UNIVERSITY OF GOTHENBURG

SCHOOL OF BUSINESS, ECONOMICS AND LAW

Negative Operating Cash Flows – A Signal for Well-performing Commercial Banks?

A quantitative correlational study of Eurozone banks

School of Business, Economics and Law
Bachelor's thesis in Accounting
Department of Accounting
Course FEG313. Spring term 2014
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Acknowledgements

Abstract

Bachelor's Thesis in Accounting, School of Business, Economics and Law at the University of Gothenburg, spring term 2014

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Background and problem discussion: Commercial banks are essential since they maintain and restore the stability in the economy. Thus, it is important to measure the performance of commercial banks. One key aspect in the analysis of the performance of companies is the cash flow statement. However, it is not used to analyse banks. Many of the largest Scandinavian commercial banks had negative operating cash flows for several consecutive years without suffering any liquidity issues. This phenomenon can be explained by the fact that commercial banks sell cash. A well-performing bank creates an outflow of cash since it sells more and more cash through lending. Consequently, it should be logical that well-performing commercial banks have negative operating cash flows due to increased lending.

Purpose of the Study: This paper aims to study whether negative operating cash flows signal increased lending and, hence, improved performance for commercial banks. This thesis, also, intends to investigate if there are any differences between the correlations between the studied countries and, if so, why these differences arise. Furthermore, the purpose of this thesis is also to analyse the reasons behind the most extreme correlations found in the sample.

Methodology: A hypothesis was derived by using a deductive approach. This hypothesis was tested through a quantitative correlational study between operating cash flows and return on equity for 39 commercial banks. The six banks with the most extreme correlations were studied more thoroughly. All the studied banks were from the original eleven Euro Area countries. They had to be active, listed and applying IFRS. The banks in this study cover more than 80% of all the banks that fulfilled the criteria above. Data was collected from the period 2005-2012.

Empirical findings: The result of this thesis illustrates that slightly more than 50% of the commercial banks have a negative correlation between operating cash flows and return on equity. When studying the commercial banks with the most extreme correlations, four of six had negative correlations between change in lending and operating cash flows. The empirical findings also address similarities in correlation for commercial banks within countries and differences between countries.

Conclusions: It cannot be statistically confirmed that there exists a negative correlation between return on equity and operating cash flows. Hence, the hypothesis can be rejected. This thesis has also illustrated that there may be common patterns in terms of cash flow reporting within countries, but these patterns may differ between countries or regions. It is difficult to clearly state why these patterns arise, they may be arbitrary but there is also a possibility that they depend on differences in accounting practices in each country. The disparate practices emerge as a result of the flexibility in the accounting standard IAS 7.

Keywords: IAS 7, statement of cash flows, operating cash flows, return on equity, correlation, financial institutions, commercial banks, cash flow accounting, comment letters.

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1. Introduction

1.1 Background

The financial crisis of 2008 was unexpected to many people, some banks failed and other experienced severe liquidity problems. It started in the U.S. when Lehman Brothers and other major banks went bankrupt, but it spread quickly to other parts of the world and contributed to the stern crisis in Europe. This crisis addresses the importance of banks and their performance in order to maintain stability in the economy.

Commercial banks are described as: *"a bank organized chiefly to handle the everyday financial transactions of businesses (as through demand deposit accounts and short-term commercial loans)"* (Merriam-Webster, Inc.). They are said to be crucial for economic development. They help sustaining and restoring the stability of an economy. They also fuel investment and foster economic activity through their provision of credit. Maturity transformation is often seen as the core business of banks, i.e. to transform short-term borrowing to long-term lending and hereby provide liquidity to the economy (Torfason, 2014). However, this activity makes banks especially vulnerable. Liquid assets can in an instance become illiquid which often may happen when banks are in great need of money (Reinhart & Rogoff, 2009:141). Furthermore, because banks to a great extent operate the payment system in an economy, the effect of poor performing banks will cascade to the rest of the economy (Berger, Molyneux & Wilson, 2012). The liquidity in well performing banks has been taken for granted for years and banks are usually seen as "too big to fail". However, when banks fail, it causes serious implications for the financial system and the broader economy (Zhou, C. 2010). Thus, it is of great importance to be able to measure the performance of banks.

When financial analysts measure the performance of companies, one key instrument for the analysis is the cash flow statement. However, their cash flow statements are not normally used when analysing banks, although they are mandatory to disclose according to IAS 7. Analysts use other liquidity ratios in order to compensate the fact that the cash flow statements are difficult to interpret and therefore not as useful as other information. The purpose of International Financial Reporting Standards (IFRS) is to work as a basis for decision-making for the primary users of financial statements. The question one could ask is why cash flow statements are mandatory for banks, when they do not provide useful information for decision-making? Or can cash flows statement still have a value when analysing the performance of commercial banks. Some have even called for research on how accounting standards for cash flow statements should be re-designed in order to make cash flow statements useful for the users (Torfason 2014). Moreover:

> Finally, if the cash flow statements of banks are to be used, it requires regulatory change - ultimately a new accounting regime for banks - and change in how cash flow is measured, statements prepared, and credit creation accounted for (Torfason 2014).

This thesis does not go that far. Instead, by testing if there is correlation between operating cash flow and return on equity (ROE) this thesis investigates whether the current cash flow statements can contribute with valuable information regarding the performance of commercial banks.

In the forthcoming section the research problem will be discussed. Afterwards, the purpose of the study is presented and followed by the research question. Finally, the limitations of the study are outlaid.

1.2 Problem Discussion

From what has been mentioned in the previous section, we see it as important to investigate whether the current cash flow statement can be useful when analysing the financial performance of banks. As previously mentioned, many analysts consider the cash flow statement essential when analysing companies in other industries, but when it comes to banks they pay little, or none, attention to it. According to interviews conducted by Asgeir Torfason in his paper *Cash Flow Accounting in Banks – a study of practice* (2014), different professional groups use different financial indicators in order to evaluate banks in Europe. In general, accountants, operators as well as directors use the new liquidity ratios Net Stable Funding Ratio (NSFR) and Liquidity Coverage Ratio (LCR) introduced by Basel III. Furthermore, they look at the survival period and use credit ratings to compare banks. Another example is the Federal Reserve in the U.S., which does not use the cash flow statement in banks either (Federal Reserve Bank San Francisco 1999). Instead it uses the CAMELS rating system, which assesses different components to evaluate a bank's overall financial stability, liquidity being one of the components. Torfason (2014) shows that many of the largest Scandinavian commercial banks had negative operating cash flows for several consecutive years without suffering any liquidity issues. This phenomenon can be explained by the fact that commercial banks sell cash. A well-performing bank creates an outflow of cash since it sells more and more cash through lending. Lending is one of the main revenue-generating activities in commercial banks, thus it is classified as an operating activity. Hence, it is logical that well-performing commercial banks have negative operating cash flows due to increased lending. Moreover, another question is whether the pattern Torfason (2014) found in the Scandinavian commercial banks applies for other regions. If it does not, the differences between countries or regions ought to be further analysed.

When analysing whether the operating cash flows contribute by showing valuable information in banks, we have identified three different outcomes. Firstly, the operating cash flows may be non-compatible. With this outcome the operating cash flows are not compatible with the banking activities, since it does not reflect the performance. Secondly, operating cash flows may be useful. Useful in the way that operating cash flows give useful information about the activities of banks, but other financial statements - adapted for banks - are much more useful to evaluate their performance. Thirdly, the operating cash flows may be predicative. That is, if the operating cash flows are interpreted correctly they can be used in order to analyse the performance of banks. This study investigates if negative operating cash flows imply that commercial banks increase their sales and therefore, also, their performance. If so, negative operating cash flows may be a signal for well-performing commercial banks.

1.3 Purpose of Study

The purpose of this study is to investigate whether negative operating cash flows are a signal for increased lending and, hence, improved performance for commercial banks. This thesis, also, intends to study if there are any differences between the correlations between the studied countries and, if so, why these differences arise. To fulfil the purpose, a correlation analysis between the operating cash flows and the performance measure return on equity (ROE) will be used. The correlation analysis studies whether the operating cash flows and ROE co-vary negatively and differ between regions. The aim of this thesis is also to analyse the reasons behind the most extreme correlations found in the sample.

Operating cash flows were chosen as one of the variables in the correlation study to measure changes in lending. Lending is classified as an operating activity in the cash flow statement since it is a principal revenue-producing activity for commercial banks. Increased lending is

believed to improve the performance in commercial banks and ROE is the most commonly used performance measure in commercial banks. Jenkins states:

> Still today, most banks around the world use return on equity – RoE – as their main metric of profitability. Despite the carnage of the crisis, and the lessons of excessive risk - taking it conveyed, some banks are even targeting higher RoEs than they achieved in the boom years. (Jenkins 2011).

1.4 Research Question

The following research questions are derived from the purpose above.

1. Does ROE in commercial banks have a negative correlation with operating cash flows and what can be the reasons behind the most extreme correlations?
2. Are there any differences in the correlation between the investigated countries and, if so, why?

From the first research question a hypothesis is developed. It states:
"A well-performing commercial bank ought to have negative operating cash flows due to increased lending and vice versa"

1.5 Limitations

This study is limited to the largest commercial banks from the eleven original Euro area member countries, that is, the countries that first imposed the Euro as their currency in 1999 (The European Central Bank). The eleven original Euro area countries can be found in *Appendix 1*. The main type of activity for a commercial bank is the combination of retail banking, wholesale banking and regular private banking. Investment banks, namely banks that have corporate finance and investment banking as their main activities, are excluded from this study. See email from BankScope Services for definition in *Appendix 2*. The banks also had to be active and listed in a regulated European securities market.

Cash flows are classified into three different categories according to operating, investing and financing activities. This study does merely investigate the operating cash flows in banks. The operating cash flow ought to be positive in order for a non-financial company to be able to fund its own activities. If the operating cash flows are negative the company has to borrow in order to continue operating and, in the long run, it will go bankrupt.

The data collection was limited to the information from annual reports issued by the selected banks. No databases were used in order to collect data.

There are multiple performance measures that are used in banks, but this study is limited to the usage of ROE as the only performance measure. This is motivated in the section *1.3 Purpose of Study*.

1.6 Abbreviations

BBVA = Banco Bilbao Vizcaya Argentaria
CAMELS = Capital Adequacy, Assets, Management Capability, Earnings, Liquidity &
Sensitivity
CL = Comment Letters
ECB = The European Central Bank
ED = Exposure Draft
FAS = Financial Accounting Standard
FASB = Financial Accounting Standard Board
IAS = International Accounting Standards
IASB = International Accounting Standards Board
IFRS = International Financial Reporting Standards
IMF = International Monetary Fund
LCR = Liquidity Coverage Ratio
NSFR = Net Stable Funding Ratio
OECD = Organisation for Economic Development
RBS = Royal Bank of Scotland
ROE = Return on equity
US GAAP = United States Generally Accepted Accounting Principles

2. Research Methodology
2.1 Approach

This study is based on a deductive approach. That is, from a previously known theoretical framework within the area of the study, one or more hypotheses are derived. These hypotheses then serve as the framework for the empirical analysis. Finally, the hypotheses should be translated into researchable phenomena (Bryman & Bell 2013). This thesis was conducted in five phases.

Firstly, the problem with the operating activities in the cash flow statement in commercial banks was investigated through different sources. Asgeir B. Torfason's dissertation *Cash Flow Accounting in Banks – a study of practice* (2014) served as the fundamental basis of information.

Secondly, in Torfason's dissertation a pattern for the operating cash flow in the largest Scandinavian commercial banks was found. Many of the Scandinavian commercial banks had negative operating cash flows for years without any liquidity complications. From this, we developed a hypothesis stating that negative operating cash flows can be interpreted as a positive performance signal in commercial banks.

Thirdly, the data, namely the operating cash flows and ROE, was collected from annual reports in different banks in the original eleven Euro area member countries between 2005 and 2012. The ROE was calculated manually by all banks. The net income was divided by the Shareholders' Equity in every bank. This was done in order to make sure that the same definition of ROE was used for every bank. The operating cash flows were taken directly from the cash flow statement. Our sample period was chosen because IFRS became mandatory for all banks in the sample from 2005. Hence, the same regulatory framework was applicable for the banks. Moreover, the period includes one crisis as well as two economic booms. More information about the criteria for the selection of banks is described in *2.3 Data Collection*.

Fourthly, the data was analysed. The analysis was conducted through a correlation study between the operating cash flow and ROE. A correlation study was chosen because correlation shows the systematic statistical relationship between two arbitrary variables. It indicates whether the variables co-vary or not. If one variable changes and causes the other variable to change in a consistent and predictable way, there exists a relationship between the two variables. If the change in both variables goes in the same direction there is a positive correlation between the variables. If a negative change in one variable causes a positive change in the other variable there is a negative statistical relationship. There are different degrees of strength in terms of statistical relationships, the correlation coefficient, denominated as *r*, illustrates this. *r* is a single digit that lies between +1 and -1. The closer to +1, the stronger the positive correlation between the two variables is. The closer to -1, the stronger the negative statistical relationship is. If the correlation is 0 there is no co-varying association between the variables, and the closer to 0 the weaker the correlation (Duignan, J. 2014).

Finally, by analysing the correlation between operating cash flows and ROE the hypothesis can either be confirmed or falsified. If the hypothesis is falsified it will lead to the first outcome, mentioned in section *1.2 Problem Discussion*. If that is the case, the cash flow statements cannot be used when analysing the performance of commercial banks. If the

hypothesis is confirmed it will lead to the third outcome, mentioned in the same section as above. If so, the cash flow statement can be used. The third outcome states that the cash flow statement can be used when analysing the performance of commercial banks.

A disadvantage concerning a deductive approach is that there might be a certain bias. A researcher may only use the information supporting a particular statement or hypothesis and if there are contradicting arguments they will not be addressed. The collected information tends to confirm the researcher's viewpoint since it is biased. Hence, the researcher might leave out important information to confirm his or her statement (Jacobsen 2002). However, the thesis uses data collected from annual reports. This type of data is considered reliable since the annual reports have been audited and confirmed by accounting firms. Furthermore, a deductive approach is usually associated with quantitative research and this kind of research has several advantages that are to be addressed below.

This thesis studies whether the operating activity in the cash flow statement contributes with valuable information or not when analysing the performance of banks. In order to answer this question a quantitative study was considered the most appropriate. There are mainly three factors that make a quantitative study advantageous. These factors are measurement, causality and generalisation. Firstly, it makes it possible to detect minor discrepancies. Secondly, it provides an instrument to measure differences. Finally, it sets the basis for more precise calculations of the correlation between different variables. Moreover, a quantitative study makes it possible to describe how the operating cash flow correlates with the return on equity, hence showing the causality. Furthermore, a quantitative study will make it possible to generalise the conclusions and make the conclusions applicable to other banks (Bryman & Bell 2013). However, there exist some problems with a quantitative study. For example, since the facts are derived from the author's preferences the conclusions tend to be artificial (Cicourel 1964). Furthermore, the analysis of the relationship between variables tends to lead to the fact that factors which affect the variables usually are overlooked (Bryman & Bell 2013). In order to deal with the issue about the last criticism, the banks with a negative correlation less than -0.7 and the banks with a positive correlation more than 0.7 have been investigated more thoroughly. Thus, it is possible to see whether there is a pattern regarding how these banks' cash flows are created and thus be able to make a better generalisation. However, the advantages of a quantitative study for this thesis outweigh the disadvantages.

2.2 Research Design

The authors intended to use Datastream in order to facilitate the data collection of cash flows from different banks. Datastream is considered a trustworthy database, and its data is collected from the International Monetary Fund (IMF), the World Bank, Eurostat, the European Commission and the Organisation for Economic Development (OECD) et cetera (thomsonreuters.com). Unfortunately this database could not be used since some errors were noted in the database. When comparing the data from Datastream with the data from the actual annual reports from the selected banks, we discovered that some figures were positive in the database whereas they were negative in the annual reports. A manual collection of the data was thus decided upon, from the actual annual reports.

Since the data was collected from annual reports of the selected banks, the data is secondary. The major issue concerning this type of data is that it originally was collected for other purposes and it may, in some cases, be inappropriate for the specific research question. Hence, a high level of credibility is required for the documents that are to be used. Furthermore, when using secondary data one does not know who collected the data primarily

and neither how it was collected and registered (Jacobsen 2002). Moreover, there might exist an incentive to manipulate data from annual reports. It is not particularly difficult to manage earnings in order to embellish the result and disguise stakeholders. *"Managers manage firms but they can also manage earnings"* (Penman, 2010, s. 609). Accounting numbers are based on choices and judgements, which make them naturally misleading. Cash flows are however more objective than other accounting numbers, yet they can be manipulated and more easily so in banks as banks have the possibility to reclassify different cash flows (Runeson 2014). IAS 7 does not treat banks specifically and their operations are very different from other companies (Mulford & Comisky 2009). However, the advantages of using annual reports outweigh the disadvantages since annual reports generally can be considered legitimate, and particularly the annual reports from companies listed in one of the EU's markets. These annual reports are subject to prudent regulation in terms of IFRS, they are also audited and confirmed by accounting firms. Hence, they can be considered a trustworthy secondary source, whereas a database is a tertiary source.

To find banks that fulfilled the criteria mentioned in *"2.3 Data collection"*, the database BankScope was used. BankScope is an extensive and global database that contains detailed information about private as well as public banks: their financials, ratings and other information. More than 30 000 banks all over the world are included in the database. BankScope was launched by the company Bureau van Dijk, which is a renowned company within business intelligence and company information (Bureau van Dijk). The database has a good search engine in which we applied the criteria explained in the following sections in order to select banks.

2.3 Data Collection

2.3.1 Selection of Countries

The banks had to be from one of the original eleven Euro area member countries since they have the same central bank, the European Central Bank (ECB), and hence also the same bank regulations. The investigated banks started to use IFRS in 2005. It became compulsory for European publicly listed companies as the European Union adopted the IAS regulation in 2005 and the EU requires that IFRS be used in all member states (Marton et al 2013). Thus, 2005 was a good starting year for the study, the banks started to apply the same accounting rules. Moreover, they already had uniform bank regulations and currency due to the Eurozone membership. The eleven original Euro area countries can be found in *Appendix 1*.

The application of IFRS was an important criterion in order to get a clarity and consistency when comparing banks within the Euro area. It would be skewed to compare an American commercial bank using the United States Generally Accepted Accounting Principles (US GAAP) accounting rules to a European bank using the IFRS accounting rules since the accounting rules themselves may make the figures in the annual reports differ considerably depending on classifications, judgements and choices.

Although all the selected banks apply the same accounting rules, IFRS, and have the same central bank, ECB, there will still be differences between different countries, particularly during the crisis since some countries in the Euro Area were more troubled than others.

2.3.2 Selection of Commercial Banks

The selection of commercial banks had to be modified when the method was changed. An extensive search for banks with annual reports available from 2005 to 2012 had to be done and, indeed, the banks also had to fulfil the other criteria mentioned below.

The studied banks are all commercial banks, meaning that their main activities are retail banking, wholesale banking and regular private banking. Some of the selected banks are also active in investment banking, but it is not their main activity. The database BankScope does not explicitly state specific criteria for a bank to be classified as an investment bank. However, it is important to take into account how big their investment banking activities are when analysing the cash flow statement since investment activities may have a significant impact on the cash flows. Moreover, subsidiaries were excluded and all banks had to be active.

Subsidiaries were excluded because it is not possible to find data for the subsidiaries alone since they are separate entities that are part of a group. The financial reports this study intends to use are consolidated, which implies that the financial reports only can be found for the group and not for individual entities. If annual reports for the specific subsidiaries were to be found it would not be likely that they applied IFRS since it is only obligatory for a group of entities, not the entities themselves (The European Commission, IAS 27). For these reasons the subsidiaries do not fulfil the criteria. Furthermore, when collecting data from consolidated financial reports another issue is that some bank groups include other activities such as insurance and postal services, and this may, indeed, have an impact on the correlation between ROE and cash flows.

According to BankScope, there were 268 commercial banks that fulfilled the above mentioned criteria. 39 of the largest commercial banks were selected as they together accounted for 80.18% of the market in 2012 (BankScope). The commercial banks in the original Euro area countries were ranked according to their total operating income. Since the studied banks covered more than 80% of the market in the original Euro area, we assumed that the selection was strong enough to generalise the result for banks in this area. The 39 banks that were selected can be found in *Appendix 3*.

2.3.3 Analysis of Missing Data

Since the data was collected manually certain annual reports were difficult to find, especially the ones from 2005 and 2006 as some banks only keep their annual reports from the last five years online. Some annual reports had to be requested by email and in the majority of cases the banks replied quickly.

The following banks had to be excluded due to missing data. The Spanish banks Bankia and Kutxabank were formed in 2010 and in 2012 respectively, consolidating the operations of several other smaller Spanish banks. BancoPosta belongs to the Italian post office, the financial reports for the bank itself could not be found. Ulster Bank is a special case because it is a bank group but it is owned by the Royal Bank of Scotland group. Ulster had separate annual reports 2007-2012 but between 2005 and 2006 their financials were reported as part of the annual report of RBS. It was possible to calculate the ROE for all studied years but the cash flow statements for 2005 and 2006 could not be found in the annual report of RBS. We tried to reach both RBS and Ulster through email, Facebook and Twitter but the banks could

not provide the cash flow statement for 2005 nor 2006. Hence, Ulster had to be excluded from study but was, yet, included in the analysis of the Irish banks as a pattern could be seen.

2.4 Empirical and Analytical Method

After the data collection, a table with all the banks and their correlation was created. When analysing the correlation for the different banks some patterns for different countries were observed. These countries were addressed and further discussed in the section *4.3 Empirical Findings and Analysis of the Differences between Countries*. In the section *4.1 Empirical Findings and Analysis of Correlations*, an analysis of the normal distribution was conducted. If the data is normally distributed there are possibilities to generalise the data and draw statistical conclusions from it. Hence, the data was tested for normal distribution. A chi-square test was conducted in Microsoft Excel. The null hypothesis states that the data is normally distributed, whereas the alternative hypothesis states it is not. The test resulted in a p-value of 36.51%, which means that there is a 36.51% chance of receiving the correlation result this thesis received with another sample of 39 randomly selected commercial banks of the population if the data is normally distributed. The population consists of all the 268 commercial banks that fulfilled the criteria mentioned above. After the p-value was calculated, we compared it with a significance level of 5%. The significance level is the lowest percentage accepted in order not to reject the null hypothesis. Since the p-value exceeds the significance level, the null hypothesis cannot be rejected (Cortinhas & Black 2012). By knowing the fact that the data was normally distributed, statistical conclusions could be drawn from this sample.

In the section *4.2 Empirical Findings and Analysis of Outliers* the banks with a correlation stronger than 0.7 and weaker than -0.7 were studied. Three banks had a correlation stronger than 0.7, these banks were Banca Monte dei Paschi di Siena, LeasePlan Corporation and Bank of Ireland. There were also three banks with weaker correlation than -0.7, these were Banca delle Marche, Caixabank and BNP Paribas.

To further analyse the banks mentioned above, the change in lending and the change in operating cash flows were compared. To compare them the correlation was tested. A negative correlation should, according to the hypothesis, indicate a negative change in operating cash flows and a positive change in lending since a bank "sells cash" through lending as its principal revenue-generating activity. A closer examination of the proportion of investment banking and insurance activities was also made for some of the banks. The more investment activities a bank has, the more it should tend to have positive operating cash flows since the main revenue source is more similar to that of a non-financial company. In the case of Bank of Ireland the impairments were investigated to study the effect the Eurozone crisis had on the result of the bank. Many loans are written-off during economic turndown as both business and households have more difficulties to repay their bank loans.

To calculate the change in lending, the figures from "loans and advances to customers" and "loans and advances to banks" or "loans and advances to financial institutions" were collected from the annual reports. The figures for each year were compared for the periods 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011 and 2011-2012 to examine the change between those years.

As for LeasePlan Corporation, only the finance leasing was taken into account. Finance leasing is per definition the same in a leasing company as the lending activity in a commercial bank (Berk & DeMarzo 2013). The change in finance leasing was collected from LeasePlan

Corporation's Annual Reports between 2005 and 2012. Consequently, the correlation for LeasePlan Corporation was calculated between the change in finance leasing and the change in operating cash flows.

2.5 Validity and Reliability

Validity measures whether the conclusions from the study cohere or not, i.e. whether the chosen indicators truly measure what the researcher wants to investigate. There are several different kinds of validity. The validity described above is called construct validity; this thesis will touch upon construct validity and external validity (Bryman & Bell 2013).

In order to evaluate the construct validity, the authors have deduced the hypothesis that negative operating cash flows can be interpreted as a positive performance signal in commercial banks. The correlation between the most commonly used performance measure in commercial banks - return on equity - and operating cash flow is then calculated in order to see whether the hypothesis can be confirmed or not. The confirmation or falsification of the hypothesis will then lead to either the first possible outcome or the third, stated in the problem discussion. That is, the cash flow statement can either be used when analysing the performance of commercial banks or not. When calculating the correlation it is possible that the ROE and the operating cash flows have been manipulated by the managers in the commercial banks. The correlation would, in that case, be misleading (Bryman & Bell 2013). However, annual reports can be considered very legitimate. The annual reports are subject to thorough auditing from the accounting firms and thus both the cash flows and ROE can be interpreted as trustworthy measures.

External validity means that the results from the study should be applicable to banks beyond the selection made by this thesis, i.e. whether the results can be generalised or not (Bryman & Bell 2013). By accounting for over 80% of the market for commercial banks in the original eleven countries of the Euro Area the sample can be justified. Moreover, since the selected banks use IFRS it further justifies a generalisation of all the commercial banks that apply IFRS, not just the ones in the study. However, even if the banks in the sample cover a qualified majority of the market and use the IFRS there are possibilities for differences in de facto application and de jure application of IFRS between countries.

The definition of commercial banks by Bureau van Dijk can be ambiguous. The proportion of other income-generating activities, such as investment banking, will affect the results in the empirical findings. The hypothesis is only applicable if commercial banks conduct retail banking, wholesale banking and private banking. The correlation depends on how the revenues are generated. In order to tackle this issue the thesis will study the banks with a negative correlation of less than -0.7 and the banks with a positive correlation of more than 0.7. This permits us to examine whether these most extreme correlations can be justified by their proportion of different revenue-producing activities. A more thorough analysis of the banks with the most extreme correlations also increases the credibility and ability of the study to generalise the result from the sample.

Reliability means that the result from the study would be identical if the same study were conducted again or that the result would be identical even though random circumstances occurred. The reliability of our correlation study can be controlled through a test-retest, i.e. to carry out the same study to check if the result would be the same (Bryman & Bell 2013). This study is designed in a way that makes it possible to perform a test-retest and, therefore, confirm the reliability of the thesis.

2.6 Source Criticism

BankScope is a tertiary source, which implies that information may have been lost or manipulated in the process. That is, the selection may not cover 80.18% of the market due to manipulated data. Yet, BankScope is a very renowned database which is generally considered trustworthy and therefore it could be used.

All the annual reports are secondary sources, which can be manipulated by the managers of banks. Thus, there are possibilities that the operating cash flow and ROE do not disclose a faithful representation of the banks. However, annual reports can be considered very legitimate generally, and particularly the annual reports from companies listed in one of the EU's regulated markets. These annual reports are subject to prudent regulation in terms of IFRS, they are also audited and confirmed by accounting firms.

Most of the theoretical framework consists of data from secondary sources. The reference has been stated in these cases. In certain cases the primary source has been used as a reference, for example when referring to the comment letters.

3. Theoretical Framework

3.1. The Importance of the Cash Flow Statement

Accounting numbers are based on choices and judgements, which make them naturally misleading. They can be easily manipulated through creative accounting and earnings management. *"Managers manage firms but they can also manage earnings"* (Penman, 2010, s. 609). Cash flows are believed to represent a more objective measure than other accounting numbers, however, they may be manipulated through purchasing planning. Not only are they more objective, they also show stakeholders the actual amount of money the entity has generated through different activities. The net income of an entity is the cash flows plus accrued incomes and expenses, hence, the cash flows and the results are best analysed together (Runeson 2014).

W. T. Grant *"serves as the classic case of the importance of a cash flow statement"* (Kam 1990). The American W. T. Grant, or Grants, was an American chain of mass-merchandise stores and its bankruptcy in 1976 was the second biggest in US history at that time.

> Although they surfaced as a gusher rather than a trickle, the problems
> that brought the […] company into bankruptcy, and ultimately,
> liquidation, did not develop overnight (Largay III & Stickney 1980).

Stakeholders believed the financials were sound and stable since the company showed positive figures in terms of profitability, revenue, balance sheet growth and increasing stock prices. The problem was that W.T Grant lacked information about the cash flow provided by operations. The working capital was bad, the operating cash flow was negative and most key ratios had been manipulated over the ten years preceding the bankruptcy. This example stresses the importance of the cash flow statement since it complements the other financial statements in order to give the stakeholders a true and fair view of the company (Torfason 2014).

3.2 Comment Letters - Cash Flow Statements in Banks

It has to be accentuated that the lessons from W. T. Grant do not directly apply to banks, because the activities of banks are very different. The comment letters from bankers to standard setters will be presented in this section to examine why the standard for cash flow statement was formed and to illustrate the opinions about cash flow accounting in banks. This quote is taken from a comment letter from 1986:

> By their very nature financial institutions differ from other types of
> business. Banks do not sell a product; they sell cash. To require a bank to
> provide a statement of cash flows is analogous to requiring a
> manufacturing company to provide a statement of inventory flows. (CL
> 1986 no. 349: 1035)

The quote above emphasizes that the cash flow statement does not work for banks because they sell cash. Analysts use other liquidity ratios instead of the cash flow statements, for example, NSFR and LCR introduced by Basel III (Torfason 2014). Nonetheless, cash flows can still have a value when analysing the performance of commercial banks and the cash flow statement is mandatory for banks according to IAS 7 in IFRS (Torfason 2014; The European Commission, IAS 7).

In the comment letters in response to FASB's exposure draft in 1986 and in response to the joint discussion paper between FASB and IASB in 2008 five main problems are pointed out

(Torfason 2014). Those problems are; inconsistency, classifications, definitions of cash and non-cash items, net or gross cash flow and direct or indirect method. If nothing else is stated the following information is taken from Torfason's compilations of the comment letters.

The first main problem, inconsistency, regards the fact that the rules do not cohere with the intended purpose of the cash flow statement. The purpose of the cash flow statement is to present relevant information regarding "[...] *cash receipts and cash payments of an enterprise during a period*" (FAS 95, 1987:5). Examples of the criticism concerning inconsistency involves that the indirect method fails to show the cash receipts and cash payments. According to Price Waterhouse the cash flow statement is "*inconsistent to include interest expense as an operating activity and dividends as a financing activity*" (CL 1986 no. 431:1272). Because interest expense and dividends both compose the cost of capital of the firm they should be classified by the same activity. Commercial banks make money on the interest difference created from the maturity transformation, i.e. they make money from the balance sheet. In order to balance the financing activity with the investment activity in the cash flow statement the cash inflow, which is a liability, and the cash outflow, which is an asset, should be equal since the banks invest the cash inflows by lending them out (Ijiri & Noel 1984; Minsky 1982, 1975). As new loans are created in banks the cash inflows and cash outflows are not equal and therefore the cash flows are inconsistent.

Classification, the second main problem, concerns the fact that banks generate revenues differently than regular companies. This implies that the classification between operating, investing and financing activities is misleading for banks. The classification rules allow banks to classify interbank loans that are used to lend to other banks as an operating activity. This type of transaction is normally classified as an investment activity. Moreover, deposits from customers are classified as an operating activity and bonds are classified as a financing activity, although both are liabilities for the bank. Thus, when netting the transactions it becomes difficult to keep apart the cash flow from customers and the cash flow from other banks and therefore, also, difficult to decide what activity transactions should be classified by.

Torfason (2014) states that the definition of cash, the third main problem, complicates the cash flow accounting in banks. What counts as cash is not consistent. There is little regulatory framework regarding what count as cash equivalents. Furthermore, due to the fact that cash is the commodity of commercial banks, they are able to net cash flows. The brief explanation of what counts as cash equivalents implies that non-cash transactions can be included in the cash flow statement, which contradicts the purpose of the cash flow statement. Many people, including a board member of FASB in 1986, believe that these non-cash transactions should be accounted separately from the cash flow statement. Price Waterhouse emphasizes the need for better information on what counts as cash equivalents:

> While these activities do not represent cash flows and should not be
> allowed to detract from the statement's primary focus on cash flows,
> such activities may be significant to an understanding of the enterprise'
> investing and financing activities and its future cash flows. (CL 1986 no.
> 431: 1274)

In banks the amount of cash flows is much larger than in regular companies due to the fact that banks operate the payment system. The debate regarding gross versus net cash flows, the fourth main problem, in banks derives from this fact. Usually gross cash flow will depict more accurate cash flows, however advantages of allowing net cash flows for banks are pointed out in the comment letters. These opinions led to that the standard (FAS 95) allowed banks to net

the cash flows for items with short maturity, quick turnover and large amounts (FAS 95, 1987: 7, paragraph 12). Moreover, when using the indirect method instead of the direct method there is a greater need for netting cash flows. However, the debate regarding gross or net cash flows culminates into the fact that there are other more suitable ways of measuring the performance and solvency in banks.

The last main problem is the choice banks have between indirect and direct method. The direct method is recommended: *"The more comprehensive and presumably more useful approach would be to use the direct method"* (FAS 95, 1987: 35, paragraph 119). By allowing both methods it opens up for inconsistency. The reason why the direct method is recommended is because the operating activity is reported separately and therefore not mixed with non-cash transactions. Analysing the cash flow statement of non-financial companies is of great importance for commercial banks when deciding whether to lend or not, because *"only cash can repay a bank loan"* (CL 1986 no. 67: 283–5). Showing the gross amount in accordance with the direct method is, by banks, seen as the best way to disclose cash flows. When lending to each other banks disregard analysing the cash flows. Hence, this difference in treatment between non-financial companies and financial has to be seen as odd.

The comment letters contributed to the creation of the accounting standard IAS 7 - Statement of Cash Flows. It has some exceptions for banks but overall the same rules apply for financial institutions and non-financial companies. The standard will be more thoroughly addressed in the following section *3.3 IAS 7 - Statement of Cash Flows*.

The standard FAS 95: Statement of Cash Flows issued by the American FASB is nearly identical with IAS 7. Thus, the discussion about the fundamental issues concerning FAS 95 **-** in this section about comment letters but also in the section *3.4.1 Cash Flow Accounting in Banks* **-** also applies for IAS 7.

3.3 IAS 7 - Statement of Cash Flows

In 2005 the European Union adopted the IAS regulation. Hence, it became mandatory for European publicly listed companies to apply accounting standards issued by International Accounting Standards Board, IASB (Marton et al 2013). The standard that regulates cash flow accounting is called IAS 7 Statement of Cash Flows (The IFRS Foundation and the IASB). If the source is not presented in the following sections below *3.3.1 - 3.3.4* the information is taken from the European Commission.

3.3.1 Objective, Scope and Benefits

The standard states that a company needs to report the cash flows in order to give the stakeholders information to evaluate the company's ability to generate liquid assets and its need for cash and cash equivalents. The objective is to require that all companies present information about historical changes in cash and cash equivalents of the entity in a statement of cash flows in which the cash flows during the period are classified into operating, investing and financing activities (The IFRS Foundation and the IASB).

Although the activities in financial companies are very different from activities in other sorts of industries, the standard applies to every company regardless of industry. Financial institutions are believed to have a need for cash and cash equivalents for the same reason as other companies, even though they sell cash and *"cash can be viewed as the product of the entity"* as stated in paragraph 3. This paragraph also reads that financial institutions as well as

other entities have a need for cash because *"they need cash to conduct their operations, to pay their obligations, and to provide returns to their investors"*. Hence, IAS 7 requires that financial institutions also present a statement of cash flows (The European Commission, IAS 7).

Paragraphs 4 and 5 address the benefits of cash flow statements. They complement the other financial reports by helping the users of financial reports to acquire a true and fair view of the financial performance and risks of the company. According to paragraph 4, the statement of cash flows is useful in evaluating the entity's ability to generate cash and cash equivalents, and also to develop models to discount future cash flows in order to assess the present value of the company and compare it to other entities (The European Commission, IAS 7). Furthermore, cash flows are more objective than other accounting measures which make it possible to examine the effect of using different accounting treatments when analysing the cash flows (Runeson 2014). Paragraph 5 states that historical cash flows are often used as an indication regarding size, timing and risks concerning future cash flows. They are also useful when it comes to determine the precision and accuracy of previous assessments of future cash flows. These two paragraphs corroborate that the cash flows have a predictive and confirmatory value in accordance with the conceptual framework of IASB (FAR Online).

3.3.2 Presentation of a Statement of Cash Flow

Sample formats of statement of cash flows are presented in *Appendices 4 and 5*. That template is specifically designed for financial institutions since their activities are very different from the activities in other companies.

Several definitions are presented in paragraph 6 of the standard, most of which will not be touched upon in this thesis. Only the definitions that are considered important will be outlaid throughout the thesis. As mentioned in the previous section *3.3.1. Objective, scope and benefits* and addressed in paragraph 10, the cash flows have to be classified according to different categories depending on activities. There are three categories:

1. Operating activities
2. Investing activities
3. Financing activities

These categories allow the users of financial information to assess the impact the cash flows from different activities have on the financial performance and position of the entity. An entity reports cash flows according to operating, investing and financing activities in a way which is most applicable to its business (paragraph 11). The question is how financial institutions present and classify cash flows since *"cash can be viewed as the product of the entity"* according to paragraph 3 (The European Commission, IAS 7) and their business is very particular in this manner as they sell cash and create credit. The presentation of cash flows in financial institutions is therefore more flexible and complex. However, it matters how the banks classify the cash flows as the users of financial information evaluates the impact the cash flows have on the financial position of the entity (Mulford & Comiskey 2009). There are also some particular exemptions for financial institutions concerning the presentation of cash flows. These exemptions will be addressed in the forthcoming section *3.3.4. Specific exceptions for financial institutions*.

Cash flows from operating activities are important for the long term survival of the company, the entity needs to generate enough cash from operating activities to repay loans, make

investments, sustain operating capacity et cetera. If the entity does not generate enough cash through operating activities, it will need external funding (paragraph 13). Cash flows classified as operating stem from the main revenue-generating activities of the company. Hence, the cash flows are usually a result of transactions and events that affect the result of the company. Some examples of items derived from operating cash flows are cash receipts from commissions, royalties, sale of goods and services, and cash payments to suppliers for goods and services, remuneration to employees, payments on behalf of employees et cetera (paragraph 14; The European Commission, IAS 7).

The amount of cash flows stemming from investing activities is relevant to examine to which extent expenditures have been made in order for the assets of the entity to keep generating cash flows and income in the future. Examples of cash flows from investing activities are cash receipts from sales of buildings, machines and intangibles, and cash payments to acquire factories, equity or debt instruments, patents and licenses (paragraph 16).

The third classification is cash flows according to financing activities. It is important to disclose them separately since they are used to prognosticate the magnitude of claims on future cash flows by creditors. Examples of cash flows deriving from financing activities are cash repayments of loans, cash proceeds from issuing shares et cetera (paragraph 17).

3.3.3. Flexibility regarding IAS 7

There are many possibilities for entities to make their own choices in terms of how they want to present the cash flows. According to paragraph 11 an entity presents *"its cash flows from operating, investing and financing activities in a manner which is most appropriate to its business"*. Multiple options are given when it comes to definitions, direct or indirect method and whether to report on a net or gross basis. Moreover, there are some particular exemptions for financial institutions concerning the presentation of cash flows. They will be illustrated in the upcoming section *3.3.4. Specific exceptions for financial institutions*.

In terms of definitions there is a certain flexibility to classify short-term investments as cash equivalents if they have a maturity of approximately three months or less (paragraph 7). Bank overdrafts can sometimes be included as an element of cash and cash equivalents. This may be the case in countries where bank overdrafts are instantly reversible and used as an instrument in the cash management of the entity (paragraph 8).

Another flexibility concerns the use of either the direct or the indirect method to report cash flows from operating activities. The entity has a possibility of choosing the method it considers the most appropriate according to the paragraph 18. However, IASB encourages companies to use the direct method because it may present some components that are useful to prognosticate future cash flows. Those components are not presented when using the indirect method. Hence, the direct method has a better predictive value. This statement is confirmed by Lauver, a standard setting board member of FASB, and Professor Swieringa who claim that the direct method *"provides a description of the operating activities of an entity during a period that is both more informative and more consistent with the primary purpose of a statement of cash flows."* (FAS 95, 1987: 13). FASB and IASB agree on this matter, in fact the standards concerning the statement of cash flows are very similar. The direct and indirect method specifically regarding banks is further discussed in the section *3.2. Comment letters - Cash Flow Statements in banks*.

In some cases, an entity can choose whether to present cash flows on a net or gross basis. The entity has to report major classes of gross cash flows from financing and investing activities separately (paragraph 21). Yet, payments on behalf of the customers as well as large amounts concerning items with rapid turnover and short maturity may be presented on a net basis (paragraph 22). Furthermore, financial institutions can choose to report some other specific cash receipts and payments on a net basis. This will be further discussed below in forthcoming section.

3.3.4. Specific Exceptions for Financial Institutions

The choices mentioned in the previous section also apply for financial institutions but there are also other particular exceptions that solely concern financial institutions. These exceptions regard cash advances and loans, and interest and dividends paid and received. There is also a possibility for financial institutions to choose whether to report certain cash flows on a gross or net basis.

Cash advances and loans should normally be reported as an investing activity, but financial institutes may choose to report them as an operating activity. The reason for this is that cash may be viewed as the product of financial entities since they easily can create credit through borrowing and lending money. Hence, the cash flows arising from cash advances and loans are considered part of the main revenue-producing activities in financial institutions. However, it is not compulsory to report this kind of cash flows as operating activities (Paragraphs 15 and 16).

Interest paid and interest and dividends received are normally reported as cash flows from operating activities in financial institutions, whereas other entities have the possibility to choose one of the three classifications depending on which classification is most appropriate in the individual case (paragraph 33). Paid dividends can be reported as a financing activity, but can also be reported as an operating activity to facilitate for users to examine the ability of the company to pay dividends with cash flows from operating activities (paragraph 34).

According to paragraph 24 financial institutions may choose to report some specific cash receipts and payments on a net basis. These cash flows are the following, taken directly from paragraph 24 a-c of IAS 7:

> a) Cash receipts and payments for the acceptance and repayment of deposits with a fixed maturity date
> b) The placement of deposits with and withdrawal of deposits from other financial institutions
> c) Cash advances and loans made to customers and the repayment of those advances and loans.

Paragraph 24, mentioned above, only applies to financial institutions. The possibilities for other companies to report cash flows on a net basis are mentioned in the previous section *3.1.3. Flexibility regarding IAS 7*.

3.4 Previous Research

3.4.1 Cash Flow Accounting in Banks

The usefulness of the cash flow statement when analysing banks is today dubious. Analysts use other measures such as net interest margin, the loan loss reserve, non-interest income, tier one capital and tier two capital when evaluating the performance of commercial banks

(Mulford & Comiskey 2009). Mulford & Comiskey conducted a research paper in 2009, in which they asked two questions:

> Like non-financial companies, commercial banks must provide a statement of cash flows and report their cash flows as being derived from operating, investing or financing activities. Do these categories have meaning for commercial banks? More importantly, does reported operating cash flow have information value of relevance for the financial analysis of a commercial bank? (Mulford & Comiskey 2009)

In order to answer these question Mulford & Comiskey (2009) examined the cash flow statement in the fifteen largest, measured by total assets, independent and publicly-traded commercial banks in the U.S.. They found that the classification between operating, investing and financing activities was usually consistent between the banks. However, there exist differences in the classification. The most distinctive difference was the classification of non-cash transactions. According to FAS 95 a non-cash transaction should be presented as a footnote (FASB). When an investment is reclassified from an investment available-for-sale to an investment held-for-sale it is a non-cash transaction. However, when the securities are sold an investment available-for-sale will be classified as an investing activity in the cash flow statement and therefore not affect the operating cash flow. If the securities would be reclassified as held-for-sale when sold, they would affect the operating cash flow instead. Furthermore, loans can be transferred between investments held-to-maturity, investments available-for-sale and investments held-for-sale. When the loans are transferred there will not be any implications other than a footnote in the cash flow statement. Depending on what the loans are classified as, future amortizations will be seen in different activities in the cash flow statement. Thus, according to Mulford & Comiskey (2009), the banks have much flexibility in the classifications and can control where the future cash flows will appear in the cash flow statement.

In addition to this, Mulford & Comiskey (2009) believe that customer-oriented deposits should be classified as an operating activity. However, they are today reported as a financing activity along with brokered transactions according to FAS 95. Mulford & Comiskey (2009) argue that the essence of banking is partly to keep its current customers that deposit money in the bank and partly to find new customers that can increase the deposits in the bank. Thus, the customer-oriented transactions should be classified as operating activities, whereas the brokered transactions should be classified as financing activities. Unfortunately, the deposits are not consistently classified as customer-oriented or brokered transactions in the cash flow statement and therefore it is difficult, if not impossible, to classify the deposits accordingly in operating and financing activities. Thus, Mulford & Comiskey (2009) were not able to identify what should be classified as customer-oriented deposits and therefore, also, not able to classify them as operating activities in the cash flow statement in their study.

Mulford & Comiskey (2009), overall, believe that the cash flow statements for commercial banks are consistent enough for a comparison. However, they think that in order to make a financial analysis of commercial banks for the operating activity in the cash flow statement certain adjustments have to be made. These include a uniform classification of non-cash transactions and customer-oriented deposits in the operating activity in the cash flow statement.

Torfason (2014) found out in his thesis that commercial banks do not use the cash flow statement when evaluating other commercial banks for interbank lending. Thus, according to the bankers he interviewed the usefulness of the cash flow statement for commercial banks is

limited. Bankers have illustrated, from the day that the cash flow statement became mandatory for banks, that the cash flow statement will not work properly. The fact that analysts often do not take the cash flow statements into account when they analyse banks is a decent example of that.

A negative operating cash flow in fast-growing and newly started firms is not remarkable, in fact it is seen as natural in order to be able to invest and grow. However, in the largest Scandinavian banks negative operating cash flows were observed for years without liquidity implications, although they were not growing rapidly and were not newly started. The reason why cash flow statements are disclosed is because they are mandatory for companies applying IFRS. Furthermore, because the assets in commercial banks are loans and the funding of the assets are deposits made by customers the classifications of the different cash flow activities in the cash flow statement are not suitable for commercial banks. In addition to this, the gross effect of cash flows is much larger than the net effect. In order to be able to use the cash flow statement every transaction has to be netted out. Consequently, there is a need for regulatory accounting changes (Torfason 2014). However, Torfason (2014) believes that the cash flow statements, if shaped correctly, can be usable for analysing the performance of commercial banks. To understand how cash is created in banks is fundamental when shaping a cash flow statement that can be used to analyse the performance of commercial banks.

3.4.2 Credit Creation

The commercial banks create the majority of money in the modern economy by issuing new loans. However, the central banks can regulate the amount of credit creation by changing the interest rates. If a central bank sets a high interest rate, the commercial banks will lend less money and, thus, less credit will be created (McLeay et al 2014).

Some economics textbooks do not explain the way money is created in the modern economy. One common misconception is that money is created when a household saves its money in a bank account and the bank receives deposits that the bank then lends out. It is instead the process of making a loan that concurrently creates a duplicated deposit in the borrower's bank account and, in this manner, new money is created by the commercial banks. Due to this misconception people think the banks just act as intermediaries, that is, they simply borrow money from some customers and then lend it out to others. Viewing commercial banks as intermediaries neglects the fact that they are the real creators of money in the modern economy. When a household saves money in a bank account, it does not open that bank account nor contribute to new deposits that the bank can lend. The deposits already exist because the bank previously has lent money. Hence, the process is a reverse sequence than that usually explained by textbooks. Banks create money and new deposits by the simple act of lending money (McLeay et al 2014).

Another misconception the economics textbooks often address is that the central banks can settle a fixed amount of money in circulation in normal times and that central bank money is multiplied up into new loans and deposits. This approach is called the Money Multiplier and it implies that the central banks can fix the amount of money in circulation by establishing a rigid number of reserves available. The reserves act as a binding constraint on lending and that is why the money get multiplied up to more loans and deposits in commercial banks. In fact, this process also typically acts in the reverse way. The commercial banks first decide how much they want to lend, this depends on the interest rate set by the central bank. The lower the interest rate, the more profitable lending is and the more deposits are created by the banking system. The amount of deposits created by the commercial banks influences the

number of reserves of central bank money the banks want to hold to cushion payment withdrawals from customers, to lend to other commercial banks, to fulfil liquidity restrictions et cetera. The central bank then supplies the commercial banks with central bank money to meet their reserve needs (McLeay et al 2014).

Nonetheless, commercial banks cannot create money freely without any limitations. Firstly, there are inherent limits in the banking system. The banks want to be competitive, hence, they want to issue profitable loans and mitigate the risk. There are also regulatory liquidity requirements and other cautious bank regulations in order to make the financial system work. Secondly, households and companies can reduce the stock of money if the money they borrow is used to repay debt obligations. Thirdly, monetary policy also comprises a restraint on credit creation. The central bank sets the interest rate and, as mentioned above, the interest rate determines how profitable lending possibilities are for the commercial banks. Interest rates directly affect how many loans commercial banks issue and in that way also how much new money being created. It also affects the amount of credit creation indirectly as monetary policy influences the economic activity in the economy as a whole (McLeay et al 2014).

Figure 1 Money creation by the aggregate banking sector making additional loans[a]
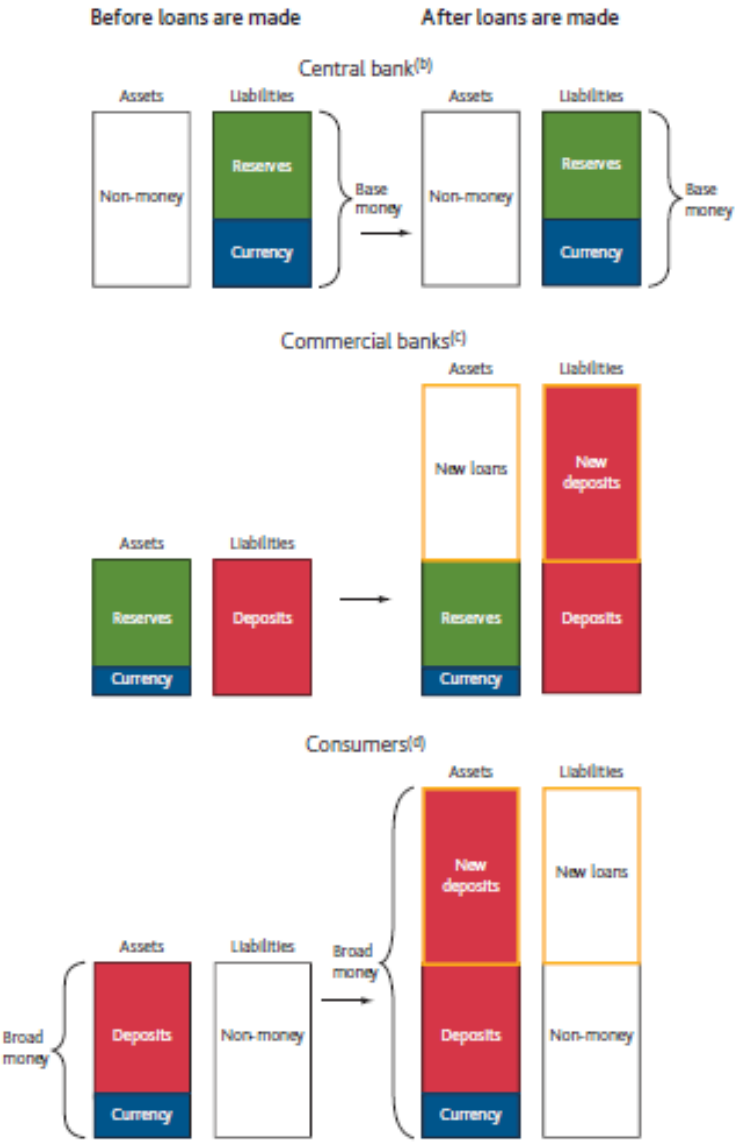
(a) Balance sheets are highly stylised for ease of exposition: the quantities of each type of money shown do not correspond to the quantities actually held on each sector's balance sheet.
(b) Central bank balance sheet only shows base money liabilities and the corresponding assets. In practice the central bank holds other non-money liabilities. Its non-monetary assets are mostly made up of government debt. Although that government debt is actually held by the Bank of England Asset Purchase Facility, so does not appear directly on the balance sheet.
(c) Commercial banks' balance sheets only show money assets and liabilities before any loans are made.
(d) Consumers represent the private sector of households and companies. Balance sheet only shows broad money assets and corresponding liabilities — real assets such as the house being transacted are not shown. Consumers' non-money liabilities include existing secured and unsecured loans.

Source: McLeay et al 2014

4. Empirical Findings and Analysis
4.1 Empirical Findings and Analysis of Correlations

In order to answer the research questions presented in this thesis, the correlation between ROE and the operating cash flow for the years 2005 to 2012 was studied for 39 commercial banks. The result is shown in *Appendix 3*. All the 39 commercial banks studied, except for Banca Carige, report cash flows using the indirect method. As seen in the table the correlation varies considerably. The mean correlation is -0.0537 with a standard deviation of 0.4681.

A chi-square test was used to analyse whether the data was normally distributed or not. The null hypothesis states that the data is normally distributed, whereas the alternative hypothesis states that the data is not normally distributed. The test resulted in a p-value of 36.51%. *"The p-value defines the smallest value of alpha for which the null hypothesis can be rejected"* (Cortinhas & Black 2012). If the data is normally distributed there is a chance of 36.51% to obtain the distribution presented in this thesis when taking a sample of 39 commercial banks out of the population. The result presented in this thesis is shown in figure 2. As seen in the diagram the data may not seem to be normally distributed. However, the data can be seen as normally distributed if the alpha, also known as the significance level, is below 36.51%. A significance level of 1% or 5% is typically chosen (Cortinhas & Black 2012). In this case a significance level of 5% was selected. The null hypothesis cannot be rejected because the p-value is greater than the significance level. Hence, it can be statistically confirmed that the data is normally distributed.

Figure 2 **Distribution of correlations for commercial banks**
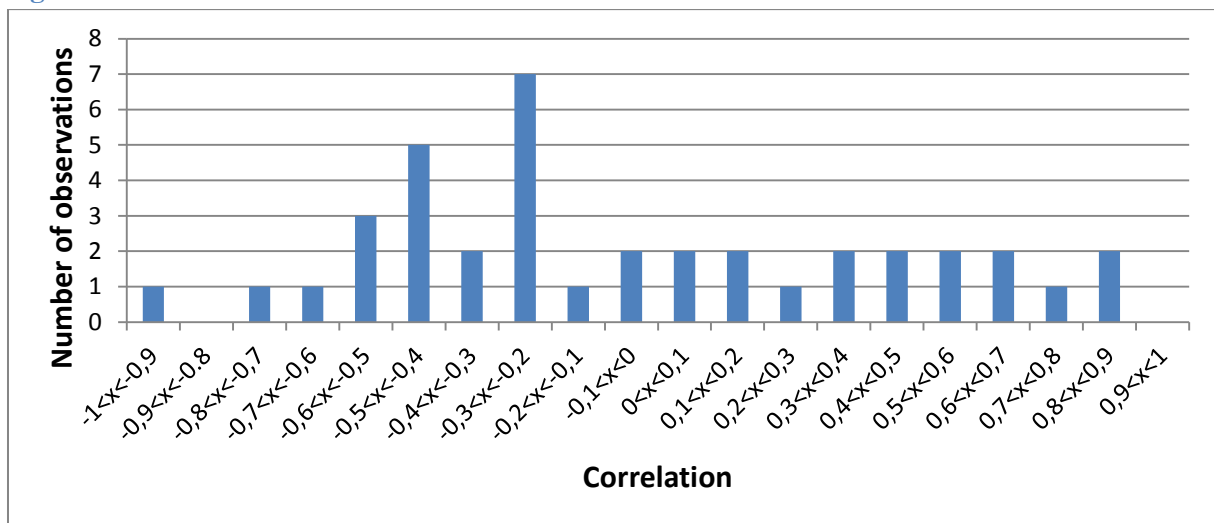
By knowing that the data is normally distributed a conclusion can be drawn. That is, 95% of all commercial banks that fulfil the criteria mentioned in *2.3 Data Collection* have a correlation between -0.9712 and 0.8638. This range is calculated by adding and subtracting 1.96 standard deviations from the mean (Corinthas & Black 2012). 50% of the commercial banks have a correlation that is equal to or less than -0.0537. Thus, just over 50% of the commercial banks have a negative correlation. To statistically justify the hypothesis that a well-performing commercial bank should have negative operating cash flows due to increased lending more than 95% of the commercial banks should have a negative correlation (Cortinhas & Black 2012). Since slightly more than 50% of the commercial banks have a negative correlation the hypothesis can be falsified. It cannot be statistically proven that there exists a negative correlation between ROE and operating cash flows. Since the hypothesis is

falsified the operating cash flows cannot be used when analysing the performance of commercial banks, which is the first outcome stated in *1.2 Problem Discussion*.

4.2 Empirical Findings and Analysis of Outliers

In order to analyse the reasons behind the commercial banks with the most extreme correlations, the banks with a negative correlation less than **-**0.7 and the commercial banks with a positive correlation more than 0.7 were studied more thoroughly. By setting these criteria six banks were studied. The commercial banks with a negative correlation less than **-**0.7 are Banca delle Marche, Caixabank and BNP Paribas. The commercial banks with a positive correlation of more than 0.7 are Banca Monte dei Paschi di Siena, LeasePlan Corporation and Bank of Ireland. The analysis of the banks involves investigating the change in lending and comparing it to the change in operating cash flows. The hypothesis states that a well performing bank should have negative operating cash flows. Thus, if a commercial bank is increasing its lending, that is increases the sales, it should be related to a decrease in the operating cash flows. The change in lending and the change in operating cash flows will be presented in tables for all banks throughout the forthcoming sections.

4.2.1 Banca delle Marche

Banca delle Marche was the bank with the most negative correlation between ROE and operating cash flows. In this section the correlation between operating cash flows and lending for Banca delle Marche was studied, the results are presented in the table below.

Table 1 Change in operating cash flows and lending

Year	Change in Operating Cash Flows	Change in Lending
2005-2006	-0.92%	14.71%
2006-2007	-208.00%	11.90%
2007-2008	178.11%	8.70%
2008-2009	-9.62%	7.50%
2009-2010	1.91%	5.70%
2010-2011	-278.61%	-1.80%
2011-2012	528.77%	-6.20%
Correlation	-0.4221	

Between 2005 and 2006 the lending increased by 14.71%. The operating cash flow for the same period decreased by 0.92%. The lending increased by 11.9% from 2006 to 2007 and the operating cash flow decreased by 208%. For the period 2007 to 2008 the lending increased by 8.7%, however the operating cash flow increased from negative 82,565 thousand Euros to 64,494 thousand Euros for the same period, which is a significant increase. Between 2008 and 2009 the lending increased by 7.5% and the operating cash flow decreased by 9.62%. From 2009 to 2010 the lending increased by 5.7%, whereas the operating cash flow increased by 1.92%. The operating cash flow decreased considerably, 278.61%, between 2010 and 2011. For the same period the lending decreased by 1.8%. Finally, for the period 2011 to 2012 the lending decreased by 6.2%, whereas the operating cash flow increased from negative 106,101 thousand Euros to 454,930 thousand Euros (Banca delle Marche Annual Reports 2005-2012). As can be seen, an increased lending led to decreased operating cash flow in four of seven periods. However, for the periods 2005 to 2006 and 2008 to 2009 there was only a slight decrease in the operating cash flows. The periods that contradict the hypothesis are the

periods 2007 to 2008 and 2010 and 2011. For 2007 to 2008 an increased lending led to a significant increase in operating cash flows, whereas for 2010 to 2011 a slight decrease in lending led to a significant decrease in operating cash flows. The correlation between the change in lending and the change in operating cash flows for Banca delle Marche is -0.4221 for the period 2005-2012. This correlation is significantly weaker than the correlation between ROE and operating cash flows. However, the hypothesis that a well-performing commercial bank ought to have negative cash flows due to increased lending and vice versa can in general be supported by the analysis of Banca delle Marche. Around 80% of the revenues for Banca delle Marche have, during the studied years, been derived from commercial banking activities (Banca delle Marche Annual Reports 2005-2012). This can be an explanation as to why the hypothesis is supported in the case of Banca delle Marche.

4.2.2 CaixaBank

The Spanish bank, Caixabank, had the second most negative correlation (-0.8653) between cash flows and ROE of all the 39 studied banks. This is illustrated in figure 5 in section *4.3 Empirical Findings and Analysis of the Differences between Countries* above. CaixaBank has two core business segments, the first is retail banking as well as insurance and the second is investments. When looking at the earnings by business, it is clear that the investment business is the smaller segment. It accounts for only 5.36% of the total gross income of CaixaBank Group (CaixaBank Annual Reports 2005-2012). As the investment business is a very small part of the banking operations and insurance seems to be a minor part of the first segment, the negative correlation supports the hypothesis. When a bank lends money it does well, because cash is what the bank sells through lending.

Table 2 Change in operating cash flows and lending

Year	Change in Operating Cash Flows	Change in Lending
2005-2006	-277.73%	26.99%
2006-2007	102.49%	21.03%
2007-2008	-12.59%	-4.66%
2008-2009	231.12%	-1.60%
2009-2010	104.84%	5.62%
2010-2011	-194.66%	-2.97%
2011-2012	605.64%	19.40%
Correlation	0.0944	

Nevertheless, it is interesting to study CaixaBank more thoroughly. As seen in the table 2, CaixaBank's lending increased by 26.99% from 2005 to 2006, whereas the operating cash flows decreased by 277.73%. Between 2006 and 2007 the lending rose by 21.03%, the operating cash flows increased even more, by 102.49%. Both the lending and the cash flows declined from 2007 to 2008, the lending by 4.66% and the cash flows by 12.59%. The lending kept decreasing from 2008 to 2009, by 1.6%, whereas the cash flows surged by 231.12%. Between 2009 and 2010 the lending increased by 5.62% and the operating cash flows by 104.84%. From 2010 to 2011 both the lending and the operating cash flows decreased by 2.97% and 194.66% respectively. Between 2011 and 2012 the lending rose by 19.4% whereas the operating cash flows incremented by as much as 605.64% (CaixaBank Annual Reports 2005-2012). The correlation between the lending and the operating cash flows is 0.0944. This rejects the hypothesis that when a bank increases its lending the operating cash flows

decrease, there ought to be a negative correlation according to the hypothesis. Nonetheless, CaixaBank has a very weak positive correlation. There is almost no correlation at all between lending and operating cash flows. This is unanticipated considering that CaixaBank had such a strong negative correlation between ROE and operating cash flows.

4.2.3 BNP Paribas

Table 3 Change in operating cash flows and lending

Year	Change in Operating Cash Flows	Change in Lending
2005-2006	661.21%	35.30%
2006-2007	-14.90%	10.20%
2007-2008	129.98%	9.20%
2008-2009	6.38%	36.20%
2009-2010	-108.43%	-2.60%
2010-2011	1595.37%	-4.30%
2011-2012	42.11%	-6.20%
Correlation	-0.1197	

Table 3 shows that the lending for BNP Paribas increased by 35.3% and the operating cash flow increased significantly from negative 2,738 million Euros to 15,366 million Euros between 2005 and 2006. The operating cash flows decreased by 14.9% from 2006 to 2007, whereas the lending increased by 10.2% for the same period. From 2007 to 2008 the lending and operating cash flows increased by 9.2% and 129.98% respectively. For the period 2008 to 2009 the lending increased by 36.2%. The operating cash flows for the same period increased by 6.38%. The lending, between 2009 and 2010 decreased by 2.6% whereas the operating cash flows decreased from 31,993 million Euros to negative 2,698 million Euros. The operating cash flows increased significantly from 2010 to 2011, from negative 2,698 million Euros to 40,245 million Euros, the lending decreased by 4.3% for the same period. Finally, between 2011 and 2012, the lending decreased by 6.2%, whereas the operating cash flows increased by 42.11% (BNP Paribas Annual Reports 2005-2012). Three of the seven periods, confirm the hypothesis. That is, an increased lending should imply negative operating cash flows and the other way around. For the period 2006 to 2007 an increased lending is combined with a decrease in operating cash flow. For the periods 2010-2011 and 2011-2012 a decrease in lending is combined with an increase in operating cash flow. The correlation between change in lending and change in operating cash flow is -0.1197, which is significantly less than the correlation between ROE and operating cash flows.

When analysing BNP Paribas' annual reports for the period 2005-2012 almost 50% of their revenues are derived from investment banking. This fact can explain why only three years justify the hypothesis of the thesis. BNP Paribas had a negative correlation of 0.701 between ROE and operating cash flows for the same period. This fact contradicts the fact that BNP Paribas has such a large percentage of its revenues from investment banking. One explanation to this fact is the classification issue. For example, in 2009 the *"net increase in cash related to transactions involving other financial assets and liabilities"* is 22,583 million Euros, whereas it is 37,530 and 96,551 million Euros in 2010 and 2011 respectively (BNP Paribas Annual Reports 2009-2011). As seen the variation between these three years is large. The classification of financial instruments is arbitrary and the banks can transfer them between

held-for-sale and available-for-sale as they want (Mulford & Comiskey 2009). Hence, they can decide whether they want to disclose the cash flows as operating activities or not. This classification issue may explain the large variations in the cash-related transactions involving other financial assets and liabilities. Another explanation for the weaker correlation might be the high proportion of investment banking and that is why the proportion of commercial banking, which includes lending, is lower than in other banks.

4.2.4 Banca Monte dei Paschi di Siena

Table 4 Change in operating cash flows and lending

Year	Change in Operating Cash Flows	Change in Lending
2005-2006	39.46%	4.50%
2006-2007	-1.08%	15.60%
2007-2008	19.58%	7.00%
2008-2009	-13.42%	4.90%
2009-2010	-2.63%	4.10%
2010-2011	-24.78%	-5.60%
2011-2012	-42.92%	-1.60%
Correlation	0.4878	

As table 4 exhibits, Banca Monte dei Paschi di Siena increased its lending between 2005 and 2006 by 4.5%, the operating cash flows for the same period increased by 39.46%. From 2006 to 2007 there was a drop by 1.08% in operating cash flows, whereas the lending increased by 15.6%. The lending rose by 7% for the period 2007 to 2008, for the same period the operating cash flows increased by 19.58%. The lending increased by 4.9% between 2008 and 2009, whereas the operating cash flows decreased by 13.42%. From 2009 to 2010 the operating cash flows diminished by 2.63% and the lending increased by 4.1% for the same period. There was a decline of 5.6% in the lending between 2010 and 2011 for Banca Monte dei Paschi di Siena, for the same period the operating cash flows decreased by 24.78%. Finally, for the period 2011 to 2012 the lending decreased by 1.6% and the operating cash flows decreased by 42.92% (Banca Monte dei Paschi di Siena Annual Reports 2005-2012). Banca Monte dei Paschi di Siena also has three out of seven periods that verify the hypothesis. These periods are 2006-2007, 2008-2009 and 2009-2010. However, for the other four periods there is no negative correlation between change in lending and change in operating cash flows. Overall, the correlation for the period 2005-2012 is 0.4878. The correlation is weaker than the correlation between ROE and operating cash flows, nonetheless it is still positive. One possible explanation for the positive correlations can be the amount of investment banking activities in Banca Monte dei Paschi di Siena. In 2005 the investment banking part of the revenues was just over 50%, whereas the investment banking share of total revenues in 2012 had diminished to roughly 30% (Banca Monte dei Paschi di Siena Annual Reports 2005-2012). Yet again, there is not enough evidence to prove the hypothesis.

4.2.5 Bank of Ireland

Bank of Ireland, as all the Irish banks, has negative cash flows and ROE after the financial crisis in 2008. Ireland was very severely affected by the crisis and the fact that both ROE and operating cash flows were negative 2008-2012 contradicts the hypothesis that banks perform well when they have negative operating cash flows. In the case of Bank of Ireland, the reason

for the strong positive statistical relationship between ROE and operating cash flows does not seem to be particular for this bank and its operating activities. Instead, it seems that this positive correlation is related to the situation of the banks in Ireland during the crisis and post-crisis.

A closer observation of Bank of Ireland reveals that the Irish retail bank branch, Retail Ireland, reported losses due to "impairment charges on loans and advances to customers". This may be related to Ireland's situation in the Eurozone crisis, since both business and households often have difficulties to repay their loans during economic downturn. The largest part of the impairments was made up of residential mortgages. The British retail bank branch, Retail UK, also reported losses due to impairments. However, the impairments were much lower and the largest part was within property and construction. A conclusion cannot be drawn from this data as more factors and variables have to be studied.

Table 5 Change in operating cash flows and lending

Year	Change in Operating Cash Flows	Change in Lending
2005-2006	-47.66%	29.34%
2006-2007	-20.19%	16.59%
2007-2008	-238.98%	9.75%
2008-2009	-0.02%	-14.25%
2009-2010	-57.28%	-2.05%
2010-2011	-8.25%	-11.93%
2011-2012	37.28%	-4.89%
Correlation	-0.3422	

Until the financial crisis of 2008 the Bank of Ireland had a fairly strong negative correlation between lending and operating cash flows. This is shown in table 5 above. The lending increased by 29.34% from 2005 to 2006, whereas the operating cash flows were reduced by 47.66%. Between 2006 and 2007 the bank boosted its lending by 16.59% while the operating cash flows were reduced by 20.19%. From 2007 to 2008 the lending still incremented, by 9.74% and the operating cash flows diminished by 238.98%. After the financial crisis of 2008, both lending and cash flows started to decrease. From 2008 to 2009 when the lending and the operating cash flows were cutback by 14.25% and 0.02% respectively. In the period after, between 2009 and 2010, the lending kept decreasing, by 2.05%, whereas the operating cash flows lessened by 57.28%. From 2010 to 2011 the lending dropped by 11.93% and the operating cash flows by 8.25%. Between 2011 and 2012 the lending decreased by 4.89% and the cash flows increased by 37.28%. The total correlation was **-**0.3422, this implies that when the lending increases the operating cash flows decrease or vice versa. The two variables co-vary in opposite directions. The negative correlation partly confirms the hypothesis. The negative correlation was stronger before the crisis, and after the crisis there was a weak positive correlation between the lending and the operating cash flows since both decreased except for the last period, 2011-2012. (Bank of Ireland Annual Reports 2005-2012). The positive statistical relationship between ROE and operating cash flows was strong. However, the correlation between operating cash flows and lending is negative. This change in correlation may be explained by the flexibility of the accounting standard, IAS 7 Statement of Cash Flows.

4.2.6 LeasePlan Corporation

Table 6 Change in operating cash flows and lending

Year	Change in Operating Cash Flows	Change in Lending
2005-2006	24.72%	21.70%
2006-2007	20.96%	-0.90%
2007-2008	2.02%	51.30%
2008-2009	-62.33%	5.50%
2009-2010	-52.63%	10.00%
2010-2011	-227.54%	14.20%
2011-2012	110.98%	-11.50%
Correlation	-0.1879	

Table 6 above displays the changes in operating cash flows and lending. LeasePlan Corporation's lending increased by 21.7% between 2005 and 2006, in the same period the operating cash flows rose by 24.72%. The lending decreased by 0.9% from 2006 to 2007 and the operating cash flows increased by 20.96%. In the period 2007 to 2008 there was an increase in lending of 51.3%, whereas the operating cash flows incremented by 2.02%. Between 2008 and 2009 the operating cash flows diminished by 62.33%. In the same period the lending increased by 5.5%. LeasePlan Corporation increased its lending by 10% in the period 2009 to 2010, whereas the operating cash flows decreased by 52.63%. From 2010 to 2011 the lending increased by 14.2% and the operating cash flows decreased by 227.54%. Finally, between 2011 and 2012, the lending decreased by 11.5%, whereas the operating cash flows increased by 110.98% (LeasePlan Corporation Annual Reports 2005-2012). The four last periods confirm the hypothesis stated in this thesis, whereas the three first periods do not. The correlation between lending and operating cash flows is **-**0.1879 in comparison to the correlation of 0.8498 between ROE and operating cash flows. It is interesting to see the difference in correlation since only the finance leases are accounted for in the calculation. Figures 3 and 4 below demonstrate the discrepancy in correlations. In the cash flow statements between 2005 and 2012 a large part of the positive operating cash flows is derived from depreciation of the operating leasing portfolio (LeasePlan Corporation Annual Reports 2005-2012). This implies that a large part of their operating cash flows originates from a non-financial activity, which affects the correlation. The hypothesis can be confirmed when only accounting for the financial activities in the company. However, in order to make a fair analysis the effects on the operating cash flows should be accounted for due to the fact that LeasePlan Corporation is mainly a leasing company.

Figure 3 Relationship between operating cash flows and ROE for LeasePlan Corporation
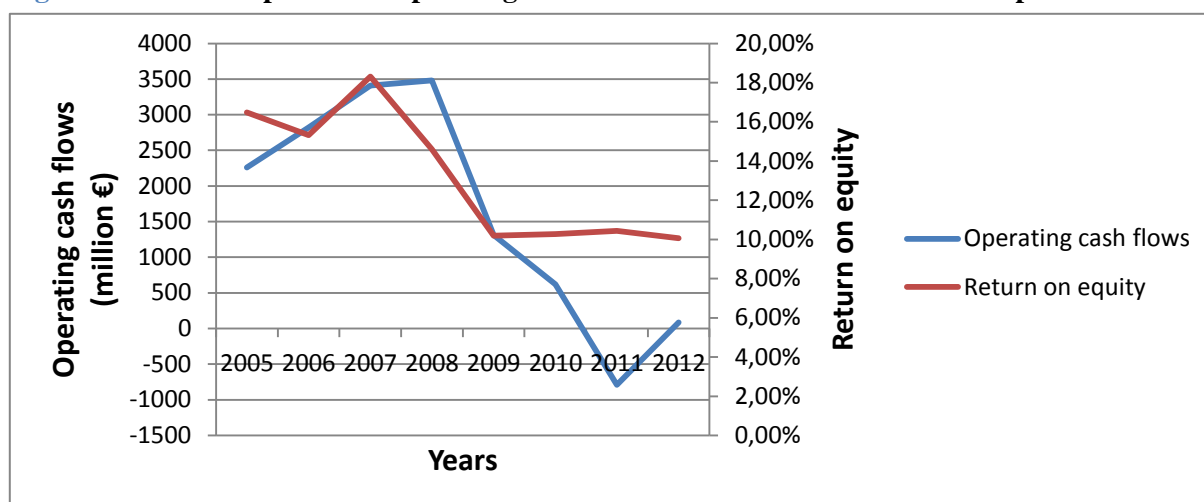
Figure 4 Change in operating cash flows and lending for LeasePlan Corporation
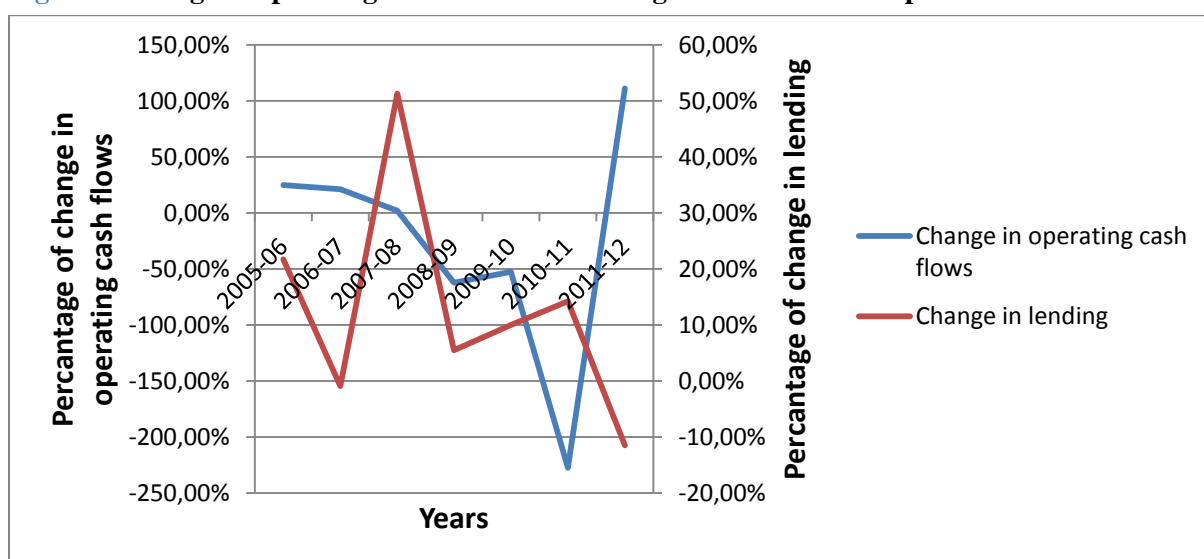
4.3 Empirical Findings and Analysis of the Differences between Countries

When analysing the results from the data collection, presented in *Appendix 3*, some differences between countries were noted. These differences will be further discussed below in order to answer the second research question.

Table 7 Correlations for Spanish commercial banks

	Bank	Country	Correlation
1.	Caixabank, S.A.	Spain	-0.5822
2.	Banco Bilbao Vizcaya Argentaria SA	Spain	-0.4341
3.	Banco Santander SA	Spain	-0.3856
4.	Banco de Sabadell SA	Spain	-0.2158
5.	Bankinter SA	Spain	-0.2109

All the five investigated Spanish banks have negative correlation, which table 7 exhibits, and those banks accounted for 89.46% of the national market in terms of operating income as of 2012. The common negative correlation might be particular for Spanish banks, it is difficult to clearly state the reason for that. The fact that the Spanish banks all have negative correlation

partly supports the hypothesis that a well-performing commercial bank should have negative operating cash flows due to increased lending and vice versa.

Figure 5 Caixabank, S.A.
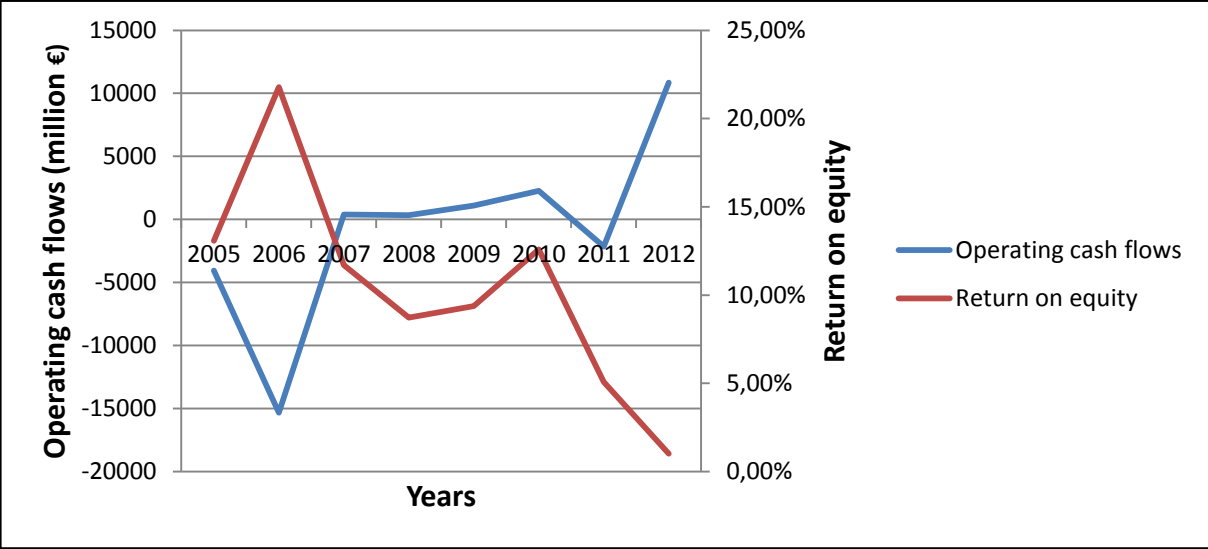
The Spanish banks were severely affected by the European sovereign-debt crisis and, hence, have not performed very well. The ROE has dropped for all of the studied Spanish banks, and at the same time the operating cash flows have surged. This can be noticed in figure 5 above. This pattern is rather similar for all studied Spanish commercial banks, it is more apparent when the negative correlation is stronger. This endorses the hypothesis, since the variables co-vary negatively.

Table 8 Correlations for Portuguese commercial banks

	Bank	Country	Correlation
1.	Banco Comercial Português SA	Portugal	-0.6719
2.	Caixa Geral de Depositos	Portugal	-0.5893
3.	Banco Espirito Santo SA	Portugal	-0.1253

As table 8 illustrates, all the Portuguese banks studied also have negative correlations. Banco Espirito Santo SA has a correlation of **-**0.1253, Banco Comercial Português **-**0.6719 and Caixa Geral de Depositos **-**0.5893. Together these three banks account for 83.09% of the national market. They have operations overseas, but not to the same extent as the Spanish banks. Portugal is another country that also was struck very hard by the Eurozone crisis, i.e. the Portuguese banks did not perform well. However, when further analysing the Portuguese banks a pattern can be noted. They all have negative cash flows and positive ROE before the economic crisis, but after the crisis the operating cash flows increase and the ROE decreases. An example of that is illustrated in figure 6 below.

Figure 6 Banco Comercial Português SA
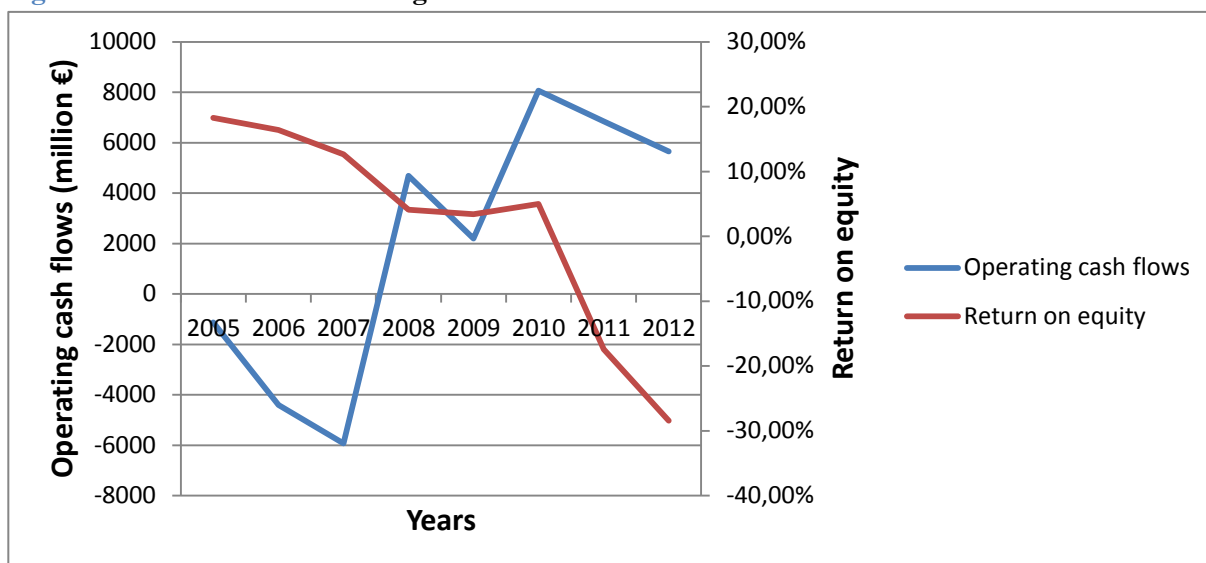
The figures for the two other studied Portuguese banks resemble figure 6, therefore the hypothesis can be supported in this case.

Table 9 Correlations for Irish commercial banks

	Bank	Country	Correlation
1.	Bank of Ireland	Ireland	0.811
2.	Allied Irish Banks plc	Ireland	0.6506
3.	Ulster Bank Ireland Limited	Ireland	0.6291

Despite the fact that two of the most severely affected countries, Spain and Portugal, have negative correlations does not make it a confirmed phenomenon. Ireland was also very sternly hit by the crisis and, in fact, the Irish banks in this study show the opposite result. As seen in table 9 they all have a quite positive correlation. The correlation of Bank of Ireland is 0.811 and Allied Irish Banks has a correlation of 0.6506. Ulster, the third largest Irish bank, had to be excluded from the study due to missing data. However, Ulster also had a rather strong positive correlation, 0.6291, between the years 2007 and 2012. Excluding Ulster the Irish market was covered by 59.54% and including Ulster the three Irish banks encompassed 71.91% of the domestic market.

Figure 7 Bank of Ireland
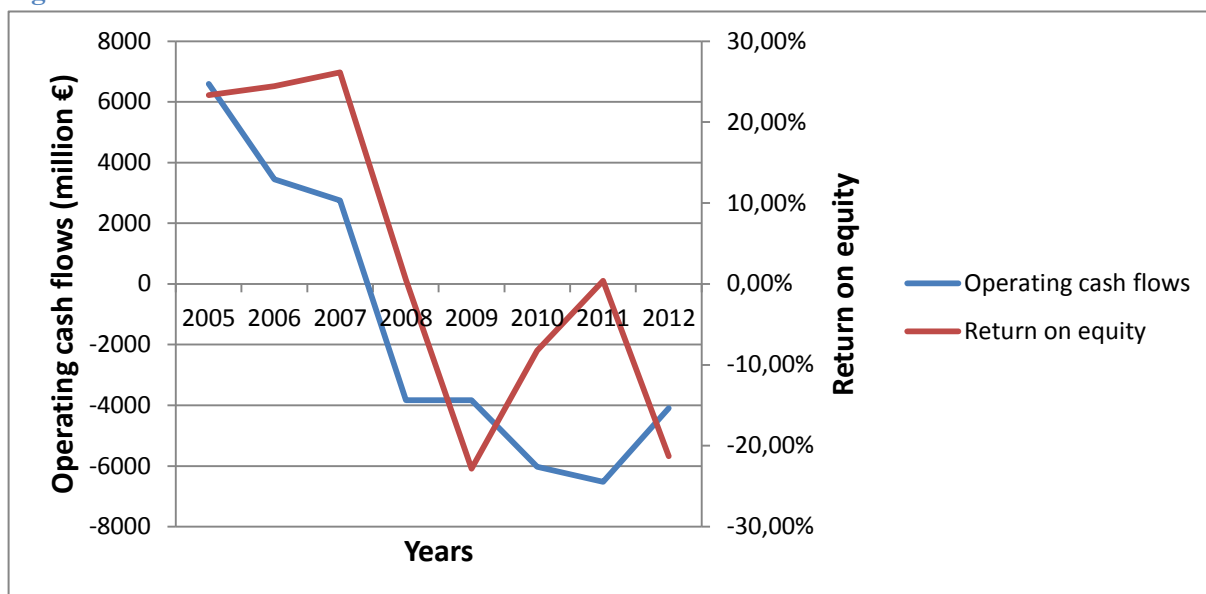
In a non-financial company a strong positive correlation would, in the normal case, show that the company has both a positive ROE and positive operating cash flows that co-vary. This would illustrate that the company generates its own cash flows through the principal revenue generating activities and when it does so, the ROE increases. However, since the banking activities are very different financial institutions tend to show more negative operating cash flows as the act of lending is their main revenue source. In the case of the Irish banks, they all (including Ulster) have positive correlations because both the operating cash flows and ROE were negative between the years 2009 and 2012, with the exception of Bank of Ireland's ROE in 2011 which was very low, 0.39%. However, they have positive cash flows and ROE before the financial crisis started in 2008. The negative cash flows and ROE after 2008 seem to be associated with the crisis, but it is difficult to state the reason for this. The changes in ROE and operating cash flows for Bank of Ireland can be seen in figure 7, the diagrams for the other two Irish banks are similar due to the strong positive correlation. The positive correlation for the Irish banks clearly rejects the hypothesis in this thesis.

Table 10 Correlations for the French commercial banks

	Bank	Country	Correlation
1.	BNP Paribas	France	-0.701
2.	Credit Agricole CIB	France	-0.5171
3.	Banque Fédérative du Crédit Mutuel	France	-0.4585
4.	Crédit du Nord	France	-0.369
5.	Credit Mutuel	France	-0.2545
6.	Société Générale	France	-0.2385
7.	RCI Banque	France	-0.2207
8.	Crédit Industriel et Commercial - CIC	France	0.0075
9.	La Banque Postale	France	0.0752
10.	Natixis	France	0.3108

France is the country with the most commercial banks represented in the sample. Seven of ten French commercial banks have negative correlations, which is illustrated in table 10. The French banks with a negative correlation are BNP Paribas, Société Générale, Credit Mutuel, Banque Fédérative du Crédit Mutuel, Credit Agricole CIB, Crédit du Nord and RCI Banque.

The French banks with a positive correlation are Natixis, La Banque Postale and Crédit Industriel et Commercial - CIC. There is no obvious pattern for all the French commercial banks. Also, it is difficult to draw conclusions for the French commercial banks from the collected data since the correlations vary significantly. Some of the banks might have more investment or insurance activities than others. The French banks with a negative correlation support the hypothesis whereas the French banks with a positive correlation decline it. BNP Paribas will be further analysed in section *4.2.3 BNP Paribas* as it is the French bank with the strongest correlation.

A possible explanation for the differences between countries is that there is a flexibility to classify cash flows inconsistently in financial institutions according to the IAS 7. This relates to the first and second main problem, mentioned in *3.2 Comment Letters – Cash Flow Accounting in Banks*, derived from the comment letters by Torfason (2014). The practice to report cash flows may vary in different countries due to tradition and national laws. One country might tend to report a specific transaction as a financing activity whereas the majority of banks in another country report the exact same transaction as an operating activity. It would be easier to compare banks in general, and particularly between countries if the cash flows were reclassified and more adapted for the reporting of banks (Mulford & Comiskey 2009).

The fourth main problem derived from the comment letters mentioned in *3.2 Comment Letters - Cash Flow Accounting in Banks* is the debate regarding gross versus net cash flows (Torfason 2014). Banks are allowed to net cash for items traded in large amounts, with a quick turnover and short maturity (FAS 95, 1987: 7, paragraph 12). Moreover, according to paragraph 24 in the standard IAS 7 financial institutions may choose to report some specific cash receipts and payments on a net basis (The European Commission, IAS 7). As described in section *3.4 Credit creation* commercial banks are the creators of money in the modern economy. Commercial banks create large amounts of money since they create new deposits by lending. The possibility for financial institutions to net cash flows may be a contributing factor to the differences between countries. The netting will affect the cash flows and how they are reported. Moreover, depending on how the netting is done it will, also, affect the correlation. Thus, it is possible that the netting varies between the countries in the sample of this thesis. For example, the netted cash flows in Ireland may explain why the Irish banks have positive correlations and the netting in Spain may explain the fact that all the Spanish banks have negative correlations. Furthermore, this may also explain the pattern of negative operating cash flows for years in the Scandinavian largest banks in Torfason's (2014) dissertation, for which the hypothesis of this thesis is based on. The netting may, also, explain why the results from this thesis cannot statistically confirm the hypothesis.

5. Conclusions

The result in this study indicates that there is not a negative correlation between ROE and operating cash flows in commercial banks. From the sample, just over 50% of the commercial banks had a negative correlation. Hence, the first research question could not prove that a significant number of commercial banks had a negative correlation. This results in a rejection of the hypothesis that well-performing banks should have negative correlation between operating cash flows and ROE. Due to the rejection of the hypothesis the operating cash flows cannot be used to analyse the performance of commercial banks, this leads to the first outcome stated in *1.2 Problem Discussion*.

The study of the six banks with the most extreme correlations confirms the result from the correlation analysis between ROE and the operating cash flows since only four of six banks had negative correlation between change in lending and operating cash flows. This underpins that the first research question could not be verified since the correlations in the study were rather diverse. An explanation as to why only four of the studied banks with the most extreme correlations had a negative correlation between lending and operating cash flows could be the amount of non-commercial activities in the banks. Another explanation could be the flexibility in IAS 7. An interesting result from the analysis of the six commercial banks with the most extreme correlations is the result from LeasePlan Corporation. LeasePlan went from a strong positive correlation to a weak negative correlation. When only the lending is accounted for in the correlation with the operating cash flows there is a negative correlation. However, in the cash flows generated by operating activities the depreciation from operating lease contracts is still a major part and this distorts the operating cash flows. These contracts should be eliminated from the operating cash flows in order only to account for the financial activities. In general for all the six banks studied, there are some tendencies for a justification of the hypothesis. Nevertheless, these tendencies are not strong enough to confirm it.

In Mulford & Comiskey's (2009) study the operating cash flows were basically found to be meaningless, unless a more consistent accounting of the operating cash flows would be conducted. With a more consistent accounting regarding the operating cash flows it could be possible to more easily analyse the performance of commercial banks. The same pattern was observed in this thesis. In the study similarities within countries were noted. Moreover, differences in the correlations between countries were also noticed, which answers the second research question. The question is also why these differences arise and that can be explained by the flexibility in the accounting standard IAS 7, the differences are accentuated by the different accounting practices in the studied country. Due to the flexibility in the standard banks in different countries are allowed to report operating cash flows differently. For example, commercial banks may net the cash flows differently. Furthermore, the classification issues may also distort the operating cash flows. This flexibility impacts the correlations between ROE and operating cash flows, and makes them differ between countries. The result in this thesis implies that the hypothesis can be confirmed in some countries, whereas falsified in others. This also means that the operating cash flows in some countries, according to the hypothesis, can indicate the performance of commercial banks, while the operating cash flows in other countries cannot provide a hint about the performance of commercial banks. This leads to the first outcome, mentioned in *1.2 Problem* Discussion, for the countries for which the hypothesis is falsified, whereas in the countries for which the hypothesis can be confirmed the third outcome is applied. However, with a consistent regulation the operating cash flows may be useful when analysing the performance of commercial banks. More studies regarding the differences in accounting practice between countries are, however, needed in order to draw that conclusion.

5.1 Contribution of the thesis

Torfason (2014) has addressed criticism of cash flow reporting from banks. The criticism is due to the inconsistency of the legal framework in terms of cash flow reporting. It is inconsistent since the activities of banks are very different, they "sell cash" through lending. The paper written by Mulford & Cominsky (2009) contributes to the discussion about the inconsistency and the possibility to reclassify cash flows. This thesis further contributes to the debate about the importance of cash flow accounting in banks by researching whether the operating cash flows can indicate the performance of commercial banks. This was investigated by examining the correlation between the ROE and the operating cash flows, before the study the authors assumed that there would be a negative statistical relationship between these two variables. Torfason (2014) noticed some patterns for the nine Scandinavian banks he studied. There was a common period of negative cash flows before the crisis of 2008 and then there is a huge surge in 2011. He believes the negative cash flows arise because of increased lending and credit creation, and subsequently the positive flows after the crisis may be interpreted as decreased lending and cash in-flows for banks due to repayment of already outstanding loans. The banks lent more before the crisis when they did well and lent less during the crisis. The pattern Torfason (2014) found indicates that when ROE increases the operating cash flows should decrease due to increased lending, which is stated in the hypothesis of this thesis. The authors assumed there might exist a general pattern between the performance of banks and the operating cash flows. Nevertheless, this thesis has shown that there might be common patterns in terms of cash flow reporting within countries, but it might differ between countries or regions. Since Torfason only studied the Scandinavian countries, the pattern he found seems to apply solely to this region. The Scandinavian countries are quite uniform in terms of culture and tradition, thus, maybe the accounting practices resemble. Moreover, the Scandinavian economies are also similar in general.

The empirical findings in this thesis indicated similarities in terms of cash flow reporting within countries and differences between countries. It is difficult to state why these patterns arise, they might be arbitrary but there is also a possibility that they depend on differences in accounting practices in different countries. Due to the disparate interpretations of the standard IAS 7: Statement of Cash Flows differences between countries emerge as a result of the flexibility.

The IFRS is mandatory for all the studied banks, and the conceptual framework states that the annual report should be relevant as basis for decision making for the users of financial reports (IASB). The IFRS is a principle-based accounting framework, that is why the standard for cash flow reporting, IAS 7, allows for much flexibility, particularly for financial institutions. The standard is the same for non-financial and financial institutions, with merely a few exceptions for financial institutions. The activities of banks are very special to their nature, the question is therefore whether the cash flow statement provides the users of financial reports with information that is relevant as a basis for decision making. According to this study the answer is no, but the pattern for different countries is interesting and can be further researched.

If the legal framework for cash flow reporting could be more consistent, similarly interpreted between countries and specifically adapted for financial institutions, the cash flow statement might work as a good basis for the decision making in banks in the future. However, that analysis surpasses the leeway of this thesis but allows for a plethora of further research in the future.

5.2 Recommendations for further research

5.2.1 Origins of operating cash flows

As Torfason (2014) states in his dissertation, the negative operating cash flows may arise due to credit creation in banks. However, to further analyse how and why the negative operating cash flows emerge, it is necessary to study where they actually derive from. The items in the cash flow statement would have to be examined individually. Also, loans between banks and different countries would have to be investigated more thoroughly. Nonetheless, it could be difficult to find out the netted cash flows between banks without having access to inside information from banks or without regulatory change in terms of cash flow reporting in banks.

5.2.2 Differences between countries

As noticed in this thesis, there are differences in the correlation between operating cash flows and ROE between countries. These differences could stem from the flexibility in IAS 7 in combination with the accounting practice in each country. However, further research on where the differences between countries originate from is needed.

5.2.3 Classification by activity

This thesis has investigated the correlation between ROE and operating cash flows, hence the underlying factors behind the classification by different activities in the cash flow statement have not been investigated further. One of the main problems put forward in the comment letters is the classification issue (Torfason 2014). In this thesis the cash flows are not reclassified between their different activities in order to show a more true and fair view as Mulford & Comiskey (2009) propose in their paper (see *3.4.1 Cash Flow Accounting in Banks*). Due to the flexibility in IAS 7 and the differences between countries observed in this thesis there is a need for more thoroughly research on how consistent the classification by activities is between commercial banks and between countries.

5.2.4 Direct and indirect method

The comment letters from the U.S. in the 80s explained why banks ought to use the direct method when reporting cash flows. It is advantageous because it better fulfils the objective of the accounting standard. The objective of the standard is to show the ability of the bank to generate cash and cash equivalents. The cash flows from the operating activities are not mixed with non-cash transactions in the direct method. As for the indirect method more cash flows are netted, hence, it is more difficult to detect where they derive from.

The information from the cash flow statement should complement the information from the income statement as it more thoroughly shows a bank's ability to generate cash and cash equivalents through its operating activities. The cash flow statement should also be useful in predicting future cash flows. Thus, comparative research on different methods used by banks when reporting cash flows should be conducted in order to investigate how the cash flow statement can be used as a source of information to fulfil the objective of IAS 7.

5.2.5 Adaptation of accounting standard for financial institutions

As of today there are some specific exceptions for financial institutions in IAS 7, the exceptions were mentioned in *3.3.4 Specific Exceptions for Financial Institutions*. Maybe there should be a separate accounting standard or supplements in the current standard adapted to financial institution since the nature of financial institutions and non-financial companies

differ considerably. A standard more apt to banks could make the reporting of cash flow less flexible and more consistent between different banks and different countries. Less netting of cash flows, a consistent classification et cetera would likely increase the usefulness of the cash flow statement in banks. The question is how this new standard or new supplements to the current standard would be formed and formulated, a research on this matter is recommended.

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Annual Reports for Banks
Every bank's annual report is publicly accessible, they are available under the investor
relations section on each webpage. The main links can be found below. The Annual Report
(AR) of the group is used:

ABN AMRO Group N.V., (ABN AMRO, AR) 2005-2012, www.abnamro.com/en/index.html

Allied Irish Banks, (AIB, AR) 2005-2012, www.aib.ie

ASR Bank, (ASR, AR) 2005-2012, www.asr.nl

Banca delle Marche, (BDM, AR), 2005-2012, www.bancamarche.it/english_version

Banca Carige, (Carige, AR) 2005-2012, www.gruppocarige.it

Banca Monte dei Paschi di Siena SpA (MPS, AR) 2005-2012, english.mps.it

Banco Bilbao Vizcaya Argentaria S.A., (BBVA, AR) 2005-2012, www.bbva.com

Banco Comercial Português, SA-Millennium bcp, (BCP, AR) 2005-2012,
ind.millenniumbcp.pt/en

Banco de Sabadell S.A., (B Sabadell, AR) 2005-2012, www.grupbancsabadell.com/en/

Banco Espirito Santo (BES, AR) 2005-2012, www.bes.pt/

Banco Santander, (BS, AR) 2005-2012, www.bancosantander.es

Bank für Arbeit und Wirtschaft und Österreichische Postsparkasse Aktiengesellschaft-
BAWAG PSK Group (BAWAG, AR) 2005-2012, www.bawagpsk.com

Bankinter, (Bankinter, AR) 2005-2012, www.bankinter.com

Bank of Ireland, (BoI, AR) 2005-2012, www.bankofireland.com

Belfius Bank, (Belfius, AR) 2005-2012, www.belfius.be

BNP Paribas, (BNP Paribas, AR) 2005-2012, www.bnpparibas.com/en

Banque Fédérative du Credit Mutuel, (BFCM, AR) 2005-2012, www.bfcm.creditmutuel.fr

CaixaBank, (Caixa, AR) 2005-2012, www.caixabank.com

Caixa Geral de Depositos (CGD, AR) 2005-2012 2005-2012, www.cgd.pt/english

Commerzbank AG (CRZ, AR) 2005-2012, www.commerzbank.com/en

Credit Agricole, (CA, AR) 2005-2012, www.credit-agricole.com

Credit du Nord, (CdN, AR) 2005-2012, www.credit-du-nord.fr

Crédit Industriel et Commercial, (CIC, AR) 2005-2012, www.cic.fr

Credit Mutuel, (CM, AR) 2005-2012, www.creditmutuel.fr

Credito Emiliano SpA (CREDEM, AR) 2005-2012, www.credem.it

Deutsche Bank, (DB, AR) 2005-2012, www.db.com

Deutsche Postbank, (DP, AR) 2005-2012, www.postbank.de

ING Bank NV (ING, AR) 2005-2012, www.ing.com/en

Intesa Sanpaolo, (IS, AR) 2005-2012, www.intesasanpaolo.com

KBC Bank NV (KBC, AR) 2005-2012, www.kbc.com

La Banque Postale, (BP, AR) 2005-2012, www.labanquepostale.fr

LeasePlan Corporation (LeasePlan, AR) 2005-2012, www.leaseplan.com/pu/en

Natixis (Natixis, AR) 2005-2012, www.natixis.com

Raiffeisen Bank International AG (Raiffeisen, AR) 2005-2012, www.rbinternational.com

RCI Banque, (RCI, AR) 2005-2012, www.rcibanque.com

Pohjola Bank, (Pohjola, AR) 2005-2012, www.pohjola.fi

SNS Bank N.V. (SNS REAAL, AR) 2005-2012, www.snsreaal.nl

Société Générale, (SG, AR) 2005-2012, www.societegenerale.com

Ulster Bank Ireland Limited (UBIL, AR) 2007-2012, group.ulsterbank.com

UniCredit SpA (UniCredit, AR) 2005-2012, www.unicreditgroup.eu

Comment letters

CL 1986 Comment Letters (CL) on exposure draft (ED) 1986 sent to FASB, published in Public Record volume containing Letters of Comment on Exposure draft, No 88-091096. See below for direct reference:

CL 1986, Comment Letters sent to FASB, no, page no. from compendium & sender:
CL 1986 no. 67: 283-5 First Charter National Bank
CL 1986 no. 431:1272/1274 Price Waterhouse
CL 1986 no. 349: 1035-8 United Virginia Bankshare

Appendices

Appendix 1: Original Euro Area Countries

	Original Euro Area Countries
1.	Germany
2.	Spain
3.	Italy
4.	France
5.	Netherlands
6.	Portugal
7.	Ireland
8.	Belgium
9.	Austria
10.	Finland
11.	Luxembourg

Appendix 2: Email from BankScope

From: **Bankscope support** <bankscope@bvdinfo.com>
Date: 2014-04-04 13:59 GMT+02:00
Subject: Re: [Ticket#2014040410000271] Bankscope request for help
To: adam.farnemyhr@gmail.com

Dear Adam Farnemyhr,

For a commercial bank, the main type of activity is the combination pf Retail Banking, Wholesale banking and regularly Private Banking.

An Investment bank is mainly active in Corporate Finance, Investment Banking.

Best regards,

Your Bankscope support team,
Laeticia Havaux
--
Bureau van Dijk
Avenue Louise,250 - B-1050 Brussels - Belgium
Tel: +32 2 639 06 10
Fax: + 32 2 639 06 24
Email: bankscope@bvdinfo.com
Web: http://www.bvdinfo.com
--

04/04/2014 13:50 - wrote:
Nom d'utilisateur : Gothenburg Library-7947
Nom : -
Prénom : -
Nom de l'entreprise : Gothenburg Library

Commentaires/Questions :
Hello,

We are currently writing our bachelor thesis and wonder what criteria should be fulfilled in order for a bank to be classified as a commercial bank in comparison to an investment bank in BankScope?

Kind regards,

Adam and Joakim

Appendix 3: Selection of Banks and Empirical Findings

	Bank	Country	Correlation	Method
1.	Banco Santander SA	Spain	-0.3856	Indirect
2.	BNP Paribas	France	-0.701	Indirect
3.	Deutsche Bank AG	Germany	-0.0743	Indirect
4.	UniCredit SpA	Italy	0.3675	Indirect
5.	Société Générale	France	-0.2385	Indirect
6.	Banco Bilbao Vizcaya Argentaria SA	Spain	-0.4341	Indirect
7.	Intesa Sanpaolo	Italy	0.2673	Indirect
8.	ING Bank NV	Netherlands	0.6139	Indirect
9.	Credit Mutuel	France	-0.2545	Indirect
10.	Commerzbank AG	Germany	0.443	Indirect
11.	Banque Fédérative du Crédit Mutuel	France	-0.4585	Indirect
12.	ABN AMRO Group N.V.	Netherlands	0.1647	Indirect
13.	Caixabank, S.A.	Spain	-0.5822	Indirect
14.	Natixis	France	0.3108	Indirect
15.	KBC Bank NV	Belgium	0.1294	Indirect
16.	La Banque Postale	France	0.0752	Indirect
17.	Raiffeisen Bank International AG	Austria	0.5919	Indirect
18.	Banca Monte dei Paschi di Siena SpA	Italy	0.7392	Indirect
19.	Crédit Industriel et Commercial - CIC	France	0.0075	Indirect
20.	Banco de Sabadell SA	Spain	-0.2158	Indirect
21.	Deutsche Postbank AG	Germany	-0.246	Indirect
22.	Credit Agricole CIB	France	-0.5171	Indirect
23.	Bank of Ireland	Ireland	0.811	Indirect
24.	Crédit du Nord	France	-0.369	Indirect
25.	Banco Espirito Santo SA	Portugal	-0.1253	Indirect
26.	ASR Bank N.V.	Netherlands	-0.4602	Indirect
27.	Banco Comercial Português, SA-Millennium bcp	Portugal	-0.6719	Indirect
28.	Allied Irish Banks plc	Ireland	0.6506	Indirect
29.	Caixa Geral de Depositos	Portugal	-0.5893	Indirect
30.	Belfius Banque SA/NV-Belfius Bank SA/NV	Belgium	0.5571	Indirect
31.	Bankinter SA	Spain	-0.2109	Indirect
32.	LeasePlan Corporation NV	Netherlands	0.8498	Indirect
33.	RCI Banque	France	-0.2207	Indirect
34.	Pohjola Bank plc	Finland	-0.0515	Indirect
35.	SNS Bank N.V.	Netherlands	-0.4945	Indirect
36.	Banca Carige SpA	Italy	-0.4014	Direct
37.	Credito Emiliano SpA	Italy	0.2084	Indirect
38.	Bank für Arbeit und Wirtschaft und Österreichische Postsparkasse Aktiengesellschaft-BAWAG PSK Group	Austria	-0.2561	Indirect
39.	Banca della Marche	Italy	-0.9222	Indirect

Appendix 4: Statement of Cash Flows, Indirect Method

Cash flows from operating activities

Profit before taxation	x	
Adjustments for:		
Depreciation	x	
Foreign exchange loss	x	
Investment income	x	
Interest expense	(x)	
	————	
	X	
Increase in trade and other receivables	(x)	
Decrease in inventories	x	
Decrease in trade payables	(x)	
	————	
Cash generated from operations	X	
Interest paid	(x)	
Income taxes paid	(x)	
	————	
Net cash from operating activities		X

Cash flows from investing activities

Acquisition of subsidiary X net of cash acquired (Note A)	(x)	
Purchase of property, plant and equipment (Note B)	(x)	
Proceeds from sale of equipment	x	
Interest received	x	
Dividends received	x	
	————	
Net cash used in investing activities		X

Cash flows from financing activities

Proceeds from issue of share capital	x	
Proceeds from long-term borrowings	x	
Payment of finance lease liabilities	(x)	
Dividends paid[a]	(x)	
	————	
Net cash used in financing activities		
		X
		———
Net increase in cash and cash equivalence		X
Cash and cash equivalents at beginning of period (Note C)		x
		———
Cash and cash equivalents at the end of period (Note C)		X
		———

(a) This could also be shown as an operating cash flow

Source: IFRS – consolidated without early application (2012)

Appendix 5: Statement of Cash Flows, Direct Method

Cash flows from operating activities

Interest and commission receipts	x	
Interest payments	x	
Recoveries on loans previously written off	x	
Cash payments to employees and suppliers	x	
	————	
	X	

Short-term funds	x	
Deposits held for regulatory or monetary control purposes	x	
Funds advanced to customers	x	
Net increase in credit card receivables	x	
Other short-term negotiable securities	x	

(Increase) decrease in operating assets:

Deposits from customers	x	
Negotiable certificates of deposit	x	
Net cash from operating activities before income tax	x	
Income taxes paid	(x)	
	————	———
Net cash from operating activities		X

Cash flows from investing activities

Disposal of subsidiary Y	x	
Dividends received	x	
Interest received	x	
Proceeds from sales of non-dealing securities	x	
Purchase of non-dealing securities	x	
Purchase of property, plant and equipment	x	
	————	———
Net cash from investing activities		X

Cash flows from financing activities

Issue of loan capital	x	
Issue of preference shares by subsidiary undertaking	x	
Repayment of long-term borrowings	x	
Net decrease in other borrowings	(x)	
Dividends paid	(x)	
	————	———
Net cash from financing activities		X

Effects of exchange rate changes on cash and cash equivalents	x
Net increase in cash and cash equivalence	**X**
Cash and cash equivalents at beginning of period	**x**
Cash and cash equivalents at the end of period	**X**

Source: IFRS – consolidated without early application (2012)