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## **Does Ownership have an Effect on Accounting Quality?**

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## Abstract

Research on accounting quality in banks has evolved around the manipulation of the Loan Loss Provision and has been discussed in terms of earnings management and income smoothing. Key variables used to explain the manipulation of Loan Loss Provisions have been investor protection, legal enforcement, financial structure and regulations. This study will extend previous research by investigating the effect of state, private, savings and cooperative ownership on accounting quality. In this study data from more than 600 major banks were collected in the European Economic Area, covering annual reports between 2005 and 2011. Similar to prevalent research, the Loan Loss Provision is used as a central indicator of accounting quality. In contrast to existent literature, accounting quality is not explained by the manipulation of the Loan Loss Provision in terms of income smoothing or earnings management. Instead, accounting quality is addressed in terms of validity and argued to be an outcome of the predictive power of the Loan Loss Provision in forecasting the actual outcome of credit losses.

The findings of this study confirm that ownership has an effect on accounting quality. All but one form of ownership investigated showed significant differences. State ownership was found to have a positive effect on accounting quality, both in comparison to private banks and all other banks. On the other hand, savings ownership was shown to have a negative impact on accounting quality compared to private and other banks. Cooperative ownership also showed a negative impact on accounting quality compared to private and other banks, yet to a substantially larger extent. No significant results were obtained for private ownership. Other results of this study included the distribution of ownership in the European Economic Area. With 50 % of all studied banks, private ownership was the dominant form of ownership in the EEA. Cooperative and savings banks were common with 23 % and 19 % respectively, whereas state owned banks with 8 % constituted the least frequent form.

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## Abbreviations and concepts

Earnings management	Alteration of accounting information
EEA	European Economic Area
GAAP	Generally Accepted Accounting Principles
GCO	Gross Charge Offs, the actual credit losses.
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
LLP	Loan Loss Provisions, the expense account estimating future credit losses
Ownership	The ability to influence control over an entity, based on votes per share.
State bank	The bank is at least partially owned by the domestic state
Cooperative bank	The bank is owned by means of members
Savings bank	The bank is owned by means of saving deposits
Private bank	The bank is owned by private shareholders and is not owned by any other form of ownership
Risk	Is associated with financial risk in this study, not operational risk
Numerical system	The European (non-English) version is used to denote numbers, where e.g. 1000 is 1.000

## Table of Content

Abstract .....	i
Acknowledgement.....	ii
Abbreviations and concepts .....	iii
1. Introduction.....	1
2. Ownership .....	4
2.1 Private Ownership .....	4
2.2 State ownership.....	5
2.3 Cooperative ownership .....	5
2.4 Savings Banks .....	7
3. Accounting quality & Management incentives .....	8
3.1 Earnings Management Incentive.....	8
3.2 Capital Management Incentive .....	9
3.3 Signaling incentive.....	10
4. Hypothesis development.....	11
4.1 State ownership.....	11
4.2 Cooperative ownership .....	12
4.3 Savings Banks .....	13
5. Methodology .....	14
5.1 Models.....	14
5.2 Data Collection .....	15
6. Empirical findings .....	24
6.1 Descriptive statistics.....	24
6.2 Results .....	28
6.3 Intra relation of variables .....	33
6.4 Residuals and scatter plot .....	33
6.5 Sensitivity analyses.....	35
7. Analysis.....	36
7.1 State ownership.....	36
7.2 Cooperative ownership .....	38
7.3 Savings Banks .....	39
8. Summary.....	40
8.1 Conclusions.....	40

8.2 Suggested further research .....	41
9. Critical review .....	42
9.1 Validity and Reliability .....	42
9.2 Limitations .....	43
References: .....	44
Appendix.....	48
A. Private ownership Model B.....	48
B. Banks included in the sample:.....	48
C. Statistics for all variables in the run, including the control variables: .....	63
D. Sensitivity test - Winsorising.....	64

## 1. Introduction

Discussions covering accounting quality in banks have in existing literature evolved around the manipulation of the Loan Loss Provision. Fonseca & Gonzalez (2008) identify several key variables that have an impact on the manipulation of Loan Loss Provision, among others investor protection, legal enforcement, financial structure and development and regulations. Leventis, Dimitropoulos and Anandarajan (2011) suggest that accounting quality through the Loan Loss Provision can further be investigated by looking at corporate governance and ownership structure. Perez, Salas-Fumás and Saurina (2008) complements Leventis et al. (2011) suggestions by stating that different types of ownership in banks may have an impact on the use of loan loss provisions due to the differences in their operational incentives. Other research finds that ownership structure, in terms of ownership concentration, will influence the incentives of the firms and hence affect the accounting quality and reporting in banks (Leuz, 2006; Gebhardt & Novotny-Farkas, 2011).

This paper will investigate whether the suggested variable of ownership has an effect on accounting quality, by asking *'Does ownership have an effect on accounting quality'*. The study will be conducted on European banks and accounting quality will be approached by investigating the predictive power of the Loan Loss Provision. There are several reasons for investigating the Loan Loss Provisions. First, being the main accrual, Loan Loss Provisions constitute a significant accounting choice made in banks (Fonseca & Gonzalez, 2008; Kanagaretnam, Lobo & Yang, 2004) and it is also proven in literature to be one of the main underlying factors to why banks default (Ahmed, Takeda & Thomas, 1999; Gebhardt & Novotny-Farkas, 2011). Second, banks are sensitive to credit losses due to leveraged lending and therefore the Loan Loss Provision play a key role in estimating and evaluating risks. Third, banks are given considerable freedom in determining the Loan Loss Provision account as the applicable standards within the IFRS framework allow for professional judgment. The professional judgement used in estimating credit losses results in higher estimate uncertainty.

The proposed study will complement the research conducted by Gebhardt and Novotny-Farkas (2011) on the implications of ownership structure on the accounting quality. Like Gebhardt and Novotny-Farkas (2011) the paper will set apart ownership in light of different management incentives, but there are some major differences:

First and most importantly, the type of ownership will not be based on the dispersion of the shares but instead by the nature of the owners. The different types of ownership included in this study will be touched upon later. Second, in this study, the Loan Loss Provision will be set against the outcome of the actual credit losses. The actual credit losses, better known as Gross Charge Offs (GCO), is another major accounting measure for banks. This measure is the actual outcome in the subsequent year of the projected credit losses. The predictive power of the loan loss provisions on the gross charge offs, will in this study provide the indication of accounting quality. This is in line with Altamuro and Beatty (2010) where the effects of internal control on the predictive power of the loan loss provision are tested. The model for this study will be based on the model used by Altamuro and Beatty (2010) but adjusted to include the variable of ownership. The model displays the predictive power of the loan loss provision on the gross charge offs in the subsequent year where a higher degree of accuracy in the prediction will be interpreted as higher accounting quality. The existence of income smoothing has in prior studies been used as an indicator for the level of accounting quality

(Gebhardt & Novotny-Farkas, 2011; Perez et al., 2008). However, by using the loan loss provision as an explanatory variable to the actual losses, or gross charge offs, the study will measure the actual quality of the loan loss provision (Marton & Runesson, 2012).

The research will be conducted among both listed and unlisted banks within the European Economic Area (EEA) and Switzerland. The forms of ownership that will be compared are private, state-owned, cooperative and savings banks. Cooperative and savings banks are included as they reoccur in prior research on European banks. Altunbas, Evans and Molyneux (2001) claim that alongside the state and privately owned banks the cooperative banks must be considered in the European countries. These types of bank ownership are all of different characteristics and their different operational goals give reason to believe that the accounting quality should differ between them.

Although banks are not unique with the presence of different forms of ownership, there exist two compelling reasons for choosing the banking industry for investigating the relationship between ownership and accounting choices. First, banks in general, and specifically in Europe, are under the restrictions of strict harmonized accounting standards. Not only must (listed) banks mandatorily follow the IFRS standards in financial reports, they are also required to adhere to certain established principles and regulatory capital ratios such as the three Basel Accords (Gebhardt & Novotny-Farkas, 2011; Feess & Hege, 2012; Iannotta, Nocera & Sironi, 2007). These standards have become even stricter as a result of the recent financial crisis (Feess & Hege, 2012). Furthermore, in spite of different characters banks today offer homogenous services and compete on the same market (Iannotta et al., 2007). This makes the banking sector even more comparable. In turn, it allows studies like this to identify differences in the accounting quality that should not exist and connect them to other factors, such as ownership. Second, the banking sector offers extensively available data through their financial statements. These data are readily accessible through various databases as well as through the banks financial statements. Due to the harmonized nature of the banking industry the available data should also be cohesive between the banks.

Another compelling reason for conducting a study on the banking sector, and related accounting issues, is the importance of the banking sector to countries' financial stability (Hess, Grimes & Holmes, 2009). The global nature of the banking industry has further increased the importance of rendering a stable banking sector. Accounting quality plays a central role in ensuring a sound banking sector and of particular interest is handling and reporting of credit losses (Hess et al., 2009).

The contribution of this study will have potential implications to related and involved parties that produce or use financial information. Possible differences in accounting quality between various forms of ownership will have potential implications for legislators as well as users of financial reports. The implications will be an addition to existing, closely related literature and the outcomes and knowledge that has been produced regarding accounting quality in banks. Previous literature has as mentioned looked at accounting quality with loan loss provision from different perspectives, for example Altamuro and Beatty (2010) looked at the enforcement of internal control while others have covered factors such as investor protection, legal enforcement, financial structure and development and regulations (Gebhardt & Novotny-Farkas, 2011; Fonseca & Gonzalez, 2008). This study will also cover the issues of collecting data and the reliability and correctness of data available in acknowledged databases such as Bankscope and Datastream. This will be an addition to the issues regarding data collection on credit losses done by Altamuro and Beatty (2010) and Marton and Runesson



(2012), but also an extension to the issue of collecting data on ownership done by Dinc (2005) and Micco, Panizza and Yañez (2007).

The study will now continue by outlining the different forms of ownership, develop the differences between them and discuss underlying management incentives. Accordingly, the hypothesis will be formulated for each form of ownership before presenting the data collection and empirical findings.

## 2. Ownership

*The investigation of possible differences in accounting quality between the various forms of ownership will start with a presentation of the four treated forms of ownership.*

The effects of ownership in banks have been treated in prior studies but with different definitions (Altunbas et al., 2001; Gebhardt & Novotny-Farkas, 2011; La Porta, Lopez-de-Silanes and Shleifer, 2002). For example, Gebhardt and Novotny-Farkas (2011) look at the concentration of ownership while Altunbas et al. (2001) compare savings, cooperative and private banks. Since this study targets ownerships' influence on accounting quality, it is important to present this study's definitions of ownership and their individual characteristics. As a contrast to Gebhardt and Novotny-Farkas (2011) research, this study will not consider the level of ownership concentration but instead the nature of the owners. The banks will be classified into private, state, cooperative and savings banks.

### 2.1 Private Ownership

A majority of banks in the industrial world are privately owned (Micco et al., 2007). In terms of innovating and containing costs the private nature of ownership should be the preferred form, especially when competition between suppliers and rivals is fierce and there is an open market for free competition (Shleifer, 1998). Prior research has identified private ownership to be more profitable than the other forms of ownership (Iannotta et al., 2007) and as a result private ownership will be associated with the goal of maximising returns and creating wealth for their shareholders. This motivates management to focus on delivering and outperforming the expectations of the market in the financial reports. The motivations and incentives have in previous research been linked to the manipulation of the Loan Loss Provision and several studies have proven the existence of this manipulation in private banks (Ahmed et al., 1999; Gebhardt & Novotny-Farkas, 2011).

Manipulation of the Loan Loss Provision has been explained by pressure from the market and linked to management's compensation schemes. Several studies claim that managers in private banks use accounting choices in an opportunistic way and inflate earnings to indeed increase their compensation (Fields, Lys & Vincent, 2001). This is labeled the remuneration incentive and will be discussed further in section 3. Another reason, although not unique to private banks, was identified as the ability to alter significant capital ratios in order to meet the regulatory capital ratios set by the regulators (Ahmed et al., 1999; Lobo & Yang, 2001).

Risk is also an important factor to take into consideration in private banks. Private banks are missing important characteristics and features that some of the other ownership forms may possess that reduce the risk. For example the back up from the state in state owned banks (will be discussed in section 2.2). As a result of the absence of these characteristics it is important for the private bank to be perceived as bearing low risk. A possible method to decrease the perception of risk is the use of Loan Loss Provision for income smoothing in order to show stable earnings and hence lower risk (Fonseca & Gonzales, 2008). This is shown to be evident in private banks, especially in the listed banks (Anandarajan, Hasan & McCarthy, 2007; Hess et al., 2009).

## 2.2 State ownership

To set apart state-owned banks from private banks, state-owned banks are characterised by a domestic state holding a stake or full interest in the bank. The phenomenon of state ownership in banks has existed for a long time, arising with the progress of the social welfare state. Despite privatisation waves there is still a large population of state owned banks around the world (La Porta et al., 2002). Dinc (2005) found in his sample on banks that in 1994 39 % of all banks in the world were partially owned by the state. In emerging countries this number was even higher and close to 50 % of the banks in these regions were owned by the state (Dinc, 2005). With the ongoing financial crises, the topic of state ownership has received new life and has once again grown to be debated in media and literature. During the financial crisis, several banks survived due to bailouts from the state (Feess & Hege, 2012). These bailouts resulted in a shift in ownership where many of the states became major shareholders in the bailed out banks.

In addition to the above-mentioned fundamental differences, there are other differences between the state and private ownership. Sapienza (2004) claims that there are three different perspectives at which to look at state ownership. First is the social view where the difference between the private and state owned firm is that the main objective for the private firm is to maximize returns while for the state owned firm it is to maximize the social welfare by allocating funds to those areas where the private firms do not have interest. Second is the agency view where the state owned firms also engage in maximizing the social welfare rather than the returns. This view is also concerned with the low powered incentives of the managers of the state owned firms, which in some cases could lead to higher overall quality. Third is the political view where the politicians use their ownership to influences the managers in state owned firms for their personal political and economical benefit (Andrews, 2005; La Porta et al., 2002; Sapienza, 2004). The main objective for the politicians in this view is to win votes and this creates pressures on management when allocating resources to groups, which can benefit politicians in coming elections.

The classifications of the state owned banks made by Sapienza (2004) is similar to that made by Andrews (2005). The difference is that Andrews (2005) put the social and agency view under the same term, development view, while the political view receives the same classification. Whether the state owned bank falls under the development view or the political view, the majority of state owned banks share the similar characteristic of not seeking to maximize returns and allocating funds to those areas where private corporations do not see any viable business (La Porta et al., 2002).

## 2.3 Cooperative ownership

The International Cooperative Alliance (ICA, 1995) defines the character of a cooperative, or mutual bank as they are often called, as “an autonomous association of persons united voluntarily to meet their common economic, social, and cultural need and aspirations through jointly-owned and democratically-controlled enterprise”. The main features of a cooperative is defined by the European Commission as: 1. Free association and withdrawal, 2. non-transferability of membership, resulting in an absence of market for the member shares, 3. a democratic structure where each member usually have one vote, no matter how big the members investment is, 4. the profit distribution is not proportional to the members investment and it is also usually restricted, 5 following member interests instead of striving to

maximizing profit (European Commission, 2001). The cooperative banks are usually conducting the same type of business as commercial banks but are separated from other type of banks by the above-mentioned characteristics.

Even though it is given relatively small attention in the literature, cooperative ownership in banks is a common occurrence in Europe. Hees and čihák (2007) found in their sample on banks an increase in market share for cooperative banks from 9 % in the 1990's to 14 % in 2004 throughout the world. In Europe that number was even greater and several countries within the EEA can see a market share for cooperative banks exceeding 40 % (Hees & čihák, 2007). Cooperative banks are also controlling 10 % of the total assets in the banking sector in the advanced economies (Hees & čihák, 2007). It is shown through history that cooperatives usually forms when existing institutions fail to meet the needs. In a period with large bank failures, as can be seen today, it is believed that the number of cooperative banks will see further increase both in number and importance (Brazda & Schediwy, 2001).

In the development of new standards to be followed in order to ensure adequate capital ratios and disclosure, such as Basel II, the cooperative ownership structure has been spared and overseen by the legislators even though it constitutes a large share of the banking industry in Europe (Fonteyne, 2007). Therefore the disclosure practices and requirements for cooperative banks are lower than for other banks, especially when compared to listed private banks (Fonteyne, 2007; Hees & čihák, 2007). Altunbas et al. (2001) and Hees and čihák (2007) further claimed that cooperative banks were faced with lower levels of capital market discipline due to members instead of shareholders. The lower disclosure levels combined with low capital market discipline should decrease the level of accounting quality within cooperative banks. However, research has shown that there are other market factors that could diminish the negative effects of lower accounting standards on the accounting quality (Ball & Shivakumar, 2005). Market factors present in cooperative banks are:

First, the pressure from shareholders does not exist since the cooperative bank is a nonprofit-maximizing entity, which is constituted by members and not shareholders (Goodhart, 2004). This limits the pressure on managers to meet shareholder expectations, which has proven to be a key driver to earnings management and lower accounting quality (Cheng & Warfield, 2005). In addition, the accountability of managers within cooperative banks towards their owners, or members as they are referred to, are considered to be greater than for managers of other forms of banks (Fama & Jensen, 1983). The reason is that owners of a cooperative bank can at any time withdraw its funds without consequences and without risk of losing money.

Second, results from empirical research conducted on cooperative banks found that the cooperative banks were more financially stable. This was especially evident when it came to volatility of the returns within cooperative banks that was substantially lower than for other banks (Hesse & čihák, 2007). The reason to the cooperative banks' lower variability in returns was explained by Hesse and čihák (2007) as an outcome of them using the consumer surplus as a first line of defense in weaker times in a similar way that regular banks use their profits. The objective for regular banks is to maximize profits but in the cooperative banks the main objective is to maximize customer surplus. The outcome is a low average return ratio in normal years while they in weaker years are able to extort the surplus to make up for weaker times, or as the authors call it, use the customer surplus as a cushion.<sup>1</sup> As a result the need for

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<sup>1</sup>The lower returns could be explained by lower effectiveness to manage revenues and costs within the cooperative banks. However, studies conducted shows no evidence on that being the case, hence the cushion theory is supported (Brunner et al, 2004; Altunbas et al, 2001)

earnings management and income smoothing diminishes and the accounting quality improve.

Third, the outcome of the “cushion” above is that the cooperative banks are facing a lower solvency risk. Along with the decreased risk of insolvency, other literature has found evidence that cooperative banks are usually adopting less risky strategies than other type of banks (Hansmann, 1996; Chaddad & Cook, 2004). Leventis et al. (2011) find in their study that banks facing less risk are also less involved in earnings management, especially regarding the loan loss provisions.

## 2.4 Savings Banks

The last form of banks in this study are savings banks and have been identified as a separate class in previous studies such as Altunbas, Evan & Molyneux (2001). Savings banks are found to be particularly common in Germany, France, Spain and Italy and come in different forms, such as trustee savings banks (Tiwari & Buse 2006). The origin varies from labour distrust movements, charitable institutions to the local state (Garcia-Cestona & Surroca 2008). The common denominator is the shifting focus from shareholders to stakeholders, having instead multiple goals and engages in local establishment.

Acquisition of ownership is not a formal act but an outcome of deposits and yet because of their private foundation, savings banks maintain the goal of maximising efficiency and seek maximum profits. This sets savings banks apart from other forms of banks, like cooperative banks that have one vote per member. Altunbas et al. (2001) identify, in their study on German savings banks, further the main characteristics of savings banks to be the offering of lending activities, for capital investment and housing, to especially low and middle income customers within the local area. The mission of savings banks is according to Garcia-Cestona and Surroca (2008) “to contribute to making financial services a universal service rendered in conditions of economic efficiency and without abuse of market power, at the same time that it contributes to a better allotment of the created wealth and to the sustained development of the regions in which these entities are present.”

From the described characteristics, it is first evident that savings banks do not have shareholders and acquisition of ownership is not a formal act. This has two implications for management. First, the absence of tradable shares limits the pressure on managers to meet shareholder expectations which has proven to be a key driver to earnings management and lower accounting quality (Cheng & Warfield, 2005; Laux & Leuz, 2009). Second, the absence of shares inhibits compensation schema found frequently in private banks. These compensation schemas have been found to be an incentive for managers to manage earnings.

Another evident aspect is that local establishment reduces the size of savings banks. The limited numbers of customers limits the flow of deposits and lending. Inherent to local establishment and limited size is the proximity to customers, but this comes at a price of potentially higher financial risk. Especially when considering the lending activities to focus low and middle income classes. Closely related to the size of the bank, is the aspect of regulation. Capital and accounting regulatory frameworks subject in particular the largest banks. Consequently savings banks are generally less subject to disclosure requirements and capital regulations.

### **3. Accounting quality & Management incentives**

*This section will present the different management incentives that could affect the use of Loan Loss Provision and in turn the accounting quality. The management incentives will later be connected to the characteristics of the different forms of ownership to reason on their effect on the accounting quality.*

The quality of financial reporting through Loan Loss Provision has been intensively debated and tested both in the academic world and among the standard setters (Hasan & Wall, 2004; Perez et al., 2008; Fields et al., 2001; Laux & Leuz, 2009). Empirical findings show that the incentives of managers have to a large extent an impact on the accounting quality (Ahmed et al., 1999). The incentives are even considered by many to be the main determinant for the accounting quality and it is argued that reporting incentives created by market forces are superior to the accounting standards when determining accounting quality (Leuz, 2006; Leuz, 2003; Ball & Shivakumar, 2005). The preparers of the financial statements are at the bottom line making the accounting choices and studies have found that the choices reflect the preparers self interest at the expense of usefulness and relevance of the financial statements (Fields et al., 2001; Barth & Landsman, 2010).

The managers' incentives to manipulate the financial reporting have resulted in extensive research, and in the case of the banking industry it focused on the managers' use of loan loss provision as a tool to manipulate the financial reporting to work in their favor. Results from academic research have proven that the Loan Loss Provision is used as a tool for management within banks to alter regulatory capital ratios to which the banks must adhere (Ahmed et al., 1999; Anandarajan et al., 2007). Even though it is the different oversight boards that set the standards to which the companies must adhere, the final estimation of the bad credit accounts are performed by the firms' management (Hasan & Wall, 2004). This is often considered as one of the main reasons to why the bad credit accounts are given the high amount of attention within accounting research. Results from research on the topic supports mainly two reasons to why the managers use the loan loss provision to manipulate the financial reporting; namely earnings management and capital management.

#### **3.1 Earnings Management Incentive**

Evidence for the use of Loan Loss Provision for earnings management are in prior research strong and consistent even though Ahmed et al. (1999) does not find any connections (Anandarajan et al., 2007; Hess et al., 2009). Based on the results from prior research it is believed that the earnings management incentive does exist and is highly present when the managers make their accounting choices. The reason to why managers engage in earnings management is due to their own compensation and to display the bank as bearing low risk. These two incentives to earnings management will be presented below:

##### **3.1.1 Management Remuneration**

The first reason is argued to originate from the managers compensation based on the results of the company. This may have an effect on the firms' management and performance. Accounting, the reflection of economic performance, would have the potential to reflect any differences. In fact, managers use accounting choices in an opportunistic way and inflate earnings to increase their compensation (Fields et al., 2001; Hasan & Wall, 2004). The

increased pressure from shareholders in particular private banks to generate maximum returns is often reflected upon managers' decisions. In order to align the aim of shareholders and the managers the compensation is frequently based in ownership of the stock and is closely tied to the firm's performance and results. Examples are so called stock based compensation or stock ownership (Cheng & Warfield, 2005). The downside of this alignment is the growing incentives for managers to maximize their own compensation, by acting in an opportunistic manner.

Cheng and Warfield (2005) further claim that managers with equity incentives tend to report earnings that are in line with or just beating the expectations. This may be particularly true for private firms. The authors could also see that managers that have a consistent stream of equity incentives will keep the earnings on an even level throughout the years. Managers will avoid large positive earnings in order to protect themselves from disappointments in future years which will be devastating to their future remuneration. Investors are interested in stocks with steady and predictable earnings and the results from these studies show that this is an acknowledged incentive for managers to practice earnings management and more precisely income smoothing.

The remuneration incentive differs largely pending on type of ownership, country and type of bank since the goal of the operation is very different. An example is the comparison between commercial banks and the non-profit banks, such as cooperative banks, where the incentives of the managers are different between the banks.

### **3.1.2 Risk**

The matter of risk is important to managers in banks. A major objective for them is to display their banks as bearing low risk. An indication of high risk is fluctuating earnings and a more stable bank would display a bank facing less risk (Fonseca & Gonzales, 2008). This raises the incentive for managers to smooth their earnings, so called income smoothing, to give the market and regulators a perception of the bank as bearing low risk. Based on the findings from Anandarajan et al. (2007) and Hess et al. (2009) it could be stated that listed banks are more concerned with the perception of bearing low risk. These arguments are based on the findings that listed banks are using the Loan Loss Provision for manipulating their earnings to a higher degree than the non-listed banks. .

## **3.2 Capital Management Incentive**

The second reason is that the use of Loan Loss Provisions to alter capital ratios has proven in studies to be a common phenomenon (Ahmed et al., 1999; Anandarajan et al., 2007). Increased pressure on the managers to adhering to stricter regulations on capital ratios, such as the Basel accords, has strengthened the incentives for managers to be involved in various types of capital management. Risk is a major factor when it comes to adhering to regulatory capital ratios (Hess et al., 2009). One of the major concerns for managers is to display an adequate stock of capital to regulators. Research has shown that banks facing higher levels of solvency risk will have a stronger incentive to engage in capital management with the result of lower accounting quality (Yasuda, Okuda & Konishi, 2004). The phenomenon was studied before the implementation of IFRS but it has proven to still exist but it in a mitigated manner after the implementation (Leventis et al., 2010).



Incentives for meeting the requirements of regulatory capital are also related to the consequences that will arise from not meeting the requirements and the effectiveness of enforcement (Gebhardt & Novotny-Farkas, 2011). When the enforcement is strict and the punishment from failing to meet the requirements will lead to large implications for the bank, the outcome is raised incentives for the managers to manipulate the numbers in the financial reporting (Moyer, 1990). Therefore, it is of significant importance for legislators and lawmakers to acknowledge the trade-off between stricter regulatory capital and poorer accounting quality and to understand the connection between regulations and financial reporting choices.

### 3.3 Signaling incentive

Except the two types of management incentives illustrated above a third type of incentive has been highly debated and tested for in prior research. This incentive has been labeled the signaling incentive. Prior research claims that the managers use the loan loss provision to signal financial strength to the market. Wahlen (1994) investigated the use of loan loss provisions for signaling and found that managers tend to increase loan loss provisions when future cash flows are expected to be high in the upcoming three years. The result is that the investors believe that the future cash flow will be positive. Even though the loan loss provision is a measure of future doubtful debt the investors seem to see the actions taken by the managers as believing the earnings of the bank are strong enough even though additional earnings are removed in the form of loan loss provisions. However, the most recent study done by Ahmed et al. (1999) fail to support these hypotheses. Ahmed et al. (1999) state that the reason for his differing results from prior research could, among others, be that the results are very specific for a certain time period and that they are not using the same time periods for their studies and compared to Beaver and Engel (1996) who also studied the signaling incentive they used another method and received different results.

Based on prior research it can be concluded that the signaling incentive can be hard to define. Different results have emerged and different methods have been used. For the time being there is no real answer to whether the loan loss provision is used as a way for managers to signal to the market.



## 4. Hypothesis development

*The previous sections touched upon the different forms of ownership, various incentives and possibilities of managing financial information. As discussed, accounting quality will be determined by the predictive power of the Loan Loss Provision. To answer the research question, hypotheses based on various incentives and pressures have been formulated for each respective form of ownership. Each hypothesis will consist of two parts; one prediction against private ownership, and another prediction against all other forms of ownership.*

Private ownership in the banking sector is the most commonly represented form of ownership according to Micco et al.. (2007). Given the overrepresentation of private ownership, private ownership will be used as the industry standard and base for the first discussions. The first part of each hypothesis will test against private ownership and is aimed to investigate a potential difference of the alternative ownership form compared to private ownership.

In addition to the above approach to private ownership, the discussions will also treat the effect of each form of ownership individually. Rather than comparing against private ownership, these discussions will compare one form of ownership to all other forms of ownership. This aims to investigate a potential difference on a broader level.

### 4.1 State ownership

A central characteristic of state owned banks pointed out in prior research are the absence of real crisis due to their access to subsidies and government funding (Barth, Caprio & Levine, 2000). The basic assumption is that state owned banks are facing less risk than private banks due to the access of capital from the state. This leads to the belief that state owned banks engage less in earnings and capital management and have higher accounting quality based on the notion that higher risk is positively correlated with earnings management (Leventis et al., 2011). In other terms, it limits the earnings and capital management incentives.

The motivations for a state to engage in ownership of banks have been classified into two types, namely developmental and political. What the development and political view have in common is the financing of projects that otherwise would not have been established. The interest and stakes of state ownership are shifted from maximising returns for the shareholders to the ensuring of a sound financial system that considers the significance of financing for the domestic economy at large (Pargendler, 2012). State ownership may thus be perceived as engaging in activities that may not per se create maximum returns but work for the development of the country.

Another characteristic of state ownership is that management does not acquire ownership, nor tend to have the same extent of compensation schema, compared to private ownership. Managers of these state owned banks are shown to have less performance incentives than their private counterparts (Pargendler, 2012). Based on the notion of managers' remuneration incentive leads to believe that the predictive power of the Loan Loss Provision is higher in state owned banks.

Based on the findings and assumptions discussed above the following hypothesis was formulated for state owned banks:

**H1a:** The ability of LLP's to predict GCO's in the subsequent period is higher for banks with state ownership than for private ownership

Given the unique characteristics of state ownership, it may further lead to believe that the accounting quality in state owned banks differs from all other forms of ownership. This results in the following hypothesis:

**H1b:** The ability of LLP's to predict GCO's in the subsequent period is different for state ownership compared to other forms of ownership

## 4.2 Cooperative ownership

Characteristics of cooperative ownership have in prior research been identified as the absence of market pressures from shareholders and instead the representation of member interests. This means that operations are non-profit maximising and cooperative banks have shown to be more stable than the other forms of banks (Iannotta et al., 2007). Even though the nature of operations in cooperative banks is today similar to private banks, they are still proven to take on less risky strategies (Hansmann, 1996; Chaddad & Cook, 2004). The cushion phenomenon found in cooperative banks, means that cooperative banks have furthermore lower solvency risk. Other research also shows that the asset risk is lower and the loan quality is higher for the cooperative banks (Iannotta et al., 2007). The lower financial risk, as Leventis et al. (2011) states, would imply lower earnings management and higher accounting quality

The absence of market pressures and the non-profit maximisation goal inherently reduces incentives for management. Lower incentives for management to manipulate financial results would imply higher accounting quality. Management in cooperative banks do not receive the same compensation schema compared to private banks, since ownership is tied to membership. Furthermore, votes are typically equally distributed between members, which further reduces management incentives based on absent pressure from the market. Therefore, the management remuneration incentive presented in section 3 will not apply in the same manner for cooperative banks.

Based on the findings and assumptions discussed above the following hypothesis was formulated for cooperative banks:

**H2a:** The ability of LLP's to predict GCO's in the subsequent period is higher for cooperative ownership than for private ownership

Given the unique characteristics of cooperative ownership, this may also lead to the belief that accounting quality in cooperative banks differs from all other forms. This results in the following hypothesis:

**H2b:** The ability of LLP's to predict GCO's in the subsequent period is different for cooperative ownership compared to other forms of ownership

### 4.3 Savings Banks

Savings banks are typically characterised by local establishment and exchange shareholders for stakeholders. Altunbas et al. (2001) identified the main characteristics of savings banks to be the offering of lending activities, especially to low and middle-income customers within the local area. Despite their mission to create a better allotment of wealth and develop regional growth, savings banks maintain their goal of maximising returns and profits by their private nature.

Savings banks are characterised by specific risks and pressures, other than market and shareholder pressures found in private banks. The goal to support low and middle income classes is fundamentally different from private ownership, inherently increasing financial risk. Furthermore, the compensation schemas are not tied to ownership, as savings banks do not have the formal act of acquiring ownership. This latter may lead to the belief that management engages less in earnings management and financial information possesses higher accounting quality. However, higher financial risk and the wish to maintain maximum returns can create incentives to manipulate earnings to conceal risks and boost returns.

Independent savings banks are due to their geographic boundaries attracting a limited amount of customers, typically reducing the size of the bank. This reduces the financial stability in case of customer default, resulting in higher solvency risk that tends to boost earnings management. Furthermore, savings banks may avoid being subject to tough disclosure levels and accounting standards due to their limited balance sheet. Combined with the higher risk associated with lending to the low and middle income individuals in the local community, this leads to believe that savings banks create financial information of lower accounting quality:

**H3a:** The ability of LLP's to predict GCO's in the subsequent period is lower for savings banks than for private ownership

Given the unique characteristics of savings banks, this may also lead to believe that the accounting quality in savings banks differs from all other forms. This results in the following hypothesis:

**H3b:** The ability of LLP's to predict GCO's in the subsequent period is different for savings banks compared to other forms of ownership

## 5. Methodology

*This section will first treat the two models that will be used for testing the hypotheses. The second part of this section will treat the data collection to obtain the relevant data for the research.*

### 5.1 Models

#### 5.1.1 Model A

In order to test the first part of each hypothesis, model A was created that allows comparison of accounting quality for state, cooperative and savings banks against private banks. The model has been derived from Altamuro and Beatty (2010) where the validity and quality of the loan loss provisions are based on their predictive power of the actual credit losses in the subsequent year. Model A is introduced below:

$$\mathbf{GCO}_{i,t+1} = \beta_0 + \beta_1\mathbf{LLP}_{it} + \beta_2\mathbf{COOP}_{it} + \beta_3\mathbf{STATE}_{it} + \beta_4\mathbf{SAVINGS}_{it} + \beta_5\mathbf{LLP*COOP}_{it} + \beta_6\mathbf{LLP*STATE}_{it} + \beta_7\mathbf{LLP*SAVINGS}_{it} + \mathbf{Controls}$$

The model is a simple linear regression existing of a dependent variable and several independent and control variables, which will be elaborated further on. Of particular interest are the independent variables in form of an interaction variable, namely LLP\*COOP, LLP\*STATE and LLP\*SAVINGS. The Beta coefficients from these interaction variables represent the predictive power of the loan loss provisions and hence the accounting quality.

#### The dependent variable

The model above exists of a dependent variable, the Gross Charge Off, that represents the actual credit losses in the subsequent year. The dependent variable is explained by several independent variables, which will be discussed below. The dependent variable Gross Charge Off is a continuous variable that can take any value.

#### The independent variables

The selected independent variables in the model were the Loan Loss Provision, state ownership, cooperative ownership and savings ownership. Furthermore three independent variables in the shape of an interaction variable are included, namely LLP\*COOP, LLP\*STATE and LLP\*SAVINGS. The interaction variables are a multiplication of the Loan Loss Provision and the three forms of ownership state, cooperative and savings. These interaction variables have been mentioned before to be used for inducing accounting quality, as they indicate the predictive power of the Loan Loss Provision for a respective form of ownership.

The independent variable Loan Loss Provision is a continuous variable that can take any value. The independent variables of ownership are dummies, taking a value of 1 or 0 depending on the respective form of ownership. As an example, the variable state ownership will receive a 1 if the bank fulfills the criteria of state ownership and 0 if it does not. The interaction variables will be an outcome of the multiplication of the Loan Loss Provisions value and the applicable dummy.

## Control Variables

The control variables in this model have been identified as log of assets, year, operating income, operating profit, stock index change, index (listed vs non listed) and loan to total assets. These control variables have in earlier research been proven to affect the Loan Loss Provisions in banks (Perez et al., 2008). The control variables year and index are dummies, either 1 or 0, and the control variables log of assets, operating income, operating profit, stock index change and loan to total assets are continuous variables.

### 5.1.2 Model B

In order to test the second part of each hypotheses an adjusted model B was used and will be introduced below. The model will require four separate tests, one test for each form of ownership.

$$\text{GCO}_{i,t+1} = \beta_0 + \beta_1 \text{LLP}_{it} + \beta_2 \text{OWNERSHIP}_{it} + \beta_3 \text{LLP} * \text{OWNERSHIP}_{it} + \text{Controls}$$

The model B is similar to model A to the inclusion of the dependent variable Gross Charge Off and is also derived from Altamuro and Beatty (2010). The model is a simple linear regression that uses once again an interaction variable for the predictive power of the Loan Loss Provision. The difference between model A and this model B lies in the inclusion of independent variables, which will be elaborated below.

### Independent variables

Model B uses three independent variables, namely the Loan Loss provision, ownership and an interaction variable of Loan Loss Provision and ownership. The Loan Loss Provision is a continuous variable, ownership a dummy taking a value of 1 or 0 and LLP\*OWNERSHIP is an outcome of the multiplication of the continuous variable Loan Loss Provision and the dummy for ownership. The main difference to model A is that only one form of ownership is included, allowing to test the Loan Loss Provisions' predictive power of one form of ownership against all other forms.

### Control variables

Model B uses the same control variables as Model A, namely log of assets, year, operating income, operating profit, stock index change, index and loan to total assets. The control variables year and index are dummies, either 1 or 0, and the control variables log of assets, operating income, operating profit, stock index change and loan to total assets are continuous variables.

## 5.2 Data Collection

### 5.2.1 Sources:

The source used in this study was primarily Bankscope, a database with information about banks. Bankscope is frequently used in other studies conducted on Loan Loss Provisions in banks and is a widely accepted database for the purpose of this study (Marton & Runesson, 2012; Hasan & Wall, 2004). Data was also collected from a database called Datastream, this

was mainly the case for the listed banks while most of the data for the unlisted banks came from Bankscope or the banks financial statements.

For specific information on Loan Loss Provisions and Gross Charge Offs, the annual reports of these banks were used to complement data in cases where the information was missing or incorrect in Bankscope or Datastream. These can be found on the homepage of the bank in question or in the database Orbis (previous Amadeus) developed by Bureau van Dijk. Regarding ownership, Bankscope was the primary source of information but annual reports were used to complement missing or unclear cases.

It should be mentioned that the preferred source of data for this type of study is databases. The reliability is regarded higher since the chance of human error is lower. However, since the data was sometimes incorrect or missing in the databases and several previous studies have manually collected the data, it was considered to be a sufficient method (Gebhardt & Novotny-Farkas, 2011; Marton & Runesson, 2012).

### 5.2.2 Sample:

In order to decide on which banks to be included in this study a search strategy was set up using Bankscope. Please see below:

	Step result	Search result
<b>1. All banks</b>	30,367	30,367
<b>2. World Region/Country: Austria (AT), Belgium (BE), Bulgaria (BG), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (GR), Hungary (HU), Iceland (IS), Ireland (IE), Italy (IT), Latvia (LV), Liechtenstein (LI), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Romania (RO), Slovakia (SK), Slovenia (SI), Spain (ES), Sweden (SE), Switzerland (CH), United Kingdom (GB)</b>	8,617	8,617
<b>3. Specialisation: Commercial banks, Savings banks, Cooperative banks, Real Estate &amp; Mortgage banks, Bank holdings &amp; Holding companies</b>	26,374	6,950
<b>4. Total Assets (th EUR): Last available year, min=1,000,000</b>	7,813	2,425

As can be seen in the search strategy the population of banks included was reduced pending on several search criteria. The total population in this study will include all banks in the European Economic Area (EEA). Switzerland, which is an important country regarding banks and follows similar rules and restrictions as the members of the EEA, will also be included in the total population.

The population was initially restricted by the characteristics of the banks' operations. Only banks with the specialization of Commercial Banks, Savings Banks, Cooperative Banks, Real Estate & Mortgage Banks, Bank holdings & Holdings companies were included. The reason to include these types of banks is that they conduct such business that could involve credit losses and where the Loan Loss Provision is a material account in the financial statements. Other type of banks, or specialisations as Bankscope titles it, would not be relevant to the study since the Loan Loss Provisions and Gross Charge Offs account would not be material on their financial statements and the nature of their business does not involve the appropriate

characteristics for this study. Examples of banks with such specialisation are Investment bank, Finance companies and Securities firms.

Furthermore, the population was restricted by excluding all banks with total assets below 1 billion Euros in 2010. The EUR 1 billion level is usually the preferred threshold point where to separate large banks from small banks. By excluding all banks with assets under EUR 1 billion the study can keep the sample and model stable from the impact that the differences between “small” and “large” banks create. The log of assets’ control variable will control for other differences in size. The size of the firm and level of available data do also have a positive relationship. By limiting the population of banks only to those above EUR 1 billion the level of available data will be greater compared to the size of the sample.

The total population, after making the above-mentioned restrictions, came out to 2425 banks. Among these, all listed banks were chosen to be included in the sample. Since the number of listed banks was considered too small in order to achieve relevant results for the study a random sample of unlisted banks was chosen to complement the listed banks.

The reason for working with a limited, random selected amount of unlisted banks was due to the time span available for this study. A larger sample would have been used if the time allowed for it. At the start of the study the number of unlisted banks included in the random sample was equal to that of the listed banks. While collecting the data for the unlisted banks it was observed that substantial data was missing, especially regarding the Gross Charge Offs. To compensate for the missing data the sample of unlisted banks was extended and as a result the amount of data became sufficient for the study. The total number of unlisted banks in the final sample came out to 439.

The restrictions to the total population are of the same character as in Marton and Runesson (2012). The difference is that they have excluded, for reasons connected to the usage of IFRS, EU members that entered the union in 2004 and later. Examples of entrances after 2004 are the Eastern European block as well as the Baltic countries Estonia, Latvia and Lithuania. These union member countries will not be excluded in this study since the obstacle regarding the usage of IFRS is not to any concern due to the considered time span between the years of 2005 and 2011.

The period selected were the years 2005 to 2011. There are various reasons to why this particular time span was chosen. First, 2005 was the first year where IFRS became compulsory to follow for (listed) banks within the European Union (Leventis et al., 2011). Earlier, the usage of local GAAP’s was extensively used in the different member countries and by only looking at the period starting at the beginning of 2005 and up to 2011 the data is comparable between countries since they are now required to follow under the same framework (Leventis et al., 2011; Hasan & Wall, 2004).

Secondly, in 2004 there was an entrance of 8 new countries into the European Union and by gathering data only post to 2004 will simplify the research since this large entrance may have implied differences to accounting choices and hence another variable to consider. The new member countries were located mostly in the Eastern European block but they also consisted of the Baltic countries as well as the islands Cyprus and Malta.

Third, the data availability is limited prior to 2005. By looking at a number of sample banks before conducting the study, as well as looking at Marton and Runesson’s (2012) study, it became evident that the amount of available data was superior post 2004.



Some of the banks in the final sample were either dissolved or absorbed by other banks. The banks that were dissolved before 2005 are not included in the sample. The banks that were absorbed after were often hard to find information about. That is because the absorbing bank includes the absorbed bank into its own financial statements. Another outcome of absorption is that the corporate website for the absorbed bank was often canceled which further complicated the data collection. Data on absorbed banks was collected to the extent data was available.

### **5.2.3 Financial data**

The data collection in this section consist of the collection of loan loss provisions and gross charge offs, but also control variables such as total assets. In order to test the model, data regarding Gross Charge Offs and the Loan Loss Provisions needed to be collected. These two accounts are considered significant parts of the banks financial statements and they are the measures to be used in this study in order to determine the accounting quality.

Based on this notion the following financial dataset was collected for the purpose of this study:

1. Loan Loss Provisions
2. Gross Charge offs
3. Control variables

#### **Loan Loss Provisions (LLP)**

The Loan Loss Provision is the account on the banks financial statement through which the management predicts future credit losses for the bank.

#### **Gross Charge Offs (GCO)**

When loans and debts are considered as uncollectible, they are written off. This is done through the gross charge off account. However, in some cases it might be possible for the bank to recover part of the debt. These types of collectables are called recoveries. Net charge offs will not be considered in this study but is defined as the difference between the gross charge offs and the recoveries.

As the study looks at the predictive power of Loan Loss Provisions on the Gross Charge Offs in the subsequent period data for two consecutive years was needed. That is, data on Loan Loss Provision for year  $t$  and information about Gross Charge Offs for year  $t+1$ . The Gross Charge Off and loan loss provisions are measures to be found in annual reports. There exist two different formats in the annual reports, one balance sheet format and one income statement format, from where Loan Loss Provision and Gross Charge Offs can be derived:

#### **Deriving LLP and GCO**

This section shows how the data of Loan Loss Provisions and Gross Charge Offs was collected and how it was derived from the financial statements. Complications and methods when gathering this type of data are also explained. The two below methods were gathered from Marton and Runesson (2012):



## 1. Balance sheet format

Here the Loan Loss Provision is found under Notes to the financial statements by subtracting ‘releases’ and ‘recoveries’ from ‘new additions to the provision account’. The Gross Charge Off is found in the same Notes to the financial statement, either directly as write-offs or indirectly by subtracting ‘recoveries’ from Net Charge Offs.

<b>Allowance for impairment losses on loans and advances</b>		
Balance at beginning of year		<i>LLA<sub>t-1</sub></i>
+ New additions	}	
- Releases		- + <i>LLP<sub>t</sub></i>
- Recoveries		
- Write off/advances written off/charge-off (= <i>GCO<sub>t</sub></i> )	}	- - <i>NCO<sub>t</sub></i>
+ Recoveries (of advances written off in previous years)		
+ E.g. exchange and other adjustments		- + <i>Other<sub>t</sub></i>
- Balance at end of year		- <i>LLA<sub>t</sub></i>

Under the balance sheet format the total Loan Loss Provisions was often expressed as “charge to the income statement” or “charge for the year” among others.

As can be seen in the table above the terminology used for Gross Charge Offs is usually write off. In order to determine if write off refers to gross or net charge off one have to look for the presence of recoveries. As stated earlier the net charge off is really the difference between Gross Charge Offs and recoveries.

## 2. Income statement format

The information in the income statement format is also found under Notes to the financial statement. In this format Gross Charge Offs is found by using the years credit losses minus previous years provisions that affect current results. The Loan Loss Provision is found by subtracting ‘impairments’ and ‘recoveries’ from the years provision for credit losses.

<b>Credit losses</b>		
+ This year's charge-off, confirmed credit losses		
- Provisions for losses from previous years affecting this year's results*		- - <i>GCO<sub>t</sub></i>
(- bortskrivningar som går direkt till resultaträkningen)		
+ This year's provision for credit losses		
- Releases of provisions/impairments		
- Recoveries of advances written off in previous years		- + <i>LLP<sub>t</sub></i>
- Net provision for credit losses		
*i.e. the amount which has affected income previous years		

As can be seen by the above calculations the Loan Loss Provisions are the provisions in the current period net of reversal of provision in previous periods. The additions to the current period's provisions should really be the accurate measure to what the bank predict as future actual losses. However, the study will still use Loan Loss Provision including reversals since

that is the preferred method in prior research as well as the preferred method in the databases (Marton & Runesson, 2012).

### **Marton & Runesson's data**

Marton and Runesson contributed to the data collection by providing access to financial data for all listed banks between 2005 and 2011 as well as for a random selection of unlisted banks. The data relevant for this study concerned Loan Loss Provisions and Gross Charge Offs.

### **Control Variables**

Data on total assets was also collected along with the collection of Loan Loss Provisions and Gross Charge Offs. Bankscope provided accurate numbers for total assets, but they were still checked for in the annual reports in order to ensure quality and correctness. The control variables were collected in the present currency in the financial report but converted into EUR.

According to Perez et al. (2008) the total assets are considered to have an effect on the management of the Loan Loss Provisions in the banking industry. When using the assets as a control variable one first has to convert it into log of total assets. Perez et al. (2008) makes the same adjustment to total assets in his study and the reason being that in general the total assets are not normally distributed.

### **Assessment of financial data**

The placement of the Loan Loss Provisions and Gross Charge Offs in the notes of the annual reports differs substantially between countries and even banks within the same country. Usually this information was found under notes called "impairment to loans", "impairment on financial assets", "provisions for bad and doubtful debt" or "allowance for impairment losses on loans and receivables".

The unlisted banks in the sample could in most cases only provide annual reports in the domestic language. This further complicated the data collection. Business and financial dictionaries were in these cases consulted in order to find the correct wording in the specific language. Some countries had banks that reported their credit losses in a very homogeneous way while others were completely different between the banks. A good example of a country with very homogeneous reporting is Italy where information regarding credit losses was found under "VOCE 130" in a majority of the banks.

The above methods for deriving the Loan Loss Provisions and the Gross Charge Offs were closely tied to countries. The income statement approach was for example used by all banks in Sweden while the Balance Sheet approach could be seen in the UK and most of the German speaking countries.

It should also be mentioned that all financial data was collected in the present currency in the financial reports but converted into EUR for all observations.

The level of reporting and disclosure regarding credit losses varied substantially between the countries. A majority of the sampled banks in the Eastern European block and the

Scandinavian countries were very generous regarding information in the annual reports. In their notes to the financial statement the Loan Loss Provisions and Gross Charge Offs could easily be derived and the information provided was comparable to that of listed banks. Germany, on the other hand, could in most cases only provide a so called “Jahresbericht” which was a shortened and simplified version of their annual report. These “Jahresbericht” contained the four financial statements but the accompanied notes were very brief and while the Loan Loss Provisions could often be derived, no Gross Charge Offs information existed. It should be mentioned that all banks, even when Bankscope and Datastream has provided information, has been checked in order to ensure the correctness of the information. If no annual reports were to be found and the numbers in Bankscope were reasonable the information provided in the database was used.

#### 5.2.4 Ownership Data:

The other major part of the data collection was that of ownership. This study will look at ownership as taking four different shapes. The bank is either:

1. State owned Bank - the whole bank or a stake of the bank is owned by the domestic state
2. Cooperative Bank - the whole bank or a stake of the bank is owned by its members.
3. Savings Bank - the whole bank or a stake of the bank is owned by its savers.
4. Private Bank - all other banks.

##### *State owned banks*

The bank will be classified as a state owned bank, when the bank is directly or indirectly owned by the domestic state. Direct ownership in the bank was clearly evident in annual reports and on Bankscope. There were problems with indirect state ownership, as states frequently create a separate entity from where they impose ownership on the banks. Indirect ownership can be traced back multiple levels, but this study will only trace indirect state ownership back to the second level. There are mainly two reasons for this:

1. The influence the state really has on the bank in question will lose strength as you move further down the ladder of indirect ownership. The study sets out to test how the states’ influence will have an effect on the accounting quality and therefore it is important to make sure that the state can really exercise influence on the bank.
2. The quality of the data will decrease while going downstream and instead of helping the study it might blur it. Different types of cross ownership will become too complicated and the validity of the data may not be ensured. It would also require more time tracing back the ownership multiple levels.

The technique of going to the second level when collecting ownership is also used by Micco et al. (2007).

The threshold in this study is set to any existence of state ownership. This was motivated by the special influence the state has even at small ownership levels, although this differs from country to country. Since the exact percentage of ownership was collected, the effect of the extent of state ownership will also be tested for. Previous studies have used different thresholds, but frequently a threshold of 20 % is considered. La Porta et al. (2002) states that the 20% direct or indirect ownership is sufficient to consider the state to be in control of the

bank, but only if the 20 % result in the state as being the largest shareholder in the bank. This study will also test the level of 10 % ownership as being in control of the bank. This level of ownership is identified in earlier literature as a level of which some control could be influenced (Faccio & Lang, 2002).

As in La Porta et al. (2002) foreign state ownership will not be considered as state ownership, since the influence and goals are different from the domestic states.

### *Cooperative Banks*

The bank will be classified as a cooperative bank, when the bank's ownership structure consists at least partially of members. Only direct member ownership will be taken into account. Indirect ownership by another cooperative bank in a regular bank will be considered as an investment. In other words, if the bank's major owner is a cooperative bank or corporation it does not automatically mean that the bank in question will be considered as cooperative. However, in most cases the owned bank had the same cooperative characteristics as the controlling owner. The special characteristics of the cooperative ownership form are explained in section 2.

The legal form of the bank indicates and reveals the cooperative nature of the bank and the cooperatives are in some countries more evident than in others. They use abbreviations to inform that the bank in question have a corporate structure set up as a cooperative bank. Examples are Germany where all cooperative banks are by law required to include eG into their corporate name and in Spain where all the "Caja Rural" banks are part of the cooperative system. Furthermore, Bankscope has marked a bank as cooperative. However, in every case the ownership is investigated individually in order to confirm this.

In some instances, a cooperative bank may have other non-member owners or in some cases even state ownership. In these instances, the categorising of the bank takes into account the size of cooperative ownership as well as state ownership before classifying.

Bankscope does have a cooperative classification but as with many other parts of the data in the database it is not always accurate. As mentioned before all the data has been checked in the annual reports and corporate websites to ensure that what Bankscope classifies as a cooperative bank really is the case.

### *Savings Banks*

Many of the countries in the study have a large system of savings banks. It is especially evident in countries as Germany, Spain, France and Italy. Since these savings banks lack "shareholders" and work to benefit the local community they are not considered as being "regular" banks in our sample.

Savings banks had its own classification in Bankscope and therefore they were easy to spot. Large systems of savings banks with the same name but with different local geographic locations are common in Europe which also further eased the ownership data collection of the savings banks. However, some savings banks are today listed banks and have shareholders. Measures were therefore taken in order to ensure the correctness of Bankscope's classification of the savings banks.

## *Private Banks*

The private banks are those banks in the sample that do not fit in under any of the criteria for the three above type of banks. This is not to be confused with unclear ownership or missing ownership data, which are excluded from the sample as missing. These banks can be both listed, which often result in a large portion of the shares being free float, and non listed where there has shown to often be one or a few controlling parties. The majority of the banks in the sample does not meet any of the criteria's for being classified as state owned, cooperative or savings banks and thus be considered as a private bank. While this was often the case, it also differed between countries. As mentioned earlier, some of the countries have large portions of savings banks and in these countries the private type of ownership was not the majority of the sampled banks. The generosity of ownership data presented in the annual reports or corporate governance reports varied for the private banks.

## **Assessment of ownership data**

The ownership structure can generally be found in the annual reports of the bank in question. A critical aspect is to find ownership based on voting rights. This study investigates the influence of ownership, and hence voting rights connect better with the purpose rather than just looking at the number or percentage of shares.

Not every bank discloses all details about ownership, as to what company owns what percentage of the votes in the bank. There are substantial variations across countries, depending on national legislation. The different legislations in the countries specify the level of ownership that has to be reported. Usually the percentages of ownership of the largest shareholders that must be stated in the annual report or corporate governance report are above 2 %, 3 %, 5 % or 10 %. That means, pending on what country the bank resides in, the bank does not have to state shareholders that hold less than the above-mentioned limits. For example, in Germany, France and Spain owners of 5 % voting rights must be disclosed and that limit is 3 % in the UK and 2 % in Italy (Faccio & Lang, 2002). However, these thresholds are mainly for listed firms and the ownership information was often troublesome to obtain.

In case the required information is not found in the annual report, the corporate governance reports were consulted. When these reports did not provide the information needed, Bankscope was consulted. Bankscope specifies both the percentage of ownership, as well as the direct and indirect ownership structure. The use of Bankscope requires some verification, before it is used. This database may contain errors, but there are some simple ways to verify its legitimacy. Since ownership cannot exceed 100 %, it revealed the accuracy of the data. Another test was to see if current ownership, often available on the company's website, aligned with that years data on Bankscope.

As Bankscope could not always provide accurate percentage of ownership it was instead mainly used as a tool for identifying the name of the shareholders. This simplified the process of searching for the shareholders in the annual reports by searching for the shareholders name identified in Bankscope, which made the searching easier, particularly in annual reports in a foreign language.

## 6. Empirical findings

*This section will start with descriptive statistics to illustrate the characteristics of the gathered data. The following section will describe the outcome of the tests that were used for testing the formulated hypotheses.*

### 6.1 Descriptive statistics

#### Population and sample selection

The total population of banks identified by Bankscope consisted of 30.367 banks worldwide. Applying the selection presented in section 4.1 with regards to countries (namely the EEA + Switzerland), the character of lending activities and the size of the assets the potential sample of banks was reduced to the already mentioned 2.435 banks.

From the 2.435 banks the sample, all listed banks were included. Based on a random selection an additional sum of non-listed banks were included. The total sample included for testing the hypothesis came to be 635 banks. This is illustrated in the diagram below:

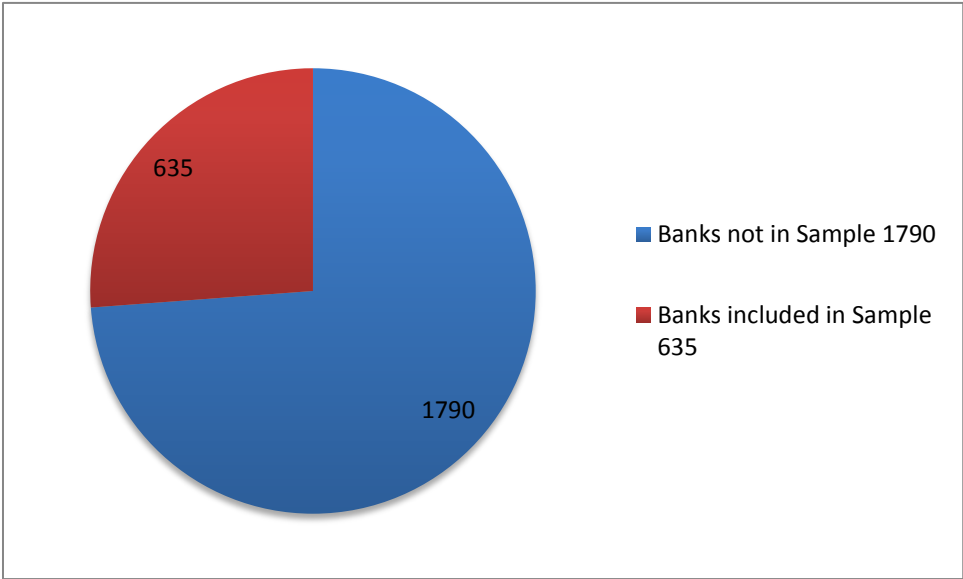


Diagram 1 - Sample

The characteristics of the remaining sample of 635 banks were divided over the earlier mentioned categories listed banks and non-listed banks, since listing is used as a control variable. Several banks altered their listing status during the years, and the diagram displays the listing characteristics for the year 2011 and serves as a snapshot only. The diagram below also shows the division between listed and non-listed banks for each country in the sample.

### Sampled Banks

	Listed	Unlisted	Total
Austria	8	16	24
Belgium	6	10	16
Bulgaria	3	3	6
Cyprus	2	3	5
Czech Republic	1	6	7
Denmark	15	9	24
Estonia	0	0	0
Finland	4	4	8
France	20	55	75
Germany	11	137	148
Greece	11	7	18
Hungary	2	3	5
Iceland	0	0	0
Ireland	2	2	4
Italy	23	43	66
Latvia	0	1	1
Lichtenstein	0	0	0
Lithuania	1	3	4
Luxembourg	1	12	13
Malta	1	0	1
Netherlands	7	11	18
Norway	14	4	18
Poland	15	6	21
Portugal	4	3	7
Romania	2	3	5
Slovakia	4	2	6
Slovenia	3	3	6
Spain	11	23	34
Sweden	5	9	14
Switzerland	13	14	27
UK	7	47	54
<b>Total</b>	<b>196</b>	<b>439</b>	<b>635</b>

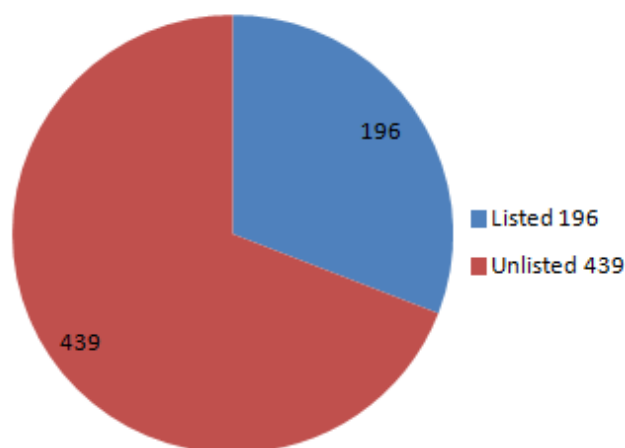


Diagram 2 - Listing of sampled banks

From the above diagram can be deduced that Germany with 148 Banks, France with 75 Banks and Italy with 66 banks constituted the bulk of the sample and combined made up approximately 46 %. An interesting feature is that the division of listed and non-listed banks was not equally spread. In Germany the population of listed banks was small, not only compared to the total number of banks in Germany but also to other smaller and less bank dense countries in the sample. This was due to the large population of savings and cooperative banks in Germany.

### Sample characteristics

The total number of banks included in the sample constituted of 635 banks, as illustrated above in diagram 1. The study extended over the years from 2005 to 2011, which means that there would be potentially 4445 observations.

For testing the hypothesis, the inference between LLP in year  $t$  and GCO in year  $t + 1$ , the values need to exist simultaneously or in other words have to be both recorded successfully

for the subsequent years. From the 4445 potential observations of both LLP and GCO, 1496 observations of LLP and GCO existed in the subsequent year. For this result the observations of LLP and GCO were filtered for pairwise exclusions. It should be mentioned that in only a few of the observations did GCO exist while LLP was missing. Hence, the LLP was more frequently reported than the GCO.

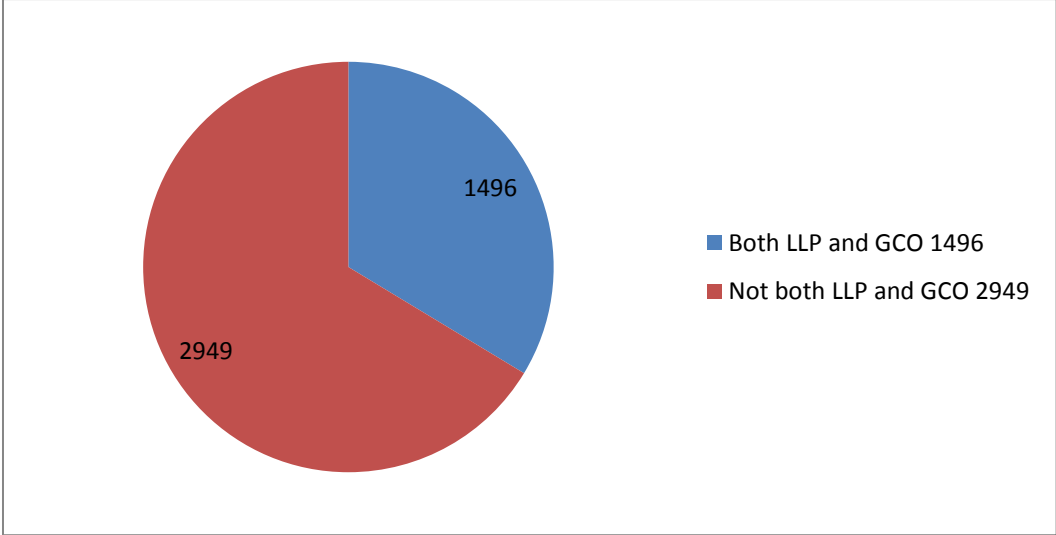


Diagram 3 - LLP and GCO

From diagram 3 above the total observations of co-existence with LLP and GCO was 34 %

### Ownership characteristics

Ownership was classified into four categories, namely private, state, cooperative and savings. Through the changes of ownership from year to year, some banks have changed classification. An example illustrating this is the privatising of a bank after 2005 or alternatively a state acquiring ownership over the sampled years.

The total observations of ownership were potentially 4445. In total 3461 observations of ownership was recorded and confirmed, the other 984 observations could not be collected. Among the 3461 observations 1724 revealed private ownership and cooperative ownership mounted to 811 observations. Furthermore 659 observations were classified as savings and 267 observations were classified as state.



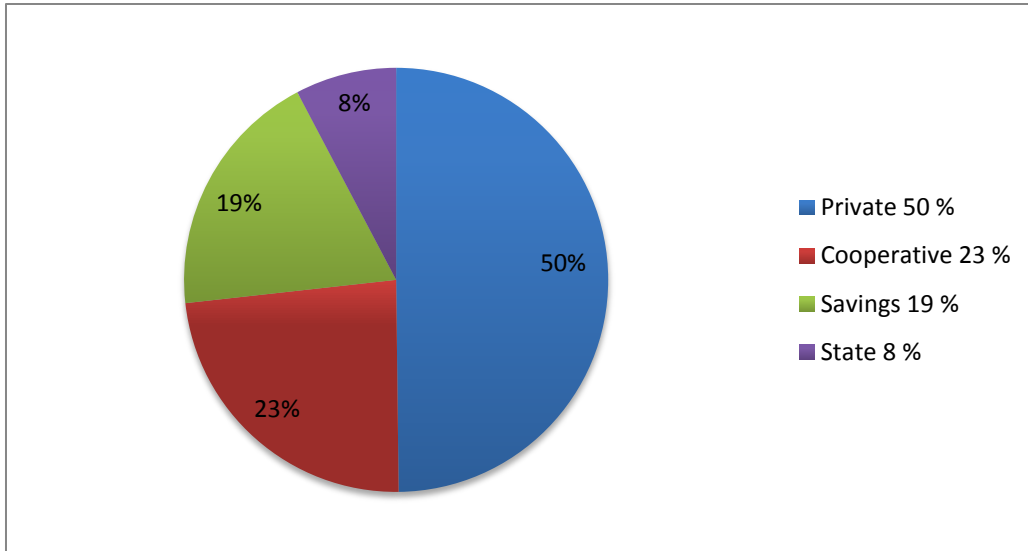


Diagram 4 - Ownership

From diagram 4 it can be seen that private ownership with 50 % was the most common form of ownership in the total sample. The least frequent form of ownership was state ownership with 8%.

For the cases where LLP and GCO in the subsequent period co-existed the distribution of ownership looked as follows:

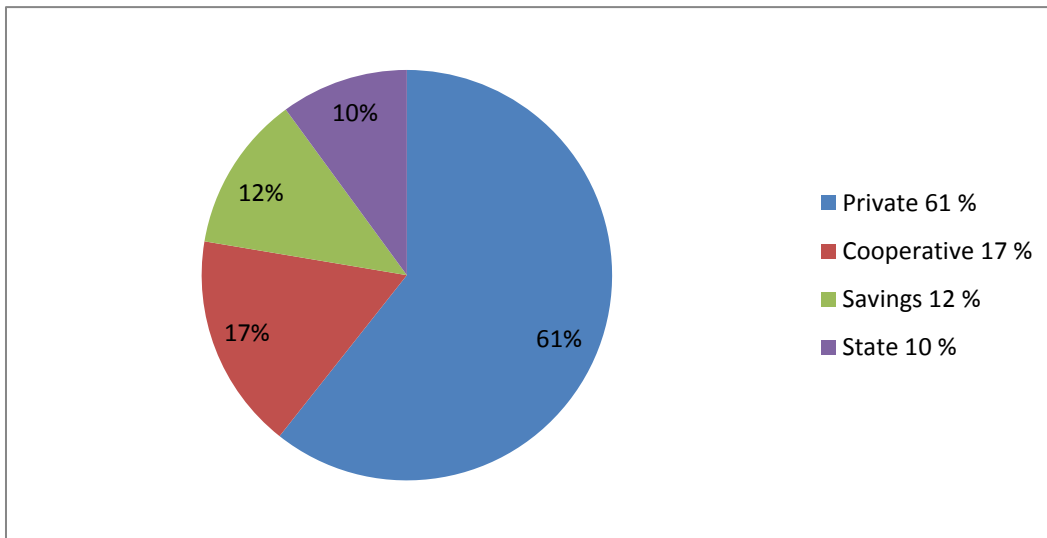


Diagram 5 – Ownership with co-existence of LLP and GCO

As can be seen the distribution of ownership when LLP and GCO in the subsequent period co-existed is slightly different than for the total sample. This is mainly due to the large amount of savings and cooperative banks in Germany where the GCO was missing for a majority of the banks.

## Statistical characteristics

The characteristics of the two main variables in the model, GCO and LLP, are described below. The descriptives display the range, minimum, maximum as well as the mean and variance with their respective standard error.

	Observations	Range	Minimum	Maximum	Mean	Std. Error	Variance
<b>GCO</b>	1496	15484	-15	15469	279	29,6	1335377
<b>LLP</b>	1496	23693	-2422	21271	271	22,4	1503203

Skewness	Std.Error2	Kurtosis	Std.Error3
7,242	0,06	62,1	0,13
8,615	0,04	94,7	0,09

## 6.2 Results

### 6.2.1 Model A

As explained in chapter 5, the comparison between state ownership, cooperative and savings banks towards the private ownership will be derived from the following model based on Altamuro and Beatty (2010):

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{it} + \beta_2 COOP_{it} + \beta_3 STATE_{it} + \beta_4 SAVINGS_{it} + \beta_5 LLP * COOP_{it} + \beta_6 LLP * STATE_{it} + \beta_7 LLP * SAVINGS_{it} + \text{Controls}$$

### Explanatory power of the variables

The chosen independent variables and control variables combined attempt to explain the dependent variable in the model. The limited amount of variables logically explains the dependent variable to a limited extent. The below diagram displays the extent to which the variables combined explain the GCO. Since the model consists of panel data, reference in the variable ownership was private ownership.

Simple linear regression. Dependent Variable: GCO									
Model	R	R Square	Adjusted R Square	Std. Error for the Estimate	Change statistics				
					R Square Change	F Change	df 1	df 2	Sig. F Change
1	0.850	0.722	0.719	612.747	0.722	206.811	18	1431	0.000

From the above table, it can be seen that the adjusted R square value is 0,719. Since the tests are parametric and the tests investigate a potential difference, an ANOVA table is displayed below. This table illustrates several important aspects with regards to the certainty of the obtained data.

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	1397679517.025	18	77648862.057	206,811	0.000
	Residual	537281701.697	1431	375458.911		
	Total	1934961218.722	1449			

The degrees of freedom of the regression were 18 and F had a value of 206,811. The significance of the model was within the 1% significance level.

### Results from testing

In the test, the base of comparison of private ownership was reflected by an exclusion of private ownership and the inclusion of state ownership, cooperative and savings banks in the statistical run. The results from this run are shown below, and of particular interest are the sign and value of the Beta coefficient as well as the significant level by the p-value.

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-586,990	107,189		-5.476	0,000
LLP	0,673	0,035	0,715	19,246	0,000
STATE	198,032	66,032	0,046	2.999	0,003
COOP	971,998	203,442	0,356	4,778	0,000
SAVINGS	118,039	48,054	0,040	2,456	0,014
LLP*STATE	-0,009	0,034	<b>-0,007</b>	-0,259	<b>0.796</b>
LLP*COOP	-254,894	54,051	<b>-0,346</b>	-4,716	<b>0,000</b>
LLP*SAVINGS	-0,533	0,197	<b>-0,041</b>	-2,702	<b>0,007</b>

Please see Appendix C for outcomes on the control variables.

The results shown in the above table may be divided into three categories according to the hypothesis: state ownership, cooperative and savings banks. The results will be discussed per category.

### State ownership

The diagram shows a negative beta value of -0,007 for the variable LLP\*STATE. The t-value for the variable LLP\*STATE was -0,259 and the significance level was 80%. The thresholds of 10 % and 20 % were also tested against private ownership, and results are described below. Since there were few banks with complete state ownership, the different thresholds were used as an alternative.

### State ownership 10 %

The test was conducted in similar fashion as above, but replacing the variable of any state ownership to banks that exceeded state ownership with 10 %. The strength of this model gave an adjusted R squared value of 0,723 with a significance level within 1%. The results relevant are displayed below:

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-587,881	106,356		-5,527	0,000
LLP	0,607	0,034	0,645	17,704	0,000
STATE 10	304,513	67,809	0,067	4,491	0,000
COOP	963,269	201,879	0,353	4,772	0,000
SAVINGS	119,139	47,463	0,040	2,510	0,012
LLP*STATE 10	0,068	0,033	<b>0,056</b>	2,078	<b>0,038</b>
LLP*COOP	-250,592	53,628	-0,340	-4,673	0,000
LLP*SAVINGS	-0,558	0,193	-0,043	-2,887	0,004

From the above table, the LLP\*STATE10 variable is of most interest. The variable has a positive beta value of 0,056 and a significance level within 5 %.

### State ownership 20 %

This test was conducted in similar fashion as above, but replacing the variable of any state ownership to banks that exceeded state ownership with 20 %. The strength of this model gave an adjusted R squared value of 0,733 with a significance level within 1 %. The results relevant are displayed below:

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-611,412	106,443		-5,744	0,000
LLP	0,522	0,034	0,528	15,303	0,000
STATE 20	455,106	111,498	0,061	4,082	0,000
COOP	936,983	197,820	0,346	4,737	0,000
SAVINGS	101,047	47,037	0,034	2,148	0,032
LLP*STATE 20	0,181	0,034	<b>0,135</b>	5,322	<b>0,000</b>
LLP*COOP	-251,053	52,662	-0,343	-4,767	0,000
LLP*SAVINGS	-0,565	0,281	-0,029	-2,015	0,044

From the above table, the LLP\*STATE20 variable is of most interest. The variable has a positive beta value of 0,135 and a significance level within 1 %.

### Cooperative ownership

From table III results from testing shows a negative beta value of -0,346 for LLP\*COOP. The t-value for the variable LLP\*COOP was -4,716 and the significance level was within 1 %.

### Savings banks

From table III results from testing shows a negative beta value of -0,041 for LLP\*SAVINGS. The t-value for the variable LLP\*SAVINGS was -2,702 and the significance level was within 1% level.

## 6.2.2 Model B

In the previous section, the predictive power relative to other ownership variables was shown. This was a comparison with private ownership acting as a reference. This section will isolate the predictive power of each type of ownership, in comparison to the rest. For example, the predictive power of Loan Loss Provision in state owned banks will be set against the predictive power of all other forms of ownership.

### State ownership

The model for testing the predictive power of state ownership (to the rest) was as follows:

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{it} + \beta_2 STATE_{it} + \beta_3 LLP * STATE_{it} + \text{Controls}$$

In the model, STATE acts as a dummy variable taking on the value “1” for all state owned banks and “0” for all other type of banks.

After testing this model, the adjusted R squared was found to be 0,714 and the significance level of the model was within 1%. The outcome is summarised in the table below:

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-315.510	94.249		-3.348	0.001
LLP	0.664	0.035	0.705	18.954	0,000
STATE	181.461	65.108	0.042	2.787	0.005
LLP*STATE	0.015	0.033	<b>0.012</b>	0.447	<b>0.655</b>

From the above table, the standardized beta coefficient for LLP\*STATE was positive with 0,012 but the significance level was 66 %. The same run was therefore tested for higher thresholds of state ownership, for 10 % and 20%. The model remained fundamentally the same.

### State ownership 10 %

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-314.843	93.579		-3.364	0.001
LLP	0.605	0.035	0.642	17.503	0,000
STATE 10	277.067	67.137	0.061	4.127	0.000
LLP*STATE 10	0.084	0.033	<b>0.069</b>	2.556	<b>0.011</b>

The adjusted R squared for this version was 0,718 and the significance level remained within 1%. From the above table, the standardized beta coefficient for LLP\*STATE10 was positive with 0,069 and the significance level within 5 %.

## State ownership 20 %

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-306.980	93.286		-3.291	0.001
LLP	0.607	0.034	0.644	17.607	0,000
STATE 20	384.028	73.673	0.078	5.213	0.000
LLP*STATE 20	0.075	0.033	<b>0.062</b>	2.283	<b>0.023</b>

The adjusted R squared for this version was 0,720 and the significance level remained within 1%. From the above table, the standardized beta coefficient for LLP\*STATE20 was positive with 0,062 and the significance level was within 5%.

## Cooperative ownership

The model for testing the predictive power for cooperative ownership (to the rest) was as follows:

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{it} + \beta_2 COOP_{it} + \beta_3 LLP*COOP_{it} + \text{Controls}$$

In the model, COOP acts as a dummy variable taking on the value “1” for all cooperative banks and “0” for all other type of banks.

After testing this model, the adjusted R squared was found to be 0,716 and the significance level of the model was within 1%. The outcome is summarised in the table below:

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-489.200	102.897		-4.754	0.000
LLP	0.678	0.023	0.720	29.058	0,000
COOP	861.867	200.568	0.316	4.297	0.000
LLP*COOP	-237.736	53.827	<b>-0.322</b>	<b>-4.417</b>	<b>0.000</b>

From the above table, the standardized beta coefficient for LLP\*COOP was negative with -0,322 and the significance level was within 1%.

## Savings Banks

The model for testing the predictive power for savings banks (to the rest) was as follows:

$$GCO_{i,t+1} = \beta_0 + \beta_1 LLP_{it} + \beta_2 SAVINGS_{it} + \beta_3 LLP*SAVINGS_{it} + \text{Controls}$$

In the model, SAVINGS acts as a dummy variable taking on the value “1” for all Savings banks and “0” for all other type of banks.

After testing this model, the adjusted R squared was found to be 0,713 and the significance of level the model remained within 1%. The outcome is summarised in the table below:

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-363.309	96.546		-3.763	0.000
LLP	0.683	0.023	0.725	29.159	0,000
SAVINGS	66.946	44.536	0.023	1.503	0.133
LLP*SAVINGS	-0.469	0.195	<b>-0.036</b>	<b>-2.410</b>	<b>0.016</b>

From the above table, the standardized beta coefficient for LLP\*SAVINGS was slightly negative with -0,036 and the significance level was within 5%.

### Private ownership

Private ownership was also tested. Please see appendix A for specific results.

### 6.3 Intra relation of variables

The use of several independent variables to explain the dependent variable, leads to concerns regarding the intra relation of variables. The higher the intra relation between variables is, the lower are their explanatory power. The intra relation between variables can be interpreted by VIF values and Eigenvalues, and this has been checked for the first run in 6.6.3. The highest VIF values were recorded for COOP and LLP\*COOP with values 29,686 and 28,498 respectively. LLP with 7,120 and LLP\*STATE with 4,098 were two other variables with high VIF values. These high VIF values indicate a high relation with other variables and low independent explanation and addition to the models. The results were expected since variables, in particular the interaction variables, consist of partially identical data.

### 6.4 Residuals and scatter plot

In order to check for weaknesses of the results, and to interpret the data in greater depth, the results were further analysed. Two important findings concern the residual values of the tests and the partial regression plots.

The partial regression plot shown below illustrates the characteristics of the spread of the observations for model A. When controlling for a standard deviation of 3, the observations did not show a perfectly straight diagonal line. The observations were slightly spread and some outliers exist. The three outliers in the upper right corner were identified to be from the listed banks Banco Santander SA 2009 (Spain), HSBC Holding Plc 2008 (UK) and HSBC Holding plc 2009 (UK). The magnitude of the provisions and actual credit losses originate from financial crises years, where banks had to recognise large credit losses.

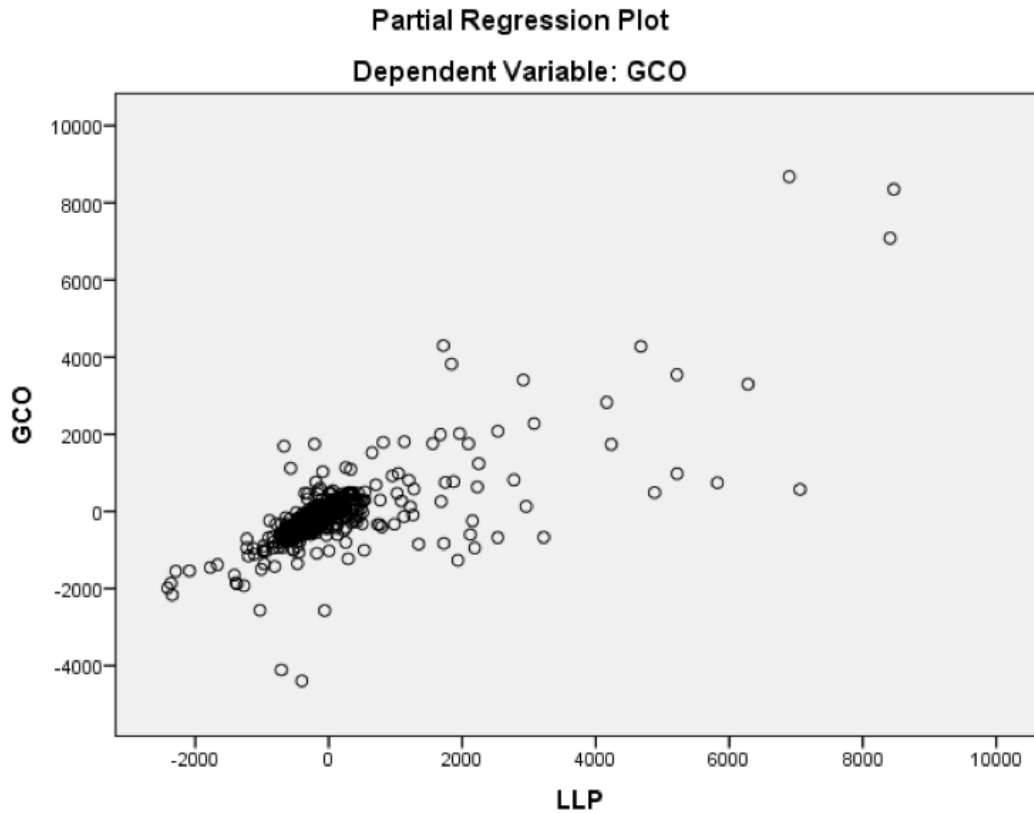


Diagram - PRP - Plot

The spread of the observations at the core, where observations are clustered, will be shown below. This is done by zooming in on the clustered observations in the lower left corner.

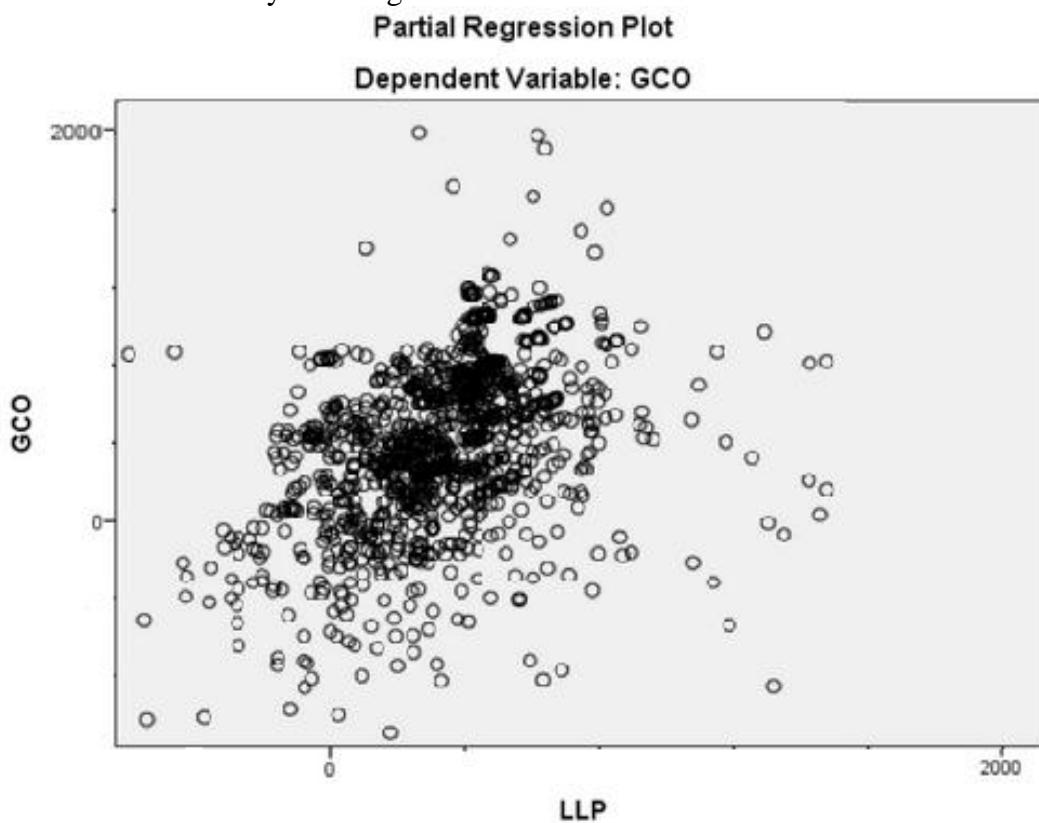
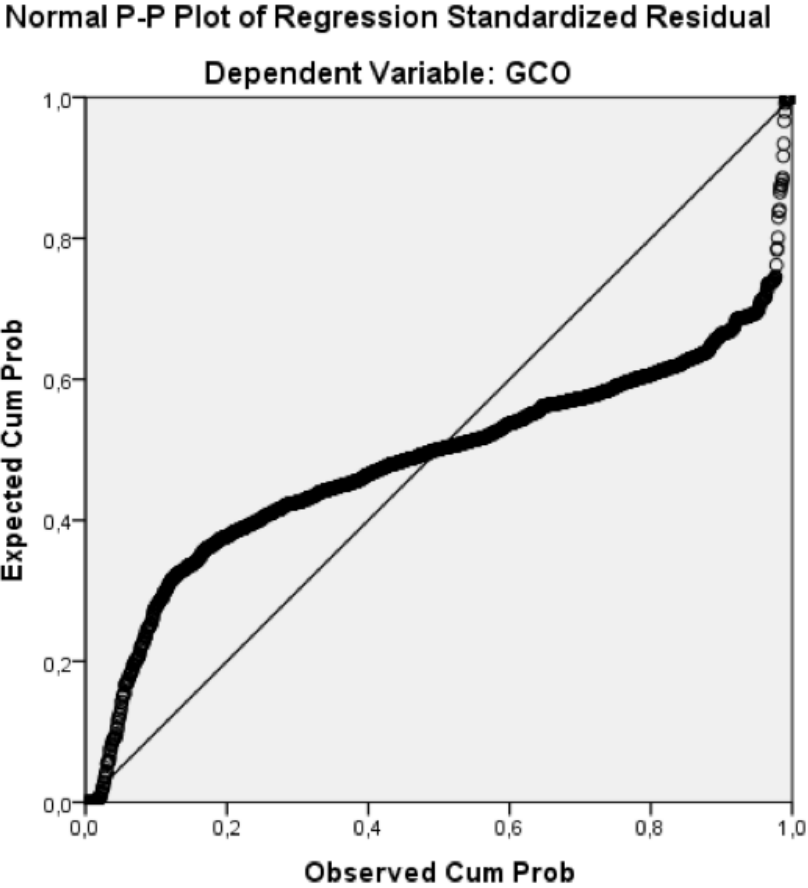


Diagram - PRP - Plot Zoom



The diagram above shows no perfect diagonal line but instead a diagonal line with spread, in particular with observation spread towards the Loan Loss Provision axes. There is however a tendency of a positive, diagonal line.

The analysis of the residual values is done by means of the normal p-plot of the standardized residual values for model A. The diagram below shows an inverted c-curve. In order for residual values to be normally distributed, hence not have an adverse impact on the test results, the residual values have to ideally match the diagonal line. This was not the case.



Normal P-Plot Residual Values

### 6.5 Sensitivity analyses

Given the spread of observations and in particular the outliers, a sensitivity test were conducted. The sensitivity test conducted is called winsorising, and 1 % in the lower and higher ends of the observations was winsorised. This means that the lowest and highest 1 % of the observations is replaced with the value of the 99th-percentile observation. Winsorising did not significantly change results of the tests. However, all tests now showed a significance level of 1%. Please find the specific results attached in the appendix D.

## 7. Analysis

*This section will connect the empirical findings with the formulated hypotheses. The outcome for each hypothesis will then be linked to the research question of ownerships effect on accounting quality. The analysis consists of two parts, one part treats the hypotheses for comparison with private ownership and another part treats comparison with all forms of ownership. Below are a summary of the outcomes for the tested hypotheses:*

Table XII Outcomes Model A			
Form of ownership	Expected $\beta$ direction	Actual $\beta$ direction	Significance
State General Threshold	+	-	None
State 10 % Threshold	+	+	At 5 % level
State 20 % Threshold	+	+	At 1 % level
Cooperative	+	-	At 1 % level
Savings	-	-	At 1 % level

Table XIII Outcomes Model B			
Form of ownership	Expected $\beta$ & Sig	Actual $\beta$	Significance
State General Threshold	$\beta \neq 0$ & Sig < 5 %	$\beta \neq 0$	None
State 10 % Threshold	$\beta \neq 0$ & Sig < 5 %	$\beta \neq 0$	At 5 % level
State 20 % Threshold	$\beta \neq 0$ & Sig < 5 %	$\beta \neq 0$	At 5 % level
Cooperative	$\beta \neq 0$ & Sig < 5 %	$\beta \neq 0$	At 1 % level
Savings	$\beta \neq 0$ & Sig < 5 %	$\beta \neq 0$	At 5 % level

### 7.1 State ownership

The prediction concerned the impact of state ownership on accounting quality. In the first hypothesis it was argued that state ownership would lead to higher accounting quality compared to private ownership. The following hypothesis was developed in section 4:

**H1a:** The ability of LLP's to predict GCO's in the subsequent period is higher for banks with state ownership than for private banks

The prediction of higher accounting quality translates into a positive  $\beta$ , in other words the LLP\*STATE interaction is positive and significant. The outcome of the test was a negative  $\beta$  value of -0,007 with a significance level of 80%. Although the beta value is in contrast to predictions, the significance level was above the general level of acceptance 5%. The results do not support the hypothesis and accounting quality was not evidenced to be higher (or lower).

**H1b:** The ability of LLP's to predict GCO's in the subsequent period is different for state ownership compared to other forms of ownership

The second hypothesis argued that the specific characteristics would lead to different

accounting quality compared to the rest. The prediction translates into a  $\beta$  value that was not 0 and significant. The  $\beta$  value was positive with 0,012 but the significance level was 66%. For this two tailed test, a level of 10% was required. Hence the results do not support the hypothesis and accounting quality was not proven to be different.

### State ownership tested for different thresholds

The model above tested for any level of state ownership, but the same model also tested specific thresholds of state ownership of 10 % and 20 %. Ownership levels of 10 % and 20 % are in prior literature identified as thresholds for when the state can practice control over the bank (Faccio & Lang, 2002, La Porta et al., 2002). The results for these thresholds are presented below. Increasing the threshold level result in an increase in the number of private banks since the banks falling below the ownership threshold will be classified as private banks.

#### State ownership threshold of 10 %

For the first hypothesis, the prediction of higher accounting quality translates into a positive  $\beta$  value, in other words the LLP\*STATE10 interaction is positive and significant. The  $\beta$  value was positive with 0,056 with a significance level within 5%. The nature of this one tailed test would require a significance level of 5 % and hence the result is significant. The results confirm the first hypothesis that state owned banks with a threshold of 10 % produce financial information with higher predictive power than for private banks.

The second hypothesis argued that the specific characteristics would lead to different accounting quality compared to the other forms of ownership. The prediction translates into a  $\beta$  value that was not 0 and significant. The  $\beta$  value was positive with 0,069 with significance level was within 5%. For this two tailed test, a level of 10 % was required. Hence the results do support the second hypothesis and accounting quality was proven to be different. The small number of observations and high degree of significance further enhanced the strength of the results.

#### State ownership threshold of 20 %

For the first hypothesis, the prediction of higher accounting quality translates into a positive  $\beta$ , in other words the LLP\*STATE20 interaction is positive and significant. The  $\beta$  value was positive with 0,135 with a significance level within 1%. The nature of this one tailed test would require a significance level of 5% and hence the result is significant. The results confirm the first hypothesis that state owned banks with a threshold of 20 % produce financial information with higher predictive power than for private banks.

The second hypothesis argued that the specific characteristics would lead to different accounting quality compared to the rest. The prediction translates into a  $\beta$  value that was not 0 and significant. The  $\beta$  value was positive with 0,062 with significance level was within 5%. For this two tailed test, a level of 10% was required. Hence the results do support the second hypothesis and accounting quality was proven to be different. The even smaller number of observations and high degree of significance further enhanced the strength of the results.

The above findings are in line with predictions based on previous research. An interesting finding of the above tests is that results vary dependent on different levels of state ownership.

At the 10 % and 20 % thresholds the state is considered to have control of the bank putting the state in a position of substantial influence (La Porta et al., 2002; Faccio & Lang, 2002). This result in the ability to appoint management and decide on their performance based remuneration which has been evidenced to be lower in state owned banks compared to private (Pargendler, 2012). As discussed earlier the remuneration incentive is of importance when determining accounting quality (Fields et al., 2001; Hasan & Wall, 2004). Hence, the positive results on accounting quality in state owned banks may be an outcome of the state imposing their control and decreasing the performance incentives of the appointed managers. It was also argued by Barth et al. (2000) that state owned banks are never in real crisis or risk due to their access to state funds. The lower risk was found by Leventis et al. (2011) to have a positive impact on the accounting quality. Another finding of the study on state owned banks is the occurrence of state ownership. Dinç (2005) claimed that around 39 % of all banks in his sample were state owned. Even though this sample was restricted to European banks the descriptive statistics showed that state ownership only constituted 8 % of the total sample.

## 7.2 Cooperative ownership

The prediction concerned the impact of cooperative ownership on accounting quality. In the first hypothesis it was argued that cooperative ownership would lead to higher accounting quality compared to private ownership. The following hypothesis was developed in section 4:

**H2a:** The ability of LLP's to predict GCO's in the subsequent period is higher for cooperative banks than private banks

The prediction of higher accounting quality translates into a positive  $\beta$ , in other words the LLP\*COOP interaction variable is positive and significant. The outcome of the test was a  $\beta$  value of -0,346 with a significance level of 1%. The beta value is in contrast to predictions negative and the significance level fulfilled the general level of acceptance 5%. The results reject the hypothesis, instead the opposite is true and accounting quality was proven to be lower.

**H2b:** The ability of LLP's to predict GCO's in the subsequent period is different for cooperative ownership compared to other forms of ownership

The second hypothesis argued that the specific characteristics of cooperative banks would lead to different accounting quality compared to the rest. The prediction translates into a  $\beta$  value that was not 0 and significant. The  $\beta$  value was negative with -0,322 with a significance level of 0,000. For this two tailed test, a level below 0,10 was required. Hence the results confirm the hypothesis and accounting quality was proven to be different in cooperative banks.

The above findings are not in line with predictions based on previous research. Results from this test, suggest lower accounting quality for cooperative banks. Altunbas et al. (2001) claimed that the disclosure requirements were lower for cooperative banks and Fonteyne (2007) stated that cooperative banks had been forgotten by the legislators. The lower level of disclosure requirements together with the absence of capital market discipline was argued to have a negative impact on the accounting quality. However, other market factors which were present in cooperative banks may be assumed to be superior determinants of accounting quality within these banks (Ball & Shivakumar, 2005). The lower accounting quality in

cooperative banks inferred by our results would suggest that the lower disclosure levels in cooperative banks had a superior negative effect compared to other mentioned characteristics such as lower risk.

### 7.3 Savings Banks

The third hypothesis concerned the impact of savings banks on accounting quality. It was argued that higher pressures and incentives would result in lower accounting quality than private ownership. Therefore the following hypothesis was developed in section 4:

**H3a:** The ability of LLP's to predict GCO's in the subsequent period is lower for savings banks than private banks

The prediction of higher accounting quality translates into a negative  $\beta$  value, in other words the LLP\*SAVINGS interaction is negative and significant. The outcome of the test was a  $\beta$  value of -0,041 with a significance level within 1%. The beta value is in line with predictions and the significance level was within the general level of acceptance 5%. The results confirm the hypothesis and accounting quality was proven to be lower.

**H3b:** The ability of LLP's to predict GCO's in the subsequent period is different for savings banks compared to other forms of ownership

The second hypothesis argued that the specific characteristics would lead to different accounting quality compared to the rest. The prediction translates into a  $\beta$  value that was not 0 and significant. The  $\beta$  value was positive with -0,036 with a significance level within 5%. For this two tailed test, a level below 0,100 was required. Hence the results confirm the hypothesis and accounting quality was proven to be different in cooperative banks.

The above findings are in line with predictions based on previous research. Accounting quality in savings banks was shown to be lower than for private banks and to be different from other forms of ownership. The characteristics of savings banks were argued to be lending to low and middle-income classes (Altunbas et al., 2001), inducing higher risk, and limited balance sheets due to local establishment and operations. Limited balance sheet size allows these banks to follow less strict disclosure regulations and at the same time to be exposed to greater solvency risk. Furthermore, the absence of tradable shares reduces pressures from the market, that was proven to be a key driver to earnings management and lower accounting quality (Chen & Warfield, 2005; Laux & Leux, 2009) The study did not investigate what factors were the specific determinants, but the study does confirm that savings banks produce financial information of lower accounting quality.

## 8. Summary

### 8.1 Conclusions

In this paper the effects of ownership on accounting quality was investigated on a sample of 635 banks within the EEA. The determinant for accounting quality was the predictive power of Loan Loss Provision to the Gross Charge Offs in the subsequent year. The effect of ownership was explained by looking at managers' incentives for each form of ownership and the differences were translated into hypotheses on expected accounting quality. The forms of ownership were divided into four different kinds; Private ownership, State ownership, Cooperative and Savings Banks.

Results from testing the various forms of ownership were not consistently in line with the expectations and hypotheses in this study. However, results display that the accounting quality is significantly different between the various forms of ownership within the sampled banks. Hence the research question 'Does ownership affect accounting quality' can be answered by saying yes, ownership does affect accounting quality.

The results showed that banks with any presence of state ownership do not significantly produce better accounting quality. When applying pre-determined thresholds (La Porta et al., 2002; Faccio & Lang, 2002) the results did show that state ownership leads to significantly higher accounting quality. The results can be explained by the nature and purpose of state ownership. State ownership below 10 % does not imply control of the bank, but is instead considered as an investment. Hence the differences between state and privately owned banks diminish, which can explain the insignificant results. State ownership at the 10 % and 20 % thresholds grants certain control and influence on the banks operations and objectives, allowing the state to practice their interests more effectively. Identical outcomes are the result from tests comparing state ownership to all other banks. This supports the reasoning that managers' incentive in state owned banks are of a different nature than in private banks leading to higher accounting quality. The results could also be an outcome of lower level of risk for state owned banks due to their access to government funds, which is in prior literature identified to be a major determinant of accounting quality.

Results showed further significant differences between cooperative ownership and private ownership, demonstrating lower accounting quality in cooperative banks. The performed tests that isolate cooperative ownership, found that accounting quality was also lower compared to all other forms of ownership. The outcome may be explained by lower disclosure requirements for cooperative banks (Altunbas et al., 2001). If the disclosure level may be held accountable for the lower accounting quality, legislators may consider increasing disclosure levels in cooperative banks. The lack of capital market discipline due to members instead of shareholders could reduce pressures on managers to produce financial information of high accounting quality and as evidenced this has a negative impact on the accounting quality.

Finally, the results showed lower accounting quality among savings banks compared to privately owned banks. The performed tests that isolate savings banks also found that the predictive power was significantly lower, i.e lower accounting quality, comparing against all other forms of ownership. A possible explanation is the overrepresentation of savings banks in the category unlisted banks, where legislation and accounting frameworks are less prominent and requires lower disclosure. The higher risk associated with the nature of lending



activities in savings banks could also be a contributing factor for the managers to conceal their risk and manage their earnings.

Drawing upon the conclusions for cooperative and savings banks, it could also be argued that the lack of capital market discipline result in less effort from managers to produce financial statements of high value and relevance. When there are few outside investors with opinions on the accuracy of the financial statements, there may be lower pressure on the managers to create accurate financial statements. The lack of capital market discipline has been subject of discussion by Altunbas et al. (2001). However, its effect on the accounting quality has not been investigated but the results from this study could be traced to this phenomenon.

The results of this paper could be highly relevant to bank regulators who need to consider the impact of privatisation of state owned, cooperative and savings banks on the accounting quality when restructuring the national banking sector but also when setting accounting standards and regulations.

The study also concerned issues around the data collection, discovering several problems. The completeness and correctness of the bad debt accounts, Loan Loss Provision and Gross Charge Off, was as expected from Marton and Runesson (2012) and Altamuro and Beatty (2010) low in the databases. The question still remains why the information is not correct in the databases but a suggestion is that the methods for deriving the Loan Loss Provision and Gross Charge Off might be different and international comparison should be done with caution. If the databases were to be more specific in the explanations of their calculations it would be easier to identify the mistakes and derive the correct measure. Ownership information was not dependable in the databases. The shareholders were often identified correctly but their stake in the bank was sometimes incorrect mostly due to indirect and cross ownership. As the percentage share lacked accuracy, Bankscope should be used as a tool to identify the shareholders and used when searching through the annual reports rather than gathering accurate shareholder data.

## 8.2 Suggested further research

The results from this study found significant differences in accounting quality between the various forms of ownership. However, the results have opened up for future research to further explain the effect of ownership on accounting quality.

The level of involvement from the state has not been considered in this paper. By comparing the accounting quality between countries with different level of state involvement, the impact of state ownership could further be investigated. The level of enforcement and punishment for not meeting the regulatory capital ratios is also different between countries. By comparing countries with different levels of enforcement the capital management incentive could be investigated further. This would strengthen the results of the effect that ownership really has on the accounting quality. Extending the research to compare state ownership to other forms in all developing countries would be compelling due to mainly two reasons: First, it is proven that the differences between state owned and other forms of banks are greater in the developing countries than in the industrialized world (La Porta et al., 2002; Altunbas et al., 2001; Micco et al., 2007). The reason being that the state owned banks in the industrial world are playing less of a developing role and are instead trying to imitate the private banks (Micco et al., 2007). Second, the concentration of state owned banks is evidenced to be higher in

developing parts of the world (Dinç, 2005). This would result in a more even sample of state owned banks compared to the other forms. The study can be further extended by including a larger time span, a suggestion is inclusion of the years back to 2000. This would cover more observations and a larger time span, accounting for different events over time. An example of such an event would be the recent financial crises that have hit the bank sector in particular. However, the IFRS framework was not applicable prior 2005 and this has to be accounted for. For future research the model's explanatory power could be strengthened by adding other important variables such as crisis and corporate governance. As the study connects the accounting quality to management incentives it would be relevant to include variables such as board structure and management occupancy and characteristics. By also tracing the compensation levels of managers in the various forms of banks the remuneration incentive could increase in relevance.

Due to special nature of the banking sector the results cannot be generalised into other areas of business. The banking sector is only one of many areas where the type of ownership differs. In continental Europe the state controls a large amount of firms in different business areas (Faccio & Lang, 2002). Cooperatives are also common in areas other than the banking sector. It would therefore be of interest to test if the accounting quality differs in these areas. Caution must however be taken since the measure used for accounting quality may not be relevant for other areas of business. The reason being that most areas are not conducting operations that involve credit losses.

## **9. Critical review**

### **9.1 Validity and Reliability**

In terms of validity, this study has approached the research question 'does ownership have an effect on accounting quality?' by investigating the predictive power of the Loan Loss Provision with regards to Gross Charge Offs. In this approach, higher predictive power correlates with higher accounting quality. However, there are other commonly found approaches in the literature around accounting quality in banks. Accounting quality has frequently been approached in terms of earnings management and income smoothing. The reader will have to bear in mind the difference between the various approaches when determining accounting quality. Furthermore, accounting quality can also be approached in other terms such as disclosure aspects.

Validity discussions are also applicable when choosing the banking industry for determining effects on ownership. The banking industry was chosen for its presence of various types of ownership and the extensive data as a result of regulations.

In terms of reliability, the study was conducted using the databases Bankscope and Datastream. Although this provides the same data to any user, in some occasions the Loan Loss Provisions and Gross Charge Offs were missing. In these occasions annual reports were used. This manual data collection reduces the reliability of this study. The annual reports in itself are standardised and audited, reducing reliability issues but manual data collection brings along the human factor. Also, one has to take into account the extensive use of domestic languages found in the annual reports. Gathering data in various languages may reduce reliability due to translation errors. Part of the financial data collection was as



mentioned in section 5 retrieved from Marton and Runesson (2012). Readers have to keep this in mind when assessing the outcome of the tests as the data was collected in two instances. However, the same method for deriving Loan Loss Provisions and Gross Charge Offs was used from the same sources. This minimises possible conflicts regarding the data collection. Another weakness in terms of reliability can be the moment of classification. The lines between the different types of ownership are sometimes complex and the appropriate type of ownership is hard to distinguish. There are for example savings banks as well as cooperative banks that are today listed on a stock exchange. This problem is mentioned before and the method explains how these situations have been dealt with, but certain caution has to be used in handling classification.

## 9.2 Limitations

The study is conducted on the banking sector and generalisation to other sectors must be done carefully. The banking sector is unique and complex and different from other sectors. Furthermore the study is done in a specific area, EEA, with many nationalities and regional legislation. Also, it is limited to years after 2005 as a result of the time reference of our study. Other statistical methods could be applied to enhance and explain the results. An example is the fixed effects model, which would be possible to use since this study is based on panel data. However, this requires abilities in statistical programs and was not used due to the time frame available. The study did chose variables related to Perez et al. (2008), but taking into consideration more or other control variables could give further results. The findings of this study also have to be put in perspective of weaknesses found on performed tests. The first matter concerns the non-randomly distributed residuals. This could be seen by the normal p-plot of residual values, which deviated from the diagonal curve. Non-randomly distributed residuals mean that the residuals influence the outcome of the tests unequally, hence weakening the purity of the findings. The second matter concerns the outliers found in the partial regression plots. Outliers have the possibility to alter the findings, in particular the explaining strength of the model and the regression coefficients. This could be either lower or higher, but with the same negative impact. To minimise the effects of outliers, a limit for the standard deviation of 3 was imposed as well as the winsoring sensitivity test. Finally, a limitation of this study related to the classification of ownership and the issue regarding the nature of the banks' operations. Even though classification of the banks has been done based on the research conducted, the nature of the operations may still be dispersed which leads to different incentive for managers which will reflect upon the accounting quality. By not going further into the nature of the operations of the sampled banks must be regarded as one of the limitations to this study. It has been shown in various studies that the operations of cooperative and savings banks and state-owned banks are getting more homogeneous since the increasing competition force the banks to maximize the efficiency of their operation. This is especially true in Europe compared to other parts of the world since the states are not in the same extent using their banks for developing purposes (Micco et al., 2007).

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## Appendix

### A. Private ownership Model B

The model for testing the predictive power for private ownership(to the rest) was as follows:

$$GCO_{i,t+1} = \beta_0 + \beta_1LLP_{it} + \beta_2PRIVATE_{it} + \beta_3LLP*PRIVATE_{it} + \text{Controls}$$

In the model, PRIVATE acts as a dummy variable taking on the value “1” for all privately owned banks and “0” for all other type of banks.

After testing this model, the adjusted R squared was found to be 0,716 and the significance level of the model was within 1% . The outcome is summarised in the diagram below:

Independent Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
Constant	-272.067	94.192		-2.888	0.004
LLP	0.678	0.024	0.720	28.119	0,000
PRIVATE	-165.775	35.272	-0.072	-4.700	0.000
LLP*PRIVATE	0.008	0.033	<b>0.006</b>	0.252	<b>0.801</b>

From the above diagram, the standardized beta coefficient for LLP\*PRIVATE was slightly positive with 0,006 and the significance level was 80 %.

### B. Banks included in the sample:

<b>Bank für Tirol und Vorarlberg AG-BTV (3 Banken Gruppe)</b>	AUSTRIA
<b>Bank Winter &amp; Co. AG</b>	AUSTRIA
<b>BAWAG Wohnbaubank</b>	AUSTRIA
<b>BKS Bank AG</b>	AUSTRIA
<b>Die Zweite Wiener Vereins-Sparcasse</b>	AUSTRIA
<b>Erste Group Bank AG</b>	AUSTRIA
<b>GiroCredit Bank Aktiengesellschaft der Sparkassen</b>	AUSTRIA
<b>Hypo Alpe-Adria Bank International AG-Hypo Alpe-Adria-Group</b>	AUSTRIA
<b>Oberbank AG</b>	AUSTRIA
<b>Oesterreichische Kontrollbank AG</b>	AUSTRIA
<b>Oesterreichische Volksbanken AG</b>	AUSTRIA
<b>Raiffeisen Bank International AG</b>	AUSTRIA
<b>Raiffeisen Landesbanken Holding GmbH</b>	AUSTRIA
<b>Raiffeisenlandesbank Kaernten - Rechenzentrum und Revisionsverband rGmbH</b>	AUSTRIA
<b>Raiffeisenlandesbank Oberösterreich AG</b>	AUSTRIA

<b>Raiffeisen-Landesbank Tirol AG</b>	AUSTRIA
<b>Raiffeisen-Leasing Bank AG</b>	AUSTRIA
<b>Salzburger Landes-Hypothekenbank-Hypo-Bank Salzburg</b>	AUSTRIA
<b>Sparkasse Kufstein Tiroler Sparkasse von 1877</b>	AUSTRIA
<b>Unicredit CAIB AG</b>	AUSTRIA
<b>Wiener Neustadter Sparkasse</b>	AUSTRIA
<b>Volksbank Wien AG</b>	AUSTRIA
<b>Volksbank Vorarlberg e.Gen.</b>	AUSTRIA
<b>Volksbanken Verbund</b>	AUSTRIA
<b>Ageas</b>	BELGIUM
<b>Ageas SA/NV</b>	BELGIUM
<b>AXA Bank Europe SA/NV</b>	BELGIUM
<b>Bank of Baroda</b>	BELGIUM
<b>Bank of Tokyo - Mitsubishi (Belgium) SA/NV</b>	BELGIUM
<b>BKCP scrI</b>	BELGIUM
<b>C.V.B.A. Lanbokas</b>	BELGIUM
<b>Caisse Privée Banque-Private Kas Bank</b>	BELGIUM
<b>Deutsche Bank AG</b>	BELGIUM
<b>Dexia</b>	BELGIUM
<b>Eural SA/NV</b>	BELGIUM
<b>Fortis (B)</b>	BELGIUM
<b>Groupe Bruxelles Lambert</b>	BELGIUM
<b>Holding Communal SA-Gemeentelijke Holding NV</b>	BELGIUM
<b>JP Morgan Chase Bank</b>	BELGIUM
<b>KBC Groep NV/ KBC Groupe SA-KBC Group</b>	BELGIUM
<b>Allianz Bulgaria Holding</b>	BULGARIA
<b>Central Cooperative Bank AD</b>	BULGARIA
<b>Corporate Commercial Bank AD</b>	BULGARIA
<b>Eurobank EFG Bulgaria AD (Postbank)</b>	BULGARIA
<b>First Investment Bank AD</b>	BULGARIA
<b>United Bulgarian Bank - UBB</b>	BULGARIA
<b>Alfa Capital Holdings (Cyprus) Limited</b>	CYPRUS
<b>Alpha Bank Cyprus Limited</b>	CYPRUS
<b>Co-operative Central Bank Limited</b>	CYPRUS
<b>Hellenic Bank Public Company Limited</b>	CYPRUS
<b>Marfin Popular Bank Public Co Ltd</b>	CYPRUS
<b>Ceska Sporitelna a.s.</b>	CZECH REPUBLIC
<b>Ceskomoravska Stavebni Sporitelna as-CMSS as</b>	CZECH REPUBLIC
<b>Czech Export Bank-Ceska Exportni Banka</b>	CZECH REPUBLIC
<b>Hypotecni banka a.s.</b>	CZECH REPUBLIC
<b>Komercni Banka</b>	CZECH REPUBLIC
<b>LBBW Bank CZ a.s</b>	CZECH REPUBLIC
<b>Unicredit Bank Czech Republic AS</b>	CZECH REPUBLIC
<b>Alm. Brand A/S</b>	DENMARK

<b>Arbejdernes Landsbank A/S</b>	DENMARK
<b>BankNordik P/F</b>	DENMARK
<b>BankTrelleborg A/S</b>	DENMARK
<b>Danmarks Skibskreditfond-Danish Ship Finance - DSF</b>	DENMARK
<b>Danske Bank A/S</b>	DENMARK
<b>Eik Bank Danmark A/S</b>	DENMARK
<b>Jyske Bank A/S (Group)</b>	DENMARK
<b>Laan &amp; Spar Bank A/S</b>	DENMARK
<b>Noerresundby Bank A/S</b>	DENMARK
<b>Nordea Kredit Realkreditaktieselskab</b>	DENMARK
<b>Nordjyske Bank A/S</b>	DENMARK
<b>Nykredit Realkredit A/S</b>	DENMARK
<b>Realkredit Danmark A/S</b>	DENMARK
<b>Ringkjoebing Landbobank</b>	DENMARK
<b>Selskabet af 1. september 2008 A/S</b>	DENMARK
<b>Spar Nord Bank</b>	DENMARK
<b>Sparbank A/S</b>	DENMARK
<b>Sparekassen Faaborg A/S</b>	DENMARK
<b>Sparekassen Himmerland</b>	DENMARK
<b>Sparekassen Kronjylland</b>	DENMARK
<b>Sparekassen Lolland</b>	DENMARK
<b>Sydbank A/S</b>	DENMARK
<b>Vestjysk Bank A/S</b>	DENMARK
<b>Aktia Plc</b>	FINLAND
<b>Alandsbanken Abp-Bank of Aland Plc</b>	FINLAND
<b>Merita Plc</b>	FINLAND
<b>Municipal Housing Finance</b>	FINLAND
<b>Nordea Bank Finland Plc</b>	FINLAND
<b>Pohjola Bank plc-Pohjola Pankki Oyj</b>	FINLAND
<b>Sampo Bank Plc</b>	FINLAND
<b>Sampo Plc</b>	FINLAND
<b>Axa Banque</b>	FRANCE
<b>Bank of Tokyo - Mitsubishi UFJ Ltd</b>	FRANCE
<b>Banque Accord</b>	FRANCE
<b>Banque BCP</b>	FRANCE
<b>Banque Calédonienne d'Investissement - BCI</b>	FRANCE
<b>Banque Centrale de Compensation</b>	FRANCE
<b>Banque Chaix</b>	FRANCE
<b>Banque de Bretagne</b>	FRANCE
<b>Banque de la Réunion</b>	FRANCE
<b>Banque de Savoie</b>	FRANCE
<b>Banque du Phénix</b>	FRANCE
<b>Banque FINAMA</b>	FRANCE
<b>Banque Kolb SA</b>	FRANCE
<b>Banque La Hénin</b>	FRANCE
<b>Banque Martin Maurel</b>	FRANCE



<b>Banque Populaire du Sud</b>	FRANCE
<b>Banque Populaire du Sud-Ouest</b>	FRANCE
<b>Banque Populaire Rives de Paris</b>	FRANCE
<b>Banque Socredo</b>	FRANCE
<b>Banque Tarneaud</b>	FRANCE
<b>Banque Worms</b>	FRANCE
<b>BNP Paribas</b>	FRANCE
<b>Boursorama</b>	FRANCE
<b>Caisse d'épargne et de prévoyance d'Alsace</b>	FRANCE
<b>Caisse d'épargne et de prévoyance d'Auvergne et du Limousin</b>	FRANCE
<b>Caisse d'épargne et de prévoyance de Flandre</b>	FRANCE
<b>Caisse d'épargne et de prévoyance de Lorraine Champagne-Ardenne</b>	FRANCE
<b>Caisse d'épargne et de prévoyance des Pays de l'Adour</b>	FRANCE
<b>Caisse d'épargne et de prévoyance du Languedoc Roussillon</b>	FRANCE
<b>Caisse d'épargne et de prévoyance du Limousin</b>	FRANCE
<b>Caisse d'épargne et de prévoyance Ile-de-France</b>	FRANCE
<b>Caisse d'épargne et de prévoyance Provence Alpes Corse SA</b>	FRANCE
<b>Caisse d'épargne et de prévoyance Rhône-Alpes Lyon</b>	FRANCE
<b>Caisse régionale de crédit agricole de l'Anjou et du Maine-Crédit Agricole de l'Anjou et du Maine</b>	FRANCE
<b>Caisse régionale de Crédit Agricole mutuel Alsace Vosges</b>	FRANCE
<b>Caisse Régionale de crédit agricole mutuel Atlantique Vendée-Crédit Agricole Atlantique Vendée</b>	FRANCE
<b>Caisse Régionale de Crédit Agricole Mutuel Brie Picardie-Crédit Agricole Brie Picardie</b>	FRANCE
<b>Caisse régionale de credit agricole mutuel d'Alpes-Provence-Credit Agricole Alpes Provence</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel d'Alsace</b>	FRANCE
<b>Caisse régionale de credit agricole mutuel de la Touraine et du Poitou-Credit Agricole de la Touraine et du Poitou</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel de l'Ille-et-Vilaine-Crédit Agricole de l'Ille-et-Vilaine</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel de Normandie-Seine</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel de Paris et d'Ile-de-France-Crédit Agricole d'Ile-de-France</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel du Calvados-Crédit Agricole du Calvados</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel du Finistère-Crédit Agricole du Finistère</b>	FRANCE
<b>Caisse régionale de Crédit Agricole mutuel du Morbihan-Crédit Agricole du Morbihan</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel Loire Haute-Loire-Crédit Agricole Loire Haute-Loire</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel Nord de France-Crédit Agricole Nord de France</b>	FRANCE
<b>Caisse régionale de credit agricole mutuel Pyrénées-Gascogne-Credit Agricole Pyrénées Gascogne</b>	FRANCE
<b>Caisse régionale de credit agricole mutuel Sud Rhône -Alpes-Credit Agricole Sud Rhône Alpes</b>	FRANCE
<b>Caisse régionale de credit agricole mutuel Sud-Alliance-Credit Agricole Sud Alliance</b>	FRANCE
<b>Caisse régionale de crédit agricole mutuel Sud-Méditerranée-Crédit Agricole Sud Méditerranée</b>	FRANCE
<b>Caisse Régionale de Crédit Agricole Mutuel Toulouse 31-Crédit Agricole Mutuel Toulouse 31 CCI</b>	FRANCE
<b>Crédit Agricole S.A.</b>	FRANCE
<b>Credit Immobilier de France Centre Est</b>	FRANCE
<b>CREDIT IMMOBILIER DE FRANCE RHONE ALPES AUVERGNE SA</b>	FRANCE
<b>Crédit immobilier général CIG</b>	FRANCE
<b>Crédit Industriel d'Alsace et de Lorraine - Banque CIAL</b>	FRANCE

<b>Crédit Industriel et Commercial - CIC</b>	FRANCE
<b>Crédit Mutuel Dauphiné - Vivarais</b>	FRANCE
<b>Crédit Mutuel du Centre (AGGR)</b>	FRANCE
<b>Crédit Mutuel Nord Europe</b>	FRANCE
<b>Dexia Crédit Local SA</b>	FRANCE
<b>Dexia France</b>	FRANCE
<b>Fédération du crédit mutuel Antilles-Guyane</b>	FRANCE
<b>GE Corporate Finance Bank SAS</b>	FRANCE
<b>Groupama Banque</b>	FRANCE
<b>Groupe Banques Populaires</b>	FRANCE
<b>HSBC Hervet</b>	FRANCE
<b>HSBC Republic Bank (France) S.A.</b>	FRANCE
<b>Monte Paschi Banque S.A.</b>	FRANCE
<b>Natixis</b>	FRANCE
<b>OSEO SA</b>	FRANCE
<b>Société Générale</b>	FRANCE
<b>Union de Crédit pour le Bâtiment UCB</b>	FRANCE
<b>Aareal Bank AG</b>	GERMANY
<b>Allgemeine Hypothekenbank AG - AHB</b>	GERMANY
<b>Allgemeine Privatkundenbank GmbH</b>	GERMANY
<b>Allianz Bauspar AG</b>	GERMANY
<b>B. Metzler seel Sohn &amp; Co Holding AG</b>	GERMANY
<b>B. Metzler seel. Sohn &amp; Co. KGaA-Metzler Bank</b>	GERMANY
<b>Baden-Wuerttembergische Bank AG</b>	GERMANY
<b>Bank Schilling &amp; Co Aktiengesellschaft</b>	GERMANY
<b>Bankhaus Neelmeyer AG</b>	GERMANY
<b>Bausparkasse Heimstatt</b>	GERMANY
<b>Berlin-Hannoversche Hypothekenbank AG-Berlin Hyp</b>	GERMANY
<b>Bethmann Bank</b>	GERMANY
<b>BHF-Bank AG</b>	GERMANY
<b>Commerzbank AG</b>	GERMANY
<b>COREALCREDIT BANK AG</b>	GERMANY
<b>DAB Bank AG</b>	GERMANY
<b>Deutsche Bank AG</b>	GERMANY
<b>Deutsche Bank Bauspar AG</b>	GERMANY
<b>Deutsche Bank Saar AG</b>	GERMANY
<b>Deutsche Hypothekenbank Frankfurt AG</b>	GERMANY
<b>Deutsche Postbank AG</b>	GERMANY
<b>Dexia Kommunalbank Deutschland AG</b>	GERMANY
<b>Diskont und Kredit AG</b>	GERMANY
<b>DZ Bank AG-Deutsche Zentral-Genossenschaftsbank</b>	GERMANY
<b>Entrium Direkt Bankers AG</b>	GERMANY
<b>Europaisch-Iranische Handelsbank AG</b>	GERMANY
<b>Flensburger Sparkasse</b>	GERMANY
<b>Frankfurter Sparkasse</b>	GERMANY
<b>Gontard &amp; Metallbank AG</b>	GERMANY

<b>Grafschafter Volksbank eG</b>	GERMANY
<b>GZB-Bank Genossenschaftliche Zentralbank AG Stuttgart</b>	GERMANY
<b>Hallertauer Volksbank eG</b>	GERMANY
<b>Hamburger Sparkasse AG (HASPA)</b>	GERMANY
<b>Hamburgische Wohnungsbaukreditanstalt</b>	GERMANY
<b>HASPA Finanzholding</b>	GERMANY
<b>Heidenheimer Volksbank eG</b>	GERMANY
<b>Hypothekenbank in Hamburg</b>	GERMANY
<b>KBC Bank Deutschland AG</b>	GERMANY
<b>Kreissparkasse Bautzen</b>	GERMANY
<b>Kreissparkasse Halle (Westf.)</b>	GERMANY
<b>Kreissparkasse Heidenheim</b>	GERMANY
<b>Kreissparkasse Kaiserslautern</b>	GERMANY
<b>Kreissparkasse Kassel</b>	GERMANY
<b>Kreissparkasse Kelheim</b>	GERMANY
<b>Kreissparkasse Köln</b>	GERMANY
<b>Kreissparkasse Muenchen Starnberg Ebersberg</b>	GERMANY
<b>Kreissparkasse Nürnberg</b>	GERMANY
<b>Kreissparkasse Stendal</b>	GERMANY
<b>Kreissparkasse Tuttlingen</b>	GERMANY
<b>Kreissparkasse Waiblingen</b>	GERMANY
<b>Kreissparkasse Wesermuende-Hadeln</b>	GERMANY
<b>Landesbank Berlin Holding AG-LBB Holding AG</b>	GERMANY
<b>Landessparkasse zu Oldenburg</b>	GERMANY
<b>LBS Landesbausparkasse Rheinland-Pfalz</b>	GERMANY
<b>Leonberger Bausparkasse AG</b>	GERMANY
<b>LIGA Bank eG</b>	GERMANY
<b>Maerkische Bank eG</b>	GERMANY
<b>MLP Ag</b>	GERMANY
<b>Münchener Hypothekenbank eG</b>	GERMANY
<b>National-Bank AG</b>	GERMANY
<b>PSD Bank Hessen-Thueringen eG</b>	GERMANY
<b>PSD Bank Nord eG</b>	GERMANY
<b>Raiffeisenbank Frechen - Hürth eG</b>	GERMANY
<b>Rhoen-Rennsteig-Sparkasse</b>	GERMANY
<b>Sachsen-Finanzgruppe</b>	GERMANY
<b>Salzlandsparkasse</b>	GERMANY
<b>Santander Direkt Bank AG</b>	GERMANY
<b>SGZ Bank Südwestdeutsche Genossenschafts - Zentralbank AG</b>	GERMANY
<b>SKG Bank AG</b>	GERMANY
<b>Sparda-Bank Muenster eG</b>	GERMANY
<b>Sparkasse Allgaeu</b>	GERMANY
<b>Sparkasse Attendorn - Lennestadt - Kirchhund</b>	GERMANY
<b>Sparkasse Bottrop</b>	GERMANY
<b>Sparkasse Bremerhaven</b>	GERMANY
<b>Sparkasse Dieburg</b>	GERMANY

<b>Sparkasse Elbe - Elster</b>	GERMANY
<b>Sparkasse Forchheim</b>	GERMANY
<b>Sparkasse Freiburg-Nordlicher Breisgau</b>	GERMANY
<b>Sparkasse Freising</b>	GERMANY
<b>Sparkasse Goslar/Harz</b>	GERMANY
<b>Sparkasse Guetersloh</b>	GERMANY
<b>Sparkasse Hamm</b>	GERMANY
<b>Sparkasse Hannover</b>	GERMANY
<b>Sparkasse Hildesheim</b>	GERMANY
<b>Sparkasse Ingolstadt</b>	GERMANY
<b>Sparkasse Karlsruhe Ettlingen</b>	GERMANY
<b>Sparkasse Kiel</b>	GERMANY
<b>Sparkasse Koblenz</b>	GERMANY
<b>Sparkasse Leipzig</b>	GERMANY
<b>Sparkasse Lemgo</b>	GERMANY
<b>Sparkasse Luenen Zweckverbandssparkasse der Staedte Luenen und Selm</b>	GERMANY
<b>Sparkasse Mainfranken Würzburg</b>	GERMANY
<b>Sparkasse Main-Spessart</b>	GERMANY
<b>Sparkasse Markgräflerland</b>	GERMANY
<b>Sparkasse Minden-Lübbecke</b>	GERMANY
<b>Sparkasse Mittelthüringen</b>	GERMANY
<b>Sparkasse Neuss</b>	GERMANY
<b>Sparkasse Neuwied</b>	GERMANY
<b>Sparkasse Niederlausitz</b>	GERMANY
<b>Sparkasse Nordfriesland Husum</b>	GERMANY
<b>Sparkasse Nürnberg</b>	GERMANY
<b>Sparkasse Pirna Sebnitz</b>	GERMANY
<b>Sparkasse Rottal-Inn</b>	GERMANY
<b>Sparkasse Schaumburg</b>	GERMANY
<b>Sparkasse Schaumburg-Lippe</b>	GERMANY
<b>Sparkasse Singen-Radolfzell</b>	GERMANY
<b>Sparkasse Weimar</b>	GERMANY
<b>Sparkasse Weserbergland</b>	GERMANY
<b>Sparkasse Wetzlar</b>	GERMANY
<b>Sparkasse Vogelsbergkreis</b>	GERMANY
<b>Sparkasse Zollernalb</b>	GERMANY
<b>Sparkassen-Finanzgruppe Hessen-Thuringen</b>	GERMANY
<b>Stadt- und Kreis-Sparkasse Darmstadt</b>	GERMANY
<b>Südwestbank AG</b>	GERMANY
<b>TARGO Deutschland GmbH</b>	GERMANY
<b>UmweltBank AG</b>	GERMANY
<b>VALOVIS BANK AG</b>	GERMANY
<b>Vereinigte Volksbank eG</b>	GERMANY
<b>WGZ-Bank AG Westdeutsche Genossenschafts-Zentralbank</b>	GERMANY
<b>Wohnungsbauförderungsanstalt des Landes Nordrhein-Westfalen - Wfa</b>	GERMANY
<b>Volksbank Bigge-Lenne eG</b>	GERMANY

<b>Volksbank Bonn Rhein Sieg eG</b>	GERMANY
<b>Volksbank Breisgau Nord eG</b>	GERMANY
<b>Volksbank eg Darmstadt Kreis Bergstrasse</b>	GERMANY
<b>Volksbank eG Ueberlingen Immenstaad</b>	GERMANY
<b>Volksbank eG Villingen</b>	GERMANY
<b>Volksbank Freiburg eG</b>	GERMANY
<b>Volksbank Guetersloh eG</b>	GERMANY
<b>Volksbank Hameln Stadthagen eG</b>	GERMANY
<b>Volksbank Kirchheim-Nuertingen</b>	GERMANY
<b>Volksbank Kraichgau eG</b>	GERMANY
<b>Volksbank Kurpfalz H + G BANK eG</b>	GERMANY
<b>Volksbank Lueneburger-Heide eG</b>	GERMANY
<b>Volksbank Main-Tauber eG</b>	GERMANY
<b>Volksbank Neckartal eG</b>	GERMANY
<b>Volksbank Oberberg eG</b>	GERMANY
<b>Volksbank Pforzheim eG</b>	GERMANY
<b>Volksbank Raiffeisenbank Dachau eG</b>	GERMANY
<b>Volksbank Siegerland eG</b>	GERMANY
<b>Volksbank Ulm-Biberach eG</b>	GERMANY
<b>Volksbank Worms-Wonnegau eG</b>	GERMANY
<b>VR Bank Kaufbeuren-Ostallgaeu eG</b>	GERMANY
<b>VR Bank Main-Kinzig-Buedingen eG</b>	GERMANY
<b>VR Bank Schwaebisch Hall-Crailsheim eG</b>	GERMANY
<b>VR Bank Suedpfalz eG</b>	GERMANY
<b>VR Meine Raiffeisen eG Altoetting Muehldorf</b>	GERMANY
<b>Wuestenrot &amp; Wuerttembergische</b>	GERMANY
<b>Wuestenrot Bausparkasse AG</b>	GERMANY
<b>Agricultural Bank of Greece</b>	GREECE
<b>Alpha Bank AE</b>	GREECE
<b>Attica Bank SA-Bank of Attica SA</b>	GREECE
<b>EFG Eurobank Ergasias SA</b>	GREECE
<b>General Bank of Greece SA</b>	GREECE
<b>Ionian and Popular Bank of Greece</b>	GREECE
<b>Macedonia Thrace Bank SA</b>	GREECE
<b>Marfin Bank</b>	GREECE
<b>Marfin Investment Group</b>	GREECE
<b>Millennium Bank SA</b>	GREECE
<b>National Bank of Greece SA</b>	GREECE
<b>National Mortgage Bank of Greece SA</b>	GREECE
<b>Omega Bank SA</b>	GREECE
<b>Piraeus Bank SA</b>	GREECE
<b>Proton Bank S.A.</b>	GREECE
<b>T Bank S.A</b>	GREECE
<b>TELESIS Investment Bank S.A.</b>	GREECE
<b>TT Hellenic Postbank S.A</b>	GREECE
<b>FHB Mortgage Bank Plc-FHB Jelzalogbank Nyrt.</b>	HUNGARY

<b>OTP Bank Plc</b>	HUNGARY
<b>Postbank and Savings Bank Corp. - Postbank und Sparkasse-Postabank es Takarekpenztar RT</b>	HUNGARY
<b>Raiffeisen Bank Zrt</b>	HUNGARY
<b>Volksbank Hungary-Magyarorszagi Volksbank Rt</b>	HUNGARY
<b>Allied Irish Banks plc</b>	IRELAND
<b>Bank of Ireland</b>	IRELAND
<b>Bank of Scotland (Ireland) Limited</b>	IRELAND
<b>National Irish Bank limited</b>	IRELAND
<b>Allianz Bank Financial Advisors S.p.A.</b>	ITALY
<b>Associazione delle Banche di Credito Cooperativo Puglia e Basilicata</b>	ITALY
<b>Azimut Holding SpA</b>	ITALY
<b>B.C.C. del Garda di Credito Cooperativo Colli Morenici del Garda</b>	ITALY
<b>Banca 121 SpA</b>	ITALY
<b>Banca Agricola Mantovana SpA</b>	ITALY
<b>Banca Bipielle Adriatico SpA</b>	ITALY
<b>Banca Carige SpA</b>	ITALY
<b>Banca Caripe SpA</b>	ITALY
<b>Banca Cassa di risparmio di Savigliano SpA - Banca CRS</b>	ITALY
<b>Banca del Fucino SpA</b>	ITALY
<b>Banca di Bergamo SpA</b>	ITALY
<b>Banca di Bologna - Credito Cooperativo</b>	ITALY
<b>Banca di Cividale SpA</b>	ITALY
<b>Banca di Legnano SpA</b>	ITALY
<b>Banca di Legnano SpA (Old)</b>	ITALY
<b>Banca di Monastier e del Sile - Credito Cooperativo</b>	ITALY
<b>Banca Generali SpA-Generbanca</b>	ITALY
<b>Banca Ifis SpA</b>	ITALY
<b>Banca Malatestiana - Credito Cooperativo</b>	ITALY
<b>Banca Mercantile Italiana</b>	ITALY
<b>Banca Monte dei Paschi di Siena SpA-Gruppo Monte dei Paschi di Siena</b>	ITALY
<b>Banca Nazionale dell'Agricoltura SpA</b>	ITALY
<b>Banca popolare dell'Emilia Romagna</b>	ITALY
<b>Banca popolare dell'Etruria e del Lazio Soc. coop.</b>	ITALY
<b>Banca Popolare di Abbiategrosso SCaRL</b>	ITALY
<b>Banca Popolare di Ancona SpA</b>	ITALY
<b>Banca Popolare di Bergamo - Credito Varesino SpA</b>	ITALY
<b>Banca Popolare di Bergamo SpA</b>	ITALY
<b>Banca Popolare di Brescia SCaRL</b>	ITALY
<b>Banca Popolare di Intra SpA</b>	ITALY
<b>Banca Popolare di Milano SCaRL</b>	ITALY
<b>Banca Popolare di Sondrio Societa Cooperativa per Azioni</b>	ITALY
<b>Banca Popolare di Spoleto SpA</b>	ITALY
<b>Banca Popolare di Verona-S Geminiano E S Prospero SpA</b>	ITALY
<b>Banca Profilo SpA</b>	ITALY
<b>Banca San Paolo di Brescia SpA</b>	ITALY
<b>Banca Woolwich SpA</b>	ITALY

<b>Banco Desio - Banco di Desio e della Brianza SpA</b>	ITALY
<b>Banco di Napoli SpA</b>	ITALY
<b>Banco di Sardegna SpA</b>	ITALY
<b>Banco Popolare</b>	ITALY
<b>Bipop- Carire SpA</b>	ITALY
<b>Cassa di Risparmi di Livorno SpA</b>	ITALY
<b>Cassa di Risparmio del Veneto SpA</b>	ITALY
<b>Cassa di risparmio della provincia di Chieti SpA - CARICHIETI</b>	ITALY
<b>Cassa di risparmio della provincia di Teramo SpA-Banca TERCAS</b>	ITALY
<b>Cassa di risparmio di Asti SpA</b>	ITALY
<b>Cassa di Risparmio di Bolzano SpA-Suedtiroler Sparkasse</b>	ITALY
<b>Cassa di risparmio di Fano SpA - CARIFANO</b>	ITALY
<b>Cassa di Risparmio di Ravenna SpA</b>	ITALY
<b>Cassa di risparmio di Verona Vicenza Belluno e Ancona Banca SpA-Cariverona Banca SpA</b>	ITALY
<b>Cassamarca, Cassa di Risparmio della Marca Trivigiana SPA</b>	ITALY
<b>Credito Artigiano</b>	ITALY
<b>Credito Bergamasco</b>	ITALY
<b>Credito Emiliano SpA-CREDEM</b>	ITALY
<b>Credito Valtellinese Soc Coop</b>	ITALY
<b>Exor Spa</b>	ITALY
<b>Intesa Sanpaolo</b>	ITALY
<b>IW Bank SpA</b>	ITALY
<b>MPS Bancaverde SpA</b>	ITALY
<b>UniCredit Banca di Roma S.p.A. (old)</b>	ITALY
<b>UniCredit SpA</b>	ITALY
<b>Unione di Banche Italiane Scpa-UBI Banca</b>	ITALY
<b>Unipol Banca Spa</b>	ITALY
<b>Veneto Banca scpa</b>	ITALY
<b>AS Citadele Banka</b>	LATVIA
<b>AB SEB Bankas</b>	LITHUANIA
<b>AB Ukio Bankas</b>	LITHUANIA
<b>Danske Bank A/S</b>	LITHUANIA
<b>Swedbank AB</b>	LITHUANIA
<b>Banco di Sicilia International SA</b>	LUXEMBOURG
<b>Banque et Caisse d'Epargne de l'Etat Luxembourg</b>	LUXEMBOURG
<b>Banque Nationale de Paris (Luxembourg) SA BNP</b>	LUXEMBOURG
<b>Deutsche Postbank International SA</b>	LUXEMBOURG
<b>Espirito Santo Financial Group S.A.</b>	LUXEMBOURG
<b>Espirito Santo International Holding</b>	LUXEMBOURG
<b>Glitnir Bank Luxembourg S.A</b>	LUXEMBOURG
<b>JP Morgan Bank Luxembourg SA</b>	LUXEMBOURG
<b>Kaupthing Bank Luxembourg SA</b>	LUXEMBOURG
<b>KBC Luxembourg</b>	LUXEMBOURG
<b>Merrill Lynch SA</b>	LUXEMBOURG
<b>Pictet &amp; Cie (Europe) SA</b>	LUXEMBOURG
<b>Société Européenne de Banque SA</b>	LUXEMBOURG

<b>HSBC Bank Malta Plc</b>	MALTA
<b>Achmea Holding NV</b>	NETHERLANDS
<b>Ageas NV</b>	NETHERLANDS
<b>Amsterdam Trade Bank NV</b>	NETHERLANDS
<b>Bank Mendes Gans NV</b>	NETHERLANDS
<b>BinckBank NV</b>	NETHERLANDS
<b>Delta Lloyd Bankengroep NV</b>	NETHERLANDS
<b>Delta Lloyd NV-Delta Lloyd Group</b>	NETHERLANDS
<b>Demir-Halk Bank (Nederland) N.V-DHB Bank</b>	NETHERLANDS
<b>Dexia Bank Nederland NV</b>	NETHERLANDS
<b>ING Groep NV</b>	NETHERLANDS
<b>MeesPierson NV</b>	NETHERLANDS
<b>NIBC Holding NV</b>	NETHERLANDS
<b>RBS Holdings NV</b>	NETHERLANDS
<b>Robeco NV</b>	NETHERLANDS
<b>Royal Bank of Scotland NV (The)-RBS NV</b>	NETHERLANDS
<b>SNS Bank N.V.</b>	NETHERLANDS
<b>SNS Reaal NV</b>	NETHERLANDS
<b>Van Lanschot NV</b>	NETHERLANDS
<b>Den Norske Bank ASA</b>	NORWAY
<b>DnB ASA</b>	NORWAY
<b>DnB NOR Hypotek AS</b>	NORWAY
<b>Fokus Bank ASA</b>	NORWAY
<b>Helgeland Sparebank</b>	NORWAY
<b>Sandnes Sparebank</b>	NORWAY
<b>Sparebank 1 Nord-Norge</b>	NORWAY
<b>Sparebank 1 Nordvest</b>	NORWAY
<b>Sparebank 1 Ostfold Akershus</b>	NORWAY
<b>SpareBank 1 Ringerike Hadeland</b>	NORWAY
<b>SpareBank 1 SMN</b>	NORWAY
<b>SpareBank 1 SR-Bank</b>	NORWAY
<b>SpareBank1 Buskerud-Vestfold</b>	NORWAY
<b>Sparebanken More</b>	NORWAY
<b>Sparebanken Ost</b>	NORWAY
<b>Sparebanken Pluss</b>	NORWAY
<b>Sparebanken Vest</b>	NORWAY
<b>Totens Sparebank</b>	NORWAY
<b>Bank BPH SA</b>	POLAND
<b>Bank Depozytowo-Kredytowy S.A. Grupa Pekao S.A. - BDK</b>	POLAND
<b>Bank Gdanski SA</b>	POLAND
<b>Bank Gospodarki Zywnosciowej SA-Bank BGZ</b>	POLAND
<b>Bank Handlowy w Warszawie S.A.</b>	POLAND
<b>Bank Millennium</b>	POLAND
<b>Bank Ochrony Srodowiska SA - BOS SA-Bank Ochrony Srodowiska Capital Group</b>	POLAND
<b>Bank Polska Kasa Opieki SA-Bank Pekao SA</b>	POLAND
<b>Bank Zachodni WBK S.A.</b>	POLAND



<b>BNP Paribas Bank Polska SA</b>	POLAND
<b>BRE Bank SA</b>	POLAND
<b>Citibank (Poland) SA</b>	POLAND
<b>Getin Holding SA</b>	POLAND
<b>Getin Noble Bank SA</b>	POLAND
<b>ING Bank Slaski S.A. - Capital Group</b>	POLAND
<b>Kredyt Bank SA</b>	POLAND
<b>Nordea Bank Polska SA</b>	POLAND
<b>Powszechna Kasa Oszczednosci Bank Polski SA - PKO BP SA</b>	POLAND
<b>Rabobank Polska SA</b>	POLAND
<b>Raiffeisen Bank Polska SA</b>	POLAND
<b>Wielkopolski Bank Kredytowy SA</b>	POLAND
<b>Banco Borges &amp; Irmao, SA</b>	PORTUGAL
<b>Banco BPI SA</b>	PORTUGAL
<b>Banco Comercial Português, SA-Millennium bcp</b>	PORTUGAL
<b>Banco Espirito Santo SA</b>	PORTUGAL
<b>Banco Santander Totta SA</b>	PORTUGAL
<b>BANIF SGPS SA</b>	PORTUGAL
<b>Credito Agricola Financial Group-Caixa Central de Credito Agricola Mutuo - CCCAM</b>	PORTUGAL
<b>BRD-Groupe Societe Generale SA</b>	ROMANIA
<b>Citibank Europe plc, Dublin - Romania Branch</b>	ROMANIA
<b>RBS Bank (Romania) SA</b>	ROMANIA
<b>Transilvania Bank-Banca Transilvania SA</b>	ROMANIA
<b>UniCredit Tiriac Bank SA</b>	ROMANIA
<b>OTP Banka Slovensko, as</b>	SLOVAKIA
<b>Post Bank JSC-Postova Banka, A.S.</b>	SLOVAKIA
<b>Prima banka Slovensko a.s.</b>	SLOVAKIA
<b>Tatra Banka a.s.</b>	SLOVAKIA
<b>VOLKSBANK Slovensko, as</b>	SLOVAKIA
<b>Vseobecna Uverova Banka a.s.</b>	SLOVAKIA
<b>Abanka Vipa dd</b>	SLOVENIA
<b>Factor Banka d.d.</b>	SLOVENIA
<b>Hypo Alpe-Adria-Bank dd</b>	SLOVENIA
<b>Nova Kreditna Banka Maribor d.d.</b>	SLOVENIA
<b>Probanka d.d. Maribor</b>	SLOVENIA
<b>SKB Banka DD</b>	SLOVENIA
<b>Banca Catalana SA</b>	SPAIN
<b>Banca Cívica SA</b>	SPAIN
<b>Banco Bilbao Vizcaya Argentaria SA</b>	SPAIN
<b>Banco Caixa Geral SA</b>	SPAIN
<b>Banco de Sabadell SA</b>	SPAIN
<b>Banco de Valencia SA</b>	SPAIN
<b>Banco de Vasconia SA</b>	SPAIN
<b>Banco Depositario BBVA</b>	SPAIN
<b>Banco Espanol de Crédito SA, BANESTO</b>	SPAIN
<b>Banco Gallego, SA</b>	SPAIN

<b>Banco Guipuzcoano SA</b>	SPAIN
<b>Banco Mare Nostrum SA-BMN</b>	SPAIN
<b>Banco Pastor SA</b>	SPAIN
<b>Banco Popular Espanol SA</b>	SPAIN
<b>Banco Santander SA</b>	SPAIN
<b>Bankia, SA</b>	SPAIN
<b>Bankinter SA</b>	SPAIN
<b>Bankoa SA</b>	SPAIN
<b>BBVA Privanza Banco SA</b>	SPAIN
<b>Caixa d'Estalvis de Catalunya, Tarragona i Manresa-Catalunya Caixa</b>	SPAIN
<b>Caja de Ahorros de Castilla La Mancha</b>	SPAIN
<b>Caja de Ahorros de Cataluña-Caixa d'Estalvis de Catalunya</b>	SPAIN
<b>Caja de Ahorros del Mediterraneo CAM</b>	SPAIN
<b>Caja de Ahorros y Monte de Piedad de Gipuzkoa y San Sebastian-Kutxa</b>	SPAIN
<b>Caja de Ahorros y Monte de Piedad de Segovia-Caja Segovia</b>	SPAIN
<b>Caja General de Ahorros de Granada - La General</b>	SPAIN
<b>Caja Rural Aragonesa y de los Prrineos S Coop de Credito</b>	SPAIN
<b>Caja Rural Central Sociedad Cooperativa de Crédito</b>	SPAIN
<b>Caja Rural de Burgos, Sociedad Cooperativa de Credito</b>	SPAIN
<b>Caja Rural de Canarias Sociedad Cooperativa de Crédito</b>	SPAIN
<b>Caja Rural De Castilla-La Mancha</b>	SPAIN
<b>Caja Rural de Cordoba S.C.C.</b>	SPAIN
<b>Citibank España</b>	SPAIN
<b>Dexia Banco Local</b>	SPAIN
<b>Avanza Bank Holding AB</b>	SWEDEN
<b>GE Money Bank AB</b>	SWEDEN
<b>Kommuninvest Cooperative Society - Kommuninvest Group</b>	SWEDEN
<b>Landshypotek AB</b>	SWEDEN
<b>Länsförsäkringar Bank AB (Publ)</b>	SWEDEN
<b>Länsförsäkringar Hypotek AB</b>	SWEDEN
<b>Nordea Bank AB (publ)</b>	SWEDEN
<b>SkandiaBanken</b>	SWEDEN
<b>Skandinaviska Enskilda Banken AB</b>	SWEDEN
<b>Sparbanken Nord</b>	SWEDEN
<b>Swedbank AB</b>	SWEDEN
<b>Swedish Housing Finance Corp-SBAB</b>	SWEDEN
<b>Svenska Handelsbanken</b>	SWEDEN
<b>Sörmland Sparbank</b>	SWEDEN
<b>Banca del Gottardo</b>	SWITZERLAND
<b>Bank CA St. Gallen AG</b>	SWITZERLAND
<b>Bank Coop AG</b>	SWITZERLAND
<b>Bank Linth LLB AG</b>	SWITZERLAND
<b>Banque Procrédit-Bank Prokredit</b>	SWITZERLAND
<b>Clientis AG</b>	SWITZERLAND
<b>Clientis Zuercher Regionalbank Genossenschaft</b>	SWITZERLAND
<b>Corner Banca S.A.</b>	SWITZERLAND

<b>Credit Agricole Financement (Suisse) SA</b>	SWITZERLAND
<b>Crédit Lyonnais (Suisse) SA</b>	SWITZERLAND
<b>EFG International</b>	SWITZERLAND
<b>Frankfurter Bankgesellschaft (Switzerland) Ltd</b>	SWITZERLAND
<b>GAM Holding AG</b>	SWITZERLAND
<b>Gazprombank (Switzerland) Ltd</b>	SWITZERLAND
<b>Habib Bank AG Zurich</b>	SWITZERLAND
<b>Helaba (Schweiz) Landesbank Hessen-Thueringen AG</b>	SWITZERLAND
<b>Hypothekarbank Lenzburg AG</b>	SWITZERLAND
<b>Pargesa Holding SA</b>	SWITZERLAND
<b>SIX Securities Group Ltd</b>	SWITZERLAND
<b>Swiss Bank Corporation - Société de Banque Suisse, SBS-Schweizerischer Bankverein - Società di Banca Svizzera, SBS</b>	SWITZERLAND
<b>Swiss Life Holding</b>	SWITZERLAND
<b>Swissquote Group Holding Ltd.</b>	SWITZERLAND
<b>UBS AG</b>	SWITZERLAND
<b>Union Bank of Switzerland UBS - Union de Banques Suisses-Schweizerische Bankgesellschaft SBG - Unione di Banche Svizzere</b>	SWITZERLAND
<b>Valartis Group AG</b>	SWITZERLAND
<b>Valiant Holding</b>	SWITZERLAND
<b>Vontobel Holding AG-Vontobel Group</b>	SWITZERLAND
<b>Abbey National Treasury Services Plc</b>	UNITED KINGDOM
<b>ABC International Bank Plc</b>	UNITED KINGDOM
<b>Alliance &amp; Leicester Commercial Bank Plc</b>	UNITED KINGDOM
<b>Alliance &amp; Leicester Plc</b>	UNITED KINGDOM
<b>Ansbacher Overseas Group Limited</b>	UNITED KINGDOM
<b>Bank of Ireland (UK) Plc</b>	UNITED KINGDOM
<b>Bank of Scotland Offshore Limited</b>	UNITED KINGDOM
<b>Barclays Bank Plc</b>	UNITED KINGDOM
<b>Barclays Plc</b>	UNITED KINGDOM
<b>BBVA Privanza (Jersey) Limited</b>	UNITED KINGDOM
<b>British Arab Commercial Bank Plc</b>	UNITED KINGDOM
<b>Cater Allen Ltd</b>	UNITED KINGDOM
<b>CDC Group Plc</b>	UNITED KINGDOM
<b>Cheltenham &amp; Gloucester Building Society</b>	UNITED KINGDOM
<b>Cheshire Building Society</b>	UNITED KINGDOM
<b>Co-operative Bank Plc (The)</b>	UNITED KINGDOM
<b>Coventry Building Society</b>	UNITED KINGDOM
<b>Credit Suisse (UK) Limited</b>	UNITED KINGDOM
<b>Credit Suisse International</b>	UNITED KINGDOM
<b>Derbyshire Building Society</b>	UNITED KINGDOM
<b>Egg Banking Plc</b>	UNITED KINGDOM

	KINGDOM
<b>Europe Arab Bank Plc</b>	UNITED KINGDOM
<b>Fairbairn Private Bank Ltd</b>	UNITED KINGDOM
<b>HBOS Plc</b>	UNITED KINGDOM
<b>Heritable Bank Plc</b>	UNITED KINGDOM
<b>HSBC Bank Middle East</b>	UNITED KINGDOM
<b>HSBC Holdings Plc</b>	UNITED KINGDOM
<b>Investec Holding Company Limited</b>	UNITED KINGDOM
<b>JP Morgan plc</b>	UNITED KINGDOM
<b>Kaupthing Singer &amp; Friedlander Ltd</b>	UNITED KINGDOM
<b>Kleinwort Benson Channel Islands Holdings Limited</b>	UNITED KINGDOM
<b>Lambeth Building Society</b>	UNITED KINGDOM
<b>Leeds Building Society</b>	UNITED KINGDOM
<b>Lehman Brothers Holdings Plc</b>	UNITED KINGDOM
<b>Lloyds Banking Group Plc</b>	UNITED KINGDOM
<b>Manchester Building Society</b>	UNITED KINGDOM
<b>National Bank of Egypt (UK) Limited</b>	UNITED KINGDOM
<b>Nationwide Building Society</b>	UNITED KINGDOM
<b>Nomura Bank International Plc</b>	UNITED KINGDOM
<b>Nomura International Plc</b>	UNITED KINGDOM
<b>North British Housing Ltd</b>	UNITED KINGDOM
<b>Northern Rock plc</b>	UNITED KINGDOM
<b>Paragon Group of Companies Plc</b>	UNITED KINGDOM
<b>Royal Bank of Scotland Group Plc (The)</b>	UNITED KINGDOM
<b>Royal Bank of Scotland Plc (The)</b>	UNITED KINGDOM
<b>Santander UK Plc</b>	UNITED KINGDOM
<b>Schroders Plc</b>	UNITED KINGDOM
<b>Standard Chartered Plc</b>	UNITED KINGDOM
<b>Stroud &amp; Swindon Building Society</b>	UNITED KINGDOM
<b>Tesco Personal Finance Group Limited</b>	UNITED KINGDOM
<b>UBS Limited</b>	UNITED KINGDOM
<b>West Merchant Bank Holdings Limited</b>	UNITED KINGDOM
<b>Woolwich Building Society</b>	UNITED KINGDOM
<b>Yorkshire Bank Plc</b>	UNITED KINGDOM

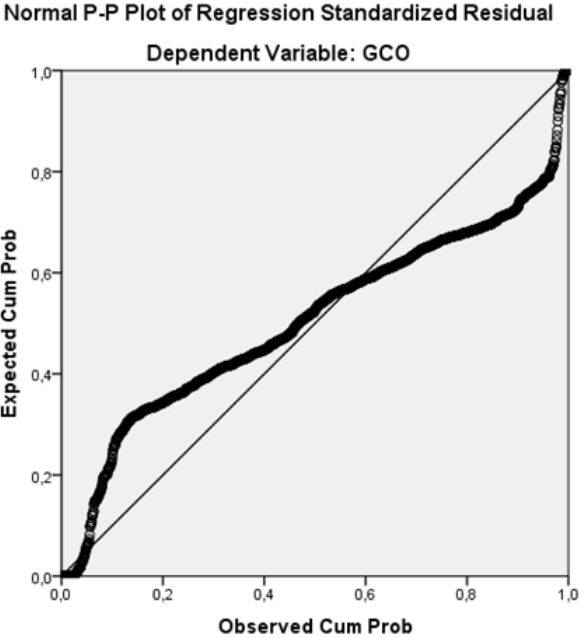
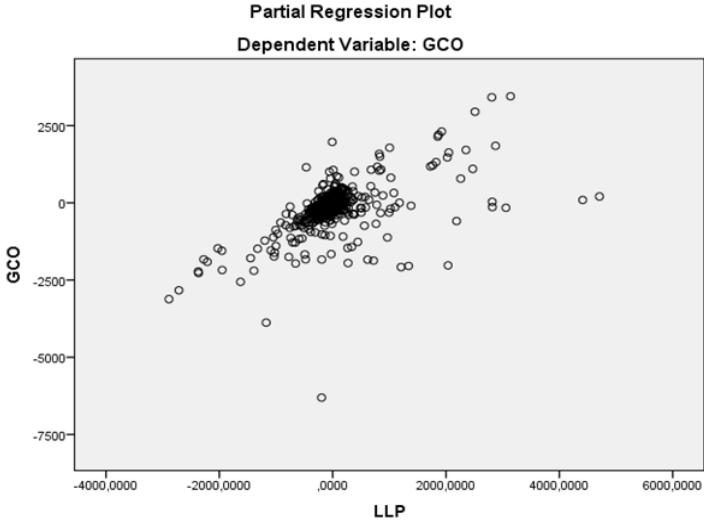
**C. Statistics for all variables in the run, including the control variables:**

<b>Table III (Appendix) Model A</b>					
Simple linear regression. Dependent variable: GCO					
<b>Independent Variable</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>		
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>T</b>	<b>Sig</b>
Constant	-586,990	107,189		-5.476	0,000
LLP	0,673	0,035	0,715	19,246	0,000
STATE	198,032	66,032	0,046	2.999	0,003
COOP	971,998	203,442	0,356	4,778	0,000
SAVINGS	118,039	48,054	0,040	2,456	0,014
LLP*STATE	-0,009	0,034	-0,007	-0,259	0,796
LLP*COOP	-254,894	54,051	-0,346	-4,716	0,000
LLP*SAVINGS	-0,533	0,197	-0,041	-2,702	0,007
INDEX	-199,866	38,168	-0,080	-5,237	0,000
Log Assets	167,940	25,125	0,131	6,684	0,000
OP	0,080	0,016	0,121	4,955	0,000
OI	0,013	0,007	0,061	1,798	0,072
Stockindex_Change	-28,634	66,397	-0,006	-0,431	0,666
Loans_TA	-100,221	38,120	-0,038	-2,629	0,009
2006	73,862	52,361	0,022	1,411	0,159
2007	71,584	52,259	0,022	1,370	0,171
2008	196,820	53,984	0,060	3,646	0,000
2009	36,685	53,113	0,011	0,691	0,490
2010	164,293	52,430	0,050	3,134	0,002

**D. Sensitivity test - Winsorising**

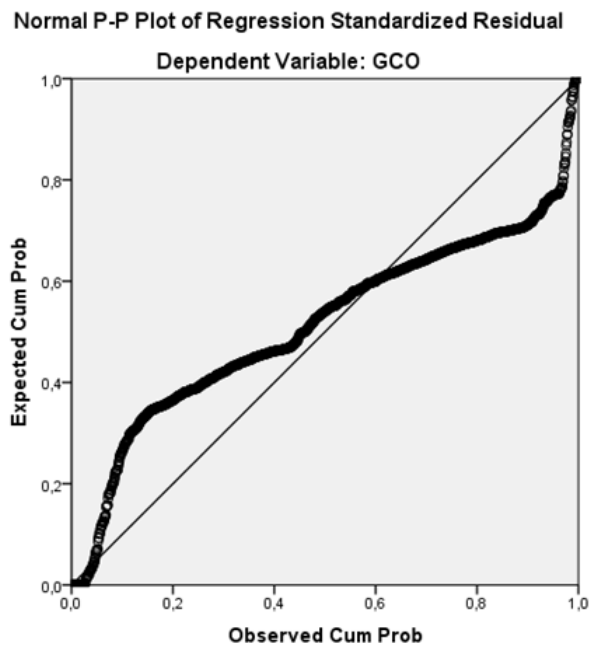
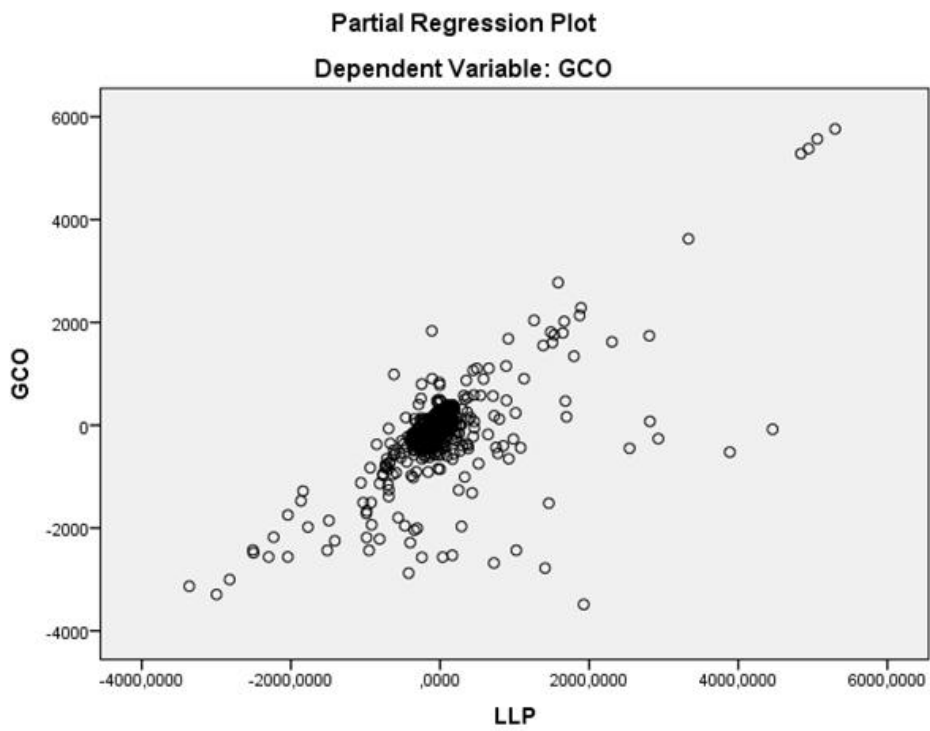
Results when winsorising 1 % of the higher and lower ends of the observations. The below diagrams show results for one example of each model.

**Model A - state ownership general threshold**



Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-248,257	61,925		-4,009	,000
Index	-228,949	21,780	-,110	-10,512	,000
LLP	,717	,024	,638	29,565	,000
Log assets	77,129	14,557	,072	5,299	,000
Coop	584,336	116,483	,258	5,016	,000
Gov	-101,001	38,734	-,028	-2,608	,009
Savings	49,775	27,494	,020	1,810	,070
OP	,006	,009	,012	,735	,463
OI	,033	,004	,191	8,315	,000
1 StockIndex_Change	22,352	37,899	,006	,590	,555
Loans_TA	-36,512	21,726	-,017	-1,681	,093
2006,	81,789	29,899	,030	2,736	,006
2007,	76,294	29,842	,028	2,557	,011
2008,	100,764	30,852	,037	3,266	,001
2009,	100,623	30,296	,037	3,321	,001
2010,	100,526	29,958	,037	3,356	,001
Gov*LLP	,327	,026	,184	12,431	,000
Savings LLP	-,649	,113	-,060	-5,751	,000
COOP LLP	-161,821	30,940	-,264	-5,230	,000

## Model B





Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-193,694	63,690		-3,041	,002
Index	-233,852	22,855	-,112	-10,232	,000
LLP	,867	,022	,771	38,991	,000
Log assets	64,718	15,175	,061	4,265	,000
OP	-,020	,009	-,037	-2,337	,020
OI	,030	,004	,174	7,083	,000
StockIndex_Change	34,430	40,708	,009	,846	,398
1 Loans_TA	-46,647	22,850	-,022	-2,041	,041
2006,	86,968	32,137	,032	2,706	,007
2007,	78,382	32,082	,029	2,443	,015
2008,	80,708	33,138	,029	2,436	,015
2009,	76,382	32,510	,028	2,349	,019
2010,	105,751	32,201	,039	3,284	,001
COOP LLP	-165,147	32,942	-,270	-5,013	,000
Coop	597,064	122,717	,263	4,865	,000