Risk and Uncertainty in the Banking Sector

A study of the Post-Earnings Announcement Drift in European banks - Did the market reflect the banks' exposure to risks before the magnitude of the financial crisis was a fact?

Master Thesis in Business Administration / Financial Accounting, 30 hp

Spring 2012

Authors
Moa Börjesson   880704
Elin Johansson   880812

Supervisors
Jan Marton
Emmeli Runesson

Acknowledgements

Abstract

Authors: Moa Börjesson and Elin Johansson

Supervisors: Jan Marton and Emmeli Runesson

Title: Risk and Uncertainty in the Banking Sector. A study of the Post-Earnings Announcement Drift in European banks - Did the market reflect the banks' exposure to risks before the magnitude of the financial crisis was a fact?

Key words

Post-Earnings Announcement Drift, risk, uncertainty, banking sector, credit loss, liquidity, auditors' role.

Background and Problem

When the financial crisis started in 2007, the attention was directed towards the risks that the banking sector was exposed to. The information asymmetry between the banks and the market caused uncertainty for the investors, and this uncertainty had to be taken into consideration for investment decisions and would affect the asset pricing (Bird & Yeung, 2012). Exposure to risks is a natural part of the banking sector, however, the question is to what extent the investors understand these risks, and how much of the uncertainty caused by these risks that they incorporate in their investment decision process. In this research the amount of credit losses and the banks' liquidity status after the financial crisis is used as a measurement of how well the banks managed the crisis. The level of the banks' exposure to risks can therefore be measured with these two proxies and the phenomenon Post-Earnings Announcement Drift (PEAD) can be examined to detect the uncertainty that the market perceive. Also, the auditors' role in limiting the uncertainty for the investors is examined through comparing the market's reaction after the earnings' announcement in the unaudited Q_1-Q_3 reports and the audited Q_4 report. The investors' reaction to earnings' announcement is investigated to provide insights into whether the uncertainty the investors faced did affect their investment decisions and if they, with the answer in hand, did foresee which banks would manage the crisis and which ones would fail.

Purpose

The purpose of this research is to investigate if a relationship can be observed between the stock prices and the uncertainty that the market is facing due to potential risks in the banking sector.

Method

The method used to find answers to the research questions is to analyze the phenomenon Post-Earnings Announcement Drift in listed banks in Europe during the years 2005-2009. The investors' reaction to earnings' announcement is investigated to provide insights into whether the uncertainty the investors faced did affect their investment decisions. The PEAD is measured as the relation between the Cumulative Abnormal Return (CAR) and the Standardized Unexpected Earnings (SUE), where the size of the CAR explains to which extent the unexpected earnings cause an effect on the stock prices.

Conclusion

From this study the authors cannot claim that there is a difference in PEAD for the banks that did not manage the crisis well, compared to the banks that maintained stability through the crisis. Based on this research, the conclusion is that the market did not foresee which banks that would manage the crisis and which ones that would not. However, this study does indicate that some form of investors' uncertainty has been captured. Significant difference among some of the groups has been observed where the liquidity was testes as a proxy for the risk exposure. Furthermore, from the results the authors cannot claim that the differences in PEAD between the quarters could be derived from the auditors' role of limiting risk for the investors.

Table of Content

Chapter 1 - Introduction

In this chapter readers are introduced to the chosen field of study; this includes a background which leads to a problem discussion about the challenges observed in the banking sector. The purpose of the thesis is described as well as the research questions. A short presentation of the overall limitations of the study enables readers to get an overview of the scope of the research. Finally, this introduction gives a presentation of previous research made in the field and the contribution of the study.

1.1 Background

A well-functioning financial system is of importance in today's globalization. The banking sector is crucial and plays a key role in the finance and credit allocation. The development during the latest decade has turned towards more complex financial instruments, and more advanced strategies for financial risk management has become possible (Marton *et al.,* 2008). When the financial crisis started in 2007, the attention was directed towards the risks that the banking sector was exposed to. The information asymmetry between the banks and the market caused uncertainty for the investors, and this uncertainty had to be taken into consideration for investment decision and would affect the asset pricing (Bird & Yeung, 2012).

The financial crisis started in the U.S. in 2007; however, the U.S. stock market had already been in a highly volatile state for some time (Ershov, 2009). Due to the large capital inflow from abroad, especially from Asia, in combination with the Federal Reserve adoption of a lax interest rate policy, the U.S economy had a low interest-rate environment (Brunnermeier, 2009). Simultaneously, there was a change regarding the banking model. The banking system transferred from the traditional banking model, which implies that the issuing bank hold loans until they are repaid, to the "originate and distribute" banking model where loans are pooled, tranched and resold via securitization. The demand for these securitizations resulted in cheap credits and the lending standards fell (Brunnermeier, 2009). The falling lending standards resulted in a higher level of granted mortgages, background checks were considered unnecessary due to the general opinion that house prices could only rise, and a borrower could always refinance a loan using the increased value of the house (Brunnermeier, 2009). When the housing bubble burst, banks had to write down bad loans with tremendously large amounts due to the fact that people could not pay their mortgages (Brunnermeier, 2009). This resulted in raised concerns all around the world regarding the liquidity in the banking sector. When the world witnessed the failure of Lehman Brothers and Washington Mutual, plus governmental takeovers of Fannie Mae, Freddie Mac and AIG, all in a few months, the concerns turned into a banking panic (Ivashina *et al.,* 2009). The problems in the U.S. commercial banks spread to Europe and in a short amount of time $1,8 trillion was allocated from some of the largest European countries to stimulate the financial markets (Ershov, 2009). The bank Northern Rock in the UK was the first bank in Europe to face difficulties and many banks followed thereafter. Overall, the banking sector all over Europe was heavily affected, all from large financial economies like the UK, Switzerland and Germany to smaller ones, like Iceland, whose collapse has been estimated as the largest of all time by the IMF (Goddard *et al.,* 2009).

Because of the largeness of this crisis, and due to the fact that it had its start in the financial market and the banking sector, the IASB acknowledged the obvious deficiencies in the accounting regulation. The regulation had not been updated to the rapid changes that occur in the financial markets, which led

to a higher amount of risk and uncertainty in the financial accounting during the financial crisis (Tropeano, 2011).

Despite a new standard, IFRS 7, concerning disclosures of risks, and the many amendments that IASB has made since the introduction of this standard, there are still question marks regarding the financial accounting. The 19th of January 2012 The Guardian contained an article where Andy Haldane, the senior Bank-of-England official, made a statement saying that the existing rules have made it possible for banks to overstate their profits and exacerbate their losses. Due to this Haldane considers that banks should have different accounting rules than other major companies (Treanor, 2012). Haldane expresses that:

> It is, after all, precisely these differences that justify separate regulatory and resolution regimes for banks. A distinct accounting regime for banks would be a radical departure from the past. But if we are to restore investor faith in banking sector balance sheets, nothing less than a radical rethink may be required.

With this statement Haldane points out the defects in today's regulation as well as the difficulties in financial accounting, which in return reflects on the investors and the stock market (Treanor, 2012). The exposure to risks is a natural part of the banking sector but the question is to what extent the investors understand these risks and how much of the uncertainty caused by these risks they incorporate in their investment decision process. The financial crises and the many bankruptcies that followed took many of the banks' stakeholders with surprise, but to what extent did the investors reflect the banks' exposure to risks before the magnitude of the financial crisis was a fact?

1.2 Problem Discussion

Risks and uncertainties have continuously been a part of investors' assessments when they are trading stocks, due to the fact that the external information not always reflects the actual financial situation in the firm. The risks that the banks are facing and how they manage these risks should be communicated to the market through disclosures left in the financial reports. However, a fundamental change in the banking sector during the last decade has been the increased variability in risk management, hence, how the institutes handle risk exposure (IFRS 7 BC2, 2011). This change has led to the implementation of the new standard *IFRS 7 Financial Instruments: Disclosures* in 2007, whose purpose was to receive a better transparency regarding the information of companies' exposure to risks and also how those risks are managed (IFRS 7 IN2, 2011).

When IFRS was implemented its purpose was to give numerous advantages for the investors. Due to the fact that all listed companies in EU member countries, since 2005, are required to make their financial reports according to the standards set by the IASB, this should result in a higher quality, transparent and comparable information. In comparison to the previous, various, national standards, IFRS is said to give more accurate, comprehensive and timely financial statement information, which results in lower uncertainty for the investors (Ball, 2006). In the theory it seems obvious that the new accounting regulation with IFRS would lead to improvements and add value to the users of financial statements but, in practice, a question mark concerning the effectiveness of the enforcement gives space for doubting what value the IFRS regulation actually adds to the investors.

The uncertainty that IFRS 7 would decrease, due to the higher quality as well as more transparent and comparable information, has importance for the investors as it affects their decision-making process. In this thesis, the expression "uncertainty" is used regarding the investors, and when the banking sector is in focus, the expression "risk" is commonly used. Risks are defined as know factors that potentially can cause a loss if an undesired outcome occurs (IFRS 7 Appendix A, 2012). Examples of

risks in the banking sector that are of interest for this study are credit risk and liquidity risks, but also the market risk due to the fact that this risk increased during the recent financial crisis and therefore during the chosen years for this study. In comparison to uncertainty, risks can more easily be calculated, because of the fact that uncertainty is mainly based on unknown factors. As mentioned, the risks that the banks are exposed to give rise to uncertainty for the investors due to the information asymmetry concerning the extent of the risk exposure and the risk management strategy. Bird and Yeung discuss in their paper from 2012 the importance of incorporating uncertainty when explaining the investors' behavior.

The level of uncertainty that reflects on the investors can to some extent be described and measured by the Efficient Market Hypothesis (EMH) and the Post-Earnings Announcement Drift (PEAD). The Efficient Market Hypothesis (EMH) has had a large impact on the development of financial theory. The fundamental idea of the hypothesis is that the market fully reflects all public relevant information that is available for the investors at the specific point in time. This means that the stocks' prices change only if the market receives new information that effects its expectations of the company's future profitability, and the change in value of the stock is, according to EMH, said to occur instantaneously (Novak, 2008). This definition of the theory is consistent with the semi-strong version of the EMH, two other major versions of the hypothesis are the "weak" and the "strong" form of market efficiency (Baesel & Stein, 1979). Due to this theory and its semi-strong version, we would observe a direct incorporation of the new information into the stocks' prices when banks release their interim reports. However, after the financial crisis of 2007-2009 the theory was once again questioned and the criticism of the theory led to a debate (Milner, 2009). Paul Volcker, former chairman for Federal Reserve said in a speech from October 2011:

> It should be clear that among the causes of the recent financial crisis was an unjustified faith in rational expectations, market efficiencies, and the techniques of modern finance.

Volcker was just one of many critics that was of the opinion that the Efficient Market Hypothesis could not explain the market's function in reality. When financial economists have explained the market's behavior, they are said to have been slow in considering the importance of incorporate uncertainty (Bird & Yeung, 2012).

Also, empirical evidence from stock markets shows that complete price reaction when new accounting information becomes public rarely occurs. Instead, the stock prices tend to drift upwards when the company announces good news and downward when negative news are presented (Ball & Bartov, 1996). This means that when a firm announces good news, the following abnormal returns tend to be larger than normal for weeks or even months after the announcement date, this because the earnings presented exceed the expectations set of the market. The opposite occurs when the earnings do not meet the market's expectation, hence when bad news are announced (Livnat & Mendenhall, 2006). This phenomenon, which is called Post-Earnings Announcement Drift (PEAD), was developed as an alternative explanation of the market's behavior instead of the Efficient Market Hypothesis. The theory of EMH states that the market directly adjusts to the released information and reacts to it. In practice, on the other hand, positive transaction costs occur when earnings' announcement is released and these costs are being accounted for in the PEAD (Marton, 2012). The PEAD, which in this thesis also is called the drift, further states a trend movement in one direction. This drift means that future abnormal returns can be predicted from earnings information that recently has been presented, and this is of interest for the investors and should be incorporated in their investment decision process (Ball & Bartov, 1996). The driving forces behind the drift are still not found but explanations in the PEAD literature tend to assume that the drift is a sign of mispricing (Setterberg, 2011).

The authors of this thesis assume that relevant explanations for the PEAD in the banking sector are the uncertainties that the investors meet derived from the banks' exposure to risk. This uncertainty, which is reflected in PEAD, is predicted mainly to have its origin in the information concerning credit losses and the banks' liquidity status. The level of credit losses and the liquidity status in the banks during and after the crisis, year 2007 to 2009, are used as proxies for how well the banks managed the crisis.

Besides disclosures of the banks' exposure to risks, auditors also have an important role in limiting the uncertainty for the investors. But during the years, with particularly the Enron scandal in year 2001 in mind, which was recognized as one of the largest audit failure, a debate has been ongoing concerning the value of the auditor's signature. On the 8th of November 2001, Enron announced that the net income had been overstated during year 1997-2000, this due to accounting errors and they therefore restated its previous reported figures. The effect of this was that within a month the firm's stockholder value was lower by $1.7 billion (Benston, 2003). In the case of Enron, the question was if this accounting error was a result of lax accounting policies or intended fraud (Time Magazine, 2002). However, the fact that the firm's auditor did not meet their responsibility in discovering and reporting the risks in Enron, led to the dissolution of Arthur Andersen, at the time one of the big five audit and accountancy firms in the world (Time Magazine, 2002). This Enron scandal and other audit failure have impacted the trust for the audit profession. In Time Magazine, the 13th of January 2002, the industry analyst Arthur Bowman declares his view of the audit profession:

> The profession has always done just enough to get out of a hole. Enron paid Andersen $25 million for its audit last year and $27 million for "consulting" and other services. How can any auditor be independent when his client is paying this kind of money?

If this is the quality that we can expect from auditors, then what is the real value of the auditor's signature?

Through a study of the PEAD in listed banks in Europe from Q_1 2005 until Q_2 2008 when the financial crisis was a fact, this thesis gives answer to the question whether the market reflected the banks' exposures to risks. The investors' reactions to earnings' announcement is investigated to provide insights into whether the uncertainty the investors faced did affect their investment decisions and if they, with the answer in hand, did foresee which banks would manage the crisis and which ones that would fail.

The question raised due to, among other things, the audit failures that have occurred during the years, is if an auditor can by his or hers signature decrease the uncertainty for the investors. This study therefore also examines the importance and reliability of the auditor's signature, which can be deduced by the interim reports and PEAD. The drift is measured from Q_1 2005 until Q_4 2009, hence 20 quarters, to see if the audited earnings' announcement Q_4, differ from the unaudited interim reports Q_1-Q_3. If a variance is deducted, this can be an explanation as to the importance the auditor's signature has to the investors.

1.3 Purpose of the Thesis
The purpose of this research is to investigate if a relationship can be observed between the stock prices and the uncertainty that the market is facing due to potential risks in the banking sector.

1.4 Research Questions
The main questions for this thesis are stated as followed:

Can we observe differences in the PEAD for the banks that did not manage the crisis well, compared to the banks that maintained stability through the crisis? Hence, with the answer in hand- did the market foresee the banks' fate before the magnitude of the financial crisis was undeniable?

Can we observe any variance of the PEAD between the unaudited Q_1, Q_2, Q_3 interim reports and the audited Q_4 report? Can the conclusion be drawn that the auditor eliminates some of the uncertainty?

1.5 Limitations of the Thesis

The study is limited to focus on listed banks within 30 European countries. All listed companies in the European Union have since 2005 been required to prepare their consolidated financial statements in accordance with IFRS (Europe Legislation Summary, 2010). It is a requirement that the banks included in the research work under the same accounting regulation, in order to be able to assume that the market receives similar information concerning the banks' exposure to risks, which should give the investors valuable and comparable information. The Standard *IFRS 7 Financial Instruments: Disclosures* states that since larger entities hold larger part of financial instruments, which in turn means more exposure to risks, they are required to leave more disclosures (IFRS 7 BC20, 2011). To be able to investigate whether some banks failed in their communication to the investors concerning risks during the years before the crisis, and therefore adding greater amount of uncertainty, which is reflected in PEAD, it is of importance to not exclude any of the listed banks in our sample according to banks' size. Due to the time limit for this study, a rough sample of all listed banks in the chosen 30 countries is a reasonable number for which it is possible to analyze the data collected.

In terms of time, the years 2005-2009 are the time period that is of interest for the study. This includes the years before, during and in the aftermath of the financial crisis.

1.6 Contribution

The phenomenon Post-Earnings Announcement Drift was observed in Ball and Brown's paper from 1968, in which they tested how new released financial announcements were reflected in the stock price, and how the stock market came to react. Their conclusion stated that the market's reaction was generated both before and after the announcement, and the investors therefore have the possibility to trade for an abnormal return. This study came to question the theory of EMH, which states that the market will react instantly when new information is released and, due to this, cannot result in abnormal gain.

After this initial study, the numbers of reports regarding the EMH and PEAD increased and several academics analyzed and compared the two phenomena (Setterberg, 2011). Well referred papers are: Jones and Litzenberger, 1970; Fosters *et al.,* 1984; Bernard and Thomas, 1989 and 1990 and Francis *et al.,* 2007 as central studies for the PEAD. Most of the previous studies made in the field have been made on the US market, but according to Setterberg (2011) the phenomenon is from 1996 and onwards confirmed in European stock markets in United Kingdom, Spain, Germany and Finland.

Setterberg's dissertation from 2011 is of interest for this study due to the fact that it is recently published and therefore includes the highest level of up-to-date information regarding the drift. The dissertation has its focus on the Swedish Post-Earnings Announcement Drift and momentum return. In the sample used in her dissertation, the financial companies have been excluded, this to increase the comparability with earlier research.

After exploring the field for previous research, no studies have been found that focus on the drift in financial companies. Due to the discussion during the recent years about the financial crisis' cause and effects, and the development of the banking sectors' accounting principles, an attempt to fill this gap could lead to valuable insights. Also, regarding the fact that fewer studies of the drift have been made

in Europe relative to the number of research made on US market, the authors believe that this thesis contributes to a well-debated subject.

Chapter 2 - Frame of Reference

The purpose of this chapter is to give the reader knowledge of concepts and theories that has been required to conduct an analysis of the empirical study. First, the different types of risks that banks must manage are examined. Then, a presentation is given of what the authors of this thesis perceive as uncertainties in the accounting and what factors can be used as proxies for the uncertainty. The role of accounting earning information in the stock market is examined and the chapter also includes a section of financial theory where the main focus is on the phenomenon Post-Earnings Announcement Drift. Thereafter, the role of the auditor in the financial reports is examined and how the auditor's signature affects the uncertainty for the investors. Finally, the stated hypotheses derived from the theory are presented.

2.1 Risks

The environment in which companies acts in is not stable, but changes occur constantly and affect the opportunities for companies and their business. Both globalization and technical improvements as well as new management approaches for risks, make it difficult for investors and other stakeholders to forecast companies' behavior. Internal and external factors create both challenges and threats which can lead to exposure to risks. The interaction of these factors can cause a potential financial loss in companies and this is identified as a risk (Cabedo & Tirado, 2004). It is well known that risks play a key role for investors when they evaluate companies (Bird & Yeung, 2012).

Before 2007, a large part of the accounting literature requested information concerning the companies' level of risks and complementary information related to these financial risks. If more disclosures of financial risks were added to the financial reports, the value of the accounting information would be improved. Current and potential shareholders as well as lenders would be able to predict more accurate and correct "expected return and risks". Hench, this added value to the financial statements would improve investors' investment decision process. The standard IFRS 7, which was a replacement for IAS 30 and part of IAS 32, became effective from 1st of January 2007. This new standard serves as a guide for the companies about which risks they should report about and how these should be quantified and presented (Cabedo & Tirado, 2004).

The risks, to which companies are exposed, can be divided into three main categories: business risks, strategic risks and financial risks. Business risks are those related to the company's products: technological innovations, product design and marketing. The factors that can give rise to business risks can also result in competitive advantage and value for shareholder. Strategic risks occur after changes in the political environment and from changes in the economy. Financial risks are risks of monetary character and these risks can affect a firm's net cash flow, they have an immediate effect on assets and liabilities and this is the reason why they have a particular relevance on the financial statements. The following are the types of financial risks that, among other risks, the banking sector must handle: credit, liquidity, market and operational risk (Cabedo & Tirado, 2004).

- Credit risk is the risk when one party fails to meet an obligation, which will cause a financial loss for the counterpart of the financial instrument (IFRS 7, Appendix A, 2011).
- Liquidity risk is the risk that a financial instrument cannot be traded quickly enough to prevent a monetary loss. Hence, this is the risk that the entity will not be able to meet obligations to deliver cash in time (IFRS 7, Appendix A, 2011).
- Market risk is the risk that the value of the financial instrument or the portfolio will decrease due to changes in the market prices and the economic financial state. The main standard

factors that influence the market risk are currency risk and interest risk (IFRS 7, Appendix A, 2011).

- Operational risk is defined as the risk that a company must stand economic losses resulting from insufficient or failed internal systems, routines and human errors (Basel Committee on Banking Supervision, 2001).

Cabedo and Tirado's classification is just one of several suggestions of how to categorize risks. The banking sector is exposed in varying degree to all of these risks. For this study, financial risks are of most interest, and the specific risks that this thesis focuses on are credit risk, liquidity risk and market risk. These chosen, three risks are of high interest for this thesis due to the fact that they affect the chosen proxies for uncertainty, which are presented in subchapter *2.3 Proxies for Uncertainty in the Banking Sector.*

The risks that the banking sector is exposed to and, in particular, the different strategies for how to manage these risks can lead to uncertainty for the investors. The relationship between the risk and uncertainty, in order how the risks in the banking sector reflect on the investors' uncertainty, is examined in the next subchapter.

2.2 Uncertainty

Uncertainty is defined as lack of certainty, which means that the element of which the uncertainty is built on cannot be defined by quantities. Uncertainty is a state where limited knowledge makes it impossible to give an accurate description of the present state (Wang *et al.,* 2000). The concept uncertainty has been mentioned in studies since Knight introduced the concept in his study from 1921 (Bird & Yeung 2012); however, the difficulty in understanding the concept led to negligence of uncertainty research for many years (Wang *et al.,* 2000). Globalization and the rapid development of technology were probably two reasons as to why the situation of avoiding uncertainty did not persist. Investors act in an environment where uncertainty must be considered and it is a factor which affects their decision-making progress (Bird & Yeung, 2012).

The more factors a system consists of and the more complex systems are, increases difficulties in making definite and objective conclusions. This is particularly true concerning systems that contain a human factor, which leads to uncertain information (Biao *et al.,* 2000). To understand a system, the characteristics of the systems must be known and well understood. For a system to be recognized, it is necessary to distinguish information that reflects the characteristics of the system. Information reflects the elements, structure and the functions of the system and if some of these characteristics are unknown, it is impossible to describe or express the system. From the time when the information emerges until it is described, influence from different factors can result in information that contains uncertainty (Ni & Wang, 1992).

How the market perceives and reacts to information has important implication for the pricing of a firm's asset (Bird & Yeung, 2012). Bird and Yeung (2012) refer to earlier studies that say that if the market is confronted with uncertainty, the investors are always acting pessimistically and follow a strategy where they try to maximize utility in case of the worst scenario. This is a common approach for how the market manages the uncertainty, as the uncertainty influences the more pessimistic investors. This gives a pessimistic bias which implies that investors upgrade bad news and downgrade good news. A conclusion to be drawn from this is that investors are always acting aversely to uncertainty, and this aversion increases with the level of uncertainty and is reflected in the asset pricing (Bird & Yeung, 2012).

The uncertainty that the investors perceive and which has an impact on their investment decision is related to how they interpret the earnings' announcement, and how well they find this to be a signal of the underlying value creation in the company analyzed (Setterberg, 2011). Setterberg (2011) proposes that a drift in the stock price will follow in the post-announcement period which she explains as a muted announcement reaction due to the fact that uncertain news signals are perceived to be risky. The authors of this thesis make the identical assumption as Setterberg (2011), that the investors' uncertainty is a reflection on their interpretation of the firms' earnings announcement. The uncertainty will therefore vary based on the question if the earnings' announcement is viewed as good or bad from an investor's point of view.

2.3 Proxies for Uncertainty in the Banking Sector

The authors of this thesis consider that appropriate proxies for the risk in the banking sector are credit losses and the liquidity status. Further, in this research the amount of credit losses and the banks' liquidity status during and after the financial crisis (year 2007-2009) is used as a measurement of how well the banks managed the crisis.

2.3.1 Credit Losses

A credit loss is a loan receivable that is written off since it has been proven not to be collectible (Finance-lib, 2012). An increased level of credit losses expands the probability for default difficulties due to the fact of non-collectible loans. This is also due to the fact that an economic downturn decreases the value of a firm's asset when the economic value declines (Acharya *et al.,* 2007). Nickel *et al.* (2000) found that the business cycle has a great influence on default difficulties. In the study it was stated that the volatility of rating transition in the banking sector is higher than in other industries and that a bank's financial results depend on the market's confidence in the institution's credit standing. This volatility falls when a peak in the business cycle occurs and rises when it troughs. The banking sector states that poorly rated banks have a higher probability for default difficulties, but highly rated have a lower level of probability for default difficulties (Nickel *et al.,* 2000).

Gonzáles-Aguado *et al.* (2010) identified that risk could be acknowledged through defaulting. Further, Archarya *et al.,* (2007) found a negative relationship between default probabilities in combination with default rates, and average recovery rates. When a recession or an industry downturn occurs, default rates are high and recovery rates low (Gonzáles-Aguado *et al.,* 2010). Due to this negative correlation between these factors the risks for the portfolio are amplified. Further, these risks tend to occur in recessions due to the fact that the marginal utility of the representative investor is high which increases the market risk (Gonzáles-Aguado *et al.,* 2010).

The authors of this thesis have chosen credit losses as a relevant proxy for uncertainty because of the earlier research confirming the relationship between the market risk and the default probability. If the market notes uncertainty due to default probability, which is affected by the financial economic state, the market risk for the chosen years in this study should vary. This is so since during these years changes occurred regarding the financial situation in Europe, from an economic upturn to an economic crisis. Since credit losses are affected by the business cycles, an observation of the variance in the credit losses among the years would be possible to deduce.

2.3.2 Liquidity

There are risks for a firm to become illiquid when the current cash flow happens to be lower than the current obligations (Moretto *et al.,* 2007). Liquidity can occur through the holding of liquid reserves or borrowing liquidity against claims on the firm's assets, where the final decision ought to be the alternative with the lowest risk of illiquidity (Moretto *et al.,* 2007). Liquidity risk is, as stated in *2.1 Risks*, the risk that a financial instrument cannot be traded quickly enough to prevent a monetary loss

(IFRS 7, Appendix A, 2011). Hence, it is a case of the lenders' risk for not receiving their deposited capital in the future. Further, the lender threatens the firms' liquidity status, which affects the firms' probability for insolvency, due to an increased level of uncertainty in the market. (Moretto *et al.,* 2007). Differently expressed, the market risk affects the investors' prospects for illiquidity and therefore the risk for insolvency in the firm, which affects the liquidity risk. Further, the market risk increases during crisis due to the domino effect, that one banking failure would lead to another, and so on (Tirole, 2011). This results in banks holding a great amount of liquidity due to the fear of the domino effect (Tirole, 2011).

The authors of this study consider the firms' liquidity status as a relevant proxy for uncertainty, and this is due to the effects the market risk has on the level of liquidity a bank decides to hold in combination with the investors' prospect for illiquidity and the liquidity risk. Another argument for the choice of liquidity status as a relevant proxy is based on a study made by Amihud (2002), where he shows that unexpected illiquidity has a negative relationship with the contemporaneous stock return. Further, Amihud (2002) stated that illiquidity has a wider effect on the stock return of firms of smaller size. Also, the liquidity was heavily affected in the recent crisis (Tirole, 2011), which would give variations among the chosen years of this study, 2005-2009.

Due to the domino effect, which has been stated above, banks have an increased intention of holding a greater amount of liquidity during a financial downturn (Tirole, 2011). However, despite this higher intention, the ability of the implementation varies. If all banks wishes to hold liquidity in a financial downturn, the ones for which the liquidity decreases have failed in their intent. These banks are losing liquidity despite the need for holding it, which reflect a greater amount of liquidity risk. Due to this and the arguments stated above, the authors of this thesis have chosen liquidity as a relevant proxy for this study and assume that investors' uncertainty increases when the level of liquidity in the banks sinks.

2.4 The role of Accounting Earnings Information in the Stock Market

The value that a company creates is an ongoing process which will give the investor return on their ownership and on their initial investment. "Economic earnings" is a theoretical concept that perfectly captures the firm's value creation and, if this earnings number was real, would be equivalent to the investors' actual return on their investment. However, this "economic earnings" is just a theoretical number and instead the investors get information about the firms' value creation through the accounting system where the value creation is assigned to periods, as quarters and years. The accounting system gives a possibility for different principles which give rise to a range of earnings' numbers that is used as metrics for the value created in the firm. This accounting number therefore acts as a signal of the real value creation; meanwhile the theoretical concept "economic earnings" will not be available for the investors. The earnings per share (EPS) is the most commonly used number in the income statement that the markets use as a signal of the value creation. Hence, the investors make their investment decision based on these unexpected earnings since the economic earnings not are available. The stock markets' reaction is therefore not a reaction of the "real" value creation but a reaction to the unexpected earnings' signal (Setterberg, 2011).

| Value Creation in a Firm | → | Unexpected Earnings Signal | → | Stock Market Reaction |

(Setterberg, 2011)

The unexpected earnings' signal can give rise to uncertainty to the investors about the real value creation in the firm. This phenomenon is defined as information uncertainty and is suggested to be a risk factor for which the market wants to be compensated (Setterberg, 2011). Hence, the information uncertainty can in this thesis refer to the uncertainty concerning the insufficient information that the banks give about their exposure to risks and the risk management strategy, in particular their credit losses and the bank's liquidity status. The following illustration shows how a rational investor incorporates uncertainty in the investment decision process and hence this uncertainty has an effect on the stock market. If the investors did not perceive any uncertainty in the post-announcement period, there would not occur any price drift (Setterberg, 2011).
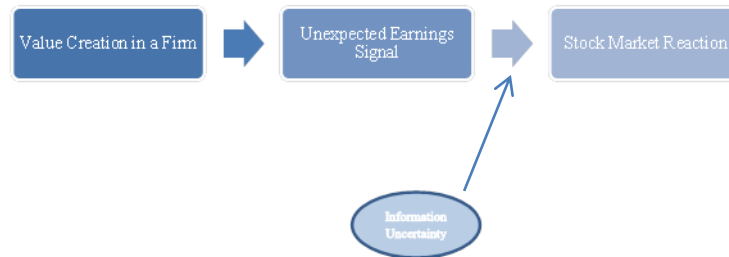
(Setterberg, 2011)

2.5 Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) has had, as mentioned earlier, a crucial role in the development of financial theory. It was primarily presented in a thesis by Eugene Fama in 1970, where it was stated that an efficient market is a market where all available information is reflected in the stock price (Fama, 1970). The fundamental idea of the EMH is also that the investors use and analyze all public available information for their investment decisions, and that they are rational when this information is processed (Malkiel, 2003). The theory assumes that the markets are able to predict companies' future profitability and that the investors only buy the share if the stock price is less than the present value of the discounted future dividends; this is the intrinsic value of the share (Novak, 2008). According to the EMH the market should react instantly when new information reaches the market, and this should directly be reflected in the stock price (Malkiel, 2003). Hence, the price changes only if the intrinsic value changes. This price change should therefore be a consequence of modified estimates of the companies' future profitability after newly released information has reached the market. The EMH states that given a particular level of risk, the stock price should reflect all relevant information and it should be impossible for investors to find any part of information on which they can earn a higher return (Novak, 2008). According to this theory there should be no possibilities of trading for abnormal returns at this particular level of risk. This is concluded in the arbitrage principle which means that investors have a powerful economic incentive to instantly trade on information that they recently have uncovered. If this process is complete and quick, the market and the share prices are classified as efficient, all according to the Efficient Market Hypothesis (Rubinstein, 2001). The theory states that the information that is released on one specific day only reflects on the stock price on that day and the stock price of tomorrow is not influenced by the information of the day before (Malkiel, 2003). The definition of the theory made in this thesis is consistent with the semi-strong version of the EMH; two other major versions of the hypothesis are the "weak" and the "strong" form of market efficiency (Baesel & Stein, 1979).

As mentioned in the introduction many critics questioned the EMH during the financial crisis; for example the statement in the Globe and Mail, 2009, where critics claimed that the Efficient Market Hypothesis could not explain the market's function in reality, because of unjustified faith in rational

expectation and market efficiencies (Milner, 2009). Due to this increased doubt for the EMH, another hypothesis expanded its reliability and trustworthiness, the Post-Earnings Announcement Drift.

2.6 Post-Earnings Announcement Drift

The phenomenon Post-Earnings Announcement Drift (PEAD), also called the Standardized Unexpected Earnings Effect (Livnat & Mendenhall, 2006), was first described in Ball and Browns paper from 1968. In this paper they stated that the stock prices do adjust when new information reaches the market, as presented in the EMH. However, the prices do not change directly but over a period of time, which allows for abnormal gain. It can be described as the occurrence when the stock prices do not instantly reflect the newly released information; instead, the abnormal return continues over a longer period of time (Ke *et al.,* 2004). Setterberg (2011) further expresses this as when new information reaches the market, the stock price at times overreacts as a result of good news and underreacts with bad news, which creates investment opportunities for abnormal profit. Even if the PEAD have been described and discussed ever since late 1960´s, the phenomenon gained even more reliability and trustworthiness during the financial crisis when critics meant that the Efficient Market Hypothesis could not explain the market's function in reality (Bird & Yeung, 2012).

The main character of the phenomenon is abnormal returns that are generated when investors have underutilized public information signal, and this can be observed after quarterly earnings' announcements which convey unexpected earnings' news. When earnings are announced with large positive unexpected earnings an upward drift in the stock's price will follow; meanwhile the earnings' announcement accompanied with large negative unexpected earnings is followed by downward drift (Francis *et al.,* 2007).
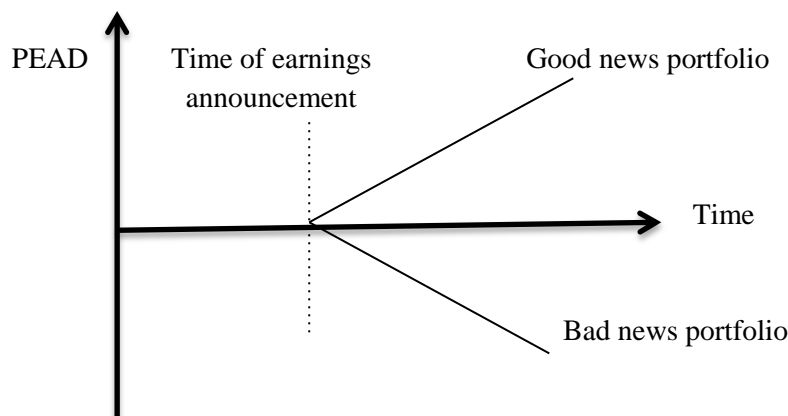
(Setterberg, 2011)

The PEAD is measured as the relation between the Cumulative Abnormal Return (CAR) and the Standardized Unexpected Earnings (SUE), where the size of the CAR explains to which extent the unexpected earnings cause an effect on the stock prices. The PEAD measures how long time this reaction lasts and, hence, how long time it takes before the markets have reflected the unexpected change (Marton, 2012).

Most of the Post-Earnings Announcement Drift is localized at the 60 following trading days after the earnings' announcement, meaning approximately a time-period of 3 months (Bernard & Thomas, 1989). Bernard and Thomas (1989) also found in their study, where the drift is analyzed due to the firm's size that close to 100 % of the drift occurs within 9 months for small firms and within 6 months for large firms. Their study also found result of a disproportional large part of the drift observed within the 60 trading days occurs within the first 5 days after the earnings' announcement. The actual percent of the drift that is derived to during the first 5 days is 13 % for small firms and 20 % for large firms.

The conclusion of this is that if the drift is explained by an incomplete adjustment for risk, then the risk must exist only temporarily and must persist during a longer time for smaller firms than for larger companies (Bernard & Thomas, 1989).

Ball *et al.* found in their study from 1988 that no significant PEAD could be detected after annual earnings' announcements. According to Bernard and Thomas (1989), a test of the drift after the quarterly earnings' announcement would provide a more powerful test relative to the one made on the annual earnings' announcement, because most of the PEAD occurs during the three month after the earnings' announcement (Bernard & Thomas, 1989). The size of the company also has an impact on the Post-Earnings Announcement Drift; smaller firms have a larger absolute magnitude of the drift. Bernard and Thomas (1989) found that the earnings' surprise was larger among the smaller firms which resulted in the larger PEAD in these companies. In their paper they do not give any further explanation as to why the drift is larger in smaller firms compared to the drift in larger firms; this is consistent with the previous research where the underlying forces of the drift are still not found. This is further discussed in the next subchapter.

2.6.1 Driving forces behind the Post-Earnings Announcement Drift

After Ball and Browns' article from 1968, PEAD has been widely studied and investigated, in order to show how it affects the investors' trading decisions. The driving forces behind the drift are still not found; many suggestions have been stated and tested but no consensus has been reached, although in later years explanations in the PEAD literature tend to assume that the drift is a sign of mispricing (Setterberg, 2011).

According to Bernard and Thomas (1989), there are two categories where diverse reasons for this mispricing could be placed. The first category implies that a part of the price response is delayed when new information is released. This delay could further on be caused by traders who do not use all available information or due to transaction and trading costs. The second category contains explanations that state that the capital-asset-pricing model (CAPM), which is often used to calculate abnormal return, is unfinished or wrongly estimated. As a result of this, the raw return that depends fully on risk cannot be distinguished. When applied to the PEAD this would mean that "firms that have unexpected high earnings become more risky on some unrecognized dimension" (Bernard & Thomas, 1989).

Setterberg (2011) also points out the fact that there is no consensus regarding the explanation of PEAD. In her dissertation she gives examples of factors that, over the latest decades, have been suggested as at least partial explanations of the PEAD. This includes: underestimations of earnings persistence, underweighted forecasts due to the integral approach of quarterly reporting, or to accounting conservatism, inflation illusion, surprise risk, opinion divergence, trading activity by unsophisticated investors, information processing biases, structural uncertainty and rational learning, liquidity risk, and transaction costs.

Previous studies made in the field have also tried to explain PEAD as a risk adjustment phenomenon (Francis *et al.,* 2007). Francis *et al.* (2007) argues that many, but not all, researchers try to explain that information uncertainty is one of the main reasons why arbitrage fails to eliminate PEAD. Francis *et al.* define information uncertainty as the rate at which reported earnings turn into cash flow. The result of Francis's research shows a positive relation between information uncertainty and PEAD profitability, hence abnormal returns. When analyzing securities with low information uncertainty, no measurable PEAD was found; meanwhile a significant positive PEAD was observed for securities with high information uncertainty. The study concludes that the stocks with the highest level of

information uncertainty are after the earnings' announcement followed by a muted reaction, perceived as a drift in the stock prices (Francis *et al.,* 2007).

As the section above indicates, since the introduction of the EMH and the PEAD there has been a large amount of studies regarding the reason behind the theories and the importance and possibility of being able to predict the stock market. Malkiel (2003) stated that due to the fact that investors occasionally make the wrong decision, despite all public available information, an efficient market, as the one explained by EMH, is less likely to appear in the stock market in comparison to the occurrence of predictable patterns. Even if the reason why the drift occurs has not been found, several studies have showed the occurrence of the PEAD in the stock market. Due to the importance for the investors to predict the stock prices, and therefore the correlation between the abnormal return and the standardized unexpected earnings, PEAD will continuously be a subject for studies.

Since no consensus of the driving forces behind the Post-Earnings Announcement Drift has been reached, the authors assume in this study that the drift is a type of inefficiency and hence a delayed response to the information that the banks release to the market.

Proceeding from the research described above, the subsequent discussion results in the authors' hypothesis regarding the level of the Post-Earnings Announcement Drift during the chosen years. When the financial crisis started, the level of risk and uncertainty in the market increased. The PEAD observe these changes and therefore, it would be possible to comprehend the market reaction to the uncertainty. Before banks turned up in bankruptcy, became merged or acquired, investors could have reacted to the uncertainty and the PEAD would therefore be higher in those banks compared to the others. The hypothesis to be tested is hence whether a larger number of PEAD can be observed in the banks that did not manage the crisis well, during the quarters from Q_1 2005 until Q_2 2008 when the financial crises was a fact, compared to its competitors that maintained stability through the crisis. This can be tested through calculating PEAD after firms' quarterly announcements. If the PEAD is larger in magnitude for the banks that did not manage the crisis well, this can be an indication that the market reacted to the uncertainty and took it into consideration when making their investment decisions.

2.7 The role of Auditors

Since the increased level of economic activity and the market expansion from a national to a global market, the importance of the auditor has been enlarged (Mahon, 1968). Mahon (1968) further states that the responsibility for communicating financial information carries heavier weight due to this, which should be one of the auditors' main character traits. Regardless the higher level of communication that the auditor requires to have with their clients, independence should continuously be in focus. An independent auditor is certain to report errors regarding the financial accounting and values accounting principle, which results in a higher level of audit quality (Bartov *et al.,* 2000). Audit quality was defined by DeAngelo (1981) as the joint probability of an auditor identifying and reporting accounting errors in the financial reports, which depends on the level of independence of the auditor. Audit quality further reflects on the quality of the financial reports and therefore the investors' decision-making. In an article for BusinessWeek from 2002, Robert Barker expressed his opinion:

> To the list of things every thinking investor should consider, I'm now adding auditor risk. It's as simple as this: No investor can make an informed decision about a stock without reading the company's financial statements, and financial statements are only as good as the firm auditing them. If you have worries about the auditing firm, you could have worries about the stock market value of the companies it audits.

(Barker, 2002)

This article states the importance of the auditor and the quality they bring to the financial reports. Auditor risk differs from audit quality due to the greater focus on damaging stockholders, creditors and other investors (Fuerman, 2004). A high level of auditor risk occurs when the auditor has a low audit quality and therefore sends false financial information to the market. This affects the level of uncertainty that the investors perceive and hence has impact on their investment decision process (Fuerman, 2004).

Proceeding from the research described above, the subsequent discussion results in the authors' hypothesis regarding the auditors' role in order to decrease the uncertainty for the investors. Due to the fact that the report of Q_4 has been audited, the auditor's signature should eliminate a certain amount of the investors' uncertainty. The authors here assume that the sampled companies in this thesis from the banking sector have a high audit quality and therefore a low auditor risk, mainly due to the fact that all firms in our sample are listed and forced to comply with extended accounting regulations, especially after the implementation of IFRS in 2005. The market should therefore perceive the audit information, relative to the unaudited interim reports, as more reliable. This can be tested through an analysis of the fluctuation of the level of PEAD in the banks after the release of the Q_1-Q_4 interim reports. For this hypothesis to be tested, the drift is measured for 20 quarters, Q_1 2005 until Q_4 2009. If the auditor's signature decreases the uncertainty, the PEAD should be lower after the announcement of the audited Q_4 report, in comparison to what occurs after the release of the unaudited Q_1-Q_3 interim reports.

2.8 Formulation of the Hypotheses

This thesis tests two hypotheses related to uncertainty, its effect on investors and, at least as a partial explanation for the PEAD in the banking sector. The discussions about the hypothesis are presented in the related subchapters *2.6.1 Driving forces behind the Post-Earnings Announcement Drift* and *2.7 The role of Auditors.*

> ➢ The authors predict that a larger number of PEAD can be observed in the banks that did not manage the crisis well, during the quarters from 2005 until Q_2 2008 when the financial crises was a fact, compared to its competitors that maintained stability through the crisis.

This hypothesis has been derived from the research question regarding the variance of the PEAD, which has been stated in subchapter 1.4 as followed:

- Can we observe differences in the PEAD for the banks that did not manage the crisis well, compared to the banks that maintained stability through the crisis? Hence, with the answer in hand- did the market foresee the banks' fate before the magnitude of the financial crisis was undeniable?

The second hypothesis concerns the question if the auditor's signature decreases the uncertainty for the investors.

> ➢ The authors predict that PEAD is lower after the earnings' announcement of the audited Q_4 report, in comparison to the unaudited Q_1-Q_3 interim reports.

This hypothesis has been derived from the research question concerning the importance of the auditor's signature which has been stated in subchapter 1.4 as follows:

- Can we observe any variance of the PEAD between the unaudited Q_1, Q_2, Q_3 interim reports and the audited Q_4 report? Can the conclusion be drawn that the auditor eliminates some of the uncertainty?

Chapter 3 - Methodology

This chapter aims to present the scientific approach and research method used to find answers to the thesis' research questions. The chapter includes a presentation of the sample used in the study and the empirical research method is presented in detail. Finally follows a discussion of the validity and reliability of the research.

3.1 Research Approach

A quantitative method was used to conduct this study and to find answers to the research questions stated. According to the chosen research approach the main characteristics are structure, precise rules and procedures, in order to ensure that the variation in data collection is as small as possible and give the study credibility (Ghauri & Grønhaug, 2005). The chosen research design was used to test the stated hypotheses and to investigate and explain relationships among variables. Since the study is based on financial market data, the research method that fits the thesis' research purpose best is an event study. An event study is a statistical method commonly used to assess the impact of a specific event on the firm's stock price (MacKinlay, 1997). The main objective of the statistical and quantitative method is to capture the characteristics of a population, and this is normally made through a study of a sample from which inferences are drawn. This method gives the study more focus on breath rather than depth and this also explain why generalizations are the preferred outcome (Blumberg *et al.*, 2008). The strength of this quantitative method is that categorizing of the sample is made before the empirical data is analyzed, which makes it easier to generalize the results for the population (Marton, 2012). The validity of the research design and the representativeness of the sample will determine the trustworthiness of the presented generalizations (Blumberg *et al.*, 2008).

3.2 Sample

The rough selection for this study's sample includes listed banks from 30 European countries. The sample was limited to the member states in the European Economic Area (EEA) and the members of the European Free Trade Association (EFTA). EEA consists of 27 European Union countries and EFTA has 4 member states (Conformance, 2012). Liechtenstein, one of the four EFTA countries, was excluded in this research since no data for the country is available in the database Thomson Reuters Datastream. Due to the relatively small size of Liechtenstein, the authors expect that this exclusion will not bias the research.

All listed companies in the European Union have since 2005 been required to prepare their consolidated financial statements in accordance with IFRS. Also, the countries that are not members of the European Union, but included in the sample, Iceland, Norway and Switzerland, apply the accounting regulation IFRS since 2005 (Europe Legislation Summary, 2010). As mentioned under subchapter *1.5 Limitation of this thesis*, it was a requirement that the banks included in the research works under the same accounting regulation. Due to this, it enables the authors to assume that the market receives similar information concerning the banks' exposure to risks, which should give the investors valuable and comparable information.

As mentioned in the theoretical framework, the size of the company also has an impact on the Post-Earnings Announcement Drift, and smaller firms have a larger absolute magnitude of the drift (Bernard & Thomas, 1989). Because of this the authors made the decision to include all listed banks within the chosen area, not just the ones of greater size. This is also due to the probability that a larger bank will become bankrupt, merged or acquired is lower compared to a bank of small size. If not all listed banks had been included in the study, it could have generated a bias.

When the rough selection of banks was reviewed, and to further be included in the sample for this study, it was a requirement that data for variables that were needed for the chosen research method were available for the quarters during year 2005-2009 in the data base Thomson Reuters Datastream, these variables are presented under subchapter *3.3.1.3 Data.*

3.3 Research Method

To determine PEAD for the sampled banks in this thesis, a test design that follows the previous studies made on PEAD was used. According to Setterberg (2011) the methodological quality of Bernard's and Thomas' study from 1989 is considered to be of high value, but the test design of how to evaluate the drift in this thesis was also based on other influential papers, mainly Francis *et al.* (2007). With these papers in mind, the authors developed a three-step research method to evaluate the Post-Earnings Announcement Drift in European banks.

Step 1 - Evaluating Unexpexted Earnings	Step 2 - Grouping and Ranking of the Banks	Step 3 - Evaluating Cumulative Abnormal Return
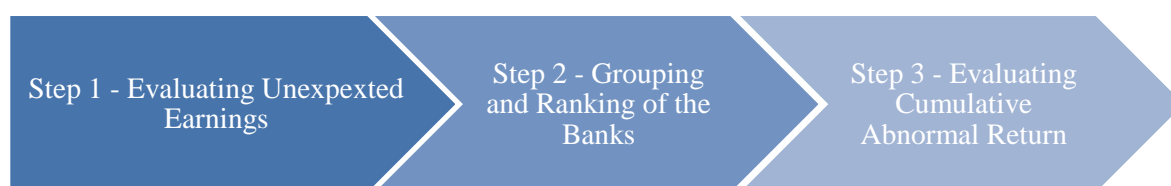
To give answers to the research questions, 4 studies were examined and were labeled as follows:

- Study 1, Credit losses
- Study 2, Liquidity status
- Study 3, Manage or not manage the crises well
- Study 4, The 4th Quarter

The first study examines the PEAD before the crisis based on the average level of credit losses that the banks had in their financial statements after the crisis meanwhile the second study focus on the liquidity status as a proxy for how well the banks managed the crisis. Study 3 examine the PEAD that is observed before the crisis in the banks that during the years 2005-2009 turned into bankruptcy, became merged or acquired and those banks that were not affected to the same extent of the crisis. Finally the fourth study evaluate whether a significant difference in PEAD can be observed between the unaudited Q_1-Q_3 and the audited Q_4.

3.3.1 Step 1 - Evaluating Unexpected Earnings

PEAD is mostly evaluated by forming strategies based on unexpected earnings (Setterberg, 2011), which was stated by Bernard and Thomas (1989) as the difference between the reported earnings and the forecasted earnings. The PEAD phenomenon is based on the assumption that the stock prices tend to drift in the same direction as the announced earnings' surprise, and it is therefore crucial to define and measure the earnings' surprise (Setterberg, 2007). Earnings' surprise and unexpected earnings are used synonymously in this thesis.

$$Unexpected\ Earnings\ =\ Actual\ Earnings - Forecast\ of\ Earnings$$

The earnings' surprise can be described as the information concerning the earnings that the market did not predict before the announcement, and therefore had not already been reflected in the stock price. This variable captures the "news" that reaches the market in the announcement; the market's expectation of the earnings preceding the announcement must therefore be investigated (Setterberg, 2011).

Previous research points out two different methods about how to calculate the unexpected earnings and from this derive the PEAD. The two methods are explained in the next subchapters and are the following:

- o   Analysts' Forecast Method
- o   Seasonal Random Walk Method

These methods share a basic form for estimating the Standardize Unexpected Earnings.

$$SUE = \frac{Actual\ Earnings - Forecast\ of\ Earnings}{Deflator}$$

(Livnat *et al.,* 2006)

3.3.1.1 Analysts' Forecast Method

The first step when estimating the SUE with the Analysts' Forecast Method is to calculate the unexpected earnings (earnings' surprise).

$$UE = EPS_{IBES,i,q} - ConsensusEPSforecast_{i,q}$$

(Setterberg, 2011)

The $EPS_{IBES,i,q}$ is the actual Earnings Per Share for the time period and for the specific firm. Meanwhile, the Consensus EPS Forecast$_{i,q}$ is the EPS that the analysts forecasted for the specific company at the same time period. This figure can be collected from the analyst agency I/B/E/S, and refers to the median of analysts' earnings' forecast for the firm, neither the highest, nor the lowest forecast. Both the estimated and the actual EPS are collected from I/B/E/S, this to enhance the method's validity. This Analysts' Forecast Method is according to Setterberg (2011) probably the most common measure used in later studies when estimating unexpected earnings in financial accounting research. The second step is to calculate SUE, the Standardized Unexpected Earnings effect.

$$SUE = \frac{UE}{P_{20\ days\ before\ the\ announcement}}$$

(Francis *et al.,* 2007)

When calculating the SUE, the unexpected earnings are divided by the company's share price 20 trading days before the earnings' announcement (Francis *et al.,* 2007). The stock price is included in the formula for SUE to standardize the measurement in order to make it possible to compare the sampled companies (Setterberg, 2011). The stock price used to calculate SUE should be the price 20 trading days before the announcement date, this in order to capture a period of time where the expectations of the announcement are not included and this will work as a starting point when measuring the PEAD (Marton, 2012).

3.3.1.2 The Random Walk Method

A Seasonal Random Walk earnings' surprise is calculated as the difference between a company's reported earnings for quarter *q* and the company's reported earnings four-quarter ago. In this study, the authors assume that the banking sector is not exposed to seasonal fluctuations, and therefore the seasonal component was not included in the model; hence the earnings for quarter *q* is compared to the reported earnings one quarter ago, instead of four quarters ago.

The first step in the calculation of PEAD with the Random Walk Method is to calculate the unexpected earnings (earnings' surprise).

$$UE = EPS_{GAAP,i,q} - EPS_{GAAP,i,q-1}$$

(Setterberg, 2011)

The $EPS_{GAAP,i,q}$ is the primary Earnings Per Share (EPS) for the time period, according to the national GAAP and the $EPS_{GAAP,i.q-1}$ is the EPS one quarters before (Setterberg, 2011).

The second step is to calculate SUE, the Standardized Unexpected Earnings effect, this second step is identical to the Analysts' Forecast Method and the same formula is used.

$$SUE = \frac{UE}{P_{20\ days\ before\ the\ announcement}}$$

(Francis *et al.,* 2007)

3.3.1.3 Reliability and Validity of the Two Methods

In Livnat's and Mendenhall's study from 2006, they draw the conclusion that when the unexpected earnings are defined using the Analysts' Forecast Method, which uses the I/B/E/S data, this gave a 30% larger drift in magnitude in comparison to the Seasonal Random Walk Method where Compustat data were used. According to Livnat and Mendenhall the reason for this difference between the methods is that if earnings are restated after the company's financial announcement, the data source Compustat changes the originally recorded value of the quarterly earnings. I/B/E/S (Analysts' Forecast Method) on the other hand, includes the earnings which were initially reported in its actual earnings figures. This means that studies that use the Compustat earnings figure (The Random Walk Method) uses numbers that were not the one that actually were observed by investors, which could inflate or devalue the level of the PEAD. Another reason for why the Analysts' Forecast Method is a more reliable formula is that Compustat's earnings reflect generally accepted accounting principles (GAAP), the analysts on the other hand report "street" measures of earnings. These "street" earnings mean that the analysts exclude various expenses required by GAAP (Livnat & Mendenhall, 2006). In this study the database Datastream was used and not Compustat. Even if the different databases might apply different praxis for the recorded values of the quarterly earnings, the authors consider this discussion to be important for the validity of this research.

When using the time series model Random Walk Method to evaluate SUE, the expected earning is determined with the previous quarter's earnings' announcement. This means a time period of three months before the actual earnings signal is released to the market and the earnings' surprise can be evaluated. During these three months business opportunities, threats or other circumstances can occur that would in fact have an impact on the expected earnings, hence; this is not incorporated when RWM is used to calculate SUE. The Analysts' Forecast Method on the other hand uses a consensus forecast made of analysts during the days close to the earnings' announcement when determining the expected earnings. The fact that this method to a larger extent incorporate events that have an effect on the expected earnings, may therefore generate a better measure of earnings surprise and thus a larger drift (Marton, 2012).

The analysts' independence and the data availability are also two subjects that have been discussed when evaluating the Analysts' Forecast and the Random Walk's reliability and validity. The estimates made of the analysts, which in this model are the expected earnings, may be coloured by other

incentives than to give the market objective information. Those incentives can, for example, be to increase the brokerage commissions and therefore encourage the market to trade. Another reason might be that the analysts do not want to damage the relation to the firm's management and might therefore be less likely to give unfavourable forecasts. Hence, the Analysts' Forecast Method may not be a "clean" metric for the expected earnings, behavioral or sociological consideration may impart a bias to analysts' forecast (Chan *et al.*, 1996). Meanwhile an advantage of using the Random Walk Method when calculating SUE is that it can be estimated for almost every firm-quarter in the Datastream database, the data required to calculate SUE with this method is more easily available compared to the I/B/E/S data required for the Analysts' Forecast Method. The main reason for this is because of the fact that the analysts more often follow larger firms and therefore data for smaller companies might be missing (Livnat & Mendenhall, 2006).

Both methods to determine the drift have been used in previous studies. As mentioned, Livnat and Mendenhall (2006) draw the conclusion that the PEAD is significantly larger when determine earnings' surprises using the Analysts' Forecast Method with numbers from I/B/E/S in comparison when a time series model was used. Meanwhile, Francis *et al.* (2007) states that they received qualitatively similar results when the earnings' surprise was computed with the Analysts' Forecast Method as well as with the Seasonal Random Walk Method. Also Chan *et al.* (1996) use the Seasonal Random Walk Method of expected earnings in their study and they argues that this model perform as well as more complex models.

Due to the discussion that the Analysts' Forecast Method is said to give larger magnitude of the drift it was of interest that this method was used in this thesis. On the other hand, I/B/E/S data was not available to the same extent as the GAAP data in the data source used in this study. To ensure that a reliable method was used as well as a large number of observations were available, both the Analysts' Forecast Model as well as the Random Walk Method was used in this research. During the work with this research it turned out that even if the EPS numbers that were collected from GAAP data would give a larger number of observations compared to when the source I/B/E/S was used, the number of observations for each method ended up to not be significant different. This due to that other variables, which were required to give one complete and useful observation, were missing. Despite this, both methods were used since the authors consider that it adds value to the study.

3.3.1.4 Data

Thomson Reuters Datastream was the source for the collection of accounting data. To be able to conduct this study with the chosen research design, the following data were required to be collected for each bank:

- Stock prices for each trading day from 2005-01-01 to 2010-06-31.
- The quarterly earnings announcement dates from 2005-01-01 to 2009-12-31.
- Net loan losses
- Cash and equivalents
- Common equity
- I/B/E/S Earnings Per Share (EPS) Estimates. Median
- I/B/E/S Earnings Per Share (EPS) Actuals. Median
- GAAP Earnings Per Share (EPS)

The definitions of the variables used in the study are to be found in Appendix 1.

All data collected refer to quarterly figures, except the stock prices which were collected for each trading day. The data from the required variables were converted into Euro to obtain comparability. Using quarterly data enabled one observation to represent one bank and one quarter. For an

observation to be included in the study, data had to be available for all variables that were required to calculate SUE and CAR with either Analysts' Forecast Method or Random Walk Method. For the observations where the announcement date was the only variable missing to fulfill the requirements, this variable was collected as far as possible manually. The announcement dates were mainly found on banks' websites and primary the date for the press release of the earnings was used. In the absence of press releases, the date when the board signed the interim report of Q_4 or the annual reports was used. Which variables that were required for the two different methods and how many observations that fulfilled these requirements for each study is explained in the illustration below.

Variables required for both methods:

Stock Prices
Earnings Announcement Dates
Net Loan Losses
Cash and Equivalents
Common Equity

Variables required for Analysts' Forecast Method:

IBES EPS Estimates.
IBES EPS Actuals.

Variable s required for Random Walk Method:

GAAP EPS

Number of observations when calculating SUE with Analysts' Forecast Method:
Study 1: 997
Study 2: 997
Study 3: 953
Study 4: 997

Number of observations when calculating SUE with Random Walk Method:
Study 1: 1040
Study 2: 1040
Study 3: 10 40
Study 4: 1040

3.3.2 Step 2 - Grouping and Ranking of the Banks

The observations which consists of one bank and one quarter were groped and ranked to be able to analyze the empirical result, the grouping and ranking are various depending of which study that was conducted.

3.3.2.1 Study 1 - Credit Losses

In the first study, the banks were ranked based on the proportion of credit losses relative to the bank's common equity, this to give comparability between the banks. It was the average share of credit losses after the crisis, from year 2007 to 2009 that was used as proxy of how well the banks managed the financial crisis. 116 banks were included in Study 1 and these were divided into 3 groups. This main categorizing of the banks was the same for each observation.

1. Group 1 – Lowest share of credit losses, 38 banks. Median = 0,25 %
2. Group 2 – Medium share of credit losses, 39 banks. Median = 1,96 %
3. Group 3 – Highest share of credit losses, 39 banks. Median = 6,53 %

These groups were then sorted in 14 sets based on which quarter they represent, from Q_1 2005 until Q_2 2008. Further was each quarter sorted in quintiles after their value on SUE, form low to high SUE. Hence, all observations are sorted by three levels, 1. Share of credit losses 2. Quarters and 3. SUE.

3.3.2.2 Study 2 - Liquidity Status

In the second study, the banks were ranked based on the proportion of liquidity relative to the bank's common equity. Common equity was also used in this study to obtain comparability between the banks. Further, as in Study 1, it was the average share of liquidity after the crisis, from year 2007 to 2009 that was used as proxy of how well the banks managed the financial crisis. 272 banks were included in Study 2 and these were divided into 3 groups. This main categorizing of the banks was the same for each observation.

1. Group 1 – Lowest share of liquidity, 90 banks. Median = 12,1 %
2. Group 2 – Medium share of liquidity, 91 banks. Median = 36,2 %
3. Group 3 – Highest share of liquidity, 91 banks. Median = 101,9 %

These groups were then sorted in 14 sets based on which quarter they represent, from Q_1 2005 until Q_2 2008. Further was each quarter sorted in quintiles after their value on SUE, from low to high SUE. Hence, as in study 1 all observations were sorted by three levels, 1. Liquidity status 2. Quarters and 3. SUE.

3.3.2.3 Study 3 - Manage or not manage the Crisis

In the third study, the banks were divided into two groups. The grouping of the banks in this study was made considering Datastream's label of the banks in the variable "Stock Price". The banks that were labeled dead, merged, acquired or had any other reason for why the stock prices were not available during the year 2007-2009 were grouped together and the other group contain the other banks. This study included 74 banks. This main categorizing of the banks was the same for each observation.

1. Group 1 – The banks that turned bankrupt, became merged or acquired, 12 banks.
2. Group 2 – The banks that manage the crises well, 62 banks.

Further, each quarter was then sorted in quintiles after their value on SUE, similar to the grouping in study 1 and 2. Because of few observations in Q_1 2008, for the Analysts' Forecast Method, this quarter was excluded in this study for this method.

3.3.2.4 Study 4 - The 4th Quarter

In the fourth study, which included 112 banks, the ranking was made based on which quarter the observation represents. This study includes 20 quarters, from Q_1 2005 until Q_4 2009.

1. Group 1 – Quarter 1
2. Group 2 – Quarter 2
3. Group 3 – Quarter 3
4. Group 4 – Quarter 4

Each quarter was then sorted in quintiles after their value on SUE, alike in Study 1-3.

3.3.3 Step 3 - Evaluating Cumulative Abnormal Return

Abnormal stock return over time is the difference between the actual and the expected return. To calculate abnormal return, the raw return for a firm is reduced by the return for a comparable index (Bernard & Thomas, 1989).

$$AR_{bt} = R_{bt} - R_{it}$$

Where AR_{bt} is the abnormal return for bank *b*, day *t* and R_{bt} and R_{it} are calculated as follows:

$$R_{bt} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

$$R_{it} = \frac{Index_t - Index_{t-1}}{Index_{t-1}}$$

R_{bt} is the raw return for bank *b,* day *t* and P refers to the specific bank's stock price. R_{it} is the mean return for the index decile that bank *b*, due to size is a member of (Bernard & Thomas, 1989).

The index was calculated from the banks that were included in the study. The banks were sorted in terms of size on common equity, the size was determined based on the average common equity during year 2005-2009. The banks were thereafter sorted in ten groups for which an index of the stock prices was calculated for each trading day from 2005-01-01 until 2010-06-31. When evaluating the Abnormal Return, each bank was hence compared with the index decile that it belongs to due to size.

The Abnormal Return was calculated two days after the announcement date and forward to day number 119 after the announcement date. The evaluation of AR starts 2 days post the announcement date because it is not the immediate response in the stock prices that is aimed to be capture but the delay in the price response. The Cumulative Abnormal Return was then measured as the sum of the abnormal return for each trading day from the announcement date. The 119 days after the earnings' announcement were the time for which PEAD was evaluated in this study. These 119 days were divided in 6 groups, day number; 2-20, 21-40, 41-60, 61-80, 81-100, and 101-119. These groups make it possible to investigate how the drift is moving.

Due to the groups of days, CAR was summed for all observations that belong to the same quarter. Hence, this CAR represents all observation that belongs to the same quarter and must therefore be divided by the number of observations to obtain the average CAR for the group.

3.5 Statistical Tests
To analyze if a significant difference between the groups' CARs could be deducted, the statistical test Kruskal-Wallis was used. The Kruskal-Wallis test is a non-parametric test and one of its advantages is that it does not require the assumption of normally distributed populations (Anderson *et al.,* 2009).

The hypotheses for the Kruskal-Wallis test are written as follows:

H_0: All groups' populations are identical

H_1: Not all groups' populations are identical

If the null hypothesis is rejected, the test must be followed up with some specific comparison testing, this because we do not know if for example group 1 and 2, 1 and 3 and 2 and 3 are statistical different from each other (Anderson *et al.,* 2009).

3.6 Validity and Reliability of the Research
The index used when evaluating the Cumulative Abnormal Return in this research was based on the firms' common equity. The measurement market cap would have been a more appropriate variable when the ten size deciles were determined, since common equity includes accounting aspects. Therefore, the market cap works as a better measurement of the firms "true" value. This can generate a bias if the bank is not benchmarked with the right index and its CAR can either be overestimated or underestimated.

Due to the time limit, no robustness test was made. If this had been conducted, the validity and reliability of the study could have been strengthened. The credit losses and the liquidity status were divided into three groups. A robustness test would be if the studies also were conducted with another grouping. For example, if the banks based on the credit losses and the liquidity status, were divided into 4 groups, would we have received the same result?

Chapter 4 - Empirical Results

In this chapter the empirical study and the research results are presented. Data for the four studies are presented in tables and the tables are complemented with explanatory text to give the reader a better understanding of the results.

4.1 Descriptive Results

The results are presented in tables viewing the Cumulative Abnormal Return (CAR) for high and low Standardized Unexpected Earnings (SUE), and the difference between the two. When determining the groups of high and low SUE, as mentioned in *Chapter 3 Methodology*, all observations were ranked by the value of SUE. From this, the observations for each quarter were sorted in quintiles and hence, it is the first and the fifth quintiles that are represented in the tables. In the tables, the group of belonging is stated at the top and the holding period in the left column. After each table there is an explanatory text.

The output from the Kruskal-Wallis test, that was used to test statistically the significance among the groups, is also presented. For each study and method, the primarily output is presented where every group/quarter has been included. Further, if a significant difference between two groups/quarters has been observed, where the p-value is 0,15 or less, these results are presented as well.

4.1.1 Study 1, Credit Losses

4.1.1.2 Study 1, Credit Losses, Analysts' Forecast Method

Study 1 - Credit Losses
Analysts' Forecast Method

Holding Period (Trading Days, Relative to Announcement)	Banks with low Credit Losses			Banks with medium Credit Losses			Banks with large Credit Losses		
	High SUE	Low SUE	Diff. (Hi-Lo)	High SUE	Low SUE	Diff. (Hi-Lo)	High SUE	Low SUE	Diff. (Hi-Lo)
	Cumulative Abnormal Return (%)								
2 to 20	-73,04%	37,61%	-110,65%	-25,77%	-14,52%	-11,25%	-27,38%	-33,16%	5,78%
21 to 40	-3,82%	7,95%	-11,77%	-13,77%	-21,10%	7,33%	-34,39%	13,98%	-48,36%
41 to 60	-9,32%	-19,70%	10,38%	-13,08%	10,86%	-23,94%	-5,22%	-0,31%	-4,91%
61 to 80	-27,97%	11,78%	-39,74%	-9,60%	-13,54%	3,94%	-6,95%	-47,39%	40,44%
81 to 100	-44,71%	29,76%	-74,47%	8,27%	27,70%	-19,43%	-9,37%	-10,91%	1,54%
101 to 119	-15,81%	-6,09%	-9,73%	-13,30%	-32,22%	18,92%	-34,91%	-32,66%	-2,26%

In Study 1, where the credit losses were the proxy for how well the banks managed the crisis, the Kruskal-Wallis test for the Analysts' Forecast Method gave a p-value of 0,236 and there is therefore no significant difference among the three groups. The null hypotheses that all groups' populations are identical could not be rejected.

When the test instead was made by comparing the groups among each other, banks with low level of credit losses (Group 1) and banks with high level of credit losses (Group 3) had a p-value of 0,109. With a level of significance of 15%, the null hypotheses could be rejected.

4.1.1.2 Study 1, Credit Losses, Random Walk Method

Study 1 - Credit Losses
Random Walk Method

Holding Period	Banks with low Credit Losses			Banks with medium Credit Losses			Banks with large Credit Losses		
(Trading Days, Relative	High	Low	**Diff.**	High	Low	**Diff.**	High	Low	**Diff.**
to Announcement)	SUE	SUE	**(Hi-Lo)**	SUE	SUE	**(Hi-Lo)**	SUE	SUE	**(Hi-Lo)**
	Cumulative Abnormal Return (%)								
2 to 20	-9,09%	-16,35%	7,26%	-5,67%	-13,43%	7,76%	-22,07%	-5,81%	-16,26%
21 to 40	17,18%	-23,11%	40,29%	7,64%	-15,14%	22,78%	-10,50%	-27,75%	17,25%
41 to 60	-16,25%	-15,24%	-1,02%	7,99%	-19,28%	27,27%	-12,76%	-0,56%	-12,21%
61 to 80	13,51%	-22,52%	36,03%	-55,07%	-17,58%	-37,49%	-22,77%	4,21%	-26,99%
81 to 100	-13,35%	-30,10%	16,76%	-1,46%	-9,03%	7,57%	8,75%	14,53%	-5,79%
101 to 119	-27,22%	10,81%	-38,03%	-17,02%	-22,45%	5,44%	-59,41%	-2,23%	-57,18%

When Study 1 was conducted with the method of Random Walk, the Kruskal-Wallis test showed a p-value of 0,529 and there is therefore no significant difference among the three groups. In this case, the null hypotheses could not be rejected.

4.1.2 Study 2, Liquidity Status

4.1.2.1 Study 2, Liquidity Status, Analysts' Forecast Method

Study 2 - Liquidity Status
Analysts' Forecast Method

Holding Period	Firms with low Liquidity Status			Firms with medium Liquidity Status			Firms with high Liquidity Status		
(Trading Days, Relative	High	Low	**Diff.**	High	Low	**Diff.**	High	Low	**Diff.**
to Announcement)	SUE	SUE	**(Hi-Lo)**	SUE	SUE	**(Hi-Lo)**	SUE	SUE	**(Hi-Lo)**
	Cumulative Abnormal Return (%)								
2 to 20	-20,14%	-20,94%	0,79%	-41,20%	-2,97%	-38,23%	-32,94%	-2,94%	-30,00%
21 to 40	-74,54%	-71,57%	-2,98%	6,47%	-10,91%	17,39%	-11,94%	15,67%	-27,61%
41 to 60	-8,91%	-51,67%	42,76%	-5,73%	7,83%	-13,56%	-2,78%	-13,85%	11,07%
61 to 80	-7,84%	-59,20%	51,36%	-17,37%	-36,86%	19,49%	-7,87%	-21,69%	13,82%
81 to 100	-19,75%	-20,37%	0,62%	0,29%	26,65%	-26,36%	-22,25%	-1,02%	-21,23%
101 to 119	-14,70%	-34,98%	20,28%	-43,69%	-9,44%	-34,26%	-14,33%	-54,72%	40,39%

In Study 2, the liquidity status was set as the proxy for how well the banks managed the crisis. The Kruskal-Wallis test for the Analysts' Forecast Method showed a p-value of 0,149 and the three groups are therefore significantly different from each other at a level of 15 %. If this higher level of significance is used, the null hypotheses could be rejected.

Further, when performing the test between two groups at a time, banks with low liquidity status (Group 1) and banks with medium liquidity status (Group 2) the p-value was 0,055. The null hypothesis could be at a level of 10 %.

4.1.2.2 Study 2, Liquidity Status, Random Walk Method

Study 2 - Liquidity Status
Random Walk Method

Holding Period (Trading Days, Relative to Announcement)	Firms with low Liquidity Status			Firms with medium Liquidity Status			Firms with high Liquidity Status		
	High SUE	Low SUE	Diff. (Hi-Lo)	High SUE	Low SUE	Diff. (Hi-Lo)	High SUE	Low SUE	Diff. (Hi-Lo)
				Cumulative Abnormal Return (%)					
2 to 20	14,00%	-54,74%	68,74%	-15,55%	-20,00%	4,45%	-28,11%	-4,86%	-23,25%
21 to 40	3,67%	-39,53%	43,20%	4,06%	-22,32%	26,38%	-3,54%	-28,79%	25,25%
41 to 60	19,69%	-6,12%	25,81%	-5,67%	-30,35%	24,68%	-1,92%	21,69%	-23,61%
61 to 80	-10,35%	-65,14%	54,79%	-3,89%	-19,75%	15,87%	-35,81%	1,58%	-37,38%
81 to 100	-22,47%	-45,54%	23,07%	-1,11%	-2,67%	1,56%	11,31%	3,35%	7,96%
101 to 119	-14,39%	11,21%	-25,59%	-0,57%	-41,99%	41,43%	-40,33%	0,82%	-41,15%

The Kruskal-Wallis test for the Random Walk Method of Study 2 showed a p-value of 0,046 and the three groups are significantly different at a level of 5 %. The null hypotheses that all populations are equal could be rejected and there is a difference among the groups.

When performing the test between two groups at a time, the comparison between Group 1 and 2 was insignificant, but a p-value of 0,037 between Group 1 and 3 and 0,055 between Group 2 and 3. We can therefore reject the null hypotheses for these tests at a level of 5 %.

4.1.3 Study 3, Manage or not manage the crises well

4.1.3.1 Study 3, Manage or not manage the crisis well, Analysts' Forecast Method

Study 3 - Manage or not manage the crisis well
Analysts' Forecast Method

Holding Period (Trading Days, Relative to Announcement)	Banks that did not manage the crisis			Banks that manage the crisis well		
	High SUE	Low SUE	Diff. (Hi-Lo)	High SUE	Low SUE	Diff. (Hi-Lo)
			Cumulative Abnormal Return (%)			
2 to 20	-54,66%	-12,61%	-42,05%	-8,66%	3,94%	-12,60%
21 to 40	-59,07%	39,04%	-98,11%	-5,97%	2,98%	-8,96%
41 to 60	-36,90%	-25,98%	-10,92%	-11,09%	-17,37%	6,29%
61 to 80	-14,42%	-11,92%	-2,50%	-10,54%	-22,32%	11,79%
81 to 100	3,32%	-21,24%	24,56%	10,91%	26,24%	-15,33%
101 to 119	-22,48%	29,96%	-52,45%	-16,01%	-25,25%	9,24%

For Study 3, where the first group represents the banks that did not manage the crisis and the second the banks that maintained stability through the crisis, the Kruskal-Wallis test for the Analysts' Forecast Method gave a p-value of 0,262. There is therefore no significant difference among the two groups and the null hypotheses could therefore not be rejected.

4.1.3.2 Study 3, Manage or not manage the crises well, Random Walk Method

Study 3 - Manage or not manage the crisis well
Random Walk Method

Holding Period (Trading Days, Relative to Announcement)	Banks that did not manage the crisis			Banks that manage the crisis well		
	High SUE	Low SUE	Diff. (Hi-Lo)	High SUE	Low SUE	Diff. (Hi-Lo)
			Cumulative Abnormal Return (%)			
2 to 20	-40,75%	-19,73%	-21,01%	-22,26%	-16,25%	-6,01%
21 to 40	-55,40%	-32,16%	-23,24%	8,54%	-22,57%	31,11%
41 to 60	13,16%	13,35%	-0,19%	-2,86%	-4,94%	2,09%
61 to 80	-14,71%	23,68%	-38,39%	-22,97%	-9,09%	-13,89%
81 to 100	-6,80%	-25,46%	18,66%	-2,06%	-3,39%	1,33%
101 to 119	-0,92%	-1,80%	0,88%	-40,43%	-2,85%	-37,58%

30

The same result was given when the Kruskal-Wallis test was used on the results from the Random Walk Method; this test showed a p-value of 0,423. There is therefore no significant difference among the three groups, and the null hypotheses could not be rejected.

4.1.4 Study 4, The 4th Quarter

4.1.4.1 Study 4, The 4th Quarter, Analysts' Forecast Method

Study 4 - The 4th Quarter
Analysts' Forecast Method

Holding Period	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter		
(Trading Days, Relative	High	Low	Diff.	High	Low	Diff.	High	Low	Diff.	High	Low	Diff.
to Announcement)	SUE	SUE	(Hi-Lo)	SUE	SUE	(Hi-Lo)	SUE	SUE	(Hi-Lo)	SUE	SUE	(Hi-Lo)
						Cumulative Abnormal Return (%)						
2 to 20	4,48%	-8,92%	13,40%	-12,64%	5,83%	-18,47%	-11,86%	-6,09%	-5,78%	8,56%	6,00%	2,56%
21 to 40	-1,08%	7,21%	-8,30%	-11,65%	-26,56%	14,90%	0,09%	2,24%	-2,16%	17,69%	40,07%	-22,38%
41 to 60	19,77%	16,37%	3,39%	-6,49%	9,67%	-16,16%	-16,19%	-24,63%	8,44%	0,81%	-3,72%	4,54%
61 to 80	10,14%	-6,00%	16,13%	-15,07%	-8,17%	-6,91%	-5,62%	-18,88%	13,26%	0,11%	-13,12%	13,22%
81 to 100	-8,71%	-18,62%	9,91%	7,25%	10,80%	-3,55%	18,79%	34,54%	-15,74%	-0,95%	4,82%	-5,77%
101 to 119	-8,61%	-18,71%	10,10%	-2,15%	-17,71%	15,56%	2,01%	29,73%	-27,73%	4,93%	6,60%	-1,67%

The Kruskal-Wallis test that was performed on the results from Study 4, where the four quarters where investigated, using the Analysts' Forecast Method, showed a p-value of 0,401 and there is therefore no significant difference among the three groups and the null hypotheses could not be rejected.

When performing the test between two groups at a time, a significant difference was found between quarter 1 and 3, and 1 and 4. The test showed a p-value of 0,109 for quarter 1 and 3, and 0,150 for quarter 1 and 4. At a higher level of significance, 15 %, the null hypotheses that all populations are equal could be rejected.

4.1.4.2 Study 4, The 4th Quarter, Random Walk Method

Study 4 - The 4th Quarter
Random Walk Method

Holding Period	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter		
(Trading Days, Relative	High	Low	Diff.	High	Low	Diff.	High	Low	Diff.	High	Low	Diff.
to Announcement)	SUE	SUE	(Hi-Lo)	SUE	SUE	(Hi-Lo)	SUE	SUE	(Hi-Lo)	SUE	SUE	(Hi-Lo)
						Cumulative Abnormal Return (%)						
2 to 20	2,26%	-5,41%	7,66%	-7,17%	-8,05%	0,88%	16,52%	-3,96%	20,48%	-10,88%	8,60%	-19,48%
21 to 40	-3,84%	-6,84%	2,99%	-13,25%	-21,66%	8,41%	21,53%	-9,11%	30,64%	10,72%	11,82%	-1,09%
41 to 60	17,31%	15,15%	2,15%	5,46%	-8,27%	13,74%	-6,50%	-13,79%	7,29%	-0,73%	-5,52%	4,79%
61 to 80	-7,18%	10,58%	-17,77%	7,85%	-7,57%	15,42%	5,03%	8,55%	-3,52%	-6,53%	2,47%	-9,00%
81 to 100	6,95%	-6,20%	13,15%	14,78%	5,65%	9,13%	-12,02%	15,05%	-27,07%	1,83%	4,52%	-2,69%
101 to 119	-11,92%	2,57%	-14,49%	6,36%	-15,48%	21,84%	0,41%	8,61%	-8,21%	10,98%	8,57%	2,41%

When the Random Walk Method was used to examine Study 4, the Kruskal-Wallis test over all quarters showed a p-value of 0,102 and the null hypotheses could therefore, at a higher level of significance, at 15 %, be rejected.

When the test was performed comparing two quarters at a time the p-value was 0,055 for quarter 1 and 2 and 0,010 for quarter 2 and 4. Among the other tests there was no significant difference. Between quarter 2 and 4 we could therefore reject the null hypotheses at a level of 1 %. Between quarter 2 and 3 the p-value was 0,055 and the null hypotheses could therefore be rejected at a level of 10 %.

Chapter 5 - Analysis

The following chapter aims to link the empirical study to the fame of reference. This analysis is an attempt to give the readers an explanation of the results given in the four studies. The analysis that is presented will work as a foundation for answering the research questions in the next chapter.

5.1 Study 1, Credit Losses

As stated in the theoretical framework, the business cycle greatly influences default probabilities, and a bank's financial results are affected by the confidence the market has on the institution's credit standing (Nickel *et al.,* 2000). When an economic downturn occurs, the market risk increases. The higher volatility in the banking sector during these downturns has a higher effect on this sector (Nickel *et al.,* 2000). As credit losses affect the credit risk for the investor, a combination of market risk and credit risk should have been deduced in this study.

When the study was conducted with Analysts' Forecast Method no significant difference among the three groups was possible to identify. However, when the groups were tested against each other, Group 1 and Group 3 had a p-value of 0,109, which is an indication that these two groups are not identical. Further, based on mean ranks, banks with low credit losses (Group 1) had the lowest ranking, which indicates the highest level of negative differences. Banks with medium credit losses (Group 2) and banks with high level of credit losses (Group 3) are approximately balanced between each other. However, the CARs for firms with high SUE is constantly negative, and so is the difference between firms with high and low SUE, which is highly unlikely because positive earnings' announcement should tend to give a positive CAR, due to the fact that the stock prices tend to drift upwards when the company announces good news and downward when negative news are presented (Ball & Bartov, 1996). Hence, we should have observed a relationship between a high SUE and a higher level of CAR in comparison to the banks with low SUE and therefore a positive difference. This unlikely relationship could for example occur for three reasons. The first reason issues from the R_{bt} formula, see subchapter *3.3.3, Step 3- Evaluating Cumulative Abnormal Return.* That P_t is lower than P_{t-1}, despite the positive earnings' announcement, gives a negative result. The second reason issues from the R_{it} formula, where a similar event can occur. The $Index_t$ can be lower compared to $Index_{t-1}$, which gives a negative result. A third explanation is that the grouping of SUE in "high" and "low" SUE do not automatically mean that the observations in the group high SUE have positive earnings' announcements. High SUE only means higher value of SUE than the observations in the low group, hence, this value can potentially still mean negative earnings' announcements. But also the low SUE, in particular Group 1, acts against the theories where a negative earnings' announcement should indicate a decrease in the stock price. Here, instead, CAR is mainly positive. Because of this the third explanation is therefore highly unlikely to be the reason for the results. Instead the reason for this can be the same as the two first explanations stated above, a negative result in either the R_{bt} formula or the R_{it} formula, or in both.

When the study thereafter was conducted with Random Walk Method no significant relationship could be distinguished there either. Still via this method, banks with a high level of credit losses (Group 3) had the lowest mean rank, compared to banks with low level of credit losses (Group 1) for the Analysts' Forecast Method. Hence, the two methods do not give the same results. When studying the tables as an entity, CAR is overall higher in the groups with high SUE compared to the groups with low SUE. The fact that both firms with high and low SUE partly has negative CAR is an indication that the increase in the stock price is lower compared to index, which could be an indication of market risk. Although previous studies stating an increased stock price after a positive earnings'

announcement, the negative CAR indicates that the reaction in the stock price is lower compared to index. If the index has been calculated correctly, the market risk could give a decrease in the stock price for the total financial market due to the fact that the investors see a risk in the whole financial sector, which gives decreased stock prices for the total market, and then for all banks. The investors' uncertainty during the time for which PEAD was measured in this study could therefore be derived from the market risk, and not the credit risk. Otherwise, the credit risk would have shown differences between the groups due to the classification of the credit losses, this since the assumption was drawn that the investors' uncertainty is a reflection on their interpretation of the firms earnings' announcements.

From the results in this study the authors cannot draw any general conclusions regarding the influence credit losses have on the CAR. The result that credit losses do no influence CAR, subsequent in the relationship regarding PEAD, the correlation between SUE and CAR, could not be distinguished. Still, the low mean rank in Group 1 for Analysts' Forecast Method tends to indicate that the market did react different to banks with a low level of credit losses, compared to banks with high or medium credit losses. Hence, the results show some difference between banks with a low level of credit losses and banks with medium or high levels. This can be an indication that the market perceives banks with medium and high credit losses as comparable and reacts differently regarding banks with a low level of credit losses. Although, based on the results of this study, the authors do not consider credit losses as a good proxy for risks in the banking sector during the recent financial crisis. No significant relationship could be identified by either method and no common denominator among the two could be observed. To find an answer as to why investors do not react stronger to credit losses is challenging; an alternative is that the investors consider that the banks with a high level of credit losses are able to handle, but a low level of liquidity, on the other hand, is a greater risk.

Because of the weak results from the Kruskal-Wallis test, no general conclusions can be drawn. Potential reasons for the weak result in this study will be more extensively described in subchapter *6.3 Criticism to the Research* and does mainly refer to risks of errors in the index and the announcement dates.

5.2 Study 2, Liquidity Status

Moretto *et al*. (2007) stated in their study that an increased level of market risk, which occurs at times of economic downturns, affects the investors' prospects for illiquidity in firms and consequently the risk for insolvency. A higher level of market risk should therefore result in an increased liquidity risk, which could be expressed in a delayed price response in the stock market. Further, the market perceives this risk as an uncertainty that must be taken into consideration when making their investment decisions.

From the results in the study, observations can be made that point on differences between the three groups. When the Analysts' Forecast Method was used, the p-value for the test if the three groups were identical was 0,149. Further, firms with low liquidity status (Group 1) were shown to differ at a significance level of approximately 5 % from firms with medium liquidity status (Group 2). The mean rank for Group 1 is also higher compared to Group 3. Even if the statistical tests do not give the result that Group 1 and 3 are significant different from each other, an overview of the mean ranks give the indication that a difference is present. Hence, based on the mean rank, firms with medium liquidity status and firms with high liquidity status are approximately similar, which could indicate that investors are equivalent between medium and high level of liquidity, but the reaction occurs when the liquidity level of the bank is low. When observing the table, the magnitude of the drift seems to be larger for Group 1, compared to the groups that had better liquidity status. This is probably the reason to why Group 1 is distinguished from the other two and this might be an indication of some form of

investors' uncertainty concerning the low liquidity status. This larger drift is also a sign of that the investors were unsure of how to react to the released information at the time before the financial crisis. Also, as in Study 1, with the Analyst Forecasts' Method, this study gives the highly unlikely results of negative CAR for the groups of high SUE. The potential reasons for this were discussed under the previous subchapter of Study 1.

When the study instead was performed with the Random Walk Method the groups were significantly different from each other at a level of 5 %, with a p-value of 0,046. In comparison to the Analysts' Forecast Method, where Group 1 differed from the additional groups, firms with high liquidity status (Group 3) were assigned the mean rank of 5,33, in relation to 12,83 and 10,33 for Group 1 and 2. Here group 1 and 3 differ from each other at a significance level of 3,7 % and group 2 and 3 are significant different at a level of 5,5 %. Even if the two methods do not give consistent results of which groups that significantly differ from each other, the fact that the null hypotheses could be rejected for some of the tests, do indicate that some uncertainty among the investors is captured in this study.

When studying the table, Group 1 has an interesting display of CAR. In this group, banks with high SUE have a higher CAR compared to banks with low SUE, resulting in a positive difference between the two, which was the outcome that was expected for all groups in this research. This positive difference occurs during the total holding period, with exception for the holding period of 101-119 days. However, CAR for banks with high SUE turns negative after the holding period of 61 days, but the difference is still positive. Why this result has occurred is difficult to deduce. The relationship, regarding a higher level of CAR for banks with high SUE compared to the observations with low SUE, also occurs for firms with medium liquidity status (Group 2). Partly negative CAR for firms with high SUE also appear in this group, as in Study 1 for the Random Walk Method. In Study 1, the market risk could be an explanation for the results in the table displaying CAR. However, in this study there is no overall relationship of negative CAR for all groups and therefore is this explanation not adaptive for this study.

When studying the time for the reaction in the stock market for Group 1, the reaction seem to indicate a direct response as the CAR has a high difference from day 2, as well as an instant occurrence of CAR for both firms with high and low SUE. This relationship is not possible to deduce for the additional groups. Why this direct price response occurs could have its explanation in that investors react more quickly when a bank releases information regarding a low level of liquidity. The investors then directly see this as a bad indication and the price response it therefore direct. Hence, banks with a medium or high level of liquidity are more difficult for the investors to have a direct judgement about. When studying the table of firms with medium and high liquidity status, there is an unlikely relationship between the high and low SUE, alike the one from Study 1, and also in this study, regarding the results from Analysts' Forecast Method. The banks with a medium and high liquidity status, and a high SUE, should have a higher CAR compared to the ones with low SUE. In the group with high liquidity status the differences vary constantly and there is therefore difficult to observe a relationship for this group. Due to this unlikely relationship, the low mean rank has occurred. Further, the groups with the lowest mean rank therefore have the highest level of negative differences between high and low SUE.

This study has captured some form of uncertainty in the market, where both the Analysts' Forecast Method and the Random Walk Method showed significant differences among the groups. In both methods, Group 1 differed from the additional groups when studying the fluctuation in CAR, but the group with the lowest mean rank varied when the different methods were used. This indicates that the market reacts different to the three groups. Referring to Setterberg (2011) this could be a sign that the investors were exposed to different level of information uncertainty when making investment

decisions for the banks in the three different groups. This information uncertainty can potentially be derived from insufficient information that the banks give about their exposure to risks and the risk management concerning the firms' liquidity status. The liquidity was, as stated, heavily affected by the recent crisis (Tirole, 2011) and the investors' could therefore have developed a greater uncertainty regarding this. This liquidity risk has affected the investors' uncertainty, and in combination with the economic state that Europe was in during these years, the market risk affected the financial market. In contrast to Study 1, where only market risk could be observed, in Study 2 the authors consider the results appearing from the study of a combination of the uncertainty from the liquidity and the market risk, and the affection these two risks has on each other. Therefore, the authors believe liquidity is a relevant proxy when observing uncertainty in the banking sector during the recent financial crisis.

5.3 Study 3, Manage or not manage the crisis well

Neither for the Analysts' Forecast Method, nor for the Random Walk Method could any significant difference between the two groups in study 3 be detected. However, with regard to both methods it is observed that the banks in Group 1, that did not manage the crisis well, have larger negative Cumulative Abnormal Return than the banks that maintained stability through the crisis. This could be an indicator that differences between the groups are present. The Kruskal-Wallis test done in this research only tests and takes the differences between the high and low SUE into account and could therefore potentially miss differences that would have been deducted if high SUE and low SUE were tested separately. However, when analyzing the PEAD, which was measured from Q_1 2005 to Q_2 2008, and the statistical tests that were performed on study 3, give no indication that the investors foresaw which banks would manage the crisis well and which ones would end up in bankruptcy, become merged or acquired. An explanation for the result can be the sudden importance and greatness of the crisis in a short amount of time, which few analysts did foresee. Observers had been concerned about a credit bubble from early in year 2007, but the skepticism was large. Despite the concerns there was a sense in the market that, if a crisis would occur, it would occur in a later future (Ershov, 2009). If the market did not expect the crisis, it therefore did not fully reflect the indication showing the banks financial state. Further, this would therefore not give any significant differences among the three groups in this study, because the investors did not react to the indications.

Even if the financial crisis surprised the market, the question due to the results in this study is if the implementation of IFRS 2005 actually added value to the investors. The intention of the new accounting regulations was to result in a higher quality, transparent and comparable information, and this would lower the uncertainty for the investors (Ball, 2006). Regarding the results in this study, where no clear differences between the two groups could be observed, the question is if the market received sufficient information regarding the banks' exposures to risks in the interim and annual reports. This study indicates that banks might have failed in their communication to the investors concerning risks during the years before the crisis.

5.4 Study 4, The 4th Quarter

Due to the fact that the report of Q_4 has been audited, the hypothesis stated in this thesis was that the auditor's signature should eliminate a certain amount of the investors' uncertainty. The authors of this thesis make the assumption that the sampled companies in this study within the banking sector have a high audit quality and therefore a low auditor risk, mainly due to the fact that all firms in our sample are listed and forced to comply with extended accounting regulations, especially after the implementation of IFRS in 2005. The market should therefore perceive the audit information, relative to the unaudited interim reports, as more reliable.

Among other theories that are of interest for the analysis of this study is the phenomenon "information uncertainty". The concept "information uncertainty" was earlier in this study defined as the fact that

the investors make their investment decision based on unexpected earnings since the "real" economic earnings are not available. The stock markets' reaction is therefore not a reaction of the "real" value creation but a reaction to the unexpected earnings' signal (Setterberg, 2011). However, this information uncertainty is suggested to be a risk factor for which the market wants to be compensated (Setterberg, 2011). Hence, in this thesis the information uncertainty can refer to the uncertainty concerning the insufficient information that the banks give about their exposure to risks and the risk management strategy. If the investors did not perceive any uncertainty in the post-announcement period, there would not occur any price drift (Setterberg, 2011).

The Kruskal-Wallis test done in the fourth study shows that the null hypotheses, that the groups are identical, can be rejected at 10,2 % level when the Random Walk method is used. Further, when investigating the quarters in detail, Q_1 and Q_2 are significantly different at a level of 5,5 % and Q_2 and Q_4 are significantly different at a level of 1 % which indicate a strongly significant difference between these quarters. When the Analysts' Forecast Method is used, the null hypotheses can not be rejected. When the quarters were analyzed in more detail, Q_1 and Q_3 had a p-value of 0,109 and the test between Q_1 and Q_4 gave a p-value of 0,15. Hence, in this study it is the Random Walk Method that gives the strongest indication that a difference regarding the Cumulative Abnormal Return for the four quarters is of significance.

Consequently, the Kruskal-Wallis tests give some indications that the 4th quarter is distinguished form the other quarters, at least when the Random Walk Method is used. Also, when observing the CAR in the tables for the four different groups, the reflection is that the drift ceases after day 40 in the 4th quarter; meanwhile it proceeds in a larger extent for a longer time period in the other quarters. This observation is consistent between the two methods. The observation that the drift seems to cease more quickly in the fourth quarter can be a signal that the firms disclose more about its risks in the report of this quarter, which lowers the information uncertainty that the investors want to be compensated for. A shorter drift should, due to the theories in the frame of reference, be an indication of lower uncertainty. If the information uncertainty is lowered, then the investors should not be compensated for this risk to the same extent and CAR should therefore be lower. This is also what is observed in Q_4. Hence, this shorter drift in quarter four can be a result of the auditors' role of decreasing uncertainty for the investors as well as the probability that firms give more extended disclosure of their risks in the annual report. The annual reports contain more written texts about the exposure to risks and the risk management strategy and the information given to the investors increases compared to the information in the other interim reports. These two factors should separately and especially in conjunction give the investors valuable information about the exposure to risks and lower the investors' uncertainty that turns out in a shorter drift in the CAR. This can be one of the explanations as to why the drift is apparently more focused to the first 40 days in quarter 4. However, these findings, based on observing the tables, are not sufficiently reliable for general conclusions about the populations to be drawn from them. The statistical tests indicate that a difference between the quarters is present but the tests do only give very weak results that support the hypothesis of this thesis that the PEAD in the 4th quarter would be significantly different from the unaudited quarters.

When the Kruskal-Wallis test was done for all populations, the p-value was 0,401 when the Analysts' Forecast Method was used and 0,102 for Random Walk. Why not a significantly larger difference could be observed can have its explanation in the auditors' role, not the signature itself. The investors are aware of that, despite the fact that it is only the annual report that is signed; the interim reports are just an earlier released part of the final annual report. So even if the interim report not will be audited itself, it will be inspected when the fiscal year ends. This will result in that the market assuming the role of the auditor, not its signature, as an element that lowers the uncertainty surrounding the total year and therefore all reports.

The reason for the weak results in study 4 is mainly explained through 2 theories. First is the fact that the auditor's signature on the annual report also reflects on the other quarterly reports. The PEAD of the 4th quarter is therefore at the same level as the quarterly reports, not an indication of the auditors not lowering the investors' uncertainty, but an indication that the auditors lower the uncertainty during all quarters. The second explanation for the results concerns the uncertainty in the earnings' announcement dates. The dates used in this study can be either when the interim report of Q_4, or the annual report has been released. If inconsistency of use in these two different dates has affected the study, this would affect the magnitude of the drift and therefore the result.

Chapter 6 - Conclusion

In this chapter the readers are given the answers to the research questions. These answers are based on the findings in this study. The conclusion of the research is presented and further, attention is given to a discussion concerning criticism of the research. Finally, suggestions are made with regard to further research that can be made in the field.

6.1 Answers to the Research Questions

The main questions for this thesis were stated as followed:

Can we observe any difference in the PEAD for these banks that did not manage the crisis well, compared to the banks that maintained stability through the crisis? Hence, with the answer in hand- did the market foresee the banks' fate before the magnitude of the financial crisis was undeniable?

From this study the authors cannot claim that there is a difference in the PEAD for the banks that did not manage the crisis well, compared to the banks that maintained stability through the crisis. Based on the findings in the empirical study of PEAD in this thesis, due to the results in study 1, 2 and 3, the market did not foresee which banks would manage the crisis and which ones that would fail.

Can we observe any variance of the PEAD between the unaudited Q_1, Q_2, Q_3 interim reports and the audited Q_4 report? Can the conclusion be drawn that the auditor eliminates some of the uncertainty?

From the results presented in study 4, the authors cannot claim that the differences between the quarters that were deducted in the thesis can be derived from the auditors' role of limiting risk for the investors.

6.2 Research Conclusion

From this study the authors cannot claim that there is a difference in PEAD for the banks that did not manage the crisis well, compared to the banks that maintained stability through the crisis. Based on this research, the conclusion can be drawn that the market did not foresee which banks would manage the crisis and which ones would not. However, this study does indicate that some form of investors' uncertainty has been captured. Significant difference among some of the groups has been observed, in study 2 in particular, despite the limitations of this thesis due to the few numbers of observations and risk of errors in the index and the announcement dates which probably had a negative effect on the results of the research.

Furthermore, from the result in study 4 the authors cannot claim that the differences between the quarters could be derived from the auditors' role of limiting risk for the investors. Even though no general inferences can be drawn from the study concerning the role of the auditor, the study captures some sort of reaction by the investors, this referring to study 4 which showed significant difference between some of the quarters, especially referred to when the Random Walk Method was used; the 4th quarter was significantly different from the second quarter at a level of 1 %.

6.3 Criticism to the Research

In comparison to other studies made in the field, this research included significantly less observations. Despite this, the research does indicate that the Post-Earnings Announcement Drift is present and this is consistent with previous studies. In addition to the comparatively low number of observations, two other methodology considerations are possible reasons for the weak results. The first one concern how the index used to calculate CAR was evaluated, in subchapter *3.6 Validity and Reliability of the*

Research; an explanation for this was presented. This explanation states that the risk in the index mainly concerns the fact that the common equity was used, instead of the preferred market cap, when the banks were sorted in deciles. The index used in this study could therefore have been misleading because the banks could potentially have been compared to the wrong index when calculating the Abnormal Return. The second methodology consideration, that potentially could have affected the results negatively, is the announcement dates. These were mainly collected from Datastream but the ones that were not available were collected manually. The manually gathered announcement dates were primarily collected from press releases, and in lack of these, the date was used when the board of the banks signed the annual report. An inconsistency with regard to the date used, especially in the study concerning the 4th quarter, could therefore potentially occur, referring to the fact that some observations may have been of the date when the interim report of Q_4 was released. Meanwhile other reports can have been referring to the date of the announcement of the annual report.

As already mentioned in subchapter *3.6 Validity and Reliability of the Research,* no robustness test have been made in the research. This means that the findings in the study may not be robust if another grouping of the four studies had been made.

6.4 Further Research

Suggestion for further research in the field is to investigate unexpected credit losses instead of the actual credit losses that were observed in this study. A study that focuses on unexpected credit losses would compare the level of credit losses with previous years, to examine what is normal and what is unexpected. This measure would probably be a better proxy for the credit risk that the banks are exposed to.

Another suggestion regards the investors' uncertainty and how it is affected by which auditing firm is hired. A study could, for example, examine how, or if, the level of PEAD changes when an auditing firm from the Big Four is chosen in comparison to a smaller firm. This study would give answers about whether larger auditing firms lower the uncertainty for the investors and if there is a relationship between PEAD and the size of the auditing firm.

Chapter 7 - Appendix

Appendix 1

Price (Adjusted – Default) (P)
Datatype (P) represents the official closing price. This is the default datatype for all equities.

Net Loan Losses
Represent the actual amount the bank lost during the year from uncollectable loans. It is calculated by subtracting recoveries from the amount of loans charged off.

Common Equity
Represents common shareholders' investment in a company.

Cash and equivalents
Represents the sum of cash and short term investments.

Announcement Date
Earnings Per Share- Report Date- First, Second, Third and Fourth Quarter represent the updating source and source date for the earnings reported by the company.

Earnings Per Share (EPS) – report date, first, second, third and fourth quarter
Represent the updating source and source date for the earnings reported by the company.

I/B/E/S EPS Actual
Datatype (EPSI1MD) Earnings per Share Median Value INT1

I/B/E/S EPS Forecast
Forecast EPS datatypes- Datatype (F1MD) Median value of all FY1 estimates for a company.

Chapter 8 - References

8.1 Articles

Acharya, Viral V; Bharath, Sreedhar T and Srinivasan, Anand (2007): Does industry-wide distress affect defaulted firms? Evidence from creditor recoveries, *Journal of Financial Economics*, Vol. 85, No. 3, pp. 787-821

Amihud, Yakov (2002): Illiquidity and stock returns: cross-section and time-series effects, *Journal of Financial Markets,* Vol. 5, No. 1, pp. 31-56

Baesel, Jerome B. and Stein, Garry R. (1979): The Value of Information: Inference from the profitability of Insider Trading, *Journal of Finance and Quantitative Analysis,* Vol. 14, No. 3, pp. 553-571

Ball, Ray and Brown, Philip (1968): An Empirical Evaluation of Accounting Income Numbers, *Journal of Accounting Research*, Vol 6, No. 2, pp. 159-178

Ball, Ray and Bartov, Eli (1996): How naive is the stock market's use of earnings information?, *Journal of Accounting and Economics,* Vol 21, No. 3, pp. 319-337

Ball, Ray (2006): International Financial Reporting Standards (IFRS): pros and cons for investors, *Accounting & Business Research,* Vol. 36, 2006-special edition, pp. 5-27

Bartov, Eli; Gul, Ferdinand A and Judy S.L (2000): "Discretionary-accruals models and audit qualifications", *Journal of Accounting and Economics,* Vol. 30, No. 3, pp. 421-452

Bernard, Victor L. and Thomas, Jacob K. (1989): Post-Earnings-Announcement-Drift: Delayed Price Response or Risk Premium? *Journal of Accounting Research*, Vol. 27, pp. 1-36

Bernard, Victor L. and Thomas, Jacob K. (1990): Evidence that stock prices do not fully reflect the implications of current earnings for future earnings, *Journal of Accounting and Economics,* Vol. 13, No. 4, pp. 305-340

Biao, Ren; Wang, FengLi; Wang, QingYin (2000): Uncertainty information and uncertainty systems, *Kybernetes MCB University Press,* Vol. 29, No. 9/10, pp. 1223-1233

Bird, Ron and Yeung, Danny (2012): How do investors react under uncertainty?, *Pacific-Basin Finance Journal,* Vol. 20, No. 2, pp. 310-327

Brunnermeier, Markus K. (2009): Deciphering the Liquidity and Credit Crunch 2007–2008, *Journal of Economic Perspectives*, Vol. 23, No. 1, pp.77-90

Cabedo, J. David and Tirado, José Miguel (2004): The disclosure of risk in financial statements, *Accounting Forum*, No. 28, (??) pp. 181-200

Chan, Louis K. C.; Jagadeesh, Narasimhan and Lakonishok, Josef (1996): Momentum Strategies, *The Journal of Finance,* Vol. LI, No. 5, pp. 1681-1711

DeAngelo, Linda Elizabeth (1981): Auditor size and audit quality, *Journal of Accounting and Economics,* Vol. 3, No. 3, pp. 183-199

Ershov, M. (2009): The Crisis of 2008 – A moment of truth for the Global Economy and New Opportunities for Russia, *Problems of Economic Transition*, Vol. 51, No. 10, pp. 3-9

Fama, Eugene (1970): Efficient Capital Markets: A Review of Theory and Empirical Work, *The Journal of Funance,* Vol. 25, No. 2, pp. 383-417

Foster, George; Olsen, Chris and Shelvin, Terry (1984): Earnings releases, Anomalies and the Behavior of Security Returns, *The Accounting Review,* Vol. 50, No.4, pp. 574-603

Francis, Jennifer; Lafond, Ryan; Olsson, Per and Schipper, Katherine (2007): Information Uncertainty and Post-Earnings-Announcement-Drift, *Journal of Business Finance & Accounting,* Vol. 34, No. 3 & 4, pp. 403-433

Fuerman, Ross D (2004): "Accountable accountants", *Critical Perspectives on Accounting,* Vol. 15, No. 6, pp. 911-926

Goddard, John; Molyneux, Phil and Wilson, John O.S. (2009): The financial crisis in Europe: evolution, policy responses and lessons for the future, *Journal of Financial Regulation and Compliance*, Vol. 17, No.4, pp. 362-370

González-Aguado, Carlos and Bruche, Max (2010): Recovery rates, default probabilities, and the credit cycle, *Journal of Banking and Finance*, No. 34, Vol. 4, pp. 754-764

Ivashina, Victoria and Scharfstein, David (2009): Bank lending during the financial crisis of 2008, *Journal of Financial Economics,* Vol. 97, No. 3, pp. 319

Litzenbeger, Robert H. and Jones, Charles P. (1970): Quarterly earnings reports and intermediated stock price trends, *Journal of Finance,* Vol. 25, No.1, pp. 143-148

Livnat, Joshua and Mendenhall, Richard R. (2006): Comparing the Post-Earnings Announcement Drift for Surprises Calculated from Analyst and Time Series Forecasts, *Journal of Accounting Research,* Vol. 44, No. 1, pp. 177-205

Ke, Bin and Ramalingegowda, Santhosh (2004): Do institutional investors exploit the post-earnings announcement drift?, Vol. 39, No.1, pp. 25-53.

James J. Mahon (1968): The Communication Is the Product, *Lybrand Journal*, Vol. 49, No. 2.

Malkiel, Burton (2003): The Efficient Market Hypothesis and Its Critics, *Journal of Economic Perspectives*, Vol. 17, No. 1, pp. 59-82

McKinlay, Craig A. (1997): Event Studies in Economics and Finance, *Journal of Economic Litterature,* Vol. 35, No. 1, pp. 13-39

Moretto, Michele and Tamborini, Roberto (2007): Firm value, illiquidity risk and liquidity insurance, *Journal of Banming and Finance*, Vol. 31, No. 1, pp. 103-120

Ni, T.Z. and Wang Q.Y. (1992): Uncertainty mathematics needs studying and developing, *Journal of Hebei Mining and Civil Engineering Institute*, No. 3, pp. 1-4.

Nickel, Pamela; Parraudin, William and Varotti, Simone (2000): Stabilty of rating transition, *Journal of Banking and Finance,* Vol. 24, No. 1, pp. 203-227.

Tirole, Jean (2011): Illiquidity and All Its Friends, *Journal of Economic Literature,* Vol. 49, No. 2, pp. 287-325

Tropeano, Domenica (2011): Financial Regulations After the Crisis: Where Do We Stand? *Journal of Political Economy*, Vol. 40, No. 2, p.45

Rubinstein, Mark (2001): Rational Markets: Yes or No? The Affirmative Case, *Financial Analysts Journal,* Vol. 57, No. 3, pp. 15-29

Wang Qing Yin, Ren Biao, Wang FengLi, (2000): Uncertainty information and uncertainty systems, *Kybernetes*, Vol. 29, No. 9/10, pp.1223 - 1233

8.2 Books

Anderson, David R., Sweeney, Dennis J., Williams, Thomas A., Freeman, Jim, Shoesmith, Eddie (2009): *Statistics for Business and Economics,* United Kingdom: Cengage Learning EMEA

Blumberg, Boris; Cooper, Ronald R. and Schindler, Pamela S. (2008): *Business Research Methods,* 2nd European Ed. Berkshire, England: McGraw-Hill Higher Education

Ghauri, Pervez N. & Grønhaug, Kjell (2005). *Research methods in business studies: a practical guide*. 3rd Ed. Harlow, England: Financial Times Prentice Hall

IASB (2011) IFRS Part A the conceptual Framework and requirements

IASB (2011) IFRS Part B the accompanying documents

IASB (2012) IFRS Consolidated without early application, official pronouncements applicable on 1 January 2012,

Marton, Jan; Lumsden, Marie; Lundqvist, Pernilla; Pettersson, Anna Karin and Rimmel, Gunnar (2008). *IFRS - i teori och praktik*. 1. uppl. Stockholm: Bonnier utbildning

8.3 Dissertations

Novak, Jiri (2008). *On the importance of accounting Information for stock market efficiency*. Diss. (Summary) Uppsala : Univ., 2008

Setterberg, Hanna (2011). *The pricing of earnings: essays on the post-earnings announcement drift and earnings quality risk*. Diss. Stockholm: Handelshögskolan i Stockholm, 2012

8.4 Electronic and Internet resources

Barker, Robert (28th of October 2002). Auditing the auditors. *BusinessWeek*, p. 129.
<http://www.businessweek.com/magazine/content/02_43/b3805127.htm>
(Accessed Mars 13, 2012)

Basel Committee on Banking Supervision (2001) "Working Paper on the Regulatory Treatment of Operational Risk"

<http://www.bis.org/publ/bcbs_wp8.pdf>
(Accessed February 15, 2012).

Conformance CE Marking and & Product Safety (2012)" European Economic Area"
<http://www.conformance.co.uk/info/eea.php>
(Accessed April 9, 2012)

Europe, Legislation Summary (2010) "International Accounting Standards (IAS)"
<http://europa.eu/legislation_summaries/internal_market/single_market_services/financial_services_g
eneral_framework/l26040_en.htm>
(Accessed February 22, 2012)

Finance-lib (2012), Financial Terms
<http://www.finance-lib.com/financial-term-credit-loss.html>
(Accessed Mars 8, 2012)

Time Magazine (2002): Enron: Who's Accountable? January 13, 2002.
<http://www.time.com/time/magazine/article/0,9171,1001636,00.html>
(Accessed May 9, 2012)

Milner, Brian (2009). Sun finally sets on notion that markets are rational. *The Globe and Mail.*
<http://www.theglobeandmail.com/globe-investor/investment-ideas/features/taking-stock/sun-finally-
sets-on-notion-that-markets-are-rational/article1206213/> (Accessed February 10, 2012)

Treanor, Jill (2012). Bank of England official calls for bespoke accounting standards for banks. *The
guardian.*
<http://www.guardian.co.ok/business/2012/jan/19/bank-england-account-standards>
(Accessed January 28, 2012)

Volcker, Paul (2011). Speech: "Financial Reform: Unfinished Business" (October 27, 2011)
<http://www.nybooks.com/articles/archives/2011/nov/24/financial-reform-unfinished-business/>
(Accessed February 10, 2012)

8.5 Verbal Resources

Marton, Jan (2012): Supervisor meeting, Mars 15, 2012, April 11, 2012, May 4, 2012

8.6 Others

Ball, Ray (1988): What do we know about stock market efficiency?, *Working paper*, University of
Rochester

Benston, George J. (2003): The Quality of Corporate Financial Statements and Their Auditor before
and after Enron, *Policy Analysis*, No 497 November 6, pp. 1-29