss provision. Given the leeway, managers might have certain incentives to manipulate loan loss provisions in order to obtain different objectives. The nature of the owners and consequently the unique characteristics of different ownership forms are hypothesized to affect the managers' incentives in various ways. As a result of manipulation or inaccurate estimations of loan loss provisions the accounting quality is affected negatively as the financial reports do not reflect the reality, and banks can be perceived to have lower risk than they actually have. By collecting data from American private, listed and savings banks between 2003 and 2013 a regression analysis is performed to examine the differences in accounting quality between the ownership forms. The findings document that accounting quality in listed banks is lower compared to non-listed banks. However, the accounting quality regarding other ownership forms was not proven to differ. The results of this study contributes to the field by providing additional knowledge of how different ownership constellations might affect the accounting quality in the banking industry and consequently, the quality of information provided to stakeholders. The knowledge could benefit several stakeholders, for example to enable bank regulators to choose the proper set of regulations.

KEYWORDS

Loan loss provisions, gross charge-offs, accounting quality, savings banks, listed banks, private banks, ownership characteristics.

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ABBREVATIONS AND DEFINITIONS

FAS	Financial Accounting Standards
FASB	Financial Accounting Standards Board
FDIC	Federal Deposit Insurance Corporation, bank regulator in the United States
GCO	Gross Charge-Offs, the actual credit loss of the bank
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
Listed bank	a bank publicly traded on a stock market
LLP	Loan Loss Provisions, the expense account for estimated future credit losses
OCC	the Office of the Comptroller of the Currency, bank regulator in the United States
Private bank	a bank owned by private shareholders
Savings bank	a mutually held bank, owned by its depositors.
SEC	US Securities and Exchange Commission, bank regulator in the United States
US GAAP	Generally Accepted Accounting Principles in the United States

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1. INTRODUCTION

This chapter gives the reader an overview of the investigated field, which facilitates the reading and understanding of this study. The reader is given a background to the problem leading up to the research questions and the purpose of the study.

1.1 BACKGROUND

United Commercial Bank (UCB) was one of the 10 largest bank failures of the recent financial crises. In 2011, the Securities and Exchange Commission (SEC) charged the former bank executives with concealing losses from the bank's auditors and misleading investors about loan losses during the financial crises in 2008 and 2009, as they did not report accurate loan loss allowances. This caused the bank's holding company to understate their operating losses in 2008 by approximately 50 %. Continuing declines of the bank's loan values caused the bank to be declared bankrupt a year later. Since deposits are insured by the Federal Deposit Insurance Corporation (FDIC), the bankruptcy of United Commercial Bank caused a loss of $2.5 billion to the FDIC's insurance fund (SEC, 2011). The consequences of the actions of UCB's managers illustrate the importance of high accounting quality within the banking industry.

Banks have an important role in financial crises. There have been several studies concerning what caused the recent financial crises of 2008, which resulted in a near collapse of the financial sector and resulted in the greatest economic contraction in the US since the Second World War. According to Barth and Landsman (2010) most researchers agree that the bursting of the US housing bubble started the crisis. When the bubble burst these loans defaulted causing the banks to suffer severe credit losses, which resulted in bankruptcy of several banks including high profile institutions such as Lehman Brothers. Bank failures can lead to major consequences for the domestic financial stability, as it did in the financial crisis of 2008.

Accounting quality can be measured in various ways; this study uses the measurement of loan loss provisions' predictive power of gross charge-offs. Similarly to Altamuro and Beatty (2010), the actual quality of loan loss provisions is investigated by using loan loss provisions as the explanatory variable to gross charge-offs, which are the actual credit losses. Low predictive power indicates a low accounting quality, and consequently a low quality of the information provided to stakeholder. Bank regulators use the financial statements as inputs to calculate regulatory capital measures, and thus the risk of the banks. When the accounting quality is low the financial statements does not reflect the reality, and banks can be perceived to have lower risk than they actually have. This further emphasis the importance of the information quality provided to stakeholders in financial statements.

Loan loss provision is an accounting area where estimates are of significance, and the accrual is relatively large since loans are the main part of banks' assets. As a result, inaccurate loan loss provisions are often found to be an underlying factor to bank failures (Ahmed et al., 1999; Gebhardt & Novotny-Farkas, 2011), as in the example of the UCB. Therefore, a correct estimate of credit losses is an important factor to avoid default as the provisions then absorb the estimated credit losses without an effect on the equity. The regulation for financial instruments and thus impairment of credit loans is principle based, and requires managers' professional judgment to adjust the loan loss reserves. This gives managers a leeway when estimating loan loss provisions, and makes it possible for them to use it as a tool for income

smoothing. Prior research has found that managers have different incentives for manipulating loan loss provisions, where earnings management and capital management are the two most common incentives (see e.g. Lobo & Yang, 2001; Bouvatier & Lepetit, 2008; Moyer, 1990; Beatty et al., 2002; Ahmed et al., 1999).

Different ownership structures possess different characteristics and operational goals, which expect to affect managers' incentives in various ways and therefore also the accounting quality. Ownership structure can be defined by both the degree of ownership concentration and the nature of the owners (Iannotta, et al., 2007), this study investigates the latter. A distinction is made based on the nature of the banks' owners, or in other words what type of owners the banks have. Three different types of ownership natures are investigated: private banks, listed banks and savings banks. The majority of US banks are private banks (Micco et al., 2007) and their characteristics distinguish them from listed and savings banks, why a comparison of the three ownership structures would be of interest. As state and cooperative banks represent a minority of US banks, it was not possible to collect a sufficient sample. Therefore, they are excluded in this study in contrast to similar studies of European Banks such as Altunbas et al. (2001).

The US has historically been, and still is, a large economy; consequently US banks may impact the global financial stability to a larger extent than other countries' banks. For example, as mentioned earlier, the US housing bubble and the failure of large US banks are argued to be two of the main causes to the global financial crisis of 2008 (Bart & Landsman, 2010). This increases the need of a stable US banking sector with a sound accounting quality. Furthermore, US banks have a longer history of loan loss provisions compared to European banks, which results in better data regarding loan loss provisions and gross charge-offs for US banks in databases. Other researchers have noticed this data to be missing for many European banks (see e.g. Marton & Runesson, 2012; Gebhardt & Novotny-Farkas, 2011). But since the US and Europe have similar regulation and economic environment, the results of this US study could be projected to the European banks to some extent (Anandarajan et al., 2007).

This study contributes to the field by providing additional knowledge of how different ownership constellations might affect the accounting quality in the banking industry and consequently, the quality of information provided to stakeholders. The knowledge could benefit several stakeholders. For instance, the supervision and analysis of banks could become more precise if the analyst understands the impact of ownership structure on provisions. Bank regulators could also benefit from a wider understanding of how ownership impacts accounting choices in order to choose the proper set of regulations.

The structure of this paper is influenced by the master degree study by Danielsson and Groenenboom (2013), and is organized as follows: Chapter 2 presents the empirical context such as definitions of the different ownership forms, the regulatory environment concerning financial instruments, loan loss provisions, accounting quality and the different management incentives. Chapter 3 connects how different ownership structures are assumed to affect management's incentives and the hypotheses are developed. Models used to test the hypotheses are illustrated in Chapter 4, while Chapter 5 presents the test results, which are analyzed in Chapter 6. The study's findings and suggestions of further research are presented in Chapter 7.

1.2 Purpose

The purpose of this paper is to provide additional knowledge of how different nature of owners might affect the accounting quality within the banking industry, and thereby the quality of information provided to stakeholders.

1.3 Research questions

- Does the nature of the bank owners (in savings, private and listed banks) affect accounting quality? If so, how do they differ from each other?

2. EMPIRICAL CONTEXT

The following chapter describes the empirical context to facilitate the readers' understanding of the study. First, definitions of the different ownership structure are presented. Secondly, the reader is introduced to the regulatory environment concerning US banks and financial instruments. A comparison with the regulatory environment in Europe intends to enable the reader to apply the result of this study to the European banking sector. Thereafter, loan loss provisions are explained along with the definition of accounting quality. Lastly, the different incentives are discussed, which have been distinguished by prior research to be underlying reasons for the banks' management to manipulate loan loss provisions.

2.1 OWNERSHIP

There are two dimensions to ownership structure: the degree of ownership concentration and the nature of the owners, this study focuses on the latter. Differences may exist if the bank is privately, publicly or mutually held, since the nature of the owners and their characteristics are different in the respective ownership forms (Iannotta et al., 2007).

2.1.1 SAVINGS BANKS

US savings banks were originally intended to service "poor and financially uneducated people" as the "safe and convenient place to save" (Benston, 1972, p 197). The deposits could be for as little as one dollar and were invested in prescribed safe assets, distributing earnings back to the depositors through dividends (Wadhwani, 2011). Altunbas et al. (2011) identified the characteristics of European savings banks as offering deposit and lending activities to middle and low-income customers within the local area of the bank. Tabak et al. (2013) confirm this for US savings banks by stating that they have a stronger regional focus of operation than other American banks. The provided services of today's savings banks are more diversified, but still involve more traditional financial intermediation activities than private banks. Furthermore, mutually owned banks[1] have been found to hold better loan quality and lower asset risk (Iannotta et al., 2007). As the mission of savings banks is focused on the local region the characteristics can vary in different countries, and even within the country.

Savings banks are not for profit institutions without capital stock, mutually owned by their depositors (Kelly et al., 2012; Colantuoni, 1998). As the owners also are the customers causes a shift in focus from shareholders to stakeholders. US savings banks separate the right to earnings from the right to control management. The depositors have a right to dividends, but do not hold the rights to choose management or set its rules, in contrast to shareholders. Instead, an independent board of trustees holds the legal control and manages the bank. The trustees are legally prohibited to receive any direct financial benefits for their services and cannot benefit from opportunistic behavior by the firm (Wadhwani, 2011).

With no tradable shares and the lack of pressure from depositors, the motivation of savings banks' managers to serve the public needs and operate their banks efficiently has been questioned since managers cannot gain or lose from changes in the banks' shares. However, they can gain from higher salaries if the bank performs well, which could mean that they do

[1] Iannotta et al.'s (2007) classification of mutually held banks includes additional bank forms other than mutual savings banks

not act any differently than private managers. When there are no shareholders to depend on for capital, managers have less need to be perceived as attractive investments and are not subject to the pressure from shareholders to maximize their value, in contrast to private banks. (Benston, 1972)

2.1.2 PRIVATE BANKS

The majority of banks in the industrial world, and consequently in the US, are privately owned (Micco et al., 2007). A private bank is owned and run for profit by its shareholders, who can be one or several individuals or corporations. Compared to savings banks, the ownership in private banks is based on the proportion of shares of a specific shareholder. In addition, the shares can have different voting rights. The shares of private banks are rarely traded since ownership generally is concentrated. Private banks provide a wider range of services compared to savings banks, in addition to accepting deposits and issuing loans they, for example, assist with investments and to hedge against various risks exposures. As private banks are profit maximizing, they have been found to be more efficient and profitable than mutually held banks (Sapienza, 2004; Iannotta et al., 2007).

As the ownership is more concentrated and the shares in private banks are rarely traded, the owners' involvement in management and operations is higher compared to in publicly held firms. Therefore, private owners are assumed to not rely on simple earnings reports to determine managers' compensation, but instead on more subjective measures since they monitor the managers' work more directly (Beatty et al., 2002; Ke et al., 1999).

2.1.3 LISTED BANKS

Listed banks are similar to private banks regarding for example operations and type of customers. The main goal is, likewise private banks, assumed to be more focused on maximizing profit and shareholder value. The biggest difference lies within ownership as listed banks are publicly traded on stock markets making it possible for anyone to buy shares. As a result it is generally more common for listed banks to have a dispersed ownership concentration compared to private banks (Beatty et al., 2002).

Listed banks have larger access to external equity financing as their shares are traded on an open market. This makes the stock price an important factor for the banks' ability to attract capital. In order to maintain their stock price, and be perceived as a low risk bank, the listed banks need to present stable earnings (Anandarajan et al., 2007; Fonseca & González, 2008). Managers of listed banks might face more pressure to report consistently increasing earnings and thus have more incentives to use discretion in their loan loss provisions to avoid declines in earnings (Beatty et al., 2002). Bouvatier et al. (2014) sum up the conclusions of prior research to be that managers of listed firms might have high incentives to report earnings that are perceived as more favorable by potential investors in order to attract capital. However, their own findings indicated otherwise which could be explained by investors' demand of high accounting quality, forcing listed banks to have high accounting quality in order to be an attractive investment.

To increase the managers' incentives to act accordingly with the owners' goals, listed banks often provide 'pay for performance' compensation (Anandarajan et al., 2007). Since listed banks have tradable shares the compensation system can be, in addition to earnings, based on

the stock price. A system that has been proven to create a short term focus of managers to increase the stock price and beat analysis forecasts (Cornett et al., 2009).

Furthermore, publicly traded banks are subject to stronger enforcement in form of both public and private control (Marton & Runesson, 2012; Anandarajan et al., 2007). In addition to federal and state regulation, they have to follow the specific regulation of the stock market they are listed in. Listed banks and their managers are also subject to the public supervision of stock analysts and media journalists.

2.2 Regulatory Environment

2.2.1 Comparison of US GAAP and IFRS

Since this study focuses on US banks it is motivated to compare the US standards to the standards of another leading economic area, the European Union (EU). The comparison provides the reader knowledge of the applicability of the results of this study to banks in the EU.

US banks follow the Generally Accepted Accounting Principles (US GAAP), which are set by the Financial Accounting Standards Board (FASB). The European banks follow the International Financial Reporting Standards (IFRS), set by the International Accounting Standards Board (IASB). Generally IFRS are more principle based than US GAAP, but regarding standards for financial instruments both standards are principle based. According to the Conceptual Framework of respective standards, the general purpose of financial reporting, and the users, are the same. The purpose is to provide financial information that is useful to the users, and supports their decision-making. The users are identified as existing and potential investors, lenders and other creditors (FASB, 2010; IASB, 2010).

The decisions regarding loan loss provisions are considered to be a rather complex process, and since the standards for financial instruments are principle based, the determination of loan loss provisions require a professional judgment of managers (Hasan and Wall, 2004). Currently, US GAAP and IFRS use the 'incurred loss model' to determine loan loss provisions.[2] In short, the model states that the impairment of loans should be recognized when there is objective evidence of impairment due to an occurred event (see further in section 2.3). The criticism of the incurred loss model is that the recognition of external indicators, such as bursting housing bubbles, effect is delayed compared to more future-based loss models (Wall & Koch, 2000; Barth & Landsman, 2010). Therefore, the standard setters have started a project together to replace the old respective standards, regarding financial instruments. As the IAS 39 is to be replaced by IFRS 9 Financial Instruments, the IASB has, in their most recent exposure draft regarding the matter (ED/2013/3 Financial Instruments: Expected Credit Losses), proposed an 'expected loss model' which is more forward-looking, for example it would take into account historical credit losses for similar instruments. In FASB's Exposure Draft Financial Instrument - Credit Losses (Subtopic 825-15), a similar approach of an expected credit loss model is emphasized. Marton and Runesson (2012) investigated the difference in LLP's predictive power between the current incurred loss model and the expected loan loss model used by local GAAPs, prior to the implementation of IFRS in Europe. They found that the incurred loss model decreases the validity of loan loss provisions compared to the prior expected loss model.

[2] For IFRS, see IAS 39; US GAAP, see e.g. ASC 450-20 and ASC 310-10-35

2.2.2 BANK REGULATORS

Besides the financial reporting standards, banks in both EU and US have to adapt their financial reporting according to specific bank regulators. Their main purpose is to control banks' financial risk, which for example is made by setting requirements of minimum levels of capital-adequacy ratios and disclosure of additional information regarding assets and liabilities (Barth & Landsman, 2010). On a global basis, the main regulator is Basel Committee on Banking Supervision (BCBS), which issues the Basel Accords. Regarding the US, the main regulators are the Federal Reserve and the Federal Deposit Insurance Corporation (FDIC) (Agur, 2013). One of the objectives of the Federal Reserve is to implement the Basel Accords in the US. Another federal regulator is the US Securities and Exchange Commission (SEC), whose mission is to protect investors, and oversee the corporations that trade securities, for example banks (SEC, 2014). They require public banks to disclose important financial information to the public, and investigate banks they suspect of violating regulations. SEC can order banks to correct their financial statements, for example when banks failed to establish an appropriate loan loss allowance. Furthermore, savings banks are also chartered, regulated and supervised by the Office of the Comptroller of the Currency (OCC). OCC can issue rules and regulations, examine banks and take supervisory actions against banks or managers that do not comply with the regulation (OCC, 2014).

In addition to the federal regulators, bank's financial reporting might also be influenced by a local regulator or local laws, specific for the bank's state (US) or country (EU) (Tabak et al., 2013; Agur, 2013). In other words, the US has a dual banking system where banks are subject to both federal and state law.

2.2.3 CAPITAL REGULATION

The capital regulations in the US are mostly aligned with the Basel regulation, and divides bank's total regulatory capital into two tiers: Tier 1 and Tier 2. Tier 1 is the core capital and regulators view it as a core measurement of bank's financial strength. Loan loss provisions are not included in Tier 1 capital, therefore an increase in loan loss provisions reduces Tier 1 capital as it decreases earnings and equity that otherwise would be included in Tier 1 capital. Tier 2 is supplementary capital and considered to be less reliable than Tier 1 capital. Loan loss provisions can be included in Tier 2 capital but only up to a maximum of 1.25 % of risk-weighted assets (*12 C.F.R. § 325 Appendix A*). Consequently, an increase in loan loss provisions increases Tier 2 capital if the upper bound is not yet reached. An increase in loan loss provisions has opposing effects on Tier 1 and Tier 2 capital. In prior regimes, loan loss provisions were included in Tier 1 capital why capital management through loan loss provisions was more common in the old regime (prior to 1990) (Ahmed et al., 1999).

Banks have to comply with different capital ratios levels regarding both Tier 1 and Tier 2 capital. There are different capital categories with different requirements level. For example, to be categorized as an "adequately capitalized bank" the requirements are: Tier 1 capital to risk-weighted assets ratio minimum of 4 % and total capital to risk-weighted assets ratio 8 % or higher. A bank is categorized as "undercapitalized" if above ratios are not met, and then

have to submit a capital restoration plan[3] (*12 C.F.R. § 325.103*). Prior research has shown that capital management via loan loss provisions has decreased post implementation of new and stricter capital rules (see e.g. Ahmed et al., 1999).

2.3 Loan Loss Provisions

The intention of loan loss provisions in regulatory standards, such as IFRS and US GAAP, is to provide an assurance to cover future expected loan losses due to e.g. bankruptcy of debtors or other scenarios where the bank is unable to collect the whole amount of the loan contract. Therefore, the accumulated loan loss provisions in the balance sheet, called loan loss allowance, are supposed to reflect the estimated future loan losses. In order to explain the effects of earnings and capital management by manipulating loan loss provisions, this section explains loan loss provisions' basic effects on reported income.

As mentioned earlier, banks follow the incurred loss model. Simplified, the incurred loss model and loan loss provisions can be explained by the following example: if a big company with employees in a smaller town bankrupts a few weeks before the bank's closing accounting day, there might not yet be any defaulting loans, but the bank knows that a large portion of them will default in the near future due to the bankruptcy. The bank's management has to take this into consideration when estimating the future loan loss. On the other hand, if the company is declared bankrupt after the closing accounting day, but before the financial statements are produced, managers are not allowed to take the expected credit losses into consideration even though they are certain of their existence. If the expected loan losses exceed the bank's loan loss allowance account, an increase of the allowance is made by increasing loan loss provisions for the given period. When loan loss provisions increase, it reduces net income, which means that the expected credit loss is recognized in the period it occurred.

In the income statement, loan loss provision is considered as a non-cash expense account, which lowers the reported income. In the balance statement, loan loss provisions are accumulated and displayed as loan loss allowance with a discount for net charge-offs and other. Gebhardt and Novotny-Farkas (2011) visualized this by using the following equation:

$$LLA_t = LLA_{t-1} + LLP_t - NCO_t + Other$$

Where,
LLA= Loan loss allowances
LLP = Loan loss provisions in period *t*
NCO = Net charge-offs, the actual credit losses in period *t*, with subtraction of recoveries
Other = Adjustments to foreign exchange rates or changes in the scope of consolidation

Eventually, when the loans default, the charge-offs reduce the loan loss allowance instead of directly affecting net income, which means that it is not recognized as an expense in period *t* but in the period when it occurred via LLP (Wall & Koch, 2000). Consequently, the gross charge-offs represent the bank's actual credit loss. In the equation above the gross charge-offs can be derived by adding the recoveries to net charge-offs.

[3] For a more detailed definition and explanation of the various components of regulatory capital see 12 C.F.R. § 325.103 published by the FDIC available at www.fdic.gov

Given the fact that the loan loss provisions are influenced by subjective estimations, it gives management the opportunity to use loan loss provisions as a tool to smooth the reported income by making larger provisions in good times and reclaims them in a downturn to absorb credit losses (Fonseca & González, 2008; Cornett et al., 2009). It also gives managers the opportunity to use loan loss provisions as a tool to manage capital to reach regulatory capital levels. The incentives for management to exercise these opportunities are discussed in section 2.5.

2.4 Accounting quality

There are different measures to describe accounting quality within firms. For financial firms, and more precisely banks, their ability to estimate future credit losses is a frequently used measurement (see e.g. Marton & Runesson, 2012; Altamuro & Beatty, 2010). As described in the previous section, banks make an accrual each year in order for their loan loss allowance to reflect the expected credit loss. When the credit loss is a fact, a charge off to the allowance is made, making gross charge-offs a reflection of the actual loan losses. If the bank has made an accurate estimate of their credit losses there should be no significant difference between their provisions and their gross charge-offs. In contrast, if there is a large difference, the bank has not been successful in their estimation of its future credit losses. A smaller residual between loan loss provisions and gross charge-offs in the subsequent year indicates a higher accounting quality. Inaccurate estimations and manipulation of loan loss provisions occur at the expense of the quality of the information provided to the bank's stakeholders, and results in misleading information about the bank's financial condition (Wetmore and Brick, 1994). The misguidance of information due to manipulation of loan losses is directly contrary to the main purpose of the financial statements constituted under US GAAP.

2.5 Management Incentives

Bank managers possess more information regarding risks in the banks' loan portfolio compared to outside investors, since the latter mainly possess the information provided in the financial statements. In order to provide accurate information to the investors, the managers' professional judgment is a necessity when estimating loan loss provisions. On the other hand, decisions influenced by subjective judgment also gives managers the possibility to use discretion in estimating the size and timing of loan losses to manage earnings, and thereby pursue own objectives (Whalen, 1994; Bouvatier & Lepetit, 2008). The underlying motivations for managers' estimation of provisions have been widely investigated in prior research. Lobo and Yang (2001) identified four motivations which have been suggested by prior research to exist as: 1) income smoothing, 2) capital regulation, 3) signaling and 4) tax considerations. Given the extent of this paper it focuses on the first two motivations since they have been found to be the stronger incentives (Anandarajan et al., 2007). When analyzing the accounting quality these two underlying motivations are used in this study to identify the different incentives of respective form of ownership.

2.5.1 EARNINGS MANAGEMENT INCENTIVE

The first motive for managers' estimation of loan loss provisions is to manage earnings to obtain a predefined income level, often in order to meet forecasts or stable earnings. The act of earnings management can be seen as a measure to obtain smoothed income, which is a well-addressed topic of research in various types of industries. Copeland (1968, p 101) states that "one manipulating goal widely attributed to management is the desire to smooth reported income", and describes income smoothing as the means to "moderate year-to-year fluctuations in income by shifting earnings from peak years to less successful periods". Every industry has its own specific approach to use the leeway given by the accounting standards. Loan loss provisions are a non-cash expense and the regulatory principles give banks a leeway to determine the size of the annual provision. Therefore, the main approach in the banking industry is to use loan loss provisions to smooth income (Cornett et al., 2009). Fonseca and González (2008) made a cross-country study, and found that the incentives for income smoothing vary depending on different aspects. Their findings suggest that the incentives to smooth earnings decrease with stricter legal enforcement while it increases with market orientation and development of the financial system in a country. Rivard et al. (2003) identify two main reasons to why bank managers use earnings management: 1) to increase their own compensation and 2) to report a stable income and appear as less risky.

The first reason to engage in earnings management is to obtain higher earnings in the short term. When managers' compensation system is connected to the firm's performance or stock price it might increase the incentives to manage earnings on a short term. As compensation is tied to earnings, managers can use different accounting choices to accomplish income growth, and thereby increase their own compensation (Fields et al., 2001; Rivard et al., 2003). For example, Cornett et al. (2009) present empirical findings that CEO's pay-for-performance increases earnings management when incentive-based stock options make a large proportion of the CEO's total compensation. This can increase the incentives to engage in earnings management as higher earnings or a stable income can have as a positive effect on the stock-price. Furthermore, Cheng and Warfield (2005) find that it is more likely for managers with high equity incentives to manage earnings in order to meet or beat analysis forecasts.

The second reason to engage in earnings management is to present stable earnings. For various reasons, it is in the banks' interest to be perceived by the market as bearing low risk (Rivard et al., 2003). Volatile earnings are one indicator of high risk whereby bank managers may aim to present a stable income to manage the perceived risk of the bank (Fonseca & González, 2008). This emphasizes that managers might build up loan loss provisions during good times, and reclaim it in a downturn to absorb losses and smooth income (Fonseca & González, 2008; Cornett et al., 2009).

However, prior research is not completely unified in their conclusions to what extent loan loss provisions are used for earnings management in banks. Ahmed et al. (1999) do not find earnings management to be an important determinant for loan loss provisions. While other studies have found that listed banks engage in more earnings management than private banks (Beatty & Harris, 1999; Beatty et al., 2002; Anandarajan et al., 2007). Lobo and Yang (2001) find strong support for income smoothing via loan loss provisions, and Cornett et al. (2009) find evidence of a relation between loan loss provisions, pay-for-performance and earnings management. Furthermore, evidence is found by Lobo et al. (2013) who state that managers continue to seek different methods to achieve their own reporting objectives. In conclusion, the majority of analyzed prior research has found proof of earnings management.

2.5.2 CAPITAL MANAGEMENT INCENTIVE

The second motive for managers' estimation of loan loss provisions is managing capital levels to meet the regulatory capital ratio requirements set by bank regulators, which are discussed in section 2.2. This motive is closely related to earnings management as the capital levels are affected by loan loss provisions effect on earnings and hence the equity capital. Due to the high costs associated with the consequences of violating the capital restrictions banks might manipulate loan loss provisions to meet the restrictions (Ahmed et al., 1999; Marton & Runesson, 2012). The regulatory costs of violating the requirements can for example include that regulators refuse the bank to acquire other firms, pay dividends to shareholders, or demand a capital restoration plan; and if the ratios are under a certain level they might be forced into bankruptcy (Wall & Koch, 2000). When banks' capital levels are low relative to the regulatory requirements, managers have incentives to manipulate loan loss provisions by avoiding writing off bad loans, to avoid the regulatory costs associated with the violation (Cornett et al., 2009; Moyer, 1990; Fonseca & González, 2008).

Furthermore, if the credit losses exceed loan loss allowance it will decrease the equity capital when the expected future loan losses materialize (Cornett et al., 2009). This creates incentives to rather overstate the loan loss provisions to avoid a possible decrease in equity capital.

Several studies have proven that managers use loan loss provisions to manage capital (e.g. Moyer, 1990; Beatty et al., 2002; Ahmed et al., 1999; Lobo and Yang, 2001). A recent study by El Sood (2012) examines US bank holding companies during 2001-2009. His empirical findings indicate that banks engage in income smoothing when they risk hitting the regulatory minimum capital requirements. However, other studies did not find evidence for it (see e.g. Bouvatier & Lepetit, 2008; Altamuro & Beatty, 2010) The inconsistent results can be explained by how the Basel Accord has affected the implications of loan loss provisions on capital-adequacy ratio (see section 2.2.3). For example, Marton and Runesson (2012) summarize existing research by stating that, especially after the introduction of the Basel Accord, there is little evidence for capital management via loan loss provisions.

3. HYPOTHESIS DEVELOPMENT

This chapter develops the hypotheses regarding the differences in accounting quality between ownership structures. The characteristics of respective ownership form are connected with their assumed effects on management's incentives, and consequently, their effect on the accounting quality.

Private banks have been identified as the most common ownership form in the banking sector (Micco et al., 2007). Therefore, this study tests the different ownership structures, savings and listed banks, against private banks to see if there is a difference in accounting quality due to the ownership structure. In addition, listed and savings banks are additionally tested against a control group including all other banks.

3.1 SAVINGS BANKS

Savings banks are non-profit organizations without shares but instead mutually held, which shifts the focus from shareholders to stakeholders in form of depositors (Kelly et al., 2012; Colantuoni, 1998). Consequently, savings banks are associated with a lower focus of maximizing profits and shareholder value compared to private banks. Their different focus is assumed to result in less pressure on managers to meet expectations compared to private banks. Attempting to meet expectations has been proven to be an incentive for earnings management and might result in lower accounting quality (Cheng & Warfield, 2005).

Managers of savings banks are assumed to be subject to less pressure from the owners compared to managers of private banks due to two factors. The first factor is that the depositors in savings banks do not hold the right to influence the management; instead an independent trustee is appointed (Wadhwani, 2011). This disables the depositors from pressuring managers and might decrease the extent of how much they supervise managers' work and actions compared to what private shareholders might do, especially if the private ownership is concentrated to a few large shareholders. This could decrease managers' incentives to produce high accounting quality and instead increase their incentives to exercise earnings management, which is assumed to have a negative effect on the accounting quality. The second factor is that savings banks do not hold a capital stock (Kelly et al., 2012), which suggests that they are not dependent on being perceived as attractive investments or subject to the pressure from shareholders to maximize shareholder value (Benston, 1972). As stable earnings increase the shareholder value and is a measure for low-risk investment (Fonseca & Gonzalez, 2008), savings banks' managers might have less incentives to engage in earnings management compared to private banks. The second factor suggests a positive effect on accounting quality, compared to non-mutually held banks.

According to Fields et al. (2001), managers' incentives for earnings management increase when their incentives are aligned with those of the owners. This can for example occur when managers are compensated in shares. The absence of shares in savings banks might lower the alignment of incentives, and hence lower the incentives for earnings management. However, Benston (1972) argue that there is reason to believe they do not behave differently from managers in shareholder-owned institutions. Likewise mangers in private banks, savings banks' managers have a desire for a successful firm, as they can personally gain from a growing institution in terms of higher salaries and recognition.

As stated in chapter 2, the characteristics of savings banks have historically focused on providing loans to the low and middle class on a local geographic market (Altunbas et al.,

2011). Even if savings banks are more diversified today, they still have a more traditional focus (Tabak et al., 2013). The traditional focus might affect the accounting quality in various ways. First, a larger share of loans provided to the low and middle class are associated with a higher degree of risk for default of loans. This argument is based on the hypothesis that people with lower income, to a larger extent than others, are affected by insolvency in general, and especially during an economic downturn. Private banks however have a more diverse set of borrowers, and consequently their loan portfolio is associated with a lower level of risk compared to savings banks. Secondly, the fact that savings banks are focused on a limited geographic market might further affect their ability to differentiate their loan portfolios, which increases the financial risk of the portfolio. This argument does not apply to private banks since they do not have the same regional focus. These two effects suggest a higher level of credit risk in savings banks compared to private banks and might affect savings banks' managers in two ways. First, as it is of significance for all banks to be perceived as bearing low risk, managers of savings banks might have higher incentives to engage in earnings and capital management to conceal the higher risk. In prior research, stable earnings have been identified as an indication of lower risk (Rivard et al., 2003; Fonseca & González, 2008) Secondly, as discussed in section 2.2, bank regulators use the financial statements to compute the capital ratios. If the savings banks are indeed riskier it might enhance the incentives for savings banks' managers to manipulate loan loss provisions, as an attempt to reach the regulatory capital requirements if their capital is insufficient (Moyer, 1990; Ahmed et al., 1999). This indicates that savings banks might have more incentives, compared to private banks, to use loan loss provisions for capital management, and consequently have a lower accounting quality than private banks. On the contrary, Iannotta et al. (2007) finds higher quality of assets and lower risk of mutually held banks, which would indicate lower incentives for capital management.

In conclusion, there are various aspects arguing that the ownership characteristics of savings banks can contribute to either better or worse ability to predict GCO with LLP compared to private banks. To summarize, when including all perspectives, the incentives for earnings management seem to be lower for savings banks, while the incentives for capital management seem to be higher. As earnings management has been proven to be a stronger incentive than capital management in previous studies, especially after LLA was excluded from Tier 1 capital, the following hypothesis has been developed:

H1a: The ability of LLP to predict GCO in the subsequent period is higher for savings banks than private banks.

Given the first hypothesis, the savings banks are also predicted to have better accounting quality when comparing with both private and listed banks. Therefore, a second hypothesis was developed:

H1b: The ability of LLP to predict GCO in the subsequent period is higher for savings banks compared to all other natures of ownership.

3.2 LISTED BANKS

As stated in section 2.1, listed banks are quite similar to private banks regarding operation, type of customers and goals of profit maximization. The main difference lie within ownership and the fact that listed banks have tradable shares on a stock market, which can affect managers' incentives in various ways. For example, it is more common with dispersed ownership in listed banks compared to private shareholders, which might decrease the influence shareholders have over managers' actions. Less influence give listed banks' managers a greater leeway to make accounting choices to pursue own objectives, compared to private banks. Private shareholders, generally with larger proportion of shares per shareholder, might have a stronger influence on managers and a stronger involvement in the bank than owners of listed banks. This implies that the accounting quality would be lower in listed banks than in private banks.

Furthermore, listed banks are dependent on the stock market as a source of capital, and therefore need to be perceived as attractive investments. As stable earnings are one indicator of a well-functioning bank with low risk, it may increase the incentives for managers to engage in earnings management. As prior research has found that publicly traded banks engage in earnings management to larger extent than other banks (Beatty & Harris, 1999; Beatty et al., 2002; Anandarajan et al., 2007), which might lead to lower accounting quality.

It is also of importance to reach the regulatory capital ratios in order to be perceived with lower risk, and as the costs of not reaching them are high it is assumed to increase the incentives for capital management (Wall & Koch, 2000). The costs associated with not reaching capital ratio are presumably higher for listed banks compared to other banks. This is explained by the negative effect of a low capital ratio on the bank's stock price. On the other hand, high accounting quality is of importance to potential investors, which might indicate that listed banks cannot engage in as much manipulation of loan loss provisions as private banks (Bouvatier et al., 2014).

Another aspect of listed banks' tradable shares is the possibility to tie managers' compensation system to the value of the stock. As discussed in chapter 2, prior research has proved this system to increase managers' incentives to engage in earnings management in order to meet or beat analysis forecast and increase the value of the stock in listed banks (Cornett et al., 2009; Cheng & Warfield, 2005). While compensation system is also incorporated in other bank forms, an additional factor is added to listed banks. The share-based compensation system might lead to a short-term focus, which indicates larger incentives for earnings management in listed banks.

Listed banks are subject to stronger enforcement and regulation than private banks (Marton & Runesson, 2012; Anandarajan et al., 2007). In addition to federal and state regulation, listed banks have to comply with the specific regulation of the stock market and supervision of e.g. stock analysts. As discussed in chapter 2, heavier enforcement has been proved to decrease

the incentives to manipulate loan loss provisions for capital management (Fonseca & González, 2008). Furthermore, a public listing status also leads to a larger public interest, which might attract additional supervision by journalists. A public exposure is assumed to affect listed banks to a larger extent than other banks, since the negative effect on the stock. This aspect would imply that listed banks have less incentive to engage in manipulation of loan loss provisions and consequently have a better accounting quality than private banks.

In conclusion, there are various aspects arguing that ownership characteristics of listed banks can either contribute to better or worse ability to predict GCO with LLP compared to private banks, depending on managers' incentives for earnings and capital management. Likewise, prior research regarding management's incentives for earnings and capital management via loan loss provisions has been inconsistent. However, listed banks seem to have more reasons to engage in earnings management. As for capital management, it is not as clear whether the certain characteristics would imply higher or lower incentives. Therefore, the following hypothesis has been developed:

H2a: The ability of LLP to predict GCO in the subsequent period is lower for listed banks than private banks.

Given that the certain characteristics of savings banks implies a higher accounting quality compared to private banks, it suggests that listed banks have lower accounting when comparing to all non-listed banks. Therefore, a second hypothesis was developed:

H2b: The ability of LLP to predict GCO in the subsequent period is lower for listed banks compared to non-listed banks.

4. RESEARCH METHODOLOGY

This chapter describes the choice of research methodology and the process of data collection. Firstly, the models used to test the hypotheses are described. Secondly, the reader is given a presentation of the data sources, the collection and how the data was processed. The discussion of certain advantages and disadvantages associated with the research methodology are addressed throughout the chapter, as the authors believe this concept will assist the understanding of certain choices.

4.1 RESEARCH DESIGN

This study investigates how different forms of ownership might affect the accounting quality within the banking industry. The method used to reach conclusions of the research questions is a quantitative method, using statistical significance tests to verify the hypotheses developed in chapter 3. In order to conduct the tests, a collection of secondary data was retrieved from the Bankscope database. The database provides a vast amount of accounting data, which facilitates the use of a quantitative statistical method to analyze the relationship between the variables of interest. The process of data collection is presented more thoroughly in section 4.2.

4.1.1 MODELS

Two regression models are used to conduct the tests, both derived from Altamuro and Beatty (2010). The regression models are ordinary least squares (OLS) models. Using an OLS model for a regression analysis of panel data is associated with some problems considering the cross-sectional variation of the data generated by specific individuals (banks) over time; hence a more refined model might be more suitable for this type of research. While other models, such as the generalized linear model, could be argued to provide better estimations, they also rely on a rather complex mathematical derivation, which makes it harder to evaluate the reliability of the results. The simplicity of OLS enables an easier interpretation of the results, without any advanced statistical knowledge. Furthermore, the OLS still provides sufficient measures to examine the research questions of this study. To deal with the weaknesses of OLS and to ensure the reliability of the models' results, certain measures are taken regarding the variables, the data and the model itself. These measures are addressed in their specific context. Regarding the model, one of the underlying assumptions is the constant variance of the residuals (homoscedasticity). To confirm this assumption, a pre-test was conducted. The test showed a tendency of heteroscedasticity, for this reason the regression analysis is based on robust standards errors, which minimizes the risk for understating the p-values.

The models focus on predicting future gross charge-offs (GCO) using loan loss provisions (LLP) and a set of independent variables that varies with different natures of ownership. GCO and LLP are both continuous variables that can undertake any value, and their absolute values are naturally highly correlated with the size of the bank. As the sample consists of banks with various sizes, the variables GCO and LLP are scaled by using the observations of total assets in the beginning of the year as a measure of size. By scaling GCO and LLP the effect of the bank's size on the variables is suppressed. In addition to the variables of interest, a number of control variables are included in the models to secure the causality of the interacting variables; these are discussed after the models.

MODEL 1

The following model is used to test the "A" hypotheses of respective ownership form, how the accounting quality of savings or listed banks differs from private ownership. The model includes categorical dummies for savings and listed banks in order to distinguish private ownership.

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 SAV_{i,t} + \beta_3 LLP_{i,t} * SAV_{i,t} + \beta_4 LIST_{i,t} + \beta_5 LLP_{i,t} * LIST_{i,t} + \varepsilon_{i,t}$$

Where, $GCO_{i,t+1}$ is gross charge-offs for bank *i* in year *t+1*, scaled with total assets in the beginning of the year. To predict values of the dependent variable (GCO) the model uses the independent variable $LLP_{i,t}$, which is the observed value of loan loss provisions of bank *i* in year *t*, scaled with total assets in the beginning of the year. $SAV_{i,t}$ is a dummy variable which equals 1 if bank *i* is a savings bank in year *t* and 0 otherwise. $LIST_{i,t}$ is a dummy variable indicating if bank *i* is listed in period *t*, and equals 1 for a listed observation and 0 otherwise. As this model examines three types of ownership, private banks are the control group indicated by a value of 0 in both of the categorical dummies. The control group is the base of the regression and the coefficients of the categorical dummies indicate the relation to the control group of private ownership. The interaction terms, $LLP_{i,t}$ *$SAV_{i,t}$ and $LLP_{i,t}$*$LIST_{i,t}$, are the primary variables of interest, which measure the difference in loan loss provisions' ability to predict gross charge-offs the subsequent year for respective ownership structure compared to private ownership. The coefficients of the interaction terms are central to the analysis of whether a certain ownership structure has higher or lower accounting quality compared to private ownership.

MODEL 2

The second model tests the "B" hypotheses of respective ownership structure, which examine whether the accounting quality of a specific ownership structure differs from the rest of the banks in the sample. Model 2 is similar to Model 1, but only uses one categorical dummy.

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 OWNERSHIP_{i,t} + \beta_3 LLP_{i,t} * OWNERSHIP_{i,t} + \varepsilon_{i,t}$$

As in Model 1, the dependent variable is $GCO_{i,t+1}$. $LLP_{i,t}$ is still used as the main predictor for GCO in the subsequent period. The ownership dummy is the indicator of whether an observation is included in the control group or not. Since model 2 is applied to test savings and listed banks' accounting quality compared to the rest of the population of banks, the dummy variable equals 1 if the observation is included in the treatment group (savings or listed banks), and 0 otherwise.

4.1.2 Control Variables

In addition to the variables described in the previous sections, the two models consist of a set of control variables. Control variables are used since the variation of GCO is assumed to be explained by additional variables, besides LLP and ownership structure. If these variables are excluded from the model there is a risk for omitted-variable bias. To overcome this problem the control variables are included in the model, with the effect that the variation of the dependent variable derived from the control variables is tied to them. Consequently, the variation explained by the variables of interest is cleared from variation of extraneous variables, which improves the validity of the results.

To determine the control variables, it is important to include every variable that is considered to correlate with the variables of interest. The set of control variables used in this study is influenced by Perez et al.'s (2008) study, which examined the occurrence of LLP as a measure for earnings and capital management in Spanish banks, using a set of variables that are considered to affect loan loss provisions. Since their study was constructed of manually collected data, some alterations were made to suit the data set of this study. The following control variables are used for both models. The *logarithm of total assets* is used to capture the variation derived from the size of the bank. Using logarithm of total assets normalize the observations. A variable of *operating profit* is included since it might affect the use of LLP as an income smoothing instrument. *Total loans as a fraction of total assets* is included as a measure of the bank's general risk level. *Total capital ratio* is also a measure of risk level, but captures the variation generated by the risk of undercutting capital adequacy requirements. All observations of the control variables are the values in year *t*.

In addition to the continuous control variables, the models consist of dummy variables representing each year of the timeframe (2003-2013). These variables capture the time variation of the observations. Another variable that might affect gross charge-offs is the general state of the economy. While the time variables control this to some extent, the annual change in GDP is a better indicator, but since annual GDP is constant over one year it is omitted when time dummies are included at the same time. Therefore, an additional test is conducted to control for annual GDP growth, when excluding year dummies.

An obvious problem arising, when some of the above control variables are included, is the risk of multicollinearity, which can be hard to overcome without the risk of excluding a causal factor. In order to assure the validity of the results, the intercorrelation of the independent variables is observed cautiously, using the variance inflation factor (VIF). A VIF indicating a multicollinearity problem might lead to exclusion of one of the variables.

4.2 Data collection

4.2.1 Sources

The main source of data for this study is the Bankscope database. According to Hasan and Wall (2004), the Bankscope database provides one of the widest set of data regarding financial information in banking organizations. Since this study relies on regression models the use of secondary data make it possible to collect a large sample size, which improves the models' estimates. The vast amount of available data for US banks also enables the collection of sample statistics that provides a good measure for estimating the parameters of the population.

The disadvantage of using a method relying on secondary data is that the quality of the data cannot be completely ensured. Prior research have disputed the quality of the data of European banks in Bankscope, and have found a large proportion of missing and incomplete values concerning some of the variables used in this study (see e.g. Marton and Runesson 2012; Gebhardt and Novotny-Farkas, 2011). However, according to Gebhardt and Novotny-Farkas (2011) the data of US banks are better covered. While it is not possible to control that all observations are correct, the fact that the Bankscope database is a commonly used data source in this field of research, emphasizes the reliability of the data.

4.2.2 SAMPLE OF BANKS

Since this study focuses on private and savings banks in the US, the data set is first restricted to active banks classified as either commercial banks, savings banks, real estate and mortgage banks or bank holdings and holding companies, located in the US. The second restriction is set to focus on banks that provide annual information of loan loss provisions and gross charge-offs in at least one of the years 2002-2012, respectively 2003-2013. Since the models predicts future gross charge-offs in year $t+1$ with observations of loss provisions in year t, the observations of loan loss provisions are lagging one year. As a third restriction, the data set is limited to banks with total assets of at least 1 billion USD, in at least one of the years 2002-2013. This restriction is set since non-public banks with total assets below 1 billion USD are not subject to certain reporting requirements of FDIC[4] and other regulatory standards such as the Sarbanes-Oxley Act (SOX) or others provided by U.S. Security and Exchange Commission (SEC) (FDIC, 2009). The third restriction ensures that observed banks are subject to similar regulations. When conducting the tests the 1 billion-threshold of total assets is applied in Stata. After applying the above restrictions 2 506 banks remain. This represents the main sample of banks used to gather financial data of the variables included in the models.

4.2.3 THE PROCESS OF DATA COLLECTION

The process of data collection for this study contains some manual operations, which exposes the risk of human error. To minimize this risk, whenever a manual operation is conducted all observations are linked to a specific year and BvD ID number, stating which bank the observation is connected to. When restructuring the data the BvD ID numbers are compared using the EXACT function in Excel.

The first step is to classify each bank as either savings bank or private bank. The classification is made by using Bankscope's classification of specialization, and savings banks are coded as 1 while private banks are coded as 0. As a second step, the financial data of the variables included in the models are collected. The software (Stata), used to conduct the significance tests, requires the input of each variable to be structured in columns, which is not the case of the output from Bankscope. Therefore, the financial data of the variables is collected year by year to facilitate the restriction of the data. This process is rather simple and the risk of human error is minimal and is not further discussed.

While the collection of data regarding the continuous variables is rather simple, it is more problematic to code the dummy variable regarding listing status. Bankscope only provides

[4] The threshold of 1 billion dollars is applied since 2009, before the threshold was 500 million dollars (FDIC, 2009)

information regarding the current listing status, with statistic indicators characterized as *listed*, *unlisted* or *delisted*. Since this study uses observations during a period of 10 years, the listing status might have changed during the period, as indicated by the *delisted* characteristic. To overcome this issue, delisting date and initial public offering (IPO) date was retrieved. Cases of delisting and listing during the time period of the study were manually corrected for, using listing status at the closing date. The closing date in each historical period was assumed to be consistent with the latest closing date.

Further issues that required manual alterations were associated with the year of the latest account. In Bankscope, financial data is structured as the observed values in year 0 equals the values of the latest account, meaning that banks with latest accounts that differ from 2013 is interfering the panel data. This occurred for 61 of the sampled banks and was manually corrected by deleting these observations.

4.2.4 DATA MODIFICATION

Before conducting the test, some data modifications were made to stabilize the results of the regression and to minimize the risk of measurement errors. The mathematical process underlying the OLS model is sensitive to extreme values, particularly in the dependent variable. Extreme values in the dependent variable generate both large error terms and tend to pull the fitted line towards extreme values, making the results of the regression unstable. Extreme values can be generated by either measurement errors or exceptional conditions regarding a specific bank or observation. With this background, a pre-test was made to locate if the data set contained any extreme values and also examine their effect on the regression results. The pre-test revealed some assumed measurement errors, mainly for observations below the threshold of 1 billion in total assets. Since the observations with less than 1 billion in total assets are excluded from the main test, they do not affect the results of the regression. For observations exceeding 1 billion in total assets, outliers in the first and 99th percentiles, for both GCO and LLP divided by total assets, were dropped to minimize the risk of measurement error. As GCO and LLP are this study's main points of interest, only extreme values in those variables were dropped.

4.3 FURTHER LIMITATIONS

Certain limitations regarding the OLS model and the data have been addressed in their respective context. Further limitations of this study are that the timeframe is set to 10 years, stretching back to reported values for LLP in 2002. This limitation is used because 2002 was the year of the Sarbanes-Oxley Act, which aimed to provide improved internal control and quality in financial reports (Altamuro & Beatty, 2010). For this study, it means that the financial reports' figures used as input data are not influenced by any major regulatory changes. The timeframe of 10 years also made it possible to collect a sufficient number of observations of each ownership form. Consequently, the results of this study is limited to the accounting quality during the 10 years, and do not reflect conditions outside the timeframe.

Furthermore, the classification of the certain bank types is solely based on the specialization given in Bankscope. As discussed earlier, it is not possible to control all banks, which means that there might be banks that are incorrectly classified. Since Bankscope covers banks on a global basis and the characteristics and origin of savings banks slightly differs between different regions, the risk for incorrect classification might be higher for savings banks.

5. EMPIRICAL FINDINGS

The first part of this chapter describes the characteristics of the sample used to conduct the test. Secondly, it presents the results of the regression models.

5.1 DESCRIPTIVE STATISTICS

5.1.1 OWNERSHIP DISTRIBUTION OF BANKS

The main sample used to collect the data consisted of 2 506 banks in total, and was retrieved after applying the three restrictions: at least one reported value of 1) gross charge-offs, 2) loan loss provisions and 3) 1 billion USD in total assets. Diagram 1 shows the sample of the banks' distribution of ownership in the year of 2013. While this distribution is inconsistent over the timeframe of 10 years, due to the varying characteristic of listing status, the diagram should give an overview of the ownership characteristics of the banks.

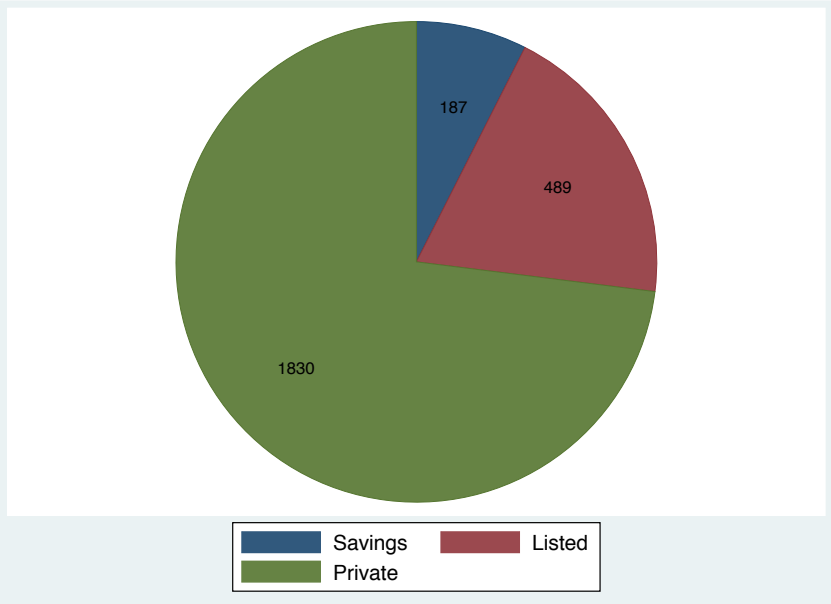

Diagram 1 – Ownership distribution of banks

As seen in diagram 1, the sample of banks mainly consists of private banks, namely 1 830 in total. This was expected since privately owned banks are, as mentioned earlier, the most common ownership form of US banks. The number of listed banks is significantly smaller with 489 banks in total and the number of savings banks is the fewest with 187 banks.

5.1.2 OWNERSHIP DISTRIBUTION IN THE SAMPLE

The collected sample of 2 506 banks included a number of observations with missing values in all of the variables in the models, due to the restriction of 'at least one value' mentioned above. A natural reason for missing values is if a bank is founded during the study's timeframe or if a bank, for some reason, did not provide its financials to the sources used by Bankscope. A comparison of the distribution of ownership in the final sample is illustrated in Diagram 2, including all observations that had at least one reported value for the variables included in the models.

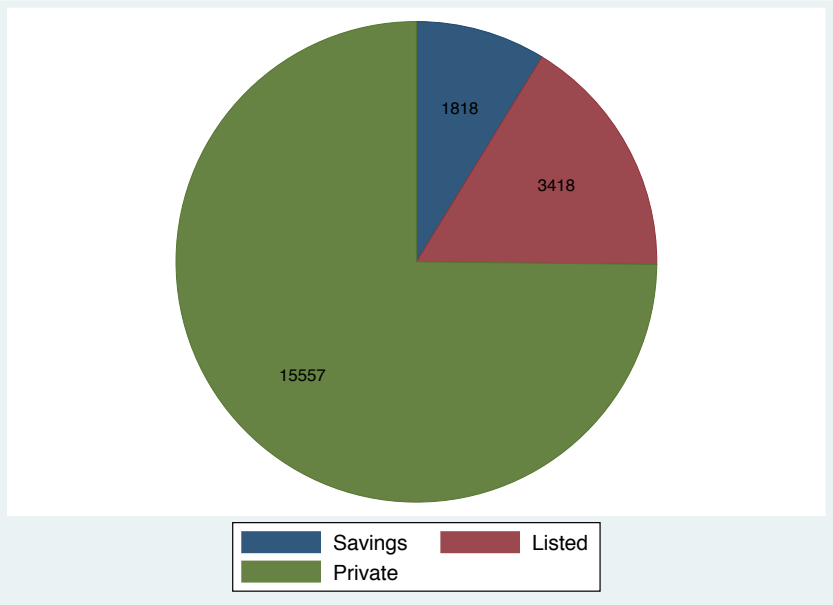

Diagram 2 – Ownership distribution of observations, gross sample

As diagram 2 shows, the gross sample of 2 506 banks over 10 years included 20 793 observations with reported values. The distribution of ownership was 1 818 observations for savings banks, 3 418 for listed banks and 15 557 for private banks. When compared to the distribution of the banks, it shows that the number of missing values of savings banks is relatively few compared to the number of missing values of listed and private banks. Note that the missing values of private and listed banks should be seen as one group due to the variation over time in banks' listing status.

The distribution of ownership in diagram 2 should be compared to the distribution of the final sample used to conduct the tests, presented in Diagram 3 on the following page. The third diagram illustrates the ownership distribution of observations with known values for all the variables included in the model, and after applying the threshold to have at least 1 billion in total assets and dropping observations in the first and 99th percentile of gross charge-offs and loan loss provisions to total assets.

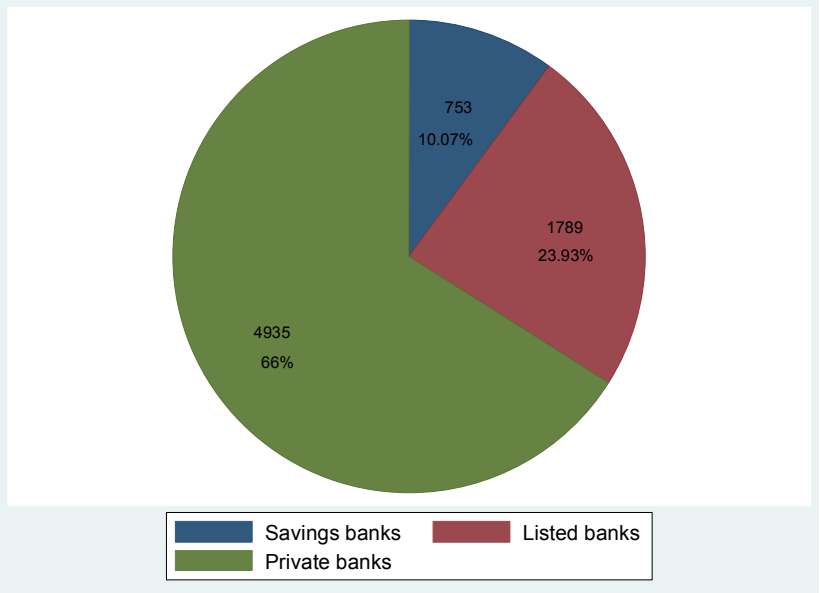

Diagram 3 – Ownership distribution of observations, final sample

Compared to the number of observations in the gross sample, the final sample size is significantly smaller, mainly due to the exclusion of observations without observed values for all the variables. The diagram shows that the number of observations of each ownership form are 753 (10.07 %) savings banks, 1 789 (23.93 %) listed banks and 4 935 (66.00 %) private banks, which equals 7 477 observations in total. While the final sample size is noticeably smaller compared to the gross sample (20 793), the distribution of ownership forms is fairly stable, meaning that the exclusion of observations is, in relative terms, about the same for all groups. Further on, the presented descriptive statistics are referring to the sample in diagram 3.

5.1.3 Sample characteristics

Five tables illustrate the composition of the sample characteristics. First, Table A shows descriptive statistics of the variables when all forms of ownership are included. The second table illustrates the distribution of observations during the timeframe of 10 years and the following three shows the descriptive statistics of each ownership structure. It should be noted that the descriptive statistics do not provide any significantly proven conditions, and should mainly be seen as a tool used to illustrate the sample characteristics.

Table A – Descriptive statistics, all observations

Variable	Obs	Mean	Std.Dev.	Min	Max
GCO	7477	0.00597	0.00749	5.54e-08	0.0512
LLP	7477	0.00570	0.00759	-0.00132	0.0515
LogTA	7477	15.08	1.388	13.82	21.58
Loan/TA	7477	0.645	0.140	0.00168	0.992
GDPGR	7477	1.608	1.923	-2.802	3.798
RTCR	7477	0.147	0.0634	-0.137	1.607
OP	7477	254795	1.878e+06	-5.760e+07	3.280e+07
TA	7477	2.600e+07	1.490e+08	1.000e+06	2.360e+09

Variable definition:
GCO is gross charge-offs in year t+1 to total assets in the beginning of the year; LLP is loan loss provision in year t to total assets in the beginning of year; LogTA is the logarithm of total assets in year; Loans/TA is total loans to total assets in year t; GDPGR is the GDP growth in year t; RTCR is regulatory total capital ratio in year t; OP is operating profits in year t; TA is total assets in year t.

Table A (previous page) includes observations of total assets to illustrate the wide size-spectra of the banks. As shown, there is a major difference in size between the largest bank, J.P. Morgan Chase & Co, and the smallest, Ameriserv Financial Bank Pennsylvania, which total assets slightly exceeds the threshold of 1 billion USD. Besides the difference in size, the most notable observation is the lowest value of regulatory total capital ratio of -13.7 %[5]. The lowest observation of operating profit belongs to the second largest bank, Citigroup Inc., during the financial crisis in 2008. Citigroup Inc. also holds the third and fourth largest observations of operating profit in 2005, respectively 2006. To illustrate the economic situation in 2008, the operating profit of Citigroup dropped about 80 billion dollars compared to 2006.

Table B - Observations per year

Year	Freq.	Percent	Cum.
2012	1,078	14.42	14.42
2011	1,045	13.98	28.39
2010	983	13.15	41.54
2009	907	12.13	53.67
2008	781	10.45	64.12
2007	722	9.660	73.77
2006	621	8.310	82.08
2005	554	7.410	89.49
2004	400	5.350	94.84
2003	386	5.160	100
Total	7,477	100	

Table B shows the distribution of observations over time, or in other words, the number of observations in period *t*. An observation in period *t* includes values of all of the variables in period *t*, except for GCO that states the value reported in period *t+1*. The distribution over time is important as a background to the regression results. As shown in table B, the number of observations is skewed towards earlier years, which should place the emphasis of the regression results on more recent observations.

[5] This figure belongs to Taunus Corporation in 2008. While the authors did not have access to the original documents of Taunus Corporation, the National Information Center (NIC) provides reports from Taunus Corporation stretching back to March 31st 2009. The quarterly report of March 2009 shows a negative capital ratio of 12.40 %, which makes it reasonable to assume that the figure of -13.7 % in 2008 is correct.

5.1.4 DESCRIPTIVE STATISTICS BY OWNERSHIP

The following tables attend to each ownership structure and display the different characteristics of the different ownership forms. The order of presentation is savings, listed and lastly private banks.

Table C - Savings banks

Variable	Obs	Mean	Std.Dev.	Min	Max
GCO	753	0.00522	0.00764	4.96e-07	0.0445
LLP	753	0.00488	0.00710	-0.00125	0.0444
LogTA	753	14.99	0.992	13.82	17.92
Loan/TA	753	0.672	0.166	0.102	0.992
GDPGR	753	1.725	1.892	-2.802	3.798
RTCR	753	0.177	0.0797	0.0292	0.619
OP	753	66288	224950	-2.364e+06	2.538e+06
TA	753	6.018e+06	9.177e+06	1.006e+06	6.060e+07

Variable definition: see table A

Table D - Listed banks

Variable	Obs	Mean	Std.Dev.	Min	Max
GCO	1789	0.00653	0.00745	8.73e-07	0.0511
LLP	1789	0.00646	0.00811	-0.00123	0.0515
LogTA	1789	15.39	1.631	13.82	21.58
Loan/TA	1789	0.641	0.128	0.0525	0.938
GDPGR	1789	1.517	1.985	-2.802	3.798
RTCR	1789	0.146	0.0466	-0.0263	0.753
OP	1789	507614	3.111e+06	-5.760e+07	3.280e+07
TA	1789	5.110e+07	2.430e+08	1.000e+06	2.360e+09

Variable definition: see table A

Table E - Private banks

Variable	Obs	Mean	Std.Dev.	Min	Max
GCO	4935	0.00589	0.00746	5.54e-08	0.0512
LLP	4935	0.00554	0.00745	-0.00132	0.0511
LogTA	4935	14.99	1.327	13.82	21.36
Loan/TA	4935	0.642	0.139	0.00168	0.992
GDPGR	4935	1.623	1.904	-2.802	3.798
RTCR	4935	0.143	0.0647	-0.137	1.607
OP	4935	191896	1.341e+06	-1.340e+07	2.690e+07
TA	4935	1.990e+07	1.090e+08	1.000e+06	1.900e+09

Variable definition: see table A

First off, a comparison of the means of the variables GCO and LLP shows that savings banks in general have lower ratios compared to the other forms of ownership, given the fact that the standard errors are similar. Even though this observation does not conclude anything in terms of accounting quality, it is of interest since the savings banks' mean of loans to total assets are higher than the others. Another empirical finding displayed in the tables is the difference in the size of the banks, between each ownership form. As expected, savings banks are in general the smallest and listed banks have the largest mean of total assets.

5.2 Regression results

The results of the regression models are presented in Table F below. The first column describes the outcome of testing the first model. The second column shows the result of the first model when using change in GDP as a control variable instead of year dummies. The outcome of the second model, when testing savings banks against all other ownership forms is presented in the third column while the fourth column illustrates the result of testing listed banks against all the other forms of ownership. As mentioned in chapter 4, all the test results are based on an OLS model with robust standard errors.

Table F - Regression results

Dependent variable	Model 1 (Year) GCO	Model 1 (GDP) GCO	Model 2 GCO	Model 2 GCO
Independent variables				
LLP	0.713***	0.690***	0.694***	0.722***
	(0.0208)	(0.0202)	(0.0181)	(0.0200)
SAV	-0.000805***	-0.000816***	-0.000883***	
	(0.000215)	(0.000216)	(0.000212)	
LLP*SAV	0.0624	0.0650	0.0821	
	(0.0573)	(0.0584)	(0.0563)	
LIST	0.000270	0.000179		0.000379*
	(0.000169)	(0.000171)		(0.000166)
LLP*LIST	-0.0643+	-0.0640+		-0.0726*
	(0.0338)	(0.0342)		(0.0333)
Constant	-0.00943***	-0.00886***	-0.00933***	-0.00933***
	(0.000855)	(0.000899)	(0.000845)	(0.000844)
N	7477	7477	7477	7477
adj. R^2	0.601	0.576	0.600	0.601

Robust standard errors in parentheses
+ $p < 0.05$, * $p < 0.025$, ** $p < 0.005$, *** $p < 0.0005$, one-tailed
See Appendix 1 for outcome of controls
*Variable definition: GCO is gross charge-offs in year t+1 to total assets in the beginning of the year; LLP is loan loss provision in year t to total assets in the beginning of year; SAV is a dummy variable taking the value 1 if the bank is a savings bank in period t; LLP*SAV is an interaction term of LLP and SAV LIST is a dummy variable taking the value 1 if the bank is a listed bank in period t; LLP*LIST is an interaction term of LLP and LIST*

5.2.1 SAVINGS BANKS

MODEL 1

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 SAV_{i,t} + \beta_3 LLP_{i,t} * SAV_{i,t} + \beta_4 LIST_{i,t} + \beta_5 LLP_{i,t} * LIST_{i,t} + \varepsilon_{i,t}$$

Model 1 tests the accounting quality of savings banks against the control group of private banks. The variable of interest is the interaction variables between LLP and the SAV ownership dummy. To conclude the accounting quality the sign of the coefficient is of interest, along with the significance level.

As seen in table F, the coefficient of the interaction term LLP*SAV is positive with 0.0642 and the standard error is 0.0573. These values do not support a difference compared to private banks, at the significance level of 5 %. The results are about the same when GDP growth is used as a control variable, as shown in column 2. The adjusted R square for Model 1 with year dummies is 0.601, respectively 0.571 when including GDP growth.

MODEL 2

In difference from Model 1, the second model does not distinguish private banks as the control group; instead the control group consists of all banks not included in the single treatment group. This means that the model is different for the tests presented in the third and fourth column in table F.

To test savings banks against all the other banks, the following model is used:

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 SAV_{i,t} + \beta_3 LLP_{i,t} * SAV_{i,t} + \varepsilon_{i,t}$$

In Model 2, the variable of interest is the interaction term LLP*SAV in the third column. The variable shows a positive coefficient of 0.0821 and a standard error of 0.0563. However, these values does not support a difference in LLP's predictive power compared to the control group of listed and private banks at a significance level of 5 % of an one tailed test. The adjusted R square of the model is 0.6.

5.2.2 LISTED BANKS

MODEL 1

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 SAV_{i,t} + \beta_3 LLP_{i,t} * SAV_{i,t} + \beta_4 LIST_{i,t} + \beta_5 LLP_{i,t} * LIST_{i,t} + \varepsilon_{i,t}$$

Model 1 tests the accounting quality of listed banks against the control group of private banks. The variable of interest is the interaction variables between LLP and the ownership dummy LIST. The difference in accounting quality is decided by the sign of the coefficient of the interaction, along with the significance level.

The coefficient of LLP*LIST is negative with a value of -0.0643 and a standard error of 0.0338. This supports a difference in LLP's predictive power compared to private banks at a significance level of 5 % in a one-tailed test. The result when GDP growth is used as a control variable is similar and supports a difference at a significance level of 5 %.

MODEL 2

The following model is used to test listed banks against the control group of all other banks:

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{i,t} + \beta_2 LIST_{i,t} + \beta_3 LLP_{i,t} * LIST_{i,t} + \varepsilon_{i,t}$$

The results are displayed in the fourth column; the coefficient of the interaction term is -0.0726, with a standard error of 0.0333. As shown, this estimation supports a difference in LLPs' predictive power within a significance level of 5 %. The adjusted R square for the model is 0.601.

5.2.3 CONTROL VARIABLES

The outcome of the control variables is in general significant on low levels. This indicates that the level of GCO in the subsequent year is highly affected by the control variables in section 4.1.2. To address the sign of the coefficients, all continuous control variables are positively correlated with level of GCO, except annual GDP growth, which naturally shows a negative coefficient. Note that the interpretation of the control variable LogTA differs from the others, since it is the logarithm of total assets. Consequently, the coefficient of LogTA states the $\beta/100$ change of the dependent variable, given a percentage change in total assets. The variable that shows the lowest p-value out of all in the test is the year dummy of 2008, stating that the year of 2008 had a major impact on GCO. The outcome of all the variables of the tests is displayed in Appendix 1.

5.2.4 TESTING ASSUMPTIONS OF THE OLS MODEL

The assumptions of the OLS model are important to evaluate the validity of the models used to retrieve the results in table F. This section attends briefly to the most important assumptions of this study. As the models are similar this section attends to the model used for the results in column 1 in table F.

First off, the VIFs for model 1 are used to check for collinearity between the independent variables, these are displayed in Appendix 3. The VIFs shows no indication of a multicollinearity problem; the highest VIF is 2.126 for LLP*LIST, when excluding the year dummies. Secondly, as stated in chapter 4, the pre-test showed a tendency of heteroscedasticity of the residuals. This is also the case for the regression in table F. Since the regression results are based robust standard errors, the heteroscedasticity have been taken into account. An additional test without using robust standard errors (i.e. a regular OLS) showed significant coefficients of all interaction terms. Considering the heteroscedasticity, these results are not as valid as the ones presented in Table F. Lastly, the normality of the residuals is displayed in Appendix 4. The diagram shows that the residuals are not perfectly normal, with a heavy emphasis of residuals around zero.

5.2.5 SENSITIVITY ANALYSIS

Since the OLS is sensitive to extreme observations additional tests were performed in order to test the sensitivity of the results in Table F. The difference between the main tests is that the outliers in the regression were adjusted by dropping observations with studentized residuals[6] of absolute values larger than |2|, which is considered as an indicator of an outlier residual (Rahmatullah, 2005). Table G shows the results of running the same tests as in table F but with the exclusion of the observations that have studentized residuals larger than |2|. The number of observations in each test should be compared with 7 477, which is the number of observations in Table F.

Table G - Regressions without observations with studentized residuals >|2|

Dependent variable	Model 1 (Year) GCO	Model 1 (GDP) GCO	Model 2 GCO	Model 2 GCO
Independent variables				
LLP	0.711***	0.676***	0.695***	0.727***
	(0.0114)	(0.0108)	(0.00962)	(0.0112)
SAV	-0.000660***	-0.000675***	-0.000711***	
	(0.000113)	(0.000119)	(0.000111)	
LLP*SAV	0.109***	0.107**	0.122***	
	(0.0300)	(0.0325)	(0.0294)	
LIST	0.000221*	0.000107		0.000335***
	(0.0000926)	(0.0000937)		(0.0000918)
LLP*LIST	-0.0493**	-0.0433*		-0.0654***
	(0.0182)	(0.0184)		(0.0180)
Constant	-0.00608***	-0.00556***	-0.00610***	-0.00608***
	(0.000502)	(0.000530)	(0.000491)	(0.000501)
N	7061	7048	7064	7065
adj. R^2	0.768	0.746	0.764	0.767

Robust standard errors in parentheses
+ $p < 0.05$, * $p < 0.025$, ** $p < 0.005$, *** $p < 0.0005$, one-tailed
See Appendix 2 for outcome of controls
*Variable definition: GCO is gross charge-offs in year t+1 to total assets in the beginning of the year; LLP is loan loss provision in year t to total assets in the beginning of year; SAV is a dummy variable taking the value 1 if the bank is a savings bank in period t; LLP*SAV is an interaction term of LLP and SAV LIST is a dummy variable taking the value 1 if the bank is a listed bank in period t; LLP*LIST is an interaction term of LLP and LIST*

Table G shows significant values in the interaction terms in all the tests and also higher values of adjusted R square compared to the tests in Table F. The number of observations dropped in each test varies around 420, which is about 6 % in total. The control variables of the test in Table G shows, as in the previous tests, significant coefficients, however the variables total capital ratio and operating profits shows higher p-values than in the test in Table F.

[6] for derivation see A Dictionary of Statistics (Upton & Cook, 2008), available via subscription at http://www.oxfordreference.com

These tests should be seen as complements, to illustrate the weakness of the OLS when including observations that generate extreme residuals. For the purpose of interpretation it should be said that the exclusion of extreme values naturally provides smaller standard errors, and hence smaller p-values. While the results in table G rely on a modified data set, the results in Table F shows the same sign of the coefficients for the interaction terms. This shows that the results in table F might be underestimated, leading to a higher risk of type II error.

6. ANALYSIS

The following chapter analyses the results of the tests and connects them with the empirical context. It also discusses however the findings are consistent or not with prior research. First, the results concerning savings banks are discussed, followed by the results regarding listed banks.

6.1 SAVINGS BANKS

In the hypothesis development in section 3.1, the certain characteristics of savings banks was assumed to lead to a better accounting quality compared to private banks, which led to the following hypothesis:

H1a: The ability of LLP to predict GCO in the subsequent period is higher for savings banks than private banks.

When interpreting the regression results a better accounting quality is equivalent to a positive coefficient of the interaction term SAV*LLP. The reasoning is as follows: a positive coefficient of the interaction term states that the correlation between loan loss provisions and gross charge-offs of savings banks is higher than the one linked to private banks. While the empirical findings showed a positive coefficient, the difference was not significant, leading to the conclusion that the hypothesis is not supported.

The second hypothesis examines if the accounting quality of savings banks are better than other ownership forms.

H1b: The ability of LLP to predict GCO in the subsequent period is higher for savings banks compared to all other natures of ownership.

As listed banks are assumed to have worse accounting quality compared to private banks, the second hypothesis is still of interest when including listed banks in the control group. However, the conclusion derived from the regression results is the same as for the first hypothesis. The coefficient of the interaction term shows a positive value, but the difference is not significant compared to the other forms of ownership.

In contrast, the tests excluding extreme observations show a significant difference of savings banks in both hypotheses above. While the sensitivity tests suggest a significant difference, one should note that those results rely on a modified data set, leading to significantly smaller standard errors. As the method used in this study already made modifications to extreme values by excluding observations in the 1st and 99th percentile of GCO and LLP, further outlier treatment is not supported. To not base the analysis on the results excluding the observations that generate large residuals is a more cautious approach considering the applicability of the results on the population.

In the hypotheses development, the certain characteristics of savings banks as non-profit maximizing banks and the absence of influential shareholders implied lower incentives for earnings management, in line with Cheng and Warfield (2005). The lower incentives for earnings management were hypothesized to generate a higher accounting quality. Even if the above findings indicate a higher accounting quality in savings banks, they do not provide sufficient evidence to support this hypothesis.

Even if the results do not conclude if there indeed is lower pressure on meeting expectations or lower focus on maximizing profits in savings banks compared to other banks, they do conclude that it does not affect the accounting quality. Consequently, the results suggest that whether a bank is share-owned or a mutually held savings bank do not affect the accounting quality.

Furthermore, Fields et al. (2001) argued that managers of share-owned banks (private and listed) act on their private benefit, as a result of the commonly used share-based compensations. This prediction was based on the absence of shares in savings banks, since higher managerial incentives for earnings management in share-owned banks was hypothesized as an indication of lower accounting quality. As this hypothesis could not be proven, the results are in line with Benston's (1972) predictions that managers in savings banks do not act differently from other banks.

A reason for the non-significant difference could be that the incentives for capital management are higher than expected, leading to a contraposition of the two incentives, which could nullify the effect on the accounting quality. This argument was emphasized as a possible factor in the hypothesis development, due to savings banks' geographic boundaries and the certain focus on the low and middle class. However, this explanation seems unlikely since the total capital ratio shows an indication (not significantly proven) of higher ratios for savings banks, which would indicate less incentive to manage capital levels via loan loss provision. The higher quality of assets in mutually held banks is supported by Iannotta et al. (2007). An additional explanation that appears more adequate is found when analyzing the outcome of the control variables (shown in Appendix 1). As all the control variables showed significant coefficients, they are better indicators of the level of accounting quality than whether the bank is a savings bank or not.

6.2 LISTED BANKS

In the hypothesis development concerning the accounting quality of listed banks, the certain characteristics were analyzed and compared to privately owned banks, leading to the following hypothesis:

H2a: The ability of LLP to predict GCO in the subsequent period is lower for listed banks than private banks.

The interpretation of the regression results to determine whether listed banks have a lower accounting quality is achieved in a similar manner as for savings banks. If the accounting quality in listed banks is indeed lower, the interaction term LLP*LIST shows a negative coefficient, meaning that LLP generated by listed banks is less positively correlated with GCO in the subsequent period, compared to LLP of private banks. When analyzing the output of the regressions the interaction term shows a negative coefficient. The difference compared to private banks is significant on a 5 % level of a one-tailed test. This leads to the conclusion that conditions stated in the hypothesis is supported.

The second part of the hypothesis regarding listed banks states the same conditions as above, with the exception that savings banks are included in the control group.

H2b: The ability of LLP to predict GCO in the subsequent period is lower for listed banks compared to non-listed banks.

As the tests for savings banks showed a positive coefficient (even though not significant) one could expect a larger difference between listed banks and the control group compared to the first hypothesis. Consequently, the interaction term in the second test shows a negative coefficient within a significance level of 5 % of a one-tailed test, which confirms the lower accounting quality of listed banks compared to non-listed banks. Compared to the test for the first hypothesis, this test shows a larger coefficient of the interaction term combined with a lower standard error, leading to higher t-value and hence a lower p-value.

The results support both hypotheses and the predictions made in the development of the hypotheses. This may be explained by the increased incentives for both earnings and capital management, as listed banks need to be perceived as low-risk and attractive investments, which is indicated by stable earnings and adequate capital ratios (Rivard et al, 2003; Fonseca & González, 2008). Consequently, listed banks were assumed to engage in earnings and capital management via loan loss provisions to a larger extent compared to non-listed banks, leading to a lower accounting quality. In addition, it was argued that managers of listed banks exhibit less direct monitoring from owners, which gives them more of a leeway to act on own objectives, which could be influenced by situation when the compensation systems are tied to the share price (Cornett et al., 2009). This was argued to increase the incentives for short-term goals and earnings management.

The model did not investigate whether earnings or capital management was the specific determinant, but in accordance with Anandarajan et al. (2007), the results do indicate that the manipulation of loan loss provisions in listed banks are higher than in non-listed banks. Furthermore, it was argued that listed banks are subject to stricter enforcement, which has been proven to decrease the incentives for capital management (Fonseca & Gonzalez, 2008), leading to a lower accounting quality. As the results of this study state otherwise it indicates that the level of enforcement is not as important when determining accounting quality in banks. On the other hand, as the incurred loss model itself has been proved to have an inherent weakness when determining future gross charge-offs (Marton & Runesson, 2012), the higher level of enforcement might not affect loan loss provisions' predictive power to the same extent as other factors.

7. SUMMARY

The final chapter presents a short summary of this study and answers to the research questions along with our conclusions. Suggestions for further research to complement the findings of this study are also given.

7.1 CONCLUSIONS

The purpose of this study was to investigate how bank's accounting quality, and consequently the quality of information provided to stakeholders, is affected by owners of different natures. To reach a conclusion, this study used the ability of loan loss provisions to predict gross charge-offs in the subsequent period as a measure of accounting quality. A sample of 2 506 US banks was used, which included three ownership forms: savings, listed and private banks. The unique characteristics of ownership were analyzed according to different incentives of earnings and capital management through manipulation of loan loss provisions. This analysis resulted in a development of four hypotheses examining the accounting quality of each form of ownership, which were tested through two OLS models. To broaden the analysis and to reach a conclusion of the research questions, the results of the regression was compared with the analysis leading up to the hypotheses in order to examine the underlying factors of the results.

So, what do the findings of this study say about how the nature of the owners affects the accounting quality? Yes, it does affect the accounting quality to some extent. The results showed a difference in accounting quality between certain ownership forms, while the difference between others was not supported. The accounting quality of listed banks was shown to be lower compared to both private banks and in comparison with all non-listed banks. However, savings banks was hypothesized to provide higher accounting quality compared to both private banks and compared to private and listed banks as one group. These hypotheses were not supported.

In the case of listed banks, the lower accounting quality was attributed to a higher pressure from the market, leading to higher incentives for both earnings and capital management compared with the others. As listed banks are dependent of attracting investors on the stock market the incentives for showing stable income was considered to be higher. An additional explanation was discussed to be a higher pressure to reach adequate capital ratios, leading to higher incentives for capital management. Furthermore, the accounting quality was discussed to be affected by a more dispersed ownership and less monitoring from shareholders, giving managers a leeway to pursue their own objectives.

Savings banks showed an indication of having higher accounting quality compared to the others, but the difference was not significant. Initially the not-for-profit characteristics and absence of pressure from shareholders of savings banks was argued to lead to lower incentives for earnings management, hence higher accounting quality. In contrast, the results stated that the accounting quality in savings banks in fact is similar to private banks. In this case the accounting quality of each bank was discussed to be more strongly tied to extraneous factors, other than if it is a private or savings bank.

The findings of this study can be of importance for all stakeholders in the banking industry when evaluating information. As it has been proven to be a difference in the quality of information, the findings are of particular importance for bank regulators and standard setters

to assists their mission to ensure that the information is comparative between banks. In addition it emphasizes to further evaluate and improve the internal and external controls to ensure the soundness of banks. Given the similarity in accounting standards and the certain characteristics of each nature of ownership, there is reason to believe that the results of accounting quality in listed banks is more easily applicable to the EU, than the results of savings banks. This is based on the fact that the characteristics of listed banks and private banks are similar to the EU, while the characteristics of savings banks differ in different regions due to their local establishments.

7.2 Suggested further research

To more deeply explain the effect of ownership on accounting quality we have found three additional aspects to investigate. First aspect considers how the ownership concentration might affect the accounting quality in addition to the nature of the owners. The effect of ownership concentration on earnings management has been studied by Bouvatier et al. (2014). However, it has not been examine how it affects the accounting quality, in terms of LLPs' predictive power of future GCO. This would give further understanding how the ownership affects the accounting quality.

An additional aspect that requires further research is a cross-country study of savings banks. As the characteristics of savings banks differs in different countries due to their local focus, it might

Furthermore, as discussed in section 2.2, banks in the US are subject to both federal and state regulation. The US dual banking system differentiates itself from most other countries, which leads us to believe that it might have a unique effect on the incentives for earnings or capital management through loan loss provisions. This could be another aspect, to investigate if it creates differences in accounting quality depending on what level banks are chartered.

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APPENDIX 1

Table F Regression results - with controls

Dependent variable	Model 1 (Year)	Model 1 (GDP)	Model 2	Model 2
	GCO	GCO	GCO	GCO
Independent variables				
LLP	0.713***	0.690***	0.694***	0.722***
	(0.0208)	(0.0202)	(0.0181)	(0.0200)
SAV	-0.000805***	-0.000816***	-0.000883***	
	(0.000215)	(0.000216)	(0.000212)	
LLP*SAV	0.0624	0.0650	0.0821	
	(0.0573)	(0.0584)	(0.0563)	
LIST	0.000270	0.000179		0.000379*
	(0.000169)	(0.000171)		(0.000166)
LLP*LIST	-0.0643+	-0.0640+		-0.0726*
	(0.0338)	(0.0342)		(0.0333)
Loan/TA	0.00601***	0.00713***	0.00605***	0.00587***
	(0.000454)	(0.000472)	(0.000457)	(0.000446)
LogTA	0.000388***	0.000431***	0.000384***	0.000383***
	(0.0000441)	(0.0000470)	(0.0000434)	(0.0000439)
RTCR	0.00422***	0.00313**	0.00427***	0.00357***
	(0.00111)	(0.00106)	(0.00112)	(0.00104)
OP	8.20e-11***	6.29e-11*	8.40e-11***	8.41e-11***
	(2.41e-11)	(2.79e-11)	(2.40e-11)	(2.44e-11)
y2012	-0.000134		-0.000138	-0.0000653
	(0.000141)		(0.000142)	(0.000139)
y2011	0.000853***		0.000856***	0.000917***
	(0.000185)		(0.000185)	(0.000183)
y2010	0.000290		0.000282	0.000345
	(0.000214)		(0.000215)	(0.000213)
y2009	0.00105***		0.00103***	0.00110***
	(0.000249)		(0.000250)	(0.000249)
y2008	0.00418***		0.00417***	0.00423***
	(0.000246)		(0.000247)	(0.000247)
y2007	0.00300***		0.00300***	0.00305***
	(0.000209)		(0.000210)	(0.000209)
y2006	0.000805***		0.000802***	0.000847***
	(0.000181)		(0.000181)	(0.000181)
y2005	-0.000229+		-0.000226+	-0.000189

	(0.000130)		(0.000131)	(0.000130)
y2004	0.000314+		0.000312+	0.000331+
	(0.000169)		(0.000170)	(0.000170)
GDPGR		-0.000352***		
		(0.0000380)		
Constant	-0.00943***	-0.00886***	-0.00933***	-0.00933***
	(0.000855)	(0.000899)	(0.000845)	(0.000844)
N	7477	7477	7477	7477
adj. R^2	0.601	0.576	0.600	0.601

Standard errors in parentheses
*+ p < 0.05, * p < 0.025, ** p < 0.005, *** p < 0.0005, one-tailed*
*Variable definition: GCO is gross charge-offs in year t+1 to total assets in the beginning of the year; LLP is loan loss provision in year t to total assets in the beginning of year; SAV is a dummy variable taking the value 1 if the bank is a savings bank in period t; LLP*SAV is an interaction term of LLP and SAV LIST is a dummy variable taking the value 1 if the bank is a listed bank in period t; LLP*LIST is an interaction term of LLP and LIST; LogTA is the logarithm of total assets in year; Loans/TA is total loans to total assets in year; RTCR is regulatory total capital ratio in year t; OP is operating profits in year t; y20xx is dummy variables taking the value 1 if the observation is from 20xx; t; GDPGR is the GDP growth in year t; y2003 is the base*

APPENDIX 2

Regression results without observations with studentized residuals >|2|,
Table G –with controls,

Dependent variable	Model 1 (Year) GCO	Model 1 (GDP) GCO	Model 2 GCO	Model 2 GCO
Independent variables				
LLP	0.711***	0.676***	0.695***	0.727***
	(0.0114)	(0.0108)	(0.00962)	(0.0112)
SAV	-0.000660***	-0.000675***	-0.000711***	
	(0.000113)	(0.000119)	(0.000111)	
LLP*SAV	0.109***	0.107**	0.122***	
	(0.0300)	(0.0325)	(0.0294)	
LIST	0.000221*	0.000107		0.000335***
	(0.0000926)	(0.0000937)		(0.0000918)
LLP*LIST	-0.0493**	-0.0433*		-0.0654***
	(0.0182)	(0.0184)		(0.0180)
Loan/TA	0.00318***	0.00381***	0.00324***	0.00311***
	(0.000258)	(0.000256)	(0.000257)	(0.000256)
LogTA	0.000302***	0.000337***	0.000307***	0.000300***
	(0.0000268)	(0.0000294)	(0.0000259)	(0.0000269)
RTCR	0.00143*	0.000300	0.00126*	0.000959+
	(0.000592)	(0.000536)	(0.000547)	(0.000576)
OP	4.42e-11**	3.54e-11+	4.47e-11**	4.48e-11**
	(1.60e-11)	(1.97e-11)	(1.47e-11)	(1.59e-11)
y2012	0.0000185		0.0000174	0.0000820
	(0.0000983)		(0.0000982)	(0.0000984)
y2011	0.000539***		0.000526***	0.000572***
	(0.000118)		(0.000118)	(0.000118)
y2010	-0.0000782		-0.0000733	-0.0000343
	(0.000121)		(0.000120)	(0.000123)
y2009	0.000506***		0.000546***	0.000527***
	(0.000143)		(0.000142)	(0.000144)
y2008	0.00308***		0.00309***	0.00313***
	(0.000158)		(0.000158)	(0.000159)
y2007	0.00224***		0.00225***	0.00231***
	(0.000129)		(0.000130)	(0.000131)
y2006	0.000413***		0.000408***	0.000448***
	(0.0000990)		(0.0000989)	(0.0000990)
y2005	-0.000154		-0.000154	-0.000125
	(0.0000953)		(0.0000954)	(0.0000954)

y2004	0.000190+ (0.000112)		0.000156 (0.000108)	0.000205+ (0.000112)
GDPGR		-0.000258*** (0.0000219)		
Constant	-0.00608*** (0.000502)	-0.00556*** (0.000530)	-0.00610*** (0.000491)	-0.00608*** (0.000501)
N	7061	7048	7064	7065
adj. R^2	0.768	0.746	0.764	0.767

Standard errors in parentheses
*+ p < 0.05, * p < 0.025, ** p < 0.005, *** p < 0.0005, one-tailed*
*Variable definition: GCO is gross charge-offs in year t+1 to total assets in the beginning of the year; LLP is loan loss provision in year t to total assets in the beginning of year; SAV is a dummy variable taking the value 1 if the bank is a savings bank in period t; LLP*SAV is an interaction term of LLP and SAV LIST is a dummy variable taking the value 1 if the bank is a listed bank in period t; LLP*LIST is an interaction term of LLP and LIST; LogTA is the logarithm of total assets in year; Loans/TA is total loans to total assets in year; RTCR is regulatory total capital ratio in year t; OP is operating profits in year t; y20xx is dummy variables taking the value 1 if the observation is from 20xx; t; GDPGR is the GDP growth in year t; y2003 is the base*

APPENDIX 3

Table of Variance Inflation Factor (VIF)

Variables	VIF
LLP	1.877
SAV	1.612
LLP*SAV	1.635
LIST	1.698
LLP*LIST	2.126
Loan/TA	1.314
Log/TA	1.308
RTCR	1.252
OP	1.229
y2012	3.287
y2011	3.261
y2010	3.238
y2009	3.140
y2008	2.773
y2007	2.617
y2006	2.414
y2005	2.267
y2004	1.931

APPENDIX 4

Normality of the residuals