COMPARISON OF PERFORMANCE BETWEEN SOCIAL AND CONVENTIONAL BANKS

An Empirical Study of Banks in Europe

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Thank you very much!
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Abstract

Banks as financial institutions play an important role in the lives of people by facilitating the flow of funds and ensuring the stability of the global economy. Recently, the world economy witnessed various financial shocks that escalated into a financial crisis between 2007 and 2009. Moral hazard, scandals, and collapses of financial institutions caused many to lose their trust on the current financial system that emphasizes profit maximization and high risk taking instead of working to keep the economy stable and healthy. This has caused many researchers to search for new alternative ways of managing the financial system, and one such alternative is social banking.

Social banks are financial institutions that differ from conventional banks by emphasizing social responsibility values instead of only focusing on profitability. There are several key differences between social and conventional banks, such as differences in asset allocation, the involvement of stakeholders in decision-making, higher levels of transparency, and additional social screening of loan applicants and investment opportunities. The purpose of social banks is to channel funds from socially-minded investors to borrowers with the right motivations.

The main purpose of this research paper is to investigate whether social banks differ from conventional banks in terms of their financial performance overall and during the financial crisis. In order to achieve this, we have adopted a quantitative strategy and gathered data from ten social and ten conventional banks from various European countries. We have used several financial ratios to measure their profitability, liquidity, and default risk, and performed linear regression to estimate the coefficients to test whether being social or conventional has an effect on these bank performance measures.

The results of our analysis reveal that, while conventional banks were able to achieve higher profitability than social banks both overall and during the financial crisis, social banks managed to maintain better liquidity than conventional banks on both occasions. Our results also reveal that social banks overall had lower risk of default than conventional banks.

Based on our results we cannot conclude that the social banking system is inherently better in all aspects than the conventional banking system. We can, however, note that social banks do have certain advantages such as better liquidity, and this suggests that the overall stability of the financial system could potentially be improved by conventional banks adopting some of the more successful practices of social banks, such as more careful screening of loan applicants and investment opportunities.

Keywords: social banks, bank performance, financial crisis
The journey of 1000 kilometers begins with the first step.
-Lao Tzu
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Chapter 1 Introduction

This chapter presents the background of the thesis with the aim to understand the research topic. We discuss the reasons behind the choice of subject in the subject choice section and provide a brief background for our theoretical framework under the problem background section. The rest of the chapter is structured by overviewing the problem background, knowledge gap, research question, and purpose. Finally, we conclude our first chapter with limitations, disposition, and definitions.

1.1. Subject choice

Banks as financial institutions play a crucial role in the global economic system. The role that banks play is that of intermediaries between people who have extra funds to deposit and people who are in need for money to borrow or to invest. Furthermore, banks play and important role in facilitating our daily activities from household activities to the most complicated financial activities performed by the biggest corporations around the world. Thus, banks affect our life in many important ways as they assure the stability of the economic system (Jokipiı & Monnin, 2013, p. 1-16).

In 2008 the world financial system faced one of the biggest failures of its history and one of the major players in initiating the crisis was the banking system that people had trusted (Isidore, 2016). This trust was broken as a result of the crisis, and as a result of the misconduct, moral hazard, and scandals committed by many banks (Touryalai, 2012; Close, 2016). Thus, because of the importance of banking system and its proneness to crises, there are studies that have referred to a possible failure in the current banking system and presented the idea of a new alternative banking system. One such alternative presented is social banking. As authors of this paper, we have become interested in this alternative way of banking, and thus have decided to study how social banks compare with their conventional counterparts, whether they have any advantages and whether they were affected by the financial crisis as much as conventional banks.

1.2. Problem background

Much research has been conducted about the financial crisis of 2007-2008, and the main elements and progression of the crisis are quite well understood today. The financial crisis began in the US housing market, when relaxed mortgage lending standards helped create a housing bubble (Gorton, 2009, p. 10-11). New types of asset-backed securities derived from these unstable mortgages were created, and these financial products were spread through financial and saving institutions, which would cause huge systemic risk once the crisis began to unfold. Liquidity and credit risk became a concern, and interbank lending started to dry up as banks realized the extent of risks related to the toxic asset-backed securities when their values began to fall (Gorton, 2009, p. 10-11).

Eventually the financial crisis caused many banks to have problems with liquidity and resulted in both bankruptcies and government bailouts for banks (Brewer & Jagtiani, 2013, p. 3). In the US, AIG and Bear Stearns received support from the government, whereas Lehman Brothers filed for bankruptcy in September 2008 (Brewer & Jagtiani, 2013, p. 3). In Europe, the financial crisis developed into a sovereign debt crisis, when
countries such as Greece, Ireland, and Portugal ran into problems with their large public account deficits and debts (Lane, 2012, p. 56-57). In Spain, another housing bubble caused trouble for banks (Akin et al., 2014, p. 224).

Banks are considered some of the main players in ensuring the stability of an economy (Jokipii & Monnin, 2013, p. 1-16), and banks are also considered the main participating players whose actions triggered the financial crisis in 2007-2008. Banks had begun to focus on being “Egonomics” instead of “Economics”. Here “Egonomics” refers to a situation where banks used financial instruments in unpropped ways. Examples include using securitization to transfer bad debt to investors instead of transferring credit risk or having a weak credit process by offering loans to people who don’t have job, income, and assets (NINJA loan) instead of offering loans to people with sound payment, capacity, and proper collateral value (Ramlall, 2013, p. 13). The US crisis started as a financial crisis and then developed to an economic crisis and then finally a debt crisis (Orlowski, 2008, p. 12). Countries all over the world, such as Greece, had high exposure linked to US toxic assets. The main problem related to the rising of an artificial economy instead of the real economy, which led to disruptions in the perfect flow of information. Instead, problems with information asymmetry such as adverse selection and moral hazard began to arise (Ramlall, 2013, p. 154).

While the world economies suffered from the financial crisis, another two crises have come into existence during the past decades. Those two crises starting with global warming (Conway, 2013) and ending with ageing population crisis (Nishimura, 2011, p. 4-20) have a tangled relationship with the financial crisis.

Scientists have agreed that human activities are the main reason for global warming, and economies around the world have played a big role in supporting human actions without assessing their negative consequences. Economies have been financing activities that advance problems such as deforestation, which helps raise the CO2 emission levels causing adverse impacts on the environment and resulting in more earthquakes, rising sea levels, heat waves, and other problems. All together, they can create environmental catastrophes (Intergovernmental Panel on Climate Change, 2015, p. 110), such as the recent hurricane Irma in the US or recent floods in China. The ageing population crisis, on the other hand, refers to low birth and death rates that also relate to the economic process and result in a reduction of saving, increasing the demand for health care, and increasing the burden on governments to provide these things (Nishimura, 2011, p. 4-20).

In his book, Ramlall (2013, p. 161-171) suggests a solution to the three crises by increasing the level of support and awareness of social banking. Social banks have existed for a long time, but not that much attention has always been devoted to them. Social banks can act as intermediary agents in linking the surplus and deficit units while aiming to fight poverty, support social development, and enhance social unity and the development of projects that support these causes. Therefore, the strategy of social banks is aimed not only towards profit maximization. On the contrary, they work towards achieving social sustainability, moral values and other positive social externalities (Ramlall, 2013, p. 162).

The social banking system differs from the conventional banking system as it attempts to work towards higher financial stability instead of pure profit maximization, resulting
in lower levels of speculation and risk taking. Social banks have long-term polices for climate change, promoting green finance, and focusing on “Economics” instead of “Egonomics”. They want to re-model the academic world and stay away from sophisticated models, move away from unfairness in remuneration system, and maintain sustainable polices instead of using inflation as a tool to reduce public debt (Ramlall, 2013, p. 162-170).

This alternative system of banking known as social banking has been in existence for a long time, but it has been often overlooked. Thanks to the financial crisis, a higher level of attention has finally started to be devoted towards social banks as an alternative system to conventional banks. Due to the nature and varying philosophies of different institutions, there is no ultimate definition for what social banking is. At the same time, there is no clear reference for social banking as a concept introduced legally, culturally, philosophically or socio-economically (Remer, 2014, p. 267-269). Because of this lack of a commonly agreed upon definition, researchers share the understanding that social banks are organizations that refer to non-monetary values or principles and putting the common good of society over any private interests with the aim to achieve economic, social and sustainable development (Remer, 2014, p. 267-269). The concept of social banking, and the different kinds of social banks (environmental value based, religious, interest-free, etc.) that exist will be further discussed in the theoretical background section of the thesis.

1.3. Research problem

Before we can establish whether social banking can truly be an alternative for the conventional banking system, it is important to understand how social and conventional banks compare in terms of their performance. As the conventional banking system has been criticized for being prone to financial crises which cause instability in the economy, it is also important to assess whether the financial crisis affected social banks in the same way it affected conventional banks. For the banking system to be stable, banks need to be able to maintain stable profitability, have adequate but not too high liquidity at all times, and manage their risks carefully. Comparing conventional and social banks’ performances in terms of these factors should provide useful insights into the discussion about whether a potential alternative for the current banking system could be found in social banks.

It is also interesting to study the differences in performance between social and conventional banks, because this can help understand whether there is a cost to being socially responsible. It has been discussed in previous research on socially responsible investment that choosing a social investment strategy should limit profitability, because it places an additional constraint to the investor’s opportunities and does not allow the investor to achieve a portfolio with optimal risk and return characteristics (Rudd, 1981 p. 57; Hall, 1986 p. 10). Whether this cost of being social also applies to social banks, and negatively affects their performance, will be interesting to see through this study.
1.4. Knowledge gap

During and after the financial crisis, social banks became known as a potential alternative to conventional banks because their practices are seen as more sustainable, and because the financial crisis was in large part caused by conventional banks’ irresponsible actions (Ramlall, 2013). Because of this juxtaposition, it is important to study how the financial crisis impacted social banks in order to better understand if they could be seen as a credible alternative. As discussed previously, the financial crisis had adverse impacts on conventional banks, but the impact on social banks, particularly in comparison to traditional banks, has not been studied as extensively.

The previous research regarding social and conventional banks has mostly focused on examining their differences in general terms. For example, how social banks tend to emphasize other values than profitability (Weber & Remer, 2011, p.2, San Jose et al., 2011, p.154), focus on socially minded investors (Cornée & Szafars, 2013, p. 7), and have different asset allocation, as well as more transparency and stakeholder involvement (Cornée et al., 2016, p. 501). These differences will be discussed further in the theoretical background section. This line of research has not, however, examined how these differences affect the performance of social and conventional banks in practice.

Most previous studies examining the impact of financial crisis on the performance of social banks have focused on the context of Islamic banking. Islamic banking can be seen as part of social banking because they operate on religious principles and should share the same ideals of equity and fairness (Saidi, 2009, p. 3). Thus this study will often reference previous literature dealing with the comparison of Islamic and conventional banks, but this should not be confused with our topic which is to compare social banks in the European context with conventional banks. Examples of such studies include Bourkhis & Nabi (2013), who examined 34 Islamic and 34 conventional banks from 16 countries, Hasan & Dridi (2010), Parashar & Venkatesh (2010), and Khan et al. (2017), who examined banks in Pakistan, a country where Islamic and conventional banks have been operating side to side for some decades. Rosman et al. (2014) used data envelopment analysis to study the efficiency of Islamic banks in Asia and the Middle East. Their study does not offer any comparisons between Islamic and conventional banks, but the results explain that Islamic banks were able to maintain operations throughout the financial crisis.

Many of these studies have used ratio analysis to measure bank performance and provide comparisons. Bourkhis & Nabi (2013), Parashar & Venkatesh (2010), and Khan et al. (2017) have used ratios such as return on average assets, return on average equity, nonperforming loans to total loans, cost to income, and cash to assets to measure bank profitability, efficiency, and liquidity in their research. The results of these comparisons between Islamic and conventional banks are mixed; some studies, such as Parashar & Venkatesh (2010) show that during 2006-2009 Islamic banks experienced better profitability however both Islamic and conventional banks suffered when it comes to return on equity.

Khan et al. (2017, p. 3) examined banks in Pakistan, a country where both Islamic and conventional banks have operations. Between 2007 and 2014, using financial ratios, their study found that Islamic banks in Pakistan performed better in terms of
profitability, efficiency, risk, and liquidity management. Conventional banks were found to have better asset quality, but otherwise Islamic banks outperformed conventional banks in the ratio analysis. Bourkhis & Nabi (2013, p. 8) on the other hand did not find significant differences in the soundness indicators of Islamic and conventional banks.

Hasan & Dridi (2010) also used profitability ratios in their research, and their findings suggest that the adverse impact of the financial crisis on Islamic banks in 2008 was lessened by their business model in comparison to conventional banks. However, in 2009 this impact was reversed as the impact of the financial crisis began to be felt on the real economy and some Islamic banks had weaknesses in their risk management practices. Still, Islamic banks managed to maintain lower leverage and higher solvency (Hasan & Dridi, 2010, p. 7)

Islamic banks are, however, merely one subcategory of social banks, and most of them also operate in the context of Islamic countries. Thus, a research gap exists when it comes to measuring the performance of other types of social banks, such as interest-free banks and environmentally focused banks. To help fill this research gap, our study will examine several European social banks in comparison with conventional banks. This will help bring the research into a new context (Europe) and add a new contribution to the literature of the field.

1.5. Research question

How has social banks’ performance in terms of profitability, liquidity, and default risk differed from the performance of conventional banks in Europe overall and during the financial crisis?

1.6. Purpose

The purpose of this thesis is to examine how social banks function as an alternative to conventional banks, and how the different practices adopted by these banks affect their performance. By comparing the performance of social and conventional banks overall and during the financial crisis we hope to contribute to the ongoing discussion about whether social banks could in the future to be a credible solution to the current problems of the financial sector. We want to understand how banks that function in different ways differ in terms of their performance, and to do this, we want to study factors such as profitability, liquidity, and default risk. This will help us get a better understanding if social banking can actually be a credible alternative to conventional banking to provide better sustainability and stability to the financial sector and the economy as a whole.

The financial crisis uncovered many weaknesses in our current financial system, where banks are considered one of the most important players in ensuring the financial market stability, and much research has been conducted exploring alternative financial systems that could help avoid a such crisis in the future. As part of this trend, some research has compared the performance of social banks with the performance of conventional banks, however mostly in the context of Islamic banking. The performance of other kinds of social banks has so far been mostly ignored. Therefore, the purpose of this thesis is to
examine the performance of social banks during the recent financial crisis in comparison to conventional banks.

1.7. Theoretical and practical contribution

The main theoretical contribution of our study is bringing the comparison of social and conventional banks into a new context, Europe. As discussed previously, the existing research that compares social and conventional banks’ performance during the financial crisis has focused on Islamic banks (e.g. Hasan & Dridi, 2010; Bourkhis & Nabi, 2013; Parashar & Venkatesh, 2010; Khan et al., 2017). It is interesting to conduct this study on European banks, because Europe is one of the regions where social banks have spread widely (Benedikter, 2011, p. 1).

Our study also has several important practical contributions that we can mention. First, this study should be interesting to bankers and banks managers because based on our result we hope to make some recommendations for practices that can help banks achieve better performance and more stability. It will be especially interesting to see if social banks through their business models and ways of doing things are able to perform better, and if any of their practices could be adopted by conventional banks. Secondly, this study will be useful for bank regulators as better understanding of the differences, strengths, and weaknesses of social and conventional banks will help when creating new banking regulations in the future. Finally, this study can also provide bank customers and investors with more insights to help them make informed choices when deciding where to deposit or invest their money, and what bank to approach for a loan proposition.

1.8. Delimitations

As mentioned before, the study is focused on measuring and comparing the performance of social and conventional banks and in order to do so, the authors have to select a sample of banks to examine. Because of the limited number of social banks in existence, we had to choose a relatively broad context for the study (Europe), instead of a more limited one, such as a single country or the Nordic countries. The choice of banks was also somewhat limited by the availability of data, because not all banks could provide the financial information we need for our analysis, even if the information was requested by email. With the choice of conventional banks, we tried to choose as many conventional banks as possible that were comparable in size to the social banks, but as the social banks tend to be rather small, it was not always possible to find small conventional banks with enough available information so some of them could not be chosen based on size alone.

Secondly, a limitation of our study is the time frame of the data. Only very few banks could provide data until the early 2000s or late 1990s, while most banks had data available until 2007-2010, depending on the bank. Thus some years have more banks than others, because of this limitation with the data. We do not, however, believe that the results overall were too affected by this, because we are examining overall trends which should be observable even if some years have less data than others.
Chapter 2 Methodology

Under the methodology chapter the authors will discuss the reasons behind doing this study, and explain the preconceptions, research philosophy, research approach, design, and strategy adopted for the purposes of this study. Finally, the authors provide a discussion over the selection of theories and the process of using secondary data. Overall, this chapter aims to provide the reader with a better understanding of the process of working and the approaches followed in designing the theoretical framework.

2.1. Choice of study and preconception

The authors’ choice of the study topic has been based on researching the literature of the chosen field in order to find a research gap to be covered. The social banking system had been somewhat overlooked in previous research until the financial crisis of 2007-2008, after which topics exploring new alternatives for the conventional banking system started to arise more. Being neutral in selecting a topic while still having the interest to study it is an essential element in doing research. At the same time, however, researchers should be aware of their own personal thinking, concepts, assumption, expectation, and beliefs regarding the subject they are studying (Bickman & Rog, 1998, p. 77).

While conducting research, researchers need to be aware of their preconceptions, in other words their own values which could affect the validity of the research (Bryman & Bell, 2015, p. 29). Preconceptions or pre-understandings can potentially lead to an “inevitable consequence”, and this can prevent the researcher from noticing possible areas in which they could improve their research (Saunders et al., 2016, p. 208). According to Bryman & Bell (2015, p. 29), preconceptions could affect the process of business research at a number of stages, starting from the chosen research area, the formulation of the research question, choice of methods used, research design and data collection, data analysis, interpreting of the data, and ending with the drawing of conclusions.

The authors of this thesis are two Master’s students at Umeå University that have spent the last two years studying financial management courses, dealing with many financial theories and models that have influenced the authors’ chosen research area. In addition, due to the present economic troubles around the world that affect the lives of people we have decided to perform a study with which we hope that we can in some way help in contribute to the current research trend of trying to find a solution. The examining of social banks especially in comparison with the current conventional bank system that has shown many weaknesses in facing the financial crisis will hopefully contribute to this research area.

The methods deployed in this research, such as ratio analysis, have been studied during previous courses within our Master’s degree, and have been used by other researchers that have dealt with measuring the performance of financial institutions. Also, several of the factors we will be studying are also part of the CAMELS parameters system which is recognized widely as an international rating system used by regulators to rate financial institutions (Rostami, 2015, p. 10-11). The system of analysis deployed has not
been influenced by any kind of preconception, in contrast, the factors for analysis have been chosen based on previous research and are some of the most widely used in measuring banks performance all over the world by scientists and banks authorities. Another reason for the authors to be aware of their preconceptions is related to their personal backgrounds that could play a role in selecting a topic or sector to study. As authors of this study we have eliminated the risk of our preconceptions as we do not have any particular history with the topic of social banking through a previous course or work. Finally, the topic reflects a research gap which has been overlook through previous years.

2.2. Research philosophy

According to Saunders et al. (2016, p. 124), research philosophy is defined as the system on which the developed knowledge has been built, referring to beliefs and assumptions. At each part of a study, researchers will make a number of assumptions that could be “explicit” or “implicit” assumptions related to how they look over the nature of the social world and the way in which researchers investigate it (Burrel & Morgan, 1979). Those assumptions can be classified into three types: ontological assumptions that deal with the nature of the reality the researchers encounter, epistemological assumptions that relate to what knowledge is accepted, and finally, axiological assumptions dealing with researcher values that, to some extent, could influence the research process (Saunders et al., 2016, p. 124).

2.2.1. Ontology

Ontology is defined as the researchers’ “assumption about the nature of reality” (Saunders et al., 2016, p. 127), and others refer to ontology as the questions that researchers face regarding the “nature of social entities” (Bryman & Bell, 2015, p. 20). Researchers concern themselves with their ontological position to define their research in terms of two aspects of ontology - objectivism and subjectivism. Objectivism reflects notions which are considered to be external to social actors concerned with the existence of the notions, whereas subjectivism describes phenomena which are created and influenced by actions of social actors concerned with existence of the notions (Saunders et al., 2009, p. 110). Hence, objectivism is attributed to positivism and subjectivism reflects the position of interpretivists (Collis & Hussey, 2014, p. 47). Here, there is a slight difference in the usage of terminology as Bryman and Bell (2015) refer to objectivism and constructionism although the interpretation is very similar.

As authors of this study we will adopt objectivism as our ontological position since the topic concerns the investigation of the differences between social banks and conventional banks in terms of performance during and after the financial crisis in Europe. By gathering data from social banks and conventional banks in Europe, we want to analyze those banks’ financial statements using ratio analysis and other methods in order to understand which banking system is more stable and was outperforming during the crisis. Thus, these are external facts beyond the authors reach and influence.
2.2.2. Epistemology

“Epistemology is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate” (Maynard, 1994, p. 10). Bryman and Bell (2015, p. 15-20) provide a similar definition and further elaborate onto why the choice of an epistemological stance is not straightforward in social sciences as it is not always clear “whether or not the social world can and should be studied according to the same principals, procedures, and methods as the social sciences”.

Primary epistemological stances include but are not limited to the following. Positivism is where valid knowledge should be produced through measurements and observations. Positivists conduct their research in a way that allows them to be an external actor and to not affect the research subject. Second epistemological stance is interpretivism where the researcher tries to maintain a minimal distance with the research subject, sometimes to the point of active participation (e.g. action research). For example, if the research is of social nature then the researcher would like to participate in the activity being studied and try to understand the process from the subjects’ perspective (Collis & Hussey, 2014, p. 47; Saunders et al., 2009, p. 116). Apart from these two extreme stances on the continuum, researchers recognize realism which is placed as a middle ground somewhat closer to positivism in its interpretation of what is knowledge. It often emphasizes collection and analysis of data from positions of direct realism which states that what we can see, and sense is the correct reflection of reality. Critical realism also points out the difference between the notion we observe and the sensation of the notions. Critical realism further emphasizes the importance of a meaningful sense-making process which should take place after the observable notion was passed and captured through our senses. (Saunders et al., 2016, p. 114-115).

For this study, we adopt positivism for our epistemological stance, as the subject of the study, comparison of performance between banks has external and observable reality that can be measured using math. Thus, interpretivism will not be the appropriate stance to adopt as measuring and comparing the performance of social banks and conventional bank is not subjective reality and as the data collection does not deal closely with the study participants. In contrast, we deal with objective data that is collected through annual financial reports. The third stance cannot be applied either, as we do not conduct a mixed methods research study.

2.2.3. Axiology

Axiology, the “role of values” refers to the values and ethics that could affect the research process (Saunders et al., 2016, pp. 124). Another reference to axiology is as a branch of philosophy that deals with values assessment and the degree with which those values could affect the researchers during the research process. In other words, axiology deals with what researchers have as values that could affect the conduct of the research and the research findings (Lee & Lings, 2008, p. x).

We adopt positivism stance for this study, deploying quantitative methods as a way of analysis seeking objectivity by being neutral and independent from the studied object. The research paper does not deal with creating new theories, instead, the paper deals
with existing theories leading to the research being free from personal values that could affect the results.

2.3. Research approach

When conducting a research project, the application of theory is usually involved (Saunders et al., 2009, p. 124). The choice of research approach is determined by the extent to which these theories are explicitly outlined at the beginning of the research project. According to Saunders et al. (2009, p. 124-126), there are two main research approaches that are applicable to social sciences; deductive and inductive approach.

Deductive approach deals with existing theory. From existing literature and theory, a hypothesis is developed and then a research strategy is designed to test the hypothesis (Saunders et al., 2009, p. 124-125). An important characteristic of the deductive approach is generalization from general to specific. To have results that are generalizable, it is essential to select a sufficient size sample. After testing the hypothesis developed based on existing theory, it will be either be accepted or rejected and thus the theory either tends to be confirmed or a need for modification is identified (Saunders et al., 2009, p. 125). In contrast to deductive approach, inductive approach starts with the collection of data to explore a phenomenon. Then, new theory will be formulated by analyzing the data (Saunders et al., 2009, p. 126). Generalization in the inductive approach is from specific cases to general, which is the opposite to deductive approach.

For this study, we have chosen the deductive approach as the most suitable. We are doing a comparison of performance between two types of banks, and the deductive approach will help us in develop an understanding of these differences. As part of this study, we will be relying on existing theories such as portfolio theory, agency theory, and stakeholder theory and previous literature on social banking to craft hypotheses to be tested. During the course of this research, we will be following the steps of doing deductive research, as outlined by Blaikie (2009, p. 106) and Saunders et al. (2009, p. 124-125). First, existing literature and theory will be used to develop testable hypothesis and establish the concepts of bank performance and how they are measured in this research (financial ratios and Z-score). The hypothesis will then be tested during the analysis, and either accepted or rejected.

2.4. Research design and strategy

Research design can be described as the overall plan of how the researchers aim to answer their research questions (Saunders et al., 2009, p. 136). It is important to carefully consider your research design and strategy to make sure it supports the answering of the research question. The aim of this study is to gain a deeper understanding regarding the performance of social banks in comparison to conventional banks during and after the financial crisis of 2008. The authors aim to use theory in accordance with the deductive approach to build and test hypotheses, and further details about the choice of quantitative approach, selection of theories, and the use of secondary data will be discussed under this section.
2.4.1. Quantitative approach

When it comes to data collection and analysis techniques and procedures, three main types of studies can be identified. Quantitative studies use numerical data, and common analysis techniques include for example statistical analysis and graphs (Saunders et al., 2009, p. 151). Qualitative studies, on the other hand, uses data collection methods such as interviews and analysis techniques such as data categorizing (Saunders et al., 2009 p. 151). Finally, mixed method studies combine both quantitative and qualitative techniques.

When doing quantitative research, researchers adopt positivism stance which is usually associated with deductive approach. Thus, the researchers focus on data analysis to test theories and to examine relationships between variables using the appropriate statistical techniques (Saunders et al., 2016, p. 166). Several quantitative research design techniques can be used in order to collect data and gain a deeper understanding regarding the object studied. In contrast, qualitative research design goes with interpretivism stance and is associated with inductive approach as the researchers focus on being subjective with the aim to build theories (Saunders et al., 2016, p. 168). Mixed method studies combine the previous two philosophical positions using quantitative and qualitative data collection techniques in order to modify or generate new theories (Saunders et al, 2016, p. 169). For this research, the authors have chosen to do a quantitative study. We will use numerical data collected from banks’ financial statements and analyze them using financial ratios.

As discussed before, social banking is still a relatively unexplored area of research, and not much previous literature exists that describe the differences in performance between social and conventional banks, except for the context of Islamic banking. Thus it could be argued that a qualitative method would also work well for this study, because qualitative methods are often associated with situations where the research is conducted on a subject on which there is not that much existing theory, and the purpose of the study is to explore, discover, and generate new theory (Johnson & Unwuegbuzie, 2004, p. 18; Edmondson & McManus, 2007 p. 1160). Despite this notion, we have decided to conduct a quantitative study, because even though the existing literature on social banks is relatively scarce, the literature on banking in general is extensive and has several well-known theories associated to it. Additionally, to measure bank performance quantitative data simply is needed. Finally, a mixed-method study consisting of e.g. data analysis and interviews of managers working at social banks could otherwise have been a possibility, but due to constraints in timing we deemed that there would be some serious challenges to get enough respondents from banks all over Europe with the time available.

2.4.2. Time perspective

As Cooper & Schindler (2014), Bryman & Bell (2011), and Saunders, et al. (2016) explain research studies can have different time horizons. The main distinction here is between cross-sectional studies and longitudinal studies. Cross-sectional studies are concerned with examining a particular phenomenon at specific time (Cooper & Schindler, 2014, p. 128). A common data collection method for cross-sectional studies is a survey, the results of which are then analyzed. Cross sectional studies can be either
quantitative, qualitative, or mixed method studies. Longitudinal studies, on the other hand, cover longer periods of time, and give the advantage of tracking changes or development over time (Cooper & Schindler, 2014, p. 128)

For this study, we will adopt a longitudinal perspective because we will be using yearly data from banks’ financial statements from a period of time that covers the years before, during, and after the 2007-2009 financial crisis. There are some cross-sectional elements as our study deals with a comparison, but the longitudinal aspect is crucial because it will allow us to see the effect of the financial crisis, which could not be observed by only doing a cross-sectional study with a comparison at a single point of time. Thus the study we will conduct is a longitudinal study.

2.5. Selection of theories

As the authors of this study have chosen to adopt the deductive approach, the choice of appropriate theories will have a crucial role during the research process. Also, when dealing with the concept of social banking which is still relatively new, it is important to have a proper discussion since, as pointed out by literature, there is not a clear agreement on which term and what exact definition should be used (Weber & Remer, 2011, pp. 1; Cornée, et al., 2016 pp. 1-2). The term social bank is the most widely used among the literature and is thus used in this study as well, but alternatives such as ethical banking and alternative banking appear in some other studies as well.

In addition to having a proper discussion on the concept of social banking, the chosen theories need to be relevant to the discussion. The theories chosen for this study in particular include modern portfolio theory, stakeholder theory, and agency theory. In addition, we will discuss bank performance and financial crises from a theoretical standpoint. The studies have been chosen based on their importance within the fields of financial management and banking, and because these theories help explain the key differences between social and conventional banks. Thus these theories also provide insight into how the performance between these two types of banks should differ, and why. These theories along with previous research are used when formulating the hypotheses to be tested in our analysis.

2.5.1. Literature search

When searching for articles and literature for this study, we have utilized the databases available through Umeå University library, such as ScienceDirect, JSTOR, Wiley, Oxford Academic Journals, and EBSCO. Both the university library search tool and Google Scholar have been used in the literature search, and hard copies of selected books have also been accessed through the university library. Keywords used in the literature search include social banking, ethical banking, bank performance, financial crisis, profitability, liquidity, and default risk, along with the keywords modern portfolio theory, agency theory, moral hazard, adverse selection, and stakeholder theory in combination with the words bank or banking. The chosen articles have been published in scientific journals of good reputation, to ensure the highest possible amount of reliability and credibility for this study.
2.6. Secondary data and sources

When it comes to data collection, there are two possible ways to deal with it: using secondary data or collecting primary data (Saunders et al., 2009, p. 256). Secondary data refers to data that has already been collected before for some other purpose, whereas primary data refers to collecting entirely new data for the research. In this study, secondary data will be used in the form of bank financial statements, from which the required numerical data such as financial ratios can be extracted and calculated. We will use this type of secondary data because it provides us with the information we need, and also it would most likely not be possible for us to collect primary data suitable for this research. One of the advantages of secondary data is time efficiency, as retrieving secondary data takes less time than collecting primary data, provided that the type of data needed is readily available. In our case, the banks included in our sample either publish their financial statements online or were able to provide them by email. Those banks that did not have their financial statements available had to be excluded from the sample. The use of secondary data also allows us to perform a longitudinal study, which would not be feasible otherwise.

2.7. Source criticism

The numerical data used in our research for testing the hypotheses comes from the banks in the form of financial statements and annual reports. These reports, and the transparency and availability of this information is governed by established rules and regulations, and this should provide evidence that the reports area reliable and credible source. However, no rules and regulations can cover all possible risks of providing incorrect information in case some parties decide to do so for any reason. Similarly, the articles used in this study have been published in reputable scientific journals and for the majority been peer reviewed, which should ensure reliability and credibility. Still, there can be a possibility that the authors of the articles have been affected by their own preconceptions, which could affect the objectivity of the study.

2.8. Summary

To conclude the chapter on methodology, Figure 1 below presents a graphical summary of the methodological choices discussed in this section of the thesis.

Figure 1: Summary of methodological choices
Chapter 3 Theoretical Framework

This section of the thesis will focus on discussing the theoretical foundations of the concepts used in our research. The first part of this section will discuss the concept of social banking and how it can be defined, and briefly introduce how social banking differs from conventional banking. The second part will focus on further discussing these differences with the help of relevant theories, modern portfolio theory, stakeholder theory, and agency theory. After getting a clear understanding of the differences between these two types of banks, we will provide some theoretical context for the different aspect of bank performance that will be measured and analyzed later in this study. Finally, the section will be concluded by exploring theory and literature on financial crises, and how social and conventional banks might be affected by a financial crisis based on everything discussed before.

3.1. The concept of social banking

Several issues arise when beginning to discuss the concept of social banking based on existing literature. To begin, there are several terms used across different research that can be seen as practically meaning the same thing, such as social banking, ethical banking, and alternative banking (Weber & Remer, 2011, p. 1; Cornée, et al., 2016, p. 1-2). For the purpose of this thesis, we use the term social banking, following especially the work of Weber & Remer in their book “Social Banks and the Future of Sustainable Finance” (2011).

Another issue when discussing the concept of social banking is that it does not have just one, generally agreed upon definition but instead, the term social banking can mean different things to different people (Weber & Remer, 2011, p. 1). One reason why a single definition does not exist is that social banking and sustainable finance have arisen from many different traditions (De Clerck, 2009, in Weber & Remer, 2011, p. 1). A definition given by Weber & Remer describes social banking as “banking that aims to have a positive impact on people, the environment and culture by means of banking, --” (2011, p. 2). Many researchers also consider social banks to be organizations that aim to work for economic, social, and sustainable development by considering values other than just private interests and making profit as guiding their operations (Cornée & Szafars, 2013, p. 2; Remer, 2014, p. 267-269).

The Global Alliance for Banking on Values is an organization founded in 2009 that consists of a network of alternative, value-based banks that can be classified as social banks. The Swedish bank Ekobanken is a member, along with 45 other financial institutions around the world that share the commitment towards sustainable development (GABV, n.d.). In their annual report, the Global Alliance for Banking on Values provides six criteria, or pillars, to sustainable banking: Triple bottom line, serving the communities and real economy by enabling new businesses to meet their needs, long-term relationships with clients that ensures the understanding of their activities and risks, self-sustenance and resiliency in the long term, transparency and inclusiveness in governance, and having these principles embedded in the culture of the bank (GABV, 2017). These principles can be seen as applying to all social banks as well, even though the Alliance itself prefers to use the term “sustainable banking” instead of “social banking”. Once again, this shows that, while the general idea of the
concept is understood in many cases, the exact term used for social banking varies, and in many cases, even when a different term is used, the meaning is more or less similar; banks that focus on not only profit maximization but are also guided by the values of sustainable development and the “greater good”.

The principles contain an important concept that most social banks subscribe to as part of their core business model, which is the triple bottom line. Triple bottom line as a corporate governance and corporate social responsibility concept began to gain popularity in the late 1990s, and the main idea behind it is that companies who follow it focus on not only economic value, but environmental and social value as well, hence the word, “triple” (Elkington, 2013, p. 1-3). Triple bottom line is also a reporting framework that helps companies support and monitor the achievement of their sustainability-related goals, and it can be used by businesses, non-profit organizations and even government entities (Slaper & Hall, 2011, p. 4-6). Thus, in many ways the concept of triple bottom line reflects the aim of social banking: to operate in a sustainable manner and work for the greater good of all stakeholders and the environment as well.

The European Federation of Ethical and Alternative Banks and Financiers (FEBEA) also proposes a list of criteria that helps describe the fundamental values of social banks. These criteria are defined by the members of FEBEA. The criteria present social banks as hybrid institutions that work towards the common good of societies by saving money that originated through the activities of the real economy and using these savings to enhance social integration and employment with the lowest possible risk level. Social banks should also stay away from investing in “controversial” sectors (tobacco, weapons, etc.) and by being transparent, they should offer credit to projects with sustainable future profitability in order to achieve a sustainable economy (FEBEA, 2015).

Different kinds of social banks exist around the world nowadays. Many social banks subscribe to the principles of sustainability and like to engage with projects that appeal to their social and ethical values (Weber & Remer, 2011, p. 2). Examples of social banks that operate in Nordic countries include Ekobanken in Sweden, Cultura Sparebank in Norway, and Merkur Bank in Denmark. As an example, according to Ekobanken (2018), based on their philosophy they aim at investing funds on projects that enhance the environmental, cultural, social, and economic sustainability in society.

Another interesting subgroup of social banks exists in the form of banks that do not charge interest. Most of such banks mainly exist in the field of Islamic finance, and they have arisen as Islam as a religion forbids the use of interest-based transactions (Ahmed, 2010, p. 2; Milano, 2011, p. 39). Instead, Islamic finance encourages banks to participate in risk sharing, so that instead of receiving interest payments on loans the bank will share on the profits or losses of the investments that it makes. Like with other social banks, a high level of transparency is required in order for this system to work (Ahmed, 2010, p. 2). Islamic finance has been one of the rising trends during the past couple of decades especially outside of the “Western” economic context and is often seen as a more socially responsible way of investment and part of the general trend on ethical or social banking as Islamic banking should share the same ideals of equity and fairness (Saidi, 2009, p. 3).
In addition to Islamic banks, there are some financial institutions that have decided to adopt the principles of interest-free banking without the religious background. These banks, like Islamic banks, have often adopted a system of profit and loss sharing (Milano, 2011, p. 40) One interest-free bank operating in the Nordic context is JAK Medlemsbank, a Swedish bank that allows its members to deposit savings and take loans, all without interest. JAK believes that interest rate creates negative impacts on the economy and people should not be able to earn money merely by having money, and they list several values such as equity, democracy, economic freedom, and eco-friendliness (JAK, 2018).

A third subgroup of social banks are microfinance institutions that mainly operate in developing countries (San Jose et al., 2011, p. 165). The purpose of microcredit is typically to give small entrepreneurs in poor environments better access to small, collateral-free loans and thus improve their opportunities and welfare (Rahman, 1999, p. 67; Karlan & Zinman, 2011, p. 1278). Microfinance institutions usually qualify as social banks because their main objective is to fight poverty and create growth opportunities. Many microfinance institutions also specifically target to empower women in developing countries through promoting possibilities for entrepreneurship (Karlan & Zinman, 2011, p. 1278). Grameen Bank, operating in Bangladesh, is a well-known example of a microcredit bank, and many international non-governmental organizations have also worked with microcredit institutions (Milano, 2011, p. 39).

While there is an absence of a ultimate, clear definition to specify the frames and polices of social banks on the field of literature, most authors define social banks as follows: the concept of social banks refers to a hybrid financial intermediary institution that works for the common good of societies by accepting deposits originated through real economy activities and investing or offering credit without being speculative but being ethical and transparent in order to achieve a sustainable economy. Most social banks tend to follow the triple bottom line ideology, though as has been discussed, there are many different kinds of social banks around the world with different philosophies and business models.

3.1.1. Differences between social and conventional banks

Several differences have been identified in the literature between social and conventional banks. Inside the economy, the most important function of banks is to act as financial intermediaries that channel funds from savers or investors to borrowers. Social banks are a part of this function, but they differentiate themselves by channeling funds from not just investors in general, but investors (depositors and shareholders) that have a socially oriented mindset (Cornée & Szafars, 2013, p. 7). On the other end of the intermediation, the borrowers of social banks need to have the right motivations in addition to having the financial capabilities of paying back the loan (Cornée & Szafars, 2013, p. 7). Social banks want to channel their financing into the real economy and stay away from speculation on financial markets (Cornée et al., 2016, p. 495). The main theory of social banking explains that the owners and depositors of social banks are willing to give up some of their financial gains in order to the bank to achieve its social objectives (Cornée et al., 2016, p. 501). This notion leads to some key differences between social and conventional banks.
An important difference between social and conventional banks is asset allocation. While conventional banks mainly focus on optimizing their loan portfolios’ risk and return, social banks have other trade-offs as well when non-economic factors such as sustainability need to be taken into account (San Jose et al., 2011, p. 154). This also means that social banks face greater information asymmetry problems and require additional screening of loan applicants, which leads to greater selectivity and transparency, and more stakeholder involvement (Cornée et al., 2016, p. 501). These are also important differences between conventional and social banks, and they can have both positive and negative consequences. In the next section, these differences will be further discussed with the help of relevant theories.

3.2. Modern portfolio theory and asset allocation

As discussed, asset allocation is one of the aspects where social banks differ from conventional banks (San Jose et al., 2011, p. 154). Banks, as all investors, face the problem of how to allocate their funds into different assets (Elton & Gruber, 1997, p. 1743). Modern portfolio theory is a theory of investment that addresses this issue by suggesting diversification as a way to either maximize portfolio expected return for a given amount of risk or minimizing portfolio risk for a given rate of expected return (Mangram, 2013, p. 66).

Modern portfolio theory was first introduced by Markowitz (1952), who emphasized that when considering investments, assets should not be selected only because of their individual qualities but considered relative to each other. The trade-off between risk and expected return is important in modern portfolio theory, and both risk and return need to be considered for the whole portfolio (Markowitz, 1991, p. 470). By coming up with different diversified portfolios that provide maximum return for given risk or minimum risk for given return, it is possible to come up with an efficient frontier of portfolios, and the investor could then choose his preferred portfolio from this efficient frontier depending on individual risk aversion characteristics (Elton & Gruber, 1997, p. 1744).

Modern portfolio theory has several key assumptions. Firstly, it assumes that investors are rational, meaning they aim at maximizing returns while minimizing risk (Markowitz, 1952, pp. 79; Mangram, 2013, p. 61). Investors are also risk-averse; if two portfolios have the same expected return, the investor chooses the portfolio with less risk. To accept higher amounts of risk, investors need to be compensated by higher rate of expected return (Mangram, 2013, p. 61). Some of the other key assumptions include efficient markets, the availability of information about different investments to investors and the utilization of this information, and the ability of investors to borrow or lend any amount of capital at a risk-free interest rate (Mangram, 2013, p. 61). Many of these assumptions have been questioned and criticized, as they are rarely true in the real world.

When considering social banks and conventional banks in terms of their positioning on the efficient frontier, it is possible that conventional banks would position themselves as more risk tolerant than social banks. The reason for this is that conventional banks are for-profit institutions, whereas social banks do not emphasize profitability alone but instead focus on other aspects as described by the triple bottom line ideology. As conventional banks are thus more profit-hungry, they are likely to accept more risk than
social banks because the returns can be greater. This behavior can sometimes lead to excess risk taking, especially if banks are not fully aware of all the risks involved with certain types of loans and financial instruments as was the case during the financial crisis when subprime loans and CDOs caused huge problems in the banking system.

Based on literature on socially responsible investment, there exists also another possibility that might explain social banks’ investment or loan portfolios, and their risk-return characteristics. Though an argument exists as to why conventional banks would be more risk tolerant for social banks, we cannot conclude that this will always be the case. However, even if the general risk tolerance of social and conventional banks is assumed to be the same, it may not be possible for social banks to achieve an investment or loan portfolio with similar risk and return characteristics to a conventional bank. To understand why, we can look at the literature on socially responsible investment, and what the theoretical implications for investing only on socially responsible causes or companies are on portfolio risk and return.

As explained by Rudd (1981, p. 57) and Hall (1986, p. 10), choosing an ethical, or socially responsible, investment strategy places a constraint on the investment portfolio by ruling out some of the possible choices of investments because they do not fulfill the ethical criteria. This constraint means that the investors choosing a socially responsible strategy is not able to achieve a normal portfolio, meaning a portfolio that is situated on the optimal risk-return efficient frontier (Rudd, 1981, p. 57). The use of ethical criteria narrows the potential pool of investments, which leads to less diversification within the portfolio (Hall, 1986, p. 10). This leads to increased exposure to risks related to any single asset in the portfolio (Rudd, 1981, p. 58-59). All in all, the social responsibility constraint leads to increase in portfolio risk, without a compensating increase in return. Any portfolio constructed under this constraint cannot be a part of the efficient frontier, because not all possible investments are available and thus risk and return characteristics cannot be optimized. Figure 1 below presents the described situation.

![Figure 2: Risk and return with social responsibility constraint](image)

The black curved line on Figure 1 represents the efficient frontier of portfolios that investors can obtain. The dotted line below represents portfolios that can be created under a social responsibility constraint, which are portfolios that only include some of

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the available assets because not all of them can be assumed to fulfill the ethical criteria. As can be seen from Figure 1, portfolios created under this constraint have lower return for the same amount of risk than the efficient portfolios. This illustrates the possible consequence of the use of social responsibility criteria when investing.

The preceding discussion can also be applied to social and conventional banks. Social banks voluntarily limit themselves by imposing ethical and sustainability criteria when managing their loan portfolios, whereas conventional banks can largely be assumed to be free from such constraints. Thus, even if social banks are willing to accept the same amount of risk as conventional banks, they will likely not be able to achieve a similar return for the same risk because they choose to limit their opportunities and thus are not able to diversify to the same extent. This explain why the owners, depositors, and investors at social banks may need to be prepared to give up some of their financial gains to achieve their other sustainability goals.

As the discussion explains, the risk-return tradeoff is not the only consideration that is important for social banks when choosing their investments and loan portfolios. For conventional banks that mainly focus on profitability, the trade-off between risk and return is probably the most important decision overall when it comes to their loan and investment portfolio because this decision determines how profitable a bank can be. For social banks, on the other hand, profitability is only one factor to consider, and apart from that there are non-economic factors such as social contribution and sustainability (San Jose et al., 2011, p. 151). Thus the framework of trade-off between only risk and return is not enough to explain the asset allocation of social banks, but the extension of adding a social responsibility constraint provides a better explanation. As Cornée et al, (2018, p. 33) state, in order to achieve a higher social contribution, social financial institutions and their funders will have to accept some financial sacrifice. For social banks, there are several important trade-offs to consider; profitability, risk, and social contribution all need to be balanced.

3.3. Stakeholder theory and participation

In addition to asset allocation, an important difference between social banks and conventional banks is the fact that social banks encourage participation from their stakeholders in their operations and decision-making process (San Jose et al., 2011, p. 155). This aligns well with their commitment to values such as sustainability and responsibility, because a good way to ensure that the interests of the greater society are served is to work together with the different stakeholders and involve them in the decision-making processes. Stakeholder theory is a theory that addresses a company’s relationship with its stakeholders.

Traditionally, profit-oriented companies have seen shareholder wealth maximization as their main end goal (Freeman, 2001, p. 39). Stakeholder theory challenges this notion and claims that firms should also incorporate the interests of other stakeholders into their operations. Freeman & Velamuri (2005, p. 6) define stakeholders as groups or individuals that can be affected by or themselves affect the actions of companies. Examples include the company’s employees, customers, suppliers, and local communities. Stakeholders can be categorized in various ways, such as primary and secondary stakeholders, owner and non-owners, or as actors or those acted upon
(Mitchell et al., 1997, p. 853). Stakeholder theory can help firms in understanding the ethical consequences of the decision they make, as it encourages firms to consider the interests of other parties in addition to shareholders (Freeman & Velamuri, 2005, p. 7). According to the stakeholder theory, there are several benefits to be gained from aligning the interest of the stakeholder with the interests of the firm; involving stakeholders is a good way to ensure their support, which can be beneficial for achieving the long-term goals of the organization (Freeman & Velamuri, 2005, p. 8).

It is easy to see why stakeholder theory applies so well for social banks; being responsible and sustainable in their operations means considering the interests of all parties involved. Comparing them to conventional banks, it can be seen that social banks tend to be much more stakeholder-oriented. Their business models are built on matching socially-minded investors with rightfully motivated borrowers (Cornée & Szafars, 2013, p. 7). To ensure that the projects they finance are sustainable and responsible, social banks conduct additional screening to determine this (Cornée et al., 2018, p. 18).

In addition to the social screening of loan applicants and potential investment projects, social banks ensure that they take into account their stakeholders’ interests by involving them in the decision-making (San Jose et al., 2011, p. 155). Even when social banks do not directly involve their stakeholders in their decision-making, they maintain transparency in their operations and e.g. publish the projects which they fund for their investors and other interested parties to see (Cornée et al., 2016, p. 497). Social banks’ websites and annual reports also tend to be informative about their asset placement (San Jose et al., 2011, p. 160).

### 3.4. Agency theory and information asymmetry

Agency theory is one of the most important theories in financial management and corporate governance, and it can help explain several of the differences between social and conventional banks. An agency relationship exists when one party, the agent, acts on behalf of another, the principal (Ross, 1973, p. 134; Jensen & Meckling, 1976, p. 308). If both parties are expected to maximize their own utility as the market model assumes, this will lead to incentive problems within the agency relationship.

In corporate governance, the most common agency relationship is between managers and shareholders, the so-called owner-manager problem or the separation of ownership and control (Jensen & Meckling, 1976, p. 309). When ownership and control are separated, it becomes an issue of how to ensure that the managers actually work to maximize shareholder value, and not e.g. spend company money on their own expenditures that do not benefit the shareholders. These kinds of agency problems occur when the agent and the principal have different goals, and when it is difficult or costly for the principal to consistently monitor the actions of the agent (Eisenhardt, 1989, p. 58). Another type of agency problem happens when the principal and agent do not have same attitudes towards risk, and these differences in risk preferences may lead to different preferred actions (Eisenhardt, 1989, p. 58).

There are several assumptions in agency theory, many of which have already been discussed; such as the separation of principal and agent, their conflicting interests as
both are trying to match their own utility (Eisenhardt, 1989, p. 58). Another key assumption in agency theory is information asymmetry. Information asymmetry describes a situation where the agent is more informed about his own activities and abilities than the principal (Shapiro, 2005, p. 264). Two of the most important information asymmetry problems are moral hazard and adverse selection, and both are present in the context of the banking industry.

The term moral hazard describes a situation where an individual who is insured against a certain risk becomes less careful as the insurance provides them with less incentive to avoid the risk (Shavell, 1979, p. 541). In agency theory, the problem of moral hazard happens when the principal is not able to monitor the actions the agent is taking (Holmström, 1979, p. 74). For example, shareholders cannot monitor the activities of managers all the time, and managers might be willing to take more risky decisions because, unless their compensation is tied to performance, they do not bear the same risk as shareholders.

In banking, deposit insurance has been suspected to potentially cause moral hazard as it protects banks from potential losses on risky investments and reduces depositors’ motivation to monitor what banks are doing (Hellmann et al., 2000, p. 148; Palia & Porter, 2007, p. 142-143). During the 2007-2008 financial crisis, moral hazard also played a role especially with the subprime mortgages market. Traditionally, banks would have to carry the risks of a bad loan by themselves, but the process of securitization allowed banks to transfer this risk to other investors, which caused widespread moral hazard when banks gave out subprime loans to customers that were never really capable of paying them back (Dowd, 2009, p. 143). Banks being bailed out by governments also raised further questions about moral hazard among these “too big to fail” institutions (Dam & Koetter, 2012, p. 2343-2344).

To reduce the problem of moral hazard within the banking sector, some solutions have been suggested such as increased regulation, capital requirements, and deposit-rate controls (Hellmann et al., 2000, p. 162) or more monitoring and intervention from supervisors (Dam & Koetter, 2012 p. 2374). The emergence of social banks can be seen as another potential solution, for a few different reasons. Firstly, social banks are guided by principles such as sustainability and social values, instead of purely looking for profits (GABV, 2017; FEBEA, 2015). This combined with additional transparency and cooperation with the different stakeholders in monitoring the realization of social objectives should create an environment where moral hazard among bankers is both less appealing and easier to detect.

Another information asymmetry problem is adverse selection. This refers to a situation with hidden information, when one party (agent) has more information than the other (principal), that could affect the outcome (Shapiro, 2005, p. 264). Within the owner-manager problem, adverse selection can happen when a new manager is being hired by the company. The manager himself has more information about his actual capabilities than the company, and if the potential manager chooses to overexaggerate his skills, there is no way for the company to know for sure.

In banking, adverse selection can happen in a similar context when hiring bank managers. However, there is another extremely important adverse selection problem in banking, namely the process of screening potential borrowers and deciding which of
them are creditworthy (Broecker, 1990, p. 429). Banks need to have a screening process in place to determine this. If a customer is deemed riskier, they will have to pay higher interest, or they might not be given credit at all. Both conventional and social banks face this information asymmetry problem, but the adverse selection problem is greater for social banks (Cornée et al., 2018, p. 18).

When screening potential loan applicants, social banks need to conduct not only financial screening, but social screening as well because they not only have to evaluate the financial state of their borrowers, but also the social and sustainability aspects of the projects they finance (Cornée et al., 2018, p. 18). This issue causes social banks to be different from conventional banks by being more transparent and encouraging the participation of shareholders and stakeholders in issues related to placement of assets (San Jose et al., 2011, p. 154-155). Social banks need transparency to combat the information asymmetry, and stakeholder participation to maintain their trust.

As social banks are more transparent and conduct social as well as financial screening on potential borrowers, they become more selective in their loan granting (Cornée et al., 2016, p. 501). This can have both positive and negative consequences. Cornée & Szafars (2013, p. 3-4) propose that social banks being able to match socially minded investors with motivated borrowers can lead to reciprocity based on shared values and trust. This reciprocity takes place when borrowers feel like they have been treated fairly by the bank and are motivated to pay back their loan without the need of additional enforcement (Cornée & Szafars, 2013 p. 3). It discourages moral hazard and, according to the model, should lead to a less risky loan portfolio as borrowers are less likely to default on their loans. According to Cornée & Szafars (2013, p. 13) this is why social banks do not mind having to incur extra costs for social screening and the evaluation of borrowers’ motives.

Selectivity in granting loans can lead to better loan repayment, but it can have negative effects as well. According to Cornée et al. (2016, p. 495), excess liquidity resulting from selectivity and transparency could be the biggest challenge social banks have to face. Because of it social banks are less able to transform deposits into loans than conventional banks, and thus are less efficient in their role as financial intermediaries. The question of whether social banks are more profitable than conventional banks remains uncertain because of the potential of additional screening costs and excess liquidity issues to offset the effects of better loan repayment (Cornée & Szafars, 2013, p. 13; Cornée et al., 2016 p. 495).

3.5. Social banking and corporate social responsibility

When discussing social banks, it is hard to not think of another topic that has become trendy for companies during the recent years: corporate social responsibility (CSR). One could ask the question, what is the difference between social banking and the CSR activities of conventional banks? Many companies, including conventional banks, have begun to engage in CSR activities for various reasons, such as new investment opportunities or even just for PR (Remer, 2011, p. 137).

Several definitions for corporate social responsibility have been proposed. McWilliams & Siegel (2001, p. 117) define CSR as activities that, instead of only appealing to the
interests of the firm, aim at furthering some social good and go beyond the requirements of the law. Bénabou & Tirole (2010, p. 2), on the other hand, define CSR as simply “sacrificing profits in the social interest”. Overall, CSR activities for companies consist of a wide range of voluntary activities that focus on the interests of other stakeholders instead of just maximizing profits for shareholders. Social banks and their activities in many ways fit well in this, as by definition they focus on other things than profitability only. As CSR activities have become more and more common among all companies, it raises the question whether social banks are actually bringing anything radically different to the banking industry, and are social banks really achieving anything that could not be achieved through CSR by conventional banks.

The main difference between corporate social responsibility activities of conventional banks and social banking is thus that with social banks, the CSR aspect is not just another side activity, but instead an inherent part of the business model as a whole. Social banking can be seen as CSR, but the important difference between social banks and conventional banks that engage in CSR is that social banks do not, or should not, engage in operations that do not include the responsibility aspect. For conventional banks CSR can be one part of their operations, but not everything they do is CSR-related. More often than not, CSR activities only constitute a very small part of the operations of conventional banks (Remer, 2011, p. 142). Remer (2011, p. 137) also points out, conventional banks still engage in activities that have harmful consequences such as funding projects that damage the environment. Thus, even if conventional banks have started to include CSR in their operations, social banks are still special because they see responsibility and sustainability as a core part of their business model, instead of a side activity. This is why social banks should have their place as special institutions within the banking sector, and why conventional banks with CSR are not be able to replace the impact of social banks. This also suggests that social banks should be able to achieve more in terms of responsibility because they do not have to compensate for other irresponsible activities that could offset the positives.

3.6. Bank performance

Now that we have discussed in more detail the differences between the two types of banks, we will move on to examining how banks in general operate. In order to get a better understanding of what determines bank performance, this section of the theoretical background focuses on first briefly explaining the main operations of banking, and then discussing the different aspects of bank performance, including profitability, liquidity, and risk management, why they are important, and how they can be measured. This section is thus closely related to the practical method section, because it will help provide a theoretical context for the measures and financial ratios that will be used in our analysis. The issues discussed here are important to both conventional and social banks.

3.6.1. Banking and profitability

When it comes to banks, they can be involved in a variety of activities however traditionally the most common and basic banking activities include the taking of deposits and giving out loans (Acharya & Richardson, 2009, p. 197). This applies to
both conventional and social banks and is how banks facilitate the flow of money from savers to investors in the financial markets (Merton, 1995, p. 23-24). Thus, the main source of revenue for most banks is interest income generated from loans, while interest expense has to be paid on deposits. Examples of loans given out by banks include retail, commercial, and mortgage loans. What often differentiates social banks from conventional banks is to whom these loans are given, how loan decisions are made, and what factors affect the decisions. Social banks often have a set of values or philosophies that guides their decision-making, and their processes often involve greater transparency and a more democratic approach (San Jose, 2011, p. 154-155).

Bank capital refers to the bank’s equity, a buffer against losses that ensures that the bank can stay operational even during difficult time at the market or within the economy. Having adequate amounts of bank capital available at any time is important for all banks, because it not only absorbs losses, but also helps preserve the confidence of deposits (Van Greuning & Brajovic Bratanovic, 2000, p. 105). This is important for liquidity management as well.

Because of their importance within an economy, banks are heavily regulated, and this includes their capital. The main international regulation for banks are the Basel Accords. When it comes to regulation, bank capital is divided into two Tiers: Tier 1 consists of “core capital” (common equity Tier 1 and additional Tier 1 capital) while Tier 2 capital includes subordinated debt and general loan-loss reserves (Bank for International Settlements, 2017, p. 3). The latest Basel III regulations demand for minimum Common Equity Tier 1 capital to be 4.5% of risk-weighted assets along with an additional Capital Conservation Buffer of 2.5% and a countercyclical buffer that can vary within the range of 0-2.5%, comprising common equity (Bank for International Settlements, 2017). Minimum total capital ratio remains the same as during the previous Basel II, which is 8% (Bank of International Settlements, 2011, p. 77).

For banks, as for all companies, profitability is important to ensure the continuation of operations. The economy needs a sound banking system and a sound banking system needs banks that are both well capitalized and profitable (Van Greuning & Brajovic Bratanovic, 2000, p. 83). Thus, profitability is one of the key aspects of bank performance. To analyze bank profitability, the bank’s income statement provides information about the sources and structure of income. Traditionally, a lot of the bank’s income is generated in the form of interest from loans, however as banks have become involved with other activities, other sources of income have appeared as well (Van Greuning & Brajovic Bratanovic, 2000, p. 2). These other sources of income include fees and commissions, trading income, and investment income (Van Greuning & Brajovic Bratanovic, 2000, p. 88). Some bank, such as Islamic banks do not charge or pay interest, so they rely entirely on these other sources of income (Ahmed, 2010, p. 2).

3.6.2. Liquidity management

The financial crisis of 2007-2008 showed once again that liquidity risk is a crucial issue for financial institutions and regulators (Nikolau, 2009, p. 7). Several financial institutions ran into problems when investors lost confidence, and many financial instruments were found to no longer have liquid markets. Liquidity risk management is a key aspect of maintaining confidence in the banking system, as it determines how well
a bank is able to meet its financial commitments (Allan et al., 1998, p. 711), and the financial crisis proved this once again. This section of the theoretical background chapter focuses on explaining what liquidity means for banks, why liquidity risk management is important for bank performance, and finally, what are some differences between conventional and social banks when it comes to the issues of liquidity management.

As traditional banking activities consist of the taking of deposits and the giving of loans, this creates a mismatch of maturities between the bank’s assets (loans) and liabilities (deposits) (Diamond & Dybvig, 1983, p. 403). This creates a liquidity mismatch, as the bank’s liabilities in the form of deposits can have a shorter timeframe than its assets, which consist largely of loans. A bank’s depositors need to be able to withdraw their deposits at any time, even at short notice. The bank cannot, however, force its borrowers to pay back their loans at any time they want, instead they will have to wait for the scheduled loan payments. This creates a mismatch of maturities between the bank’s liabilities and assets (Van Greuning & Brajovic Bratanovic, 2000, p. 157). Most of the time this should not be a problem because under normal conditions, not all depositors will want to withdraw all their deposits at once. If, however, depositors lose their confidence, this might happen, and the bank might lose its operations as a result. It is another reason why liquidity management is important for banks.

In addition to the difference in maturities, there may not exist a liquid market for all of the bank’s assets, even if securitization has allowed banks to transfer some of the risk of their assets to other investors (Merton, 1995, p. 25). During the financial crisis, what happened with many asset-backed securities that were originated through the securitization process was that their markets dried up as investors became aware of the great risks now associated with such financial instruments (Gorton, 2009, p. 10-11). Interbank lending also dried up as uncertainty about the amount of exposure to these products spread (Nikolau, 2009, p. 7). Thus, banks had trouble converting these previously liquid but now suddenly illiquid assets into cash to meet their liabilities.

It is important for banks to manage their liquidity carefully, because of the key role it plays in maintaining the stability and confidence of the financial system. There are two key aspects of liquidity that concern financial institutions: market liquidity and funding liquidity (Brunnermeier & Pedersen, 2008, p. 2201). Market liquidity concerns banks that engage in market transactions, and it deals with how quickly and easily an asset can be traded on the financial markets (Brunnermeier & Pedersen, 2008, p. 2201). The less liquid the market for an asset, the more likely it is that the bank will have to sell its position at a loss especially if it wants to get rid of it quickly (Nikolau, 2009, p. 14).

The aspect of liquidity that most concerns traditional banking activities is funding liquidity. This refers to how well the bank is able to meet its payment obligations as they become due (Nikolau, 2009, p. 13). Several reasons can cause banks to have problems with liquidity funding risk, such as liquidity stresses in the general economy when investors are not willing to provide funds, funding decisions that were too aggressive and caused a large mismatch between the maturities of short-term instruments used to finance long-term needs, and lack of confidence from depositors due to e.g. poor financial performance, which can cause a run on deposits (Khan et al., 2017, p. 203).
Similarly to bank capital, a banks’ liquidity risk is also addressed in regulation. The Basel III framework introduced two new ratios and requirements for banks to ensure adequate liquidity: liquidity coverage ratio and net stable funding ratio. The liquidity coverage ratio demands that banks have enough liquid assets to cover them for 30 days during times of stress (Bank for International Settlements, 2017). The purpose of the net stable funding ratio is to encourage banks to be more careful in matching the duration of their assets and liabilities (Bank for International Settlements, 2017).

While most traditional banks have to carefully manage their liquidity risk to ensure that they have adequate funds available at any time, social banks sometimes suffer from an opposite problem: because of the crucial role of selectiveness and transparency in their lending, they may experience excess liquidity at times (Cornée et al., 2016, p. 495). As social banks want to focus on sustainable causes, this sets some limits to their lending because they have to assess carefully the projects they decide to fund and choose ones that conform to their values. This in turn can lead to excess liquidity if social banks end up having more funds available than there are suitable borrowers or causes to fund. When this happens, social banks may end up having to invest these funds in public bonds or assets of other financial institutions (Weber & Remer, 2011, p. 9).

3.6.3. Risks in banking

In addition to liquidity risk, there are several other risks that banks need to manage and that are in the interest of regulators. Traditionally, credit risk has been the most important risk for banks and thus regulators have given this type of risk much attention. Credit risk deals with the possibility of default in transactions with counterparties such as borrowers and bond issuers, and it is the main reason why banks usually demand collateral for the loans they give (Allan et al., 1998, p. 709). Credit risk is also an issue in derivative transactions for those banks that engage in them. Credit risk is connected to liquidity risk in the sense that if enough borrowers or counterparties default on their payments, a bank can run into liquidity problems if it does not have sufficient funds available to cover the losses (Van Greuning & Brajovic Bratanovic, 2000, p. 125). Because of this, it is important for banks to carefully consider their lending policies.

Banks also need to manage their market risk and operational risk. Market risk deals with the possibility of a loss in value of the financial instruments it trades with, so the more a bank is involved with trading in financial markets along with the more traditional bank activities, the more it needs to pay attention to market risk (Van Greuning & Brajovic Bratanovic, 2000, p. 189). Many tools exist to help traders manage their market risk, however they will not be discussed further here.

Operational risk arises from operating activities within banks (Allan et al., 1998, p. 712). Operational risk can be broadly divided into two categories, internal and external risks. Internal risks relate to a failure in internal system or processes that can cause losses. For example, a trader engaging in rogue trading, mistakes in payments or transaction processing, or a failure in computer programs. External risks, on the other hand, deal with external events such as natural disasters and political risks (Bank for International Settlements, 2011, p. 3).
When it comes to social banks, there are certain risks that especially concern them due to the nature of their banking operations. Most importantly, these risks include ethical risk and image or credibility risk (Von Passavant, 2011, p. 80-81). Ethical risks arise from the fact that ethics is not a fixed set of principles, but what is seen as ethical can change based on different cultures and time periods. For example, protecting the environment has become a topic of interest for many during the past few decades, and many social banks also emphasize environmental sustainability. This has not always been the case in the past, however, and even today the level of interest in environmental protection varies between countries and even industries and companies. As ethics are an important consideration for social banks and one of their key values, there is a risk that something that is considered ethical in one context can change when the context (such as time period) changes (Von Passavant, 2011, p. 80).

Somewhat related to ethical risk is image or credibility risk, as credibility for social banks is particularly important. A bad decision, such as one that could be deemed unethical, can have seriously hurt the image of social banks and lead to severe consequences (Von Passavant, 2011, p. 81). Of course, all banks have to deal with credibility risks to some extent, but for social banks they are an even bigger threat, because of the role of ethics and sustainability in their business models.

3.7. Structure of financial crises

As part of our analysis, we will be examining the impact of the financial crisis on social and conventional banks. To enable our analysis, it is important to first get a deeper understanding of what actually happens during a financial crisis, and what are the most important factors causing them. Thus this final section of the theoretical background will examine the literature on financial crises and present the main causes, stages, and consequences of financial crises and what implications these can have for social and conventional banks.

3.7.1. Stages of financial crises

Financial crises have taken place throughout history, and some of the most famous ones from the past one hundred years include the Great Depression (1929-1939), the Oil Crisis (1973), the Asian financial crisis (1997), and of course, the latest financial crisis of 2007-2009 which was followed by the European sovereign debt crisis starting in 2009. While each crisis has had its own unique reasons and aspects, many of them also share common elements that have been identified by literature. Several possible causes of financial crises have been identified throughout the years, and when a financial crisis happens, they tend to go through somewhat similar stages despite there being differences. The three main stages of financial crises can be seen as the initiation of the crisis, followed by a crisis in the banking sector, and then finally the last stage involving consequences on the real economy and potential sovereign debt issues.

The first stage of a financial crisis is the initiation stage. Several causes can lead to the initiation of a financial crisis, and more often than not there is a combination of factors instead of a single explaining cause. Asset bubbles, such as stock or housing market booms, are one of the most common reasons to identify leading up to financial crises.
(Reinhart & Rogoff, 2008, p. 342; Claessens et al., 2010, p. 272). For example, the financial crisis of 2007-2009 was preceded by a housing bubble in the US markets, which was fueled by relaxed mortgage lending standards (Gorton, 2009, p. 10-11). Several countries in Europe also experienced housing bubbles, such as Spain and Iceland (Claessens et al., 2010, p. 273). This increase in private sector debt is another factor that can be one of the signs leading up to a financial crisis (Claessens et al., 2010, p. 273). An asset bubble that ends up bursting combined with a credit boom and bust within the economy can have severe consequences as was seen in 2007. In addition to housing bubbles, stock market crashes are also often associated with financial crises (Barro & Ursua, 2009, p. 28).

Mismanaged financial liberalization or the emergence of new financial products and innovations is another cause often connected to the initiation of a financial crisis. During the 2007-2009 financial crisis, subprime mortgages and the asset-backed securities created from them by ways of securitization were examples of innovations that ended up causing trouble in the financial markets (Acharya & Richardson, 2009, p. 196). Financial crises on developing countries, on the other hand, often begin from badly managed liberalization efforts. The East Asian financial crisis of 1997 is an example of a financial crisis that happened largely because of liberalization on the financial and capital markets, but without the necessary regulatory framework to ensure the stability of the system (Stiglitz, 2000, p. 1075).

In addition to the causes already discussed, there are still more factors that could be a part of initiating a financial crisis. Unanticipated fluctuations in currency, increases in interest rates, and government fiscal imbalances or balance of payments problems are all factors that can contribute in creating uncertainty on the financial markets and initiate a crisis (Mishkin, 1992, p. 118-119; Reinhart & Rogoff, 2008, p. 342). Financial crises also spread easily from country to country because of contagion (Longstaff, 2010, p. 436), especially as financial markets and transactions have become increasingly international.

After the first initiation stage, and after both risk and leverage have been building up, what tends to follow is a banking crisis where financial institutions suffer the consequences of the increased systemic risk and many of them end up close to bankruptcy (Panageas, 2010, p. 296). A banking crisis can happen as a result of bank run, which is when depositors at a bank have lost their confidence and want to withdraw their deposits all at the same time (Diamond & Dybvig, 1983, p. 401). Bank runs can cause even healthy banks to fail, as they suddenly have to liquidate a large part of their assets, often at a loss (Diamond & Dybvig, 1983, p. 402-403). The recent financial crisis showed that a similar situation can happen when banks face deterioration in their balance sheets because of loss of value on speculative financial instruments such as mortgage-backed securities (Mishkin, 2011, p. 50). Poor risk management practices are often a key reason why financial institutions end up in trouble after chasing higher returns during a period of asset price increases that suddenly ends (Panageas, 2010, p. 296-297).

When a country enters a banking crisis and one or more of their banks begin to near insolvency, the government of the country has two options: either they can let the bank or banks fail and risk spreading panic on the financial markets, or they can choose to bail out the financial institutions that are at risk (Zhou, 2009, p. 205; Longstaff, 2010, p. 28).
During the 2007-2009 financial crisis, governments in the US and Europe ended up bailing out several banks that were deemed “too-big-to-fail” (Panageas, 2010, p. 297). A bank can be considered “too-big-to-fail” when it is so big and systemically important that allowing it to fail could lead to severe negative consequences in the economy (Zhou, 2009, p. 205). The concept of “too-big-to-fail” has been criticized because it is said to encourage moral hazard among bankers and investors. Knowing that the government will have to bail out the bank can lead to excessive risk taking (Zhou, 2009, p. 206).

After the banking crisis, the third and final possible stage of financial crises is the spreading of its effects into the real economy. Some of the usual consequences of financial crises as identified by literature include decline in output and employment and increased levels of government debt (Reinhart & Rogoff, 2009, p. 466). If the crisis was preceded by an asset bubble and collapse, the effects on asset prices can be long-lasting. The issues with government indebtedness were especially pronounced in Europe starting at the end of 2009, as the financial crisis developed into a sovereign debt crisis (Lane, 2012, p. 56-57). Many European countries, such as Greece, Ireland, and Portugal ran into problems with their large public account deficits and debts in the aftermath of the financial crisis.

During financial crises, the agency problems prevalent in the financial sector tend to become worse and cause financial markets to not function efficiently (Mishkin, 1992, p. 115). As has already been discussed, considering certain banks “too-big-to-fail” has the negative consequence of increasing moral hazard. It can be argued that deposit insurance, while an important tool for increasing stability and lessening the threat of banks runs, can have the same effect as it also allows bankers to get away with more risk-taking (Palia & Porter, 2007, p. 142-143). Adverse selection problems also tend to become worse during financial crises, because during a crisis there is even more uncertainty in the financial markets (Mishkin, 1992, p. 119).

### 3.7.2. Social and conventional banks during financial crises

Now that we have discussed the different possible causes and stages of financial crises, we can add social and conventional banks into the discussion. Overall, we could expect social banks to be less impacted by financial crises and have less of a role than conventional banks in spreading the effects of crises in the economy. The reasons for this expectation are the differences between social and conventional banks.

As social banks should have a less profit-oriented approach to their business model, we can expect social banks to be less impacted by things like asset bubbles that are one of the main causes of financial crises. Social banks should also not engage in speculative transactions, which means that products of financial innovation such as asset-backed securities should not be a threat for them. Conventional banks, on the other hand, are more likely to have risky assets in their balance sheet, and conventional banks by channeling credit into the economy can even help in the creation of asset bubbles, as was the case with subprime loans. Of course, the impact of a major trend such as a housing bubble is felt by all participants on the financial markets, including social banks, but we would expect them not to be a major driver behind such trends. Some
other factors, such as interest rates or overall uncertainty, should affect both social and conventional banks in relatively equal measure.

The second stage of a financial crisis, the banking crisis, should also see social banks less affected than conventional banks. Because of their selectivity in granting loans and choosing investment opportunities, and their transparency in communicating with the different stakeholders, social banks are less likely to suffer from a loss of confidence by depositors. Thus a bank run is less likely to happen for a social bank than a conventional bank. Because of avoiding speculative transactions and focusing on loans, as well as typically having higher liquidity overall, social banks should be able to maintain their balance sheets in relatively good shape even during a financial crisis.

Finally, when it comes to the third stage, the spreading of the effects into the real economy, both social and conventional banks should be similarly affected by the decrease in output and economic activity. Social banks might be affected slightly more, because their loan and investment portfolios are already more restricted to begin with than those of conventional banks, and a decrease in economic activity eliminating more investment opportunities leads to even less possibilities for diversification.

As discussed before, the problems of moral hazard tend to be greater for conventional banks in comparison to social banks. Thus, if a conventional bank is deemed “too-big-to-fail”, there is a real possibility that the bankers might end up taking more risk than they otherwise would, and thus cause more problems during a financial crisis. Social banks are usually smaller and tend not to be systemically important banks, but if they were, the threat of moral hazard should not be too great for them. As social banks are guided by sustainable and ethical values, taking additional risk at the cost of someone else is likely not something a social bank would do. This should provide the social banking system with a clear advantage, especially during a crisis.
Chapter 4 Practical method

In this chapter we will first present our data collection method and discuss the selection of sample. Then, we will move on to explaining our study approach, and the measures i.e. financial ratios that will be used to analyze bank performance. After presenting the measures, we will format the hypotheses to be tested and explain the reasoning behind them. Finally, in the last part of this chapter we will discuss the control variables to be used in the estimation.

4.1. Data collection method

This section will briefly explain our choice of sample, as well as the method of data collection and a list of the banks used in this study.

4.1.1. Sample selection

For this study, the population of possible cases consists of the social and conventional banks operating in Europe. To determine the most suitable sampling technique, we first need to establish whether to use probability or non-probability sample. Probability sampling is a method of sampling where each case of the population has the same and known probability of being selected to the sample (Saunders et al., 2009, p. 2013). This sampling method aims at producing a sample that is statistically representative, and thus is selected strictly at random. This method is however not applicable for our research, because of the limitations we face regarding the availability of data, which causes some of the cases in the population to not be selectable and random selection not applicable. Thus, it becomes clear that we have to use non-probability sampling.

With non-probability sampling, there are several possible techniques available, such as purposive sampling, snowball sampling, self-selection sampling, and convenience sampling (Saunders et al., 2009, p. 236). With this study, we have used two different sampling techniques, one for the social banks, and one for the conventional banks. For social banks, because of the constraints in information availability as some banks do not publish their financial statements online and could not provide them by email either, convenience sampling was the only possible method that ensured we could obtain data on as large number of social banks as possible. Convenience sampling is a non-probability sampling technique where the sample is chosen from the population based on practical criteria that often deal with accessibility or availability of the cases (Etikan et al., 2016, p. 2). This method was the most suitable for us, because as our research explores a new context for the comparison of social banks and conventional banks, we wanted to have as large a sample as possible but had to deal with limitations due to data not being available. Thus, convenience sampling was determined the most appropriate technique for our selection of social banks, as it allowed us to choose all those cases of social banks that were available and accessible to us.

When it comes to the conventional banks, we had to use a different sampling method for a couple of reasons. First of all, the population of conventional banks is much bigger than the population of social banks, so choosing all available cases would not have worked for the study. Additionally, the availability of data was not as big of a problem
with conventional banks. For these reasons we were able to use another sampling method for conventional banks instead of convenience sampling. With the conventional banks, we decided to use purposive sampling as the technique of choice. Purposive sampling is a non-probability sampling technique where the sample is chosen deliberately based on the characteristics of the cases (Etikan et al., 2016, p. 2).

In this case, when choosing which conventional banks to include we paid attention to the following criteria: the study should have the same amount of social and conventional banks from each representative country (either a bank from that country or a bank that mostly operates in that country) to minimize the impact that operating in different countries could have on the results of the performance of banks, and each social and conventional bank from the same country should be as close to each other in size as possible. This is to minimize bias on results that could be attributed to the size of the bank. In this case, we used total assets along with number of employees (when available) as indicators of bank size. Where applicable, we also aimed at choosing a similar type of bank, as with the UK where both the social and conventional banks are building societies. With some countries, there is less similarity between the size of the two banks due to similar constraints as with the social banks, but the researchers have tried their best to obtain as comparable banks as possible.

As a result of the sampling method described, we ended up with a sample of ten social banks from nine different countries, all chosen based on convenience sampling and data availability as the main criteria, as only those banks that were able to provide their financial statements could be a part of the sample. Then, ten more conventional banks were chosen through purposive sampling using the criteria described above. Consequently, the sample of this study consists of two sets of European banks, as the aim of the study is to compare social and conventional banks’ performance during and after the financial crisis. All of the social banks except for JAK Medlemsbank are members of the Global Alliance for Banking with values.

The social banks examined in this study are the following:

- Alternative Bank Schweitz (Switzerland)
- Banca Etica (Italy)
- Crédit Coopératif (France)
- Cultura Bank (Norway)
- Ecology Building Society (UK)
- Ekobanken (Sweden)
- JAK Medlemsbank (Sweden)
- Merkur Bank (Denmark)
- Opportunity Bank Serbia (Serbia)
- Triodos Bank (the Netherlands)

The conventional banks examined in this study are the following:

- Banque Cantonale du Jura (Switzerland)
- Banco Popolare del Lazio (Italy)
- Crédit du Nord (France)
- Etnedal Sparebank (Norway)
This sample of 20 banks was selected without bias, only using the criteria described above, and several European countries are represented which should allow for more reliable results. The availability of information was a constraint, and some potential social banks had to be excluded because of this. Despite this, the sample of banks represents countries all across Europe, from Nordic countries to Southern Europe, and from Western Europe to central and Eastern. One possible bias regarding the sample of conventional banks, especially concerning the time of the financial crisis, is known in the financial literature as survival bias (Brown et al., 1995, p. 854). This possible bias arises from the fact that, only those banks that survived the financial crisis could be a part of the sample of this study. This could mean that the performance measures of these conventional banks during the crisis are somewhat higher on average than they would be if those banks that defaulted had also been a part of the sample. However, due to the fact that this study needs data from banks both during and after the crisis, including banks that defaulted would not be suitable. Nevertheless, it is important to be aware of any biases arising from the data, and the authors of this study have therefore noted that this possibility exists with the data from the banks examined in this study.

4.1.2. Data collection

Data has been collected from bank financial statements, many of them which were available online. Some banks were also contacted by email and requested to provide additional information. Despite the authors’ best efforts, not all banks had data available for all years, therefore, after a careful consideration the authors decide to include also those banks that did not have information available for all years. Excluding them completely would have limited the sample size considerably, leading to less representative and less generalizable result.

After accessing the initial financial statements, the data was extracted into Excel. For analysis, SPSS statistics was chosen as the main tool.

4.2. Study approach

In order to measure the performance of social and conventional banks, we identified three key aspects of bank performance in the previous chapter: profitability, liquidity, and risk management. Here we will present and explain the financial ratios that will be used to measure these different aspects of performance.
4.2.1. Profitability

The first three performance metrics used will measure profitability. Profitability is important for all companies, including banks, and thus measuring it through financial ratios should be a key part of any performance assessment. The following three ratios will be used as profitability measures in this study.

4.2.1.1. Return on assets and return on equity

When measuring profitability, return on assets and return on equity are two of the most important components for the bank in evaluating performance. These ratios are calculated as follows:

\[
\text{Return on assets} = \frac{\text{Net Income}}{\text{Average Total Assets}}
\]

\[
\text{Return on equity} = \frac{\text{Net Income}}{\text{Average Common Stockholder Equity}}
\]

Return on assets is a basic indicator in which can be used to compare a bank’s performance to another’s. Return on assets is a good basic indicator of a bank’s profitability, as it shows how well a bank manages to utilize its assets to generate returns. Return on equity, on the other hand, refers to how efficiently the bank is using its equity capital, and how well it manages to generate returns for its shareholder. Thus return on equity can be seen as an indicator of how well the bank is managing the interests of its shareholders. In the regression tables, these measures will be denoted by ROA for return on assets and ROE for return on equity.

4.2.1.2. Net profit margin

Net profit margin is a profitability ratio that is calculated as a percentage of net profit to revenue for a bank after deducting all expenses. It gives a more accurate view of how profitable the bank is and how successful it is in its business. Net profit margin ratio is without a doubt important to shareholders, because it analyzes the ability of the bank to convert revenue into profits. In the results tables, net profit margin will be denoted by NPM.

\[
\text{Net Profit Margin} = \frac{\text{Net Profit}}{\text{Revenue}}
\]

4.2.2. Liquidity

After profitability, we move on to presenting the two liquidity ratios to be used in this study. Liquidity is an important aspect of bank performance, because a failure in liquidity management can have severe consequences for a bank. The main measure for liquidity will be the loans to deposits ratio. Loans to assets ratio will also be used, though the information it provides about liquidity is less clear than the loans to deposits ratio.
4.2.2.1. Loans to deposits ratio

Loans to deposits ratio provides one way for assessing a bank’s liquidity. The results provided by this ratio show the availability of funds and adequate loans to deposits ratio ensures that the bank has enough funds available to meet its obligations. In the results tables, loans to deposits ratio will be denoted by LtD.

\[
\text{Loans to Deposits Ratio} = \frac{\text{Total Loans}}{\text{Total Deposits}}
\]

If a bank’s loans to deposits ratio is too high, it indicates that the bank may not have enough liquidity to cover unexpected losses from operation. If the ratio is too low, it indicates that the bank is not very efficient in converting its deposits into loans and may have excess liquidity, which can lead to not creating as much earnings as they should. In addition to that, the bank should have to borrow money with higher rates in case the loans to deposits ratio is greater than one. However, if the ratio is lower than one the bank will be able to use their deposits to cover the loans they give to their customers, without the need to borrow money from outside. There are many factors which can affect the loan to deposit ratio such as level of interest rates. For example, lower interest rates will usually encourage customers to take more loans.

4.2.2.2. Loans to assets ratio

Loan to assets ratio is computed as a percentage of the total loans outstanding divided by total assets. This ratio mainly examines the asset composition of the bank by measuring which portion of the bank’s assets consists of customer loans. It can be seen as an indicator of how much the bank is focused on lending as opposed to other activities. When presented in the regression tables, loans to assets ratio will be denoted by LtA.

\[
\text{Loans to Assets Ratio} = \frac{\text{Total Loans}}{\text{Total Assets}}
\]

4.2.3. Default risk and Z-score

While financial ratios are a common and easy to understand way to measure bank profitability and liquidity, finding a suitable indicator for bank risk can be more challenging. Banks are considered to play a key role in ensuring the stability of an economy (Jokipii & Monnin, 2013, p. 1-16), and during the financial crisis this became a major concern as bankruptcies and government bailouts caused concern (Brewer & Jagtiani, 2013, p. 3). Based on these events during the financial crisis, it can be said that bank failure is the most important concern, and thus when assessing bank risk, probability of default is usually the focus (Baselga-Pascual et al., 2015, p. 139).

A popular measure for bank default risk is the Z-score, which has frequently been used in literature and which reflects the bank’s probability of becoming insolvent (Baselga-Pascual et al., 2015, p. 139). When a bank becomes insolvent, it means that its losses exceed its equity (Laeven & Levine, 2009, p. 262). Banks with a higher Z-score are farther from insolvency, whereas lower Z-score indicates being closer to becoming insolvent (Delis & Staikouras, 2011, p. 519). Z-score can be calculated as follows:
Z – Score = Return on Assets + Capital Assets Ratio / σ Return on Assets

In the formula, capital assets ratio means equity to assets, and the denominator is the standard deviation of return on assets (Laeven & Levine, 2009, p. 262). A higher Z-score indicates that the bank is more stable because it is able to absorb more variability in returns before becoming insolvent. A lower Z-score, on the other hand, indicates that the bank has a higher risk of becoming insolvent.

When conducting regression analysis with Z-score as the dependent variable, we have used the raw scores for each bank to get the most reliable result. However, because of the great variety between banks in their Z-score values, while using it as a control variable we scaled the values by taking their natural logarithm instead of the raw score. This is because the natural logarithms have normal distribution, and the natural logarithm values are also smaller than most of the raw scores, scaling them down closer to the values of the other independent variables used. In the results tables, Z-score will be denoted by lnZ-score when the natural logarithm has been used, and Z-score when the raw values have been used.

4.3. Hypotheses

Now that we have presented the measures to be used for each aspect of bank performance, we will next format and present the hypotheses to be tested in the analysis. With the help of these hypotheses we will aim to answer our research question about how social banks’ performance in terms of profitability, liquidity, and default risk has differed from the performance of conventional banks in Europe overall and during the financial crisis. The hypotheses dealing with the performance of social and conventional banks are derived from both theory and previous research, and they will be explained and discussed in this section. Some comparisons with previous studies will also be presented. These studies, as mentioned before, deal with Islamic banks, since this is the only context in which performance comparison studies of social and conventional banks have been conducted so far. Thus there will be a brief discussion on these previous studies with each hypothesis, even though this particular study focuses on the context of social banks in Europe.

4.3.1. Profitability

By their definition, social banks differ from conventional banks by not focusing only on profitability but instead valuing things like sustainability and social contribution as well (San Jose et al., 2011, p. 151). The risk-return tradeoff presented in modern portfolio theory is an important consideration for both conventional and social banks, but social banks have additional trade-offs to consider as well because of their stakeholder-oriented approach. These other, social responsibility-related considerations impose a constraint for the investment and loan opportunities of social banks, and thus create a situation where they cannot achieve an efficient portfolio where risk and return characteristics are optimized. Thus, for the same amount of risk, social banks are likely to be less profitable than conventional banks.
Because conventional banks are more profit-oriented than social banks, it is also possible that they are more risk tolerant as higher risk means the possibility of higher profits. If conventional banks are thus assumed to take more risk than social banks, this should lead to two conclusions: when market conditions are good, conventional banks should be more profitable than social banks because the additional risks they are taking with their loan portfolios should be less likely to be realized as borrowers are less likely to default. On the other hand, during the financial crisis social banks should be more profitable than conventional banks because during a crisis, the additional risks taken by conventional banks are more likely to be realized as more borrowers tend to default on their loans during difficult economic times.

Additionally, social banks are known to face greater information asymmetry problems than conventional banks, which leads to greater selectivity in granting loans (Cornée et al., 2016, p. 501; Cornée et al., 2018, p. 18). This can create reciprocity and tends to lead to better performance in loan repayment, but increases screening costs (Cornée & Szafars, 2013, p. 13). During good economic conditions (before the financial crisis), social banks are likely to be less profitable than conventional banks because both social and conventional banks’ borrowers are in general less likely to default on their loans and thus the benefits of additional screening should be less impactful compared to the cost. However, during the financial crisis when borrowers are more likely to default, the benefits of additional screening should be greater and lead to better loan repayment for social banks and thus better profitability.

Based on the preceding discussion, we can come up with the following hypotheses:

1a. Overall, conventional banks are more profitable than social banks.
1b. During the financial crisis, social banks were more profitable than conventional banks.

As discussed before, previous research comparing conventional and social banks has mainly been conducted in the context of Islamic banking. Khan et al. (2017, p. 3) compared banks in Pakistan and his study on financial ratios found that between 2007 and 2014, Islamic banks performed better than conventional banks in terms of profitability ratios. Parashar & Venkatesh (2010) also compared Islamic and conventional banks, and their results show that during 2006-2009 Islamic banks had better profitability, but both banks felt the negative effects of the financial crisis. Hasan & Dridi (2010, p. 7) found that in 2008, the impact of the financial crisis was less felt on social banks, but in 2009 the situation was reversed. Finally, Bourkhis & Nabi (2013, p. 8) did not find any significant differences in the soundness of Islamic and conventional banks.

4.3.2. Liquidity

When it comes to liquidity, social and conventional banks face different problems. Liquidity risk management is crucial for all financial institutions, as demonstrated by the events of the financial crisis of 2008 (Gorton, 2009, p. 10-11). Thus, for conventional banks, the main concern is maintaining adequate liquidity even during adverse economic times. Social banks, on the other hand, can face an opposite problem
of excess liquidity. This is because social banks are more selective in their lending (Cornée et al., 2016, p. 495).

Social banks face greater information asymmetry problems than conventional banks and have to carefully screen their loan applicants to ensure that the projects conform to their values, so they need to be transparent and involve their stakeholders in their decision-making (San Jose et al., 2011, p. 154-155; Cornée et al., 2018, p. 18). All this can lead to the fact that social banks become less efficient in transforming their deposits into loans, both because the process takes more time and because there might not be as many suitable loan candidates. If this happens, social banks may have to invest their excess funds in assets such as public bonds (Weber & Remer, 2011, p. 9). Because of these issues, social banks are expected to have higher liquidity than conventional banks, especially during the financial crisis.

Based on this discussion, we can draw the next hypotheses:

2a. Overall, social banks experience higher liquidity than conventional banks.
2b. During the financial crisis, social banks experienced higher liquidity than conventional banks.

In other research, the ratio analysis by Khan et al. (2017) found that Islamic banks had better liquidity management than conventional banks. Parashar & Venkatesh (2010 p. 60) also found that Islamic banks had better liquidity than conventional banks during the financial crisis. Bourkhis & Nabi (2013, p. 71-72) did not find statistically significant differences between the liquidity ratios of Islamic and conventional banks.

4.3.3. Default risk

As discussed in the chapter on practical method, when measuring banking risk, this study deals with the risk of default. As discussed with profitability, conventional banks are likely to position themselves as more risk tolerant than conventional banks on the risk-return efficient frontier. Similarly, because of more selectivity and potential reciprocity, social banks tend to have better loan repayment performance than conventional banks, and they are expected to be more liquid. All these factors together lead to the conclusion that conventional banks should be more risky than social banks. This conclusion is also in line with the risk-return trade-off presented in modern portfolio theory; we expect conventional banks to be more profitable during good economic conditions than social banks, but we also expect them to have a higher risk of default.

The following hypotheses can be drawn:

3a. Overall, conventional banks’ default risk is higher than that of social banks.
3b. During the financial crisis, conventional banks’ default risk was higher than that of social banks.

Khan et al. (2017, p. 427) found Islamic banks to be relatively less risky than conventional banks based on ratio analysis. Bourkhis & Nabi (2013, p. 75) used Z-score
to measure bank risk and soundness, but their findings did not show any significant difference in how the financial crisis affected Islamic and conventional banks.

4.4. Hypotheses testing

To test our hypothesis, we will be performing multiple linear regression to find out the impact that being a social or a conventional bank might have on performance. Regression analysis is a statistical test that can be applied to estimate how the chosen dependent variable responds to specified values of other, independent variable(s) which are chosen by the researcher, and thus explain how the behavior of the dependent variable is affected by the independent variables (Freund et al., 2006, p. 52). Multiple linear regression, specifically, deals with models with one dependent variable and several independent variables (Yan & Su, 2009, p. 2). The coefficients produced by multiple linear regression are expressed as partial regression coefficients, meaning that they show how much the mean change is in the dependent variable to a unit change of the specific independent variable, holding the others constant (Freund et al., 2006, p. 74). The main assumptions associated with linear regression include linearity, independence of both observations in the data and of random errors, homoscedasticity meaning the constant variance of random errors, and finally the normal distribution of random errors (Yan & Su, 2009, p. 195).

As explained by Freund et al. (2006, p. 65), it is not enough to establish that a regression relationship is found between two variables, but it is also important to ensure that the result is not caused by another factor. This is the main reasoning for including multiple control variables in regression models, to make sure that the result is not affected by another variable. In our study we have included control variables such as bank size and country of origin, which will be explained in the following section.

4.5. Independent variables

In this section we will present the control variables included in the model that we will use to estimate whether there is a difference between social and conventional banks’ profitability, liquidity, and default risk. We have included several control variables that could affect bank performance, in order to make the model more reliable in estimating the impact of being a social or conventional bank. We also note that, because profitability, liquidity, and default risk all influence each other, these measures will also be used as control variables for each other whenever they are not used as the dependent variable in question. This section will only focus on explaining those control variables that are present in every model.

4.5.1. Social vs. conventional banks

This is the most important of the control variables, as the impact of being a social or a conventional bank is what we want to estimate in our analysis in order to test the hypotheses and answer the research question. This variable, noted in the Tables as Social, is coded as a dummy variable, with 1 meaning social bank and 0 meaning conventional bank.
4.5.2. Debt to assets ratio

The amount of leverage a bank has can have an impact on its performance. Thus we need a control variable for leverage, and debt to assets ratio is an often-used indicator for this. It reflects the bank’s financial strength and illustrates which portion of the bank’s assets is being financed with debt rather than equity. Overall it is a measure that can be used to evaluate the bank’s financial risk and assess its leverage. In the result tables, debt to assets ratio is denoted by DtA.

\[
\text{Debt to Assets Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}
\]

The resulting percentage measures the amount of total assets that are financed by other means than equity. If the debt to assets ratio equals one, it shows that the bank has equal amounts of liabilities and assets and is considered highly leveraged. A debt to assets ratio greater than one shows that the bank has more liabilities than assets and is thus extremely leveraged and highly risky to invest in. Finally, a debt to assets ratio less than one means that the bank has more assets than it has liabilities and should be able to cover their obligations, making it the least risky.

4.5.3. Number of employees

To control for bank size, we use two different independent variables. The first one of them is number of employees, noted in the Tables as Employees. The information on the number of employees has been provided by most banks on their annual reports, but some banks did not provide it. Thus, this control variable has some missing values that had to be coded separately as missing. To scale the number of employees so that the values for this independent variable would not be too high compared to the others, we have coded this variable as number of employees in hundreds.

4.5.4. Total assets

Because of several banks failing to provide information on the number of employees, we have also used total assets as a control variable for bank size. Total assets are often used as an indicator of bank size by regulators and central bankers, because it is a straightforward and easily available indicator (Schildbach, 2017, p. 6-7). As with the number of employees, we had to scale the values for total assets, noted in the Tables as TotalAssets, and they have been coded in billions of Euros. Some banks reported their total assets in other currencies that the Euro, in which case the amounts were converted to Euros using the exchange rates available at the time of the analysis.

4.5.5. International vs. regional banks

Banks can operate either on regional basis (in one country only) or internationally. If a bank operates and serves a small area or market, this will affect the level of profitability, liquidity, and default risk such banks have in comparison to banks that operate internationally and have higher opportunities to diversify the business risk (Driessen & Laeven, 2007, p. 1694). Because all these factors could have a degree of effect in our analysis, we create a dummy variable for international vs. regional banks, noted in the
tables as International. We assign the value of 1 for international banks and 0 for regional banks.

4.5.6. Commercial vs. retail banks

Banks can also be categorized by their business model. The simplest form of banks are retail banks which offer general financial products and services to people, such as opening a bank account, issuing credit cards and offering insurance. In comparison, commercial banks offer general financial services to not only consumers but also businesses (cooperation or small business) (Dixon, 2016). Therefore, creating a control variable for type of bank will strengthen our result, and show if there is an effect on social and conventional banks based on if they are commercial or retail. We have created a dummy variable, noted in the tables as Commercial, by assigning the value of 1 to commercial banks, and 0 to retail banks.

4.5.7. Country variables

Finally, the country where a bank operates in or originates from can have an impact on its performance due to differences in regulation, business climate, and general economic conditions. To control this effect, we have created dummy variables for each country where the banks originate from (Sweden, Switzerland, Italy, Norway, UK, Denmark, Serbia, the Netherlands, and France). Banks that originate from each respective country have been assigned the value of 1, and other banks the value of 0, meaning if a bank originates from France, the value for France will be 1 and otherwise 0.
Chapter 5 Findings and analysis

The following chapter will present the results of the analysis and provide discussion. First, some descriptive statistics are presented, after which the chapter moves on to the results of the main analysis using linear regression to test the hypothesis formulated in the previous section. Finally, the results will be discussed in more detail in the last section of the chapter.

5.1. Descriptive statistics

The purpose of this section is to provide analysis to describe the overall sample and data used in this study, in order to get a better grasp of the data.

5.1.1. Descriptive overview

Table 1 below shows the distribution of data in the sample by banks and country. It also shows the banks from each country that were chosen for the study.

Table 1: Sample selection

<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>Types</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Merkur Bank</td>
<td>Social</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>Kreditbanken</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>Credit Coopératif</td>
<td>Social</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Credit du Nord</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>ETICA</td>
<td>Social</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>Banco Del Lazio</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>Triodos Bank</td>
<td>Social</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>NIBC</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Cultura Bank</td>
<td>Social</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>Etnedal Sparebank</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>Serbia</td>
<td>Opportunity Bank</td>
<td>Social</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Expobank</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>Ekobanken</td>
<td>Social</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>JAK</td>
<td>Social</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ålandsbanken</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Swedbank</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>ABS</td>
<td>Social</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>La BCJ</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>Ecology Building Society</td>
<td>Social</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>Chorley Building Society</td>
<td>Conventional</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>
5.1.2. Profitability Measurements

In this section, we will present the calculated averages for each profitability measure in the form of figures and provide comments on the key observations.

5.1.2.1. Return on assets and equity

First, the following two graphs, Figure 2 and Figure 3 present the average return on assets and return on equity for conventional and social banks throughout the years.

Figure 3: Return on Assets

Figure 4: Return on Equity
Looking at Figures 2 and 3 above, it can be observed that the average return on assets for social banks shows a higher level of volatility in comparison to conventional banks, both before and after the financial crisis. What is interesting is the dramatic increase that can be seen during the period of the crisis. When it comes to return on equity, social banks overall were more stable whereas conventional banks’ average return on equity has been continuously decreasing. Still, conventional banks have had higher return on equity on average during all years than social banks. Based on the theory on social banks, this should be expected as social banks should not be similarly profit-oriented as conventional banks. Thus, higher return on equity for conventional banks is not surprising. With return on assets, on the other hand, we would expect conventional banks to similarly outperform social banks, but this does not appear to be the case.

5.1.2.2. Net profit Margin

The next Figure will present the same comparison, but with net profit margin.

![Net Profit Margin](image)

Figure 5: Net profit Margin

Figure 4 shows the average net profit margin each year for social and conventional banks in comparison. Before, 2005, social banks show a weaker performance but after 2005, we can observe a dramatic increase in the average net profit margin for social banks. Conventional banks suffer from a decrease in the average net profit margin from 2010 onwards until 2015, after which they manage to achieve better net profit margin. As there is lots of variation between the different years, we cannot conclude too much about the differences on net profit margin based on this figure alone.
5.1.2.3. Debt to assets ratio

Next, we present the debt to assets ratio averages for social and conventional banks.

![Debt to assets ratio chart]

Figure 6: Debt to assets ratio

Debt to assets ratio is a control variable in our study that reflects the bank’s financial strength by showing the level of debt a bank has in comparison with its total assets. Figure 5 shows a lower debt to assets ratio on average for social banks than conventional banks. This can indicate lower risk especially before 2008 when the difference was the most pronounced. After 2008 we can notice that the average debt to assets ratios for social and conventional banks began to move closer to each other. Thus especially after 2008 we cannot conclude that there are substantial differences between the level of indebtedness of social and conventional banks.

5.1.3. Liquidity management

Moving on from profitability to liquidity, we present similarly the calculated averages for each year in figures, providing comparison for social and conventional banks.
5.1.3.1. Loans to deposits ratio

First, we present the averages for loans to deposits ratio in the following Figure.

Figure 7: Loans to Deposits ratio

Figure 6 above shows a relatively stable loans to deposits ratio for both social and conventional banks before the financial crisis. During and after the financial crisis, however, conventional banks begin to show more volatility in their average loans to deposits ratio, and especially in 2010 the average peaks clearly. Therefore, the figure shows that during a time of difficult financial conditions such as the financial crisis, social banks reflect a higher level of stability in terms of liquidity, as they rely mostly on their deposits to fund the loans they give out, instead of outside borrowing like conventional banks. This result reflects what can be expected based on the theory on social banks; because of increased levels of screening and transparency, and due to the fact that social banks probably have fewer investment opportunities available that suit their values and principles, we can expect them to have a higher loan to deposits ratio.
5.1.3.2. Loans to assets ratio

The following Figure showing the average loans to assets ratios shows a clear difference in the asset structure between conventional and social banks.

Figure 8: Loans to Assets Ratio

Figure 7 shows that social banks have consistently higher average loans to assets ratio. This indicates that loans to customers constitute a large part of social banks’ assets, a larger part than with conventional banks. This could mean higher risk if many of the loans default at the same time, however it does not tell much about the rest of the asset structure of the banks. Once again, this result is in line with the literature on social banks; social banks are said to not be involved in speculative transactions on the financial markets to make profit, instead they tend to focus more on the traditional banking activities of lending.

5.1.4. Bank default risk

Finally, we present a similar comparison Figure for Z-score which measures the riskiness of the bank.
As can be observed from figure 8 depicting the average Z-scores for social and conventional banks, after 2005 social banks have a higher average Z-score and thus are at lower risk of default. Between 2002 and 2005, however, conventional banks showed a higher average Z-score and thus had lower default risk. Despite the differences in early years, we can conclude that from 2005 onwards, social banks were less risky and this is what we can expect based on theory. As conventional banks are more profit-oriented, they should likely to be ready to accept more risk. The average Z-score supports this.

5.1.5. Descriptive statistics for control variables

The following Table 2 presents the number of observations, minimum and maximum value, mean and standard deviation for each of the dependent and independent variables used in the estimation models. The data has been separated for social and conventional banks, to get a better understanding of the differences in the data between them.
Descriptive statistic for dummy and control variables:

Table 2: Control variables:

<table>
<thead>
<tr>
<th>Type of bank</th>
<th>Social</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of variable</td>
<td>N</td>
<td>Minimum</td>
</tr>
<tr>
<td>Return on assets</td>
<td>115</td>
<td>-.01105</td>
</tr>
<tr>
<td>Return on equity</td>
<td>115</td>
<td>-.13239</td>
</tr>
<tr>
<td>Net profit margin</td>
<td>114</td>
<td>.50305</td>
</tr>
<tr>
<td>Debt to assets ratio</td>
<td>118</td>
<td>.07224</td>
</tr>
<tr>
<td>Loans to deposits ratio</td>
<td>118</td>
<td>.57158</td>
</tr>
<tr>
<td>Loans to assets ratio</td>
<td>118</td>
<td>.45371</td>
</tr>
<tr>
<td>Number of employees</td>
<td>105</td>
<td>6</td>
</tr>
<tr>
<td>Z-Score</td>
<td>115</td>
<td>-.21934</td>
</tr>
<tr>
<td>Ln Z-Score</td>
<td>114</td>
<td>-3.23395</td>
</tr>
<tr>
<td>Total assets in Eur</td>
<td>118</td>
<td>13427158</td>
</tr>
</tbody>
</table>

Note: number of employees and total assets are reported as actual values in this table. For the purposes of the model, when used as control variables in the regression later they have been scaled, employees in hundreds and total assets in billions of Euros.
Table 2 gives a descriptive glance over the control variables employed in our regression analysis, and that were explained as part of the practical method in the section on independent variables. Control variables defined as the variables that researchers control or hold constant. In general, control variables are not considered part of the analysis, but they are important to include as they can affect the result. Table 2 also shows the number of observations (N) for each control variable, along with the minimum, maximum and standard deviation for both social banks and conventional banks.

As we can see from the Table, the number of observations (N) for social banks is somewhat smaller than for conventional banks, and this is due to that fact that the data from social banks contains some missing years because not all of them were able to provide data from as many years, and thus their data. Additionally, it is interesting to note the deviations between the two types of banks in averages of the ratios and the Z-score, which will be examined further through the following analysis. Furthermore, there are also differences in the standard deviations.

Finally, from the Table we can see that the difference between average number of employees is not that big, however in terms of the maximum value, it can be seen that the largest conventional bank examined in this study is much larger in terms of employees than the largest social bank. For the minimum value, there is not much difference at all, however the standard deviations show that conventional banks have higher deviations between banks whereas social banks’ amounts of employees tend to be more similar in comparison. When it comes to the banks’ size in terms of total assets, once again the difference between the minimum values of the two groups is not quite as big as the difference between the maximum values, though with total assets, the average for conventional banks is clearly higher than the average for social banks.

5.2. Hypotheses testing with regression analysis

To test our hypothesis regarding the performance comparison between social and conventional banks, we have employed multiple linear regression analysis. This will allow us to test whether the type of bank (social or conventional) has an impact on the different performance measures.

5.2.1. Profitability

As explained in the practical method section, we employ three different measures for profitability, which are return on assets, return on equity, and net profit margin. To test our hypotheses on profitability, we develop the following model:

\[ \text{Profitability}_{it} = \alpha + \beta_1 \text{Social}_i + \beta_2 \text{Ltr}_{it} + \beta_3 \text{LtrA}_{it} + \beta_4 \text{LnZ-score}_{it} + \beta_5 \text{Employees}_{it} + \beta_6 \text{TotalAssets}_{it} + \beta_7 \text{International}_{it} + \beta_8 \text{Commercial}_{it} + \beta_9 \text{Country1}_i + \beta_{10} \text{Country2}_i + \ldots + \beta_{17} \text{Country8}_i + \epsilon_{it} \]

With the model we will test for a relationship between the bank being social or not, and we also include several variables to control for other possible differences between banks. These include debt to assets ratio, loans to deposits ratio, loans to assets ratio, number of employees and total assets as measures of bank size, and dummy variables
for international versus local bank, commercial versus retail bank, and the different countries where the banks are based on. The following Table 3 shows the R-squared values for each of the models.

Table 3: R-squared, hypothesis 1a

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>ROE</th>
<th>NPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td>0.3138</td>
<td>0.7202</td>
<td>0.3224</td>
</tr>
</tbody>
</table>

As can be seen from Table 3, we can say that 31.4 % of the variation in return on assets can be explained by the model. For net profit margin, the result is similar as the model explains 32.2 % of the variation. The model can be said to be strongest for return on equity, with 72 % of the variation in return on equity being explained by the model.

Hypothesis 1a. Overall, conventional banks are more profitable than social banks.

First, we perform a regression analysis on the data for all years to test the hypothesis on overall profitability. The results of testing this hypothesis are summarized in the following three Tables:

Table 4: Return on assets, estimation results for hypothesis 1a

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social**</td>
<td>-0,0056961</td>
<td>0,0016444</td>
<td>-3,46</td>
<td>0,001</td>
</tr>
<tr>
<td>DtA**</td>
<td>-0,1360012</td>
<td>0,0241284</td>
<td>-5,64</td>
<td>0,000</td>
</tr>
<tr>
<td>LtD</td>
<td>-0,0000281</td>
<td>0,0000361</td>
<td>-0,78</td>
<td>0,438</td>
</tr>
<tr>
<td>LtA</td>
<td>0,0033602</td>
<td>0,0040418</td>
<td>0,83</td>
<td>0,407</td>
</tr>
<tr>
<td>lnZ-score*</td>
<td>0,0014676</td>
<td>0,0005622</td>
<td>2,16</td>
<td>0,010</td>
</tr>
<tr>
<td>Employees</td>
<td>0,0001527</td>
<td>0,0001311</td>
<td>1,16</td>
<td>0,246</td>
</tr>
<tr>
<td>TotalAssets</td>
<td>-0,0000458</td>
<td>0,0000796</td>
<td>-0,57</td>
<td>0,566</td>
</tr>
<tr>
<td>International</td>
<td>-0,0015824</td>
<td>0,0021531</td>
<td>-0,73</td>
<td>0,463</td>
</tr>
<tr>
<td>Commercial**</td>
<td>0,0124269</td>
<td>0,0031695</td>
<td>3,92</td>
<td>0,000</td>
</tr>
<tr>
<td>Switzerland</td>
<td>-0,0027731</td>
<td>0,0023897</td>
<td>-1,16</td>
<td>0,247</td>
</tr>
<tr>
<td>Italy**</td>
<td>0,0066974</td>
<td>0,0020539</td>
<td>3,26</td>
<td>0,001</td>
</tr>
<tr>
<td>Norway</td>
<td>0,0055567</td>
<td>0,003286</td>
<td>1,69</td>
<td>0,093</td>
</tr>
<tr>
<td>UK**</td>
<td>-0,1148935</td>
<td>0,0199206</td>
<td>-5,77</td>
<td>0,000</td>
</tr>
<tr>
<td>Denmark</td>
<td>-0,0018284</td>
<td>0,0026433</td>
<td>-0,69</td>
<td>0,490</td>
</tr>
<tr>
<td>Serbia**</td>
<td>-0,0126115</td>
<td>0,0031352</td>
<td>-4,02</td>
<td>0,000</td>
</tr>
<tr>
<td>Netherlands</td>
<td>-0,0036323</td>
<td>0,0022104</td>
<td>-1,64</td>
<td>0,102</td>
</tr>
<tr>
<td>France</td>
<td>0,011781</td>
<td>0,0063151</td>
<td>1,87</td>
<td>0,064</td>
</tr>
<tr>
<td>_cons</td>
<td>0,1143509</td>
<td>0,0221935</td>
<td>5,15</td>
<td>0,000</td>
</tr>
</tbody>
</table>

The results in Table 4 for return on assets show that the effect of being a social bank on this measure is highly significant, and the impact is negative. Of the other control variables, debt to assets ratio also has a highly significant negative impact, meaning the bigger the portion of the bank’s assets that is financed with debt, the less profitable the bank. This is interesting to note, as it shows that too much leverage can have a negative impact on return on assets. The natural logarithm of Z-score, which measures the overall default risk of the bank, also has a significant effect.

Next, Table 5 shows the results of the estimation for return on equity.
Similarly to return on assets, Table 5 shows that the effect of being a social bank on return on equity is negative and highly significant. The impact on return on equity is much greater than on return on assets, though both are highly significant according to the p-values. Other variables of interest that have a significant impact on return on equity according to the model are number of employees (positive), total assets (negative), being an international as opposed to regional bank (negative) and being a commercial as opposed to retail bank (positive). It is interesting to note that expanding internationally seems to have a negative impact on return on equity, whereas expanding in terms of the services offered (commercial banks vs. retail banks) has a positive effect according to the model.

The following Table presents the results of the estimation for net profit margin.

**Table 6: Net profit margin, estimation results for hypothesis 1a**

<table>
<thead>
<tr>
<th>NPM</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social**</td>
<td>0,1258312</td>
<td>0,0769113</td>
<td>1,64</td>
<td>0,104</td>
</tr>
<tr>
<td>DtA**</td>
<td>-3,897919</td>
<td>1,135487</td>
<td>-3,43</td>
<td>0,001</td>
</tr>
<tr>
<td>LtD</td>
<td>0,000781</td>
<td>0,0016912</td>
<td>0,46</td>
<td>0,645</td>
</tr>
<tr>
<td>LtA*</td>
<td>-0,477857</td>
<td>0,1891974</td>
<td>-2,53</td>
<td>0,012</td>
</tr>
<tr>
<td>lnZ-score</td>
<td>0,025531</td>
<td>0,0270757</td>
<td>0,94</td>
<td>0,347</td>
</tr>
<tr>
<td>Employees</td>
<td>0,0052803</td>
<td>0,0061336</td>
<td>0,86</td>
<td>0,390</td>
</tr>
<tr>
<td>TotalAssets</td>
<td>-0,0003966</td>
<td>0,003724</td>
<td>-0,11</td>
<td>0,915</td>
</tr>
<tr>
<td>International</td>
<td>-0,0779442</td>
<td>0,1007407</td>
<td>-0,77</td>
<td>0,440</td>
</tr>
<tr>
<td>Commercial</td>
<td>0,1023149</td>
<td>0,1486249</td>
<td>0,69</td>
<td>0,492</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0,0638274</td>
<td>0,1121485</td>
<td>0,57</td>
<td>0,570</td>
</tr>
<tr>
<td>Italy**</td>
<td>0,4241193</td>
<td>0,0960652</td>
<td>4,41</td>
<td>0,000</td>
</tr>
<tr>
<td>Norway*</td>
<td>0,4109811</td>
<td>0,153826</td>
<td>2,67</td>
<td>0,008</td>
</tr>
</tbody>
</table>
Finally, according to the model and Table 6, being a social bank has a positive effect on net profit margin, however the results are not significant as their p-value is above 10%. Of the other dependent variables, debt to assets ratio and loans to assets ratio both have a significant negative impact on net profit margin on the 5% level. As with return on assets, the result on the negative impact of a higher debt to assets ratio shows the possible risks associated with being too highly leveraged.

Based on the preceding discussion, the regression analysis of two of the three profitability measure, return on assets and return on equity, showed a highly significant negative impact for social banks. The third measure, net profit margin, did not give significant results. Thus, based on the analysis on return on assets and return on equity, we can accept hypothesis 1a that conventional banks are overall more profitable than social banks.

**Hypothesis 1b.** During the financial crisis, social banks were more profitable than conventional banks.

To test hypothesis 1b, we perform a similar linear regression analysis however this time only with data from the years of the financial crisis, that is, 2007-2009. Otherwise the same model and same variables are used. The next Table shows the R-squared values for the model on data from 2007 to 2009, after which the results of the analysis are presented.

**Table 7: R-squared, hypothesis 1b**

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>ROE</th>
<th>NPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td>0.6299</td>
<td>0.7678</td>
<td>0.7182</td>
</tr>
</tbody>
</table>

As can be seen from Table 7, the model is a relatively strong predictor for all of the profitability measure, as 63 % of variation in return on assets, 77 % of variation in return on equity, and 72 % of variation in net profit margin is determined by the model. As with overall profitability, the model appears to be strongest with return on equity. The R-squared values are somewhat higher than those of the previous model, and this reflects the fact that this model only uses three years of data, so the amount of observations is smaller.

Next, Table 8 shows the results of the estimation for hypothesis 1b and return on assets.

**Table 8: Return on assets, estimation results for hypothesis 1b**

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>0.0001489</td>
<td>0.0028962</td>
<td>0.05</td>
<td>0.960</td>
</tr>
<tr>
<td>DtA</td>
<td>0.1544558</td>
<td>0.1311653</td>
<td>1.18</td>
<td>0.253</td>
</tr>
<tr>
<td>LtD</td>
<td>0.004015</td>
<td>0.0063487</td>
<td>0.63</td>
<td>0.534</td>
</tr>
<tr>
<td>LtA</td>
<td>-0.002051</td>
<td>0.0084286</td>
<td>-0.24</td>
<td>0.810</td>
</tr>
</tbody>
</table>
For return on assets, the model does not show a significant effect for social banks during 2007-2009 as shown by Table 8. Actually, none of the dependent variables appear to have a significant effect on return on assets for these years. Thus, no conclusion can be drawn on bank performance based on return on assets for the years 2007-2009.

Next is Table 9 presenting the estimation results for return on equity and hypothesis 1b.

Table 9: Return on equity, estimation results for hypothesis 1b

<table>
<thead>
<tr>
<th>ROE</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social*</td>
<td>-0,215225</td>
<td>0,0714729</td>
<td>-3,01</td>
<td>0,007</td>
</tr>
<tr>
<td>DtA</td>
<td>1,394865</td>
<td>3,236878</td>
<td>0,43</td>
<td>0,671</td>
</tr>
<tr>
<td>LtD</td>
<td>-0,3210284</td>
<td>0,1566732</td>
<td>-2,05</td>
<td>0,045</td>
</tr>
<tr>
<td>LtA</td>
<td>-0,0675131</td>
<td>0,2080005</td>
<td>-0,32</td>
<td>0,749</td>
</tr>
<tr>
<td>lnZ-score</td>
<td>-0,0466019</td>
<td>0,1763181</td>
<td>-0,26</td>
<td>0,794</td>
</tr>
<tr>
<td>Employees</td>
<td>0,0107138</td>
<td>0,00633</td>
<td>1,69</td>
<td>0,106</td>
</tr>
<tr>
<td>TotalAssets*</td>
<td>-0,0062931</td>
<td>0,0024814</td>
<td>-2,54</td>
<td>0,020</td>
</tr>
<tr>
<td>International</td>
<td>-0,1648558</td>
<td>0,1269029</td>
<td>-1,30</td>
<td>0,209</td>
</tr>
<tr>
<td>Commercial</td>
<td>-0,0549593</td>
<td>0,1030596</td>
<td>-0,53</td>
<td>0,600</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0,13891</td>
<td>0,3725912</td>
<td>0,37</td>
<td>0,713</td>
</tr>
<tr>
<td>Italy</td>
<td>0,2193682</td>
<td>0,1323787</td>
<td>1,66</td>
<td>0,113</td>
</tr>
<tr>
<td>Norway</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>12,75935</td>
<td>6,521542</td>
<td>1,96</td>
<td>0,065</td>
</tr>
<tr>
<td>Denmark</td>
<td>-0,0394357</td>
<td>0,208684</td>
<td>-0,19</td>
<td>0,852</td>
</tr>
<tr>
<td>Serbia</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>0,1715714</td>
<td>0,2643537</td>
<td>0,65</td>
<td>0,524</td>
</tr>
<tr>
<td>France</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>-0,5298776</td>
<td>3,383071</td>
<td>-0,16</td>
<td>0,877</td>
</tr>
</tbody>
</table>

Table 9 shows that, as opposed to return on assets, with return on equity a significant negative effect can be observed for social banks during 2007-2009. This aligns with the result that conventional banks overall have higher return on equity based on the model, however it goes against the hypothesis which considers the possibility that the additional risks taken by conventional banks may be more likely to be realized during...
difficult financial times. This does not appear to be true, as conventional banks managed to maintain a higher return on equity than social banks even during the financial crisis.

Finally, table 10 presents the results for net profit margin for hypothesis 1b.

<table>
<thead>
<tr>
<th>NPM</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social*</td>
<td>0,596719</td>
<td>0,1674245</td>
<td>3,56</td>
<td>0,002</td>
</tr>
<tr>
<td>DtA</td>
<td>-0,6935974</td>
<td>7,582356</td>
<td>-0,09</td>
<td>0,928</td>
</tr>
<tr>
<td>LtD*</td>
<td>1,073784</td>
<td>0,3670054</td>
<td>2,93</td>
<td>0,008</td>
</tr>
<tr>
<td>LtA</td>
<td>-0,1703293</td>
<td>0,4872392</td>
<td>-0,35</td>
<td>0,730</td>
</tr>
<tr>
<td>lnZ-score</td>
<td>0,08812</td>
<td>0,4130234</td>
<td>0,21</td>
<td>0,833</td>
</tr>
<tr>
<td>Employees</td>
<td>0,018471</td>
<td>0,0148279</td>
<td>1,25</td>
<td>0,227</td>
</tr>
<tr>
<td>TotalAssets</td>
<td>-0,0059715</td>
<td>0,0058127</td>
<td>-1,03</td>
<td>0,317</td>
</tr>
<tr>
<td>International</td>
<td>0,1321732</td>
<td>0,2972689</td>
<td>0,44</td>
<td>0,661</td>
</tr>
<tr>
<td>Commercial</td>
<td>-0,4535894</td>
<td>0,241416</td>
<td>-1,88</td>
<td>0,075</td>
</tr>
<tr>
<td>Switzerland</td>
<td>-0,3135128</td>
<td>0,8727914</td>
<td>-0,36</td>
<td>0,723</td>
</tr>
<tr>
<td>Italy*</td>
<td>0,6763286</td>
<td>0,3100958</td>
<td>2,18</td>
<td>0,041</td>
</tr>
<tr>
<td>Norway</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK*</td>
<td>-39,37618</td>
<td>15,27665</td>
<td>-2,58</td>
<td>0,018</td>
</tr>
<tr>
<td>Denmark</td>
<td>0,0804556</td>
<td>0,4888404</td>
<td>0,16</td>
<td>0,871</td>
</tr>
<tr>
<td>Serbia</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>-0,070924</td>
<td>0,619246</td>
<td>-0,11</td>
<td>0,910</td>
</tr>
<tr>
<td>France</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>-0,5701238</td>
<td>70,924812</td>
<td>-0,07</td>
<td>0,943</td>
</tr>
</tbody>
</table>

Unlike in the overall results, during the financial crisis being a social bank had a significant positive effect on net profit margin as shown by Table 10. Of the other dependent variables, loans to deposits ratio also had a significant effect at the 5 % level. A higher profit margin might suggest that social banks are able to gain some benefit from the selectivity they apply in their loan granting process, possibly in the form of better loan repayment performance by their borrowers. Despite this possibility, social banks were not able to translate a higher profit margin to a higher return on equity even during the financial crisis.

As discussed, despite the fact that social banks had a higher profit margin during the financial crisis, they were not able to achieve higher profitability than conventional banks in terms of return on equity. Thus, we cannot accept hypothesis 1b, that social banks had higher profitability during the financial crisis. It should be noted, however, that due to limitations of data availability, not all banks could be analyzed for the years 2007-2009. It is possible that this had some impact on the results for this time period.

5.2.2. Liquidity

Based on the practical method section, the main measure for bank liquidity employed is loans to deposits ratio. Loans to assets ratio will be used for regression analysis as well, however the loans to deposits ratio is a better measure of liquidity because loans to assets is more focused on describing the asset structure of the bank. The following model is developed for the analysis:
With the model we will once again test for a relationship between the bank being social or not, and as with profitability, several control variables are included such as debt to assets ratio, the profitability ratios used in the previous analysis, number of employees and total assets as measures of bank size, and dummy variables for international versus local bank, commercial versus retail bank, and the different countries where the banks are based on. The following Table 11 again shows the R-squared values for each of the models.

**Table 11: R-squared, hypothesis 2a**

<table>
<thead>
<tr>
<th></th>
<th>LtD</th>
<th>LtA</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td>0.4664</td>
<td>0.7655</td>
</tr>
</tbody>
</table>

As the R-squared values show in Table 11, the model explains 46.6% of variation in the loans to deposit ratio. With loans to assets ratio, this rises to 76.6%.

**Hypothesis 2a.** Overall, social banks experience higher liquidity than conventional banks.

The following two Tables summarize the results of the regression analysis for the two liquidity measures.

**Table 12: Loans to deposits, estimation results for hypothesis 2a**

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>LtD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social**</td>
<td>-10.89335</td>
<td>3.124542</td>
<td>-3.49</td>
<td>0.001</td>
</tr>
<tr>
<td>DtA</td>
<td>-66.46308</td>
<td>55.983</td>
<td>-1.19</td>
<td>0.237</td>
</tr>
<tr>
<td>ROA</td>
<td>67.8337</td>
<td>230.1649</td>
<td>0.29</td>
<td>0.769</td>
</tr>
<tr>
<td>ROE</td>
<td>-21.78437</td>
<td>15.39661</td>
<td>-1.41</td>
<td>0.159</td>
</tr>
<tr>
<td>NPM</td>
<td>1.705847</td>
<td>3.749631</td>
<td>0.45</td>
<td>0.650</td>
</tr>
<tr>
<td>lnZ-score</td>
<td>-1.742</td>
<td>1.230878</td>
<td>-1.42</td>
<td>0.159</td>
</tr>
<tr>
<td>Employees</td>
<td>0.1877468</td>
<td>0.2976492</td>
<td>0.63</td>
<td>0.529</td>
</tr>
<tr>
<td>TotalAssets</td>
<td>-0.1679503</td>
<td>0.1811282</td>
<td>-0.93</td>
<td>0.355</td>
</tr>
<tr>
<td>International</td>
<td>-1.574695</td>
<td>4.005085</td>
<td>-0.39</td>
<td>0.695</td>
</tr>
<tr>
<td>Commercial*</td>
<td>15.01776</td>
<td>6.719484</td>
<td>2.23</td>
<td>0.027</td>
</tr>
<tr>
<td>Switzerland</td>
<td>7.053804</td>
<td>5.049804</td>
<td>1.40</td>
<td>0.164</td>
</tr>
<tr>
<td>Italy</td>
<td>5.934846</td>
<td>5.41151</td>
<td>1.10</td>
<td>0.274</td>
</tr>
<tr>
<td>Norway</td>
<td>10.96671</td>
<td>6.983925</td>
<td>1.57</td>
<td>0.118</td>
</tr>
<tr>
<td>UK</td>
<td>-12.2835</td>
<td>46.34907</td>
<td>-0.27</td>
<td>0.791</td>
</tr>
<tr>
<td>Denmark</td>
<td>2.095512</td>
<td>5.319351</td>
<td>0.39</td>
<td>0.694</td>
</tr>
<tr>
<td>Serbia</td>
<td>-1.90351</td>
<td>6.870448</td>
<td>-0.28</td>
<td>0.782</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1.939958</td>
<td>4.764642</td>
<td>0.41</td>
<td>0.684</td>
</tr>
<tr>
<td>France</td>
<td>13.42111</td>
<td>11.51029</td>
<td>1.17</td>
<td>0.245</td>
</tr>
<tr>
<td>_cons</td>
<td>60.74766</td>
<td>49.18213</td>
<td>1.24</td>
<td>0.218</td>
</tr>
</tbody>
</table>

When it comes to loans to deposits ratio in Table 12, the impact of being a social bank is highly significant and negative. This means that social banks are better able to cover
possible losses on loans with just their deposits and without the need for outside borrowing. Thus, social banks have higher liquidity than conventional banks. A lower loans to deposits ratio also means that social banks are likely to be less effective in transforming their deposits to loans, which is also pointed out by literature. In addition to being social, the only other dependent variable to have a significant effect on loans to deposits in this model is being a commercial as opposed to retail bank, which has a positive effect significant at the 5% level.

Table 13: Loans to assets, estimation results for hypothesis 2a

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social**</td>
<td>0.234357</td>
<td>0.0272279</td>
<td>8.61</td>
<td>0.000</td>
</tr>
<tr>
<td>DtA*</td>
<td>-1.444426</td>
<td>0.4878472</td>
<td>-2.96</td>
<td>0.003</td>
</tr>
<tr>
<td>ROA*</td>
<td>4.582475</td>
<td>2.005704</td>
<td>2.28</td>
<td>0.024</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.1378019</td>
<td>0.1341692</td>
<td>-1.03</td>
<td>0.306</td>
</tr>
<tr>
<td>NPM**</td>
<td>-0.1042054</td>
<td>0.032675</td>
<td>-3.19</td>
<td>0.002</td>
</tr>
<tr>
<td>lnZ-score</td>
<td>0.0083805</td>
<td>0.0107261</td>
<td>0.78</td>
<td>0.436</td>
</tr>
<tr>
<td>Employees**</td>
<td>0.0096307</td>
<td>0.0025938</td>
<td>3.71</td>
<td>0.000</td>
</tr>
<tr>
<td>TotalAssets*</td>
<td>-0.0043024</td>
<td>0.0015784</td>
<td>-2.73</td>
<td>0.007</td>
</tr>
<tr>
<td>International**</td>
<td>-0.3557594</td>
<td>0.0349011</td>
<td>-10.19</td>
<td>0.000</td>
</tr>
<tr>
<td>Commercial*</td>
<td>-0.1810251</td>
<td>0.0585549</td>
<td>-3.09</td>
<td>0.002</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.0458513</td>
<td>0.044005</td>
<td>1.04</td>
<td>0.299</td>
</tr>
<tr>
<td>Italy**</td>
<td>0.2464964</td>
<td>0.047157</td>
<td>5.23</td>
<td>0.000</td>
</tr>
<tr>
<td>Norway</td>
<td>-0.0888235</td>
<td>0.0608593</td>
<td>-1.46</td>
<td>0.146</td>
</tr>
<tr>
<td>UK*</td>
<td>-1.032994</td>
<td>0.4038952</td>
<td>-2.56</td>
<td>0.011</td>
</tr>
<tr>
<td>Denmark**</td>
<td>-0.1876828</td>
<td>0.0463539</td>
<td>-4.05</td>
<td>0.000</td>
</tr>
<tr>
<td>Serbia**</td>
<td>-0.161984</td>
<td>0.0598705</td>
<td>-2.71</td>
<td>0.007</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.0147349</td>
<td>0.0415201</td>
<td>0.35</td>
<td>0.723</td>
</tr>
<tr>
<td>France**</td>
<td>-0.8137609</td>
<td>0.100303</td>
<td>-8.11</td>
<td>0.000</td>
</tr>
<tr>
<td>_cons</td>
<td>1.964606</td>
<td>0.428583</td>
<td>4.58</td>
<td>0.000</td>
</tr>
</tbody>
</table>

With the loans to assets ratio in Table 13, the results of the regression show that being a social bank has a highly significant positive effect. This does not necessarily mean that social banks’ assets are less liquid, however. It mainly shows that social banks are more focused on the traditional banking activities of granting loans, as opposed to conventional banks which tend to engage in other operations such as trading in the financial markets as pointed out by literature. Thus the loans to assets ratio alone cannot give conclusive evidence about bank liquidity without further analyzing the rest of the bank’s assets. This notion is also supported by the fact that commercial banks are found to have lower loans to assets ratio that retail banks, which makes sense as commercial banks tend to offer a wider range of services to their customers than retail banks.

As the preceding analysis shows, based on the loans to deposits ratio, social banks should have higher liquidity overall than conventional banks. Thus, we can accept the hypothesis 2a. stating that social banks experience higher liquidity than conventional banks overall.

**Hypothesis 2b.** During the financial crisis, social banks experienced higher liquidity than conventional banks.
To test hypothesis 2b, we again perform a similar linear regression analysis but with data only from 2007-2009. The following Tables present the R-squared values and then the results of the regression.

### Table 14: R-squared, hypothesis 2b

<table>
<thead>
<tr>
<th></th>
<th>LtD</th>
<th>LtA</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td>0.9999</td>
<td>0.9106</td>
</tr>
</tbody>
</table>

From Table 14 we can see that with both loans to deposits and loans to assets during 2007-2009, the model has a very high R-squared value. For loans to deposits, 99.99 % of the variation and for loans to assets, 91.1 % of the variation can be explained by the model. These high values for R-squared can be explained by the limited number of observations, as the data for the financial crisis only includes three years and the number of banks included is also smaller because some of the banks did not provide data for these years.

### Table 15: Loans to deposits, estimation results for hypothesis 2b

<table>
<thead>
<tr>
<th>LtD</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social**</td>
<td>-0.455814</td>
<td>0.0547964</td>
<td>-8.32</td>
<td>0.000</td>
</tr>
<tr>
<td>DtA</td>
<td>-0.1980838</td>
<td>3.353405</td>
<td>-0.06</td>
<td>0.954</td>
</tr>
<tr>
<td>ROA</td>
<td>12.30169</td>
<td>7.427941</td>
<td>1.66</td>
<td>0.114</td>
</tr>
<tr>
<td>ROE*</td>
<td>-0.7483009</td>
<td>0.2681292</td>
<td>-2.79</td>
<td>0.012</td>
</tr>
<tr>
<td>NPM*</td>
<td>0.2303707</td>
<td>0.0905219</td>
<td>2.54</td>
<td>0.020</td>
</tr>
<tr>
<td>lnZ-score</td>
<td>-0.2037751</td>
<td>0.1675364</td>
<td>-1.22</td>
<td>0.239</td>
</tr>
<tr>
<td>Employees</td>
<td>-0.0112963</td>
<td>0.0063402</td>
<td>-1.78</td>
<td>0.091</td>
</tr>
<tr>
<td>TotalAssets</td>
<td>0.0018044</td>
<td>0.0030216</td>
<td>0.60</td>
<td>0.557</td>
</tr>
<tr>
<td>International</td>
<td>-0.0461414</td>
<td>0.0760128</td>
<td>-0.61</td>
<td>0.551</td>
</tr>
<tr>
<td>Commercial</td>
<td>0.1107799</td>
<td>0.1173993</td>
<td>0.94</td>
<td>0.357</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.5807132</td>
<td>0.3596853</td>
<td>1.61</td>
<td>0.123</td>
</tr>
<tr>
<td>Italy</td>
<td>-0.1025554</td>
<td>0.169549</td>
<td>-0.60</td>
<td>0.552</td>
</tr>
<tr>
<td>Norway</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK**</td>
<td>36.40906</td>
<td>2.397102</td>
<td>15.19</td>
<td>0.000</td>
</tr>
<tr>
<td>Denmark</td>
<td>-0.2861757</td>
<td>0.2223485</td>
<td>-1.29</td>
<td>0.214</td>
</tr>
<tr>
<td>Serbia</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.2553062</td>
<td>0.2528498</td>
<td>1.01</td>
<td>0.325</td>
</tr>
<tr>
<td>France</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>2.037315</td>
<td>3.529406</td>
<td>0.58</td>
<td>0.571</td>
</tr>
</tbody>
</table>

According to the model and Table 15, being a social bank has a highly significant effect on loans to deposits ratio during the financial crisis, and the regression shows that social banks had a lower loans to deposits ratio during this time, though the effect does not appear nearly as great as in the overall result. It is possible that the liquidity problems that affected the banking sector during the financial crisis also affected social banks, even if they still managed to maintain better liquidity than conventional banks. Return on equity and net profit margin are also found to have a significant effect in the model, negative for return on equity and positive for net profit margin.

Next, Table 16 present the results for loans to assets ratio and hypothesis 2b.
Table 16: Loans to assets, estimation results for hypothesis 2b

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social**</td>
<td>0.2613423</td>
<td>0.0579822</td>
<td>4.51</td>
<td>0.000</td>
</tr>
<tr>
<td>DtA</td>
<td>6.141827</td>
<td>3.548368</td>
<td>1.73</td>
<td>0.100</td>
</tr>
<tr>
<td>ROA</td>
<td>-3.335348</td>
<td>7.859793</td>
<td>-0.42</td>
<td>0.676</td>
</tr>
<tr>
<td>ROE</td>
<td>0.138651</td>
<td>0.2837179</td>
<td>0.49</td>
<td>0.631</td>
</tr>
<tr>
<td>NPM</td>
<td>-0.0939992</td>
<td>0.0957848</td>
<td>-0.98</td>
<td>0.339</td>
</tr>
<tr>
<td>lnZ-score*</td>
<td>0.5552045</td>
<td>0.1772768</td>
<td>3.13</td>
<td>0.005</td>
</tr>
<tr>
<td>Employees*</td>
<td>0.0167387</td>
<td>0.0067088</td>
<td>2.50</td>
<td>0.022</td>
</tr>
<tr>
<td>TotalAssets</td>
<td>-0.0026042</td>
<td>0.0031973</td>
<td>-0.81</td>
<td>0.425</td>
</tr>
<tr>
<td>International**</td>
<td>-0.5268747</td>
<td>0.0804321</td>
<td>-6.55</td>
<td>0.000</td>
</tr>
<tr>
<td>Commercial</td>
<td>0.0430079</td>
<td>0.1242248</td>
<td>0.35</td>
<td>0.733</td>
</tr>
<tr>
<td>Switzerland*</td>
<td>-1.148954</td>
<td>0.380597</td>
<td>-3.02</td>
<td>0.007</td>
</tr>
<tr>
<td>Italy</td>
<td>-0.1099448</td>
<td>0.1794064</td>
<td>-0.61</td>
<td>0.547</td>
</tr>
<tr>
<td>Norway</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>3.874324</td>
<td>2.536467</td>
<td>1.53</td>
<td>0.143</td>
</tr>
<tr>
<td>Denmark*</td>
<td>0.6031063</td>
<td>0.2352756</td>
<td>2.56</td>
<td>0.019</td>
</tr>
<tr>
<td>Serbia</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands*</td>
<td>-0.8185013</td>
<td>0.2675502</td>
<td>-3.06</td>
<td>0.006</td>
</tr>
<tr>
<td>France</td>
<td>0</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>-6.907359</td>
<td>3.734602</td>
<td>-1.85</td>
<td>0.080</td>
</tr>
</tbody>
</table>

The regression analysis on Table 16 for loans to assets ratio for 2007-2009 also shows similar results as the overall analysis; social banks have a highly significant positive effect on the loans to assets ratio. This shows that social banks were more focused on traditional loaning activities as opposed to other types of operations even during the financial crisis. Other variables with significant or highly significant effect include Z-score, with a positive effect indicating that less risky banks have a greater proportion of their assets as loans (as opposed to probably riskier financial instruments), number of employees (positive effect), and being an international as opposed to regional bank (negative effect). International banks having lower loans to assets ratios makes sense, because international banks tend to be bigger and bigger banks tend to engage in a wider range of activities and thus have their assets consist of a wider range of products, not only customer loans.

Based on the preceding discussion especially on the loans to deposits ratio, we can conclude that based on our model social banks maintained higher liquidity than conventional banks during the financial crisis, and thus we can accept hypothesis 2b.

5.2.3. Default risk

As explained in section 4. Practical method, we use Z-score to measure bank default risk and develop a model to be tested with regression analysis to find out if being a social or conventional bank has an impact on the overall riskiness of a bank. The model is as follows:

$$BankRisk_i = \alpha + \beta_1Social_i + \beta_2DtA_i + \beta_3ROA_i + \beta_4ROE_i + \beta_5NPM_i + \beta_6LtD_i + \beta_7LtA_i + \beta_8lnZ-score_i + \beta_9Employees_i + \beta_{10}TotalAssets_i + \beta_11International_i + \beta_12Commercial_i + \beta_13Country_i + \beta_14Country2_i + ... + \beta_20Country8_i + \varepsilon_i$$
The R-squared value for this model is 0.8106, which means that the model explains 81.1% of the variation in Z-score.

**Hypothesis 3a.** Overall, conventional banks’ default risk is higher than that of social banks.

The following Table 17 shows the results of the regression:

<table>
<thead>
<tr>
<th>Table 17: Z-score, estimation results for hypothesis 3a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-Score</td>
</tr>
<tr>
<td>Social**</td>
</tr>
<tr>
<td>DtA</td>
</tr>
<tr>
<td>ROA</td>
</tr>
<tr>
<td>ROE**</td>
</tr>
<tr>
<td>NPM*</td>
</tr>
<tr>
<td>LtD**</td>
</tr>
<tr>
<td>LtA</td>
</tr>
<tr>
<td>Employees</td>
</tr>
<tr>
<td>TotalAssets</td>
</tr>
<tr>
<td>International</td>
</tr>
<tr>
<td>Commercial*</td>
</tr>
<tr>
<td>Switzerland**</td>
</tr>
<tr>
<td>Italy</td>
</tr>
<tr>
<td>Norway</td>
</tr>
<tr>
<td>UK*</td>
</tr>
<tr>
<td>Denmark</td>
</tr>
<tr>
<td>Serbia</td>
</tr>
<tr>
<td>Netherlands**</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>_cons</td>
</tr>
</tbody>
</table>

The results in Table 17 show that the effect of being a social bank on the Z-score is positive and highly significant. This suggests that social banks are overall less risky than conventional banks, as higher Z-score indicates less risk of insolvency. Interestingly, the regression results show that return on equity should have a highly significant positive impact on Z-score. This is somewhat surprising, because according to the risk-return tradeoff, we would expect the impact to rather be negative as higher return tends to be associated with higher risk, not lower risk. For net profit margin, on the other hand, the effect is significant and negative. For return on assets, the result is not significant, so we cannot conclude anything about the risk-return tradeoff based on return on assets. From the table we can also see that being a commercial bank has a significant negative effect on Z-score. This result makes sense because commercial banks are engaged in a wider range of operations than retail banks, and it is not surprising that this increases their riskiness. Based on the preceding discussion, according to this model, we can accept hypothesis 3a, that conventional banks overall are more risky than social banks.

**Hypothesis 3b.** During the financial crisis, conventional banks’ default risk was higher than that of social banks.
Finally, to test hypothesis 3b we perform a similar regression analysis to 3a, with data from years 2007-2009. The model has R-squared value of 0.9941, which is very high and suggests that 99.4% of the variation in Z-score during 2007-2009 is explained by the model. Once again, this high value for R-squared is explained partially by the fact that the number of observations was smaller than with the overall analysis. The results are shown in the following table.

| Variable       | Coef   | Std. Err. | t     | P>|t| |
|----------------|--------|-----------|-------|-----|
| Social**       | -30,85364 | 7,773996  | -3,97 | 0,001 |
| DtA**          | -542,4255 | 116,6861  | -4,65 | 0,000 |
| ROA            | 406,4292  | 496,7745  | 0,82  | 0,424 |
| ROE            | 27,02227  | 20,68151  | 1,31  | 0,208 |
| NPM            | -0,6928039 | 7,153397 | -0,10 | 0,924 |
| LtD*           | -54,65393 | 16,12251  | -3,39 | 0,003 |
| LtA**          | 69,90387  | 12,8466   | 5,44  | 0,000 |
| Employees*     | -0,9975779 | 0,4712252 | -2,12 | 0,048 |
| TotalAssets    | 0,1384754 | 0,2101453 | 0,66  | 0,518 |
| International**| 56,0417   | 7,652615  | 7,32  | 0,000 |
| Commercial     | 8,200935  | 8,227125  | 1,00  | 0,332 |
| Switzerland**  | 144,2643  | 5,107667  | 28,24 | 0,000 |
| Italy          | -12,38535 | 8,361043  | -1,48 | 0,156 |
| Norway         | 0        | (omitted) |       |     |
| UK*            | 1718,625  | 620,3872  | 2,77  | 0,013 |
| Denmark**      | -54,52272 | 6,441698  | -8,46 | 0,000 |
| Serbia         | 0        | (omitted) |       |     |
| Netherlands**  | 88,28644  | 4,963461  | 17,79 | 0,000 |
| France         | 0        | (omitted) |       |     |
| _cons          | 540,3604  | 100,8171  | 5,36  | 0,000 |

The regression shown in Table 18 suggests that, unlike the hypothesis states, social banks were actually more risky during the financial crisis than conventional banks, and the result is highly significant at the 1% level. Other dependent variables that had a significant effect on bank default risk during the financial crisis include debt to assets ratio, loans to deposits ratio, and loans to assets ratio as well as the bank being international as opposed to regional which had a positive effect on Z-score. Thus we cannot accept hypothesis 3b, that social banks were less risky during the financial crisis than conventional banks.

5.3. Discussion

In this section, we will further discuss the results of our analysis and attempt to provide some explanations for them based on theory. The discussion will follow the same order as the hypotheses, first we will talk about the results regarding profitability, then regarding liquidity, and finally, bank default risk. As each hypothesis was divided into two, the overall comparison and the comparison during the financial crisis, the discussion here will also attempt to explain both results.
5.3.1. Profitability

Regarding our analysis on profitability, a main assumption drawn from the literature is that conventional banks are more profit oriented than social banks by definition, as explained by San Jose et al. (2011, p. 151), and another assumption drawn from this is that conventional banks and social banks position themselves differently based on the risk-return tradeoff described in modern portfolio theory. Because of the self-imposed social responsibility constraint, social banks were assumed to struggle with achieving a loan and investment portfolio that has optimized risk and return characteristics, and thus they would likely have to accept a portfolio with less profitability. Conventional banks were also suggested to be more risk-tolerant as that would give them the opportunity to achieve higher profits, but also the possibility to incur greater losses if their risks are realized. Our two hypotheses were mainly formatted based on these assumptions; overall, conventional banks should be more profitable but during difficult economic times (the financial crisis) they would suffer more losses and thus social banks might be more profitable during such times.

As stated, our results regarding return on assets and return on equity overall confirm our first hypothesis 1a regarding overall profitability. This is also in line with the modern portfolio theory; the fact that conventional banks are more focused on profits leads to them having higher profitability overall, while social banks struggle with their profitability because of the social responsibility constraint. This issue, which leads to social banks and conventional banks having different asset allocation, is one of the key differences between social and conventional banks as pointed out by literature such as San Jose et al. (2011, p. 151), and Cornée et al. (2018, p. 33). As will be discussed later, our results also show that overall, social banks had not only higher profitability, but also higher default risk based on their Z-scores, which is supported by the risk-return tradeoff.

When it comes to net profit margin overall, our results actually find that social banks outperformed conventional banks. A possible explanation provided by literature is that social banks, by being transparent and selective in their screening attract borrowers that share the same values with the banks (Cornée et al., 2016, p. 501). This ability to match socially minded investors and borrowers with right motivations can lead to reciprocity based on shared trust and values (Cornée & Szafars, 2013, p. 3). This reciprocity in turn should lead to social banks benefiting from borrowers’ better loan repayment performance, which could help social banks achieve a good net profit margin. Still, according to our results social banks have not been able to translate their net profit margins into better return on assets and return on equity.

Hypothesis 1b concerned the profitability of social banks and conventional banks during the financial crisis specifically. Significant results were found with return on equity and net profit margin during the years of 2007-2009, and these results align with the results for overall profitability. Based on the literature, however, we expected the results during the financial crisis to differ from those overall, as demonstrated by the hypothesis that social banks would be more profitable during the financial crisis than conventional banks. The reason for his hypothesis was that, as conventional banks tend to be more risky, they should be more likely to run into problems with profitability during difficult economic times such as a financial crisis. According to our results, however, this did not
happen, and conventional banks were able to maintain higher profitability even during the crisis.

A possible explanation for this profitability result that contradicts our hypothesis is known as survival bias in the financial literature (Brown et al., 1995, p. 854), and this was discussed in the section on sample selection. It is possible that the banks whose profitability suffered considerably during the financial crisis did not survive, and this may cause the result to be somewhat biased as those banks could not be a part of the sample. In any case, further research would be needed on banks during the financial crisis to confirm whether the result here is due to survival bias, or if conventional banks’ profitability is indeed that much stronger that they were able to maintain it at a higher level than social banks even during the financial crisis. Based on the result of this study, however, we cannot accept hypothesis 1b that social banks had higher profitability during the financial crisis than conventional banks.

Overall, the results on profitability seem to confirm that there indeed is a cost to being social. As Rudd (1981, p. 57) and Hall (1986, p. 10) explain, the additional constraint of social responsibility prevents an investor from achieving an optimized portfolio, meaning increased risk without the compensation of higher returns. Even though banks focus on giving out loans instead of investing on stocks for example, our results suggest that a similar effect can be observed with social banks as they were found to have lower profitability than conventional banks. The fact that this study confirms that there is a cost to being social also supports the view on social banks presented by Cornée et al. (2016 p. 501) that the owners and depositors of social banks need to be willing to give up some part of their potential financial gain to achieve the social objectives.

5.3.2. Liquidity

Hypotheses 2a and 2b dealt with liquidity, and the main assumption, drawn from theory and existing literature, was that social banks should have more liquidity both overall and during the financial crisis. The main liquidity measure used for the regression analysis, loans to deposits ratio, confirms this. The results show that overall, being a social bank had a significant effect on the loans to deposits ratio, and the same thing was true during the financial crisis though the effect was not as great. Social banks’ loans to deposits ratios were lower than those of conventional banks.

The reasons for social banks having higher liquidity than conventional banks are well covered in literature, and mainly stem from issues with information asymmetry as described in the agency theory. The main reason pointed out by Cornée et al. (2018, p. 18) is that social banks face greater information asymmetry problems based on agency theory than conventional banks. All banks face the potential of adverse selection when choosing which customers to give loans to, but conventional banks only have to concern themselves with financial screening of applicants while social banks need to conduct additional screening because they look at not only financial, but also other aspects such as sustainability (Cornée et al., 2016, p. 501). This combined with the additional transparency and stakeholder involvement causes social banks to have higher liquidity, because the screening process takes longer and there are likely to be fewer suitable candidates for loans (Cornée et al., 2016, p. 495).
Higher liquidity can make social banks more stable than conventional banks, but it also means that they are less efficient in transforming deposits into loans. Excess liquidity can become a problem as well and social banks are more likely to have to deal with this than conventional banks (Weber & Remer, 2011, p. 9). When comparing the results for overall profitability and overall liquidity, it can be noticed that conventional banks with lower liquidity have higher profitability than social banks with higher liquidity. This once again shows how social banks sacrifice profitability, and that while having more liquidity can make the bank more stable, it also tends to have a negative impact on profitability.

In addition to the loans to deposits ratio, used as the main measure for liquidity here, the analysis also looked at loans to assets ratio. This ratio mainly describes the composition of assets of banks and does not necessarily say much about liquidity because it does not tell anything about what the assets that are not loans are composed of. Both overall and during the financial crisis social banks had higher loans to assets ratios, which is probably due to the fact that social banks tend to focus more on traditional banking activities whereas many conventional banks have expanded into new areas such as financial instruments trading, according to Van Greuning & Brajovic Bratanovic (2000, p. 2).

It can be difficult to judge what this ratio tells about liquidity without knowing the composition of the assets that are not loans. A bank with a high loans to deposits ratio can run into liquidity problems if many of their loan customers default at the same time, but if the bank is engaged in securities trading their liquidity is affected by the market liquidity of the assets that they trade in (Brunnermeier & Pedersen, 2008, p. 2201). This kind of liquidity of different assets can vary depending on the security and the market conditions and timing, making it difficult to make general judgements without knowing more about the specific asset.

5.3.3. Default risk

The final two hypothesis concerned banking default risk. Based on the literature we drew the assumption that conventional banks should be more risky than social banks, because as profit-oriented institutions they should be more tolerant for higher risk if it gives the possibility of higher returns. As discussed with profitability, we expect conventional banks and social banks to position themselves differently based on the risk-return tradeoff of the modern portfolio theory, and the results regarding profitability supported this conclusion. With the overall results, conventional banks were indeed found to have a higher risk of default than social banks as being a social bank was found to have a significant positive impact on the Z-score. Social banks also have lower profitability, which is in accordance with theory.

Additional explanatory factors for social banks having lower risk overall could be the effect of reciprocity and additional screening of loan applicants, which should lead to less defaults on loans, which Cornée et al. (2016, p. 495) discuss. The potential reciprocity effect shows that there are some benefits to be gained from being more stakeholder-oriented as opposed to only shareholder-oriented. Also, conventional banks being more prone to moral hazard might explain why they tend to have higher risk. Ensuring that social banks’ managers and employees have a responsible mindset and
social focus should prevent the kind of excessive risk taking that can lead to problems if the risks become realized.

When it comes to the results regarding the financial crisis years of 2007-2009, however, the result becomes more difficult to explain. Our hypothesis 3b stated that we expect conventional banks to have a higher risk of default during the financial crisis than social banks. According to our results, however, this does not seem to be the case. Being a social bank was found to have a negative impact on the Z-score during the financial crisis which means that social banks were more risky than conventional banks. Conventional banks were still found to be more profitable during the financial crisis, so the risk-return tradeoff does not explain this result. Neither does the other literature, as all the key differences between social and conventional banks, including asset allocation, greater transparency, and more selectivity in loan granting (San Jose et al., 2011, p. 154; Cornée et al., 2016, p. 501) all suggest that social banks should be less risky even during difficult financial times.

Similarly to the profitability result that caused us to not accept hypothesis 1b, a possible explanation for this Z-score result that seems to contradict the theory is again survival bias, which was explained by Brown et al. (1995, p. 854). It is possible that the reason that the conventional banks examined here had a lower default risk than social banks during the financial crisis is because those banks that had higher default risk did not survive the crisis. Thus the conventional banks that had higher default risk could not be included in the sample because they do not exist anymore, creating results that are possibly biased. Once again, more research on social and conventional banks during the financial crisis would have to be conducted with a sample that includes both banks that survived and banks that did not survive the crisis would be needed to determine if survival bias is indeed the cause of this result as suspected here.

It should be noted here again that, due to limitations in the data, the sample of banks used in the analysis is somewhat different for the overall regression and the financial crisis years. Not all banks were able to provide data all the way to 2007 or further, and this means that some of the banks included in the overall analysis could not be included for the analysis regarding the financial crisis. Some of the variation in the results might be explained by this fact, however both analyses still included several banks, both social and conventional, and the overall trends should still be observable even from a more limited sample.
Chapter 6 Conclusions

In this chapter we will first provide a brief final discussion of the results, relating our analysis to the purpose of the study. Then, we will proceed to giving our recommendations, and discussing the theoretical and practical contribution, truth criteria, and suggestions for further research.

6.1. Discussion of results

It is important to link our analysis to the research question. The research question presented in the beginning of the thesis states that we wanted to examine how social banks’ performance in terms of profitability, liquidity, and default risk differed from the performance of conventional banks in Europe overall and during the financial crisis. Our approach to answering the research question was to look at a sample of banks from different European countries, consisting of the same amount of social and conventional banks. Financial ratios were used to measure the different aspects of performance, and linear regression was used as the main analysis tool to test our hypothesis on the comparison of social and conventional banks.

To conclude our results, conventional banks were found to be more profitable than social banks both overall and during the financial crisis, whereas social banks were found to have higher liquidity. When it comes to default risk as measured by Z-score, social banks overall were found to be less risky, but during the financial crisis the situation was reversed; social banks were found to be riskier. In general, the results of this study align with existing theory, apart from the result of social banks having more default risk than conventional banks during the financial crisis, for which we did not find a proper explanation from theory or literature.

As discussed in the introductory chapter, one of the purposes of this research is to get a better understanding if social banks could be a credible alternative for conventional banks and if the emergence of social banks could be a solution to the many problems of the current banking system. By examining the different performance measures and comparing these two types of banks we have attempted to provide some answers to this question, however it is difficult to give a conclusive answer. It is clear that the social banking system has its benefits; social banks overall appear to be less risky and more stable due to increased liquidity, but this comes at a cost. Conventional banks were consistently able to achieve higher profitability, even during the financial crisis, and they were even found to be less risky than social banks during 2007-2009 according to our analysis.

6.2. Recommendations

Based on these results, we can say that the social banking system as an alternative has its benefits, and it clearly has its place existing along with the conventional banking system. However, based on these results we cannot yet recommend social banks as a replacement for conventional banks, though possibly adopting some of their methods such as more careful screening of loan applicants and being more transparent with their stakeholders could be beneficial for conventional banks as well, and help the overall financial system be more stable.
6.3. Theoretical and practical contribution

When it comes to the literature on social banking, most research that examines the differences between social and conventional banks has been focused on looking at the general differences, such as differences in asset allocation, screening of loan applicants, or increased transparency (San Jose et al., 2011; Weber & Remer, 2011; Cornée & Szafars, 2013; Cornée et al., 2016). Our study differs from these previous ones because instead of general differences, we wanted to examine specific aspects of performance, and how these general differences affect the performance of social banks in comparison to conventional banks.

Other studies comparing the performances of social and conventional banks have mainly been conducted within the context of Islamic banking, such as Bourkhis & Nabi (2013), Hasan & Dridi (2010), Parashar & Venkatesh (2010), and Khan et al. (2017). The findings of these studies regarding the performance comparison are somewhat mixed, some of them reporting differences and some of them not. The main theoretical contribution of our study is bringing this comparison to a new context by comparing European banks.

When it comes to practical contributions, the results of our study can be useful for banker and bank managers, bank regulators, and bank customers. Bankers and bank managers can use our study to better understand the advantages and disadvantages of different bank practices adopted by social and conventional banks. Bank regulators can use this study to better understand the differences between social and conventional banks, and what are they key concerns for each type of banks. Understanding the relative strengths and weaknesses of each type of bank will help create future regulations that can address the key concerns of each type of bank. Lastly, bank customers and potential investors thinking of their choices of banks should also find this study useful as it helps explain the advantages and disadvantages of social and conventional banks. Socially-minded individuals should consider social banks as long as they are ready to accept that they will have to give up some of their financial returns to achieve a higher social contribution.

Finally, we also hope to contribute to the literature that has suggested social banking as a potential solution for the problems within the conventional banking sector (Ramlall, 2013, p. 161-171), many of which became apparent during the financial crisis. Our results suggest that, while social banking has certain benefits, we cannot propose it as an alternative to completely replace the conventional banking system. At the very least, further research on social banking should be conducted in as many contexts as possible before further recommendations.

6.4. Truth criteria

This section provides the reader with information that assesses the quality of this study. This information is a critical analysis of the problem, process, and all the choices made by the authors during the research process. The study in question followed a quantitative approach; therefore, the evaluation will be through reliability, validity, replication and generalization as the main criteria.
6.4.1. Reliability

In quantitative studies, the reliability criterion refers to the questions of whether the results of the study are reputable and how carefully the choices regarding the selection of data and methodology have been made (Bryman & Bell, 2015, p. 41). Thus, the purpose of this section is to assess whether the measures used are stable and consistent and not subject to any fluctuations that could cause the results to be unreliable. A reliable study one that, if performed again with the same set of data and the same methodology would result in the same result (Collis & Hussey, 2014, p. 217).

To ensure a high degree of reliability, the data used in this study comes from the published financial reports of 20 banks, which were acquired either through the banks’ websites, or by contacting the banks by email. All the financial reports have been prepared by the banks themselves in accordance with the International Financial Reporting Standards (IFRS), which means that the data cannot be subject to changes in the future. This ensures a high degree of reliability as the regulations on bank financial reporting ensure that the numerical data has to stay same.

6.4.2. Validity

The validity criterion refers to whether the measure used of a concept actually measures it (Bryman & Bell, 2015, p. 159). The authors aim was to examine if the performance of social banks differed from that of conventional banks in terms of three aspects: profitability, liquidity and default risk. The data employed in the study consists of numerical data collected from the financial statements of 20, and to measure performance, financial ratios were calculated from the data and analyzed with the SPSS software. The hypotheses tested as part of the analysis were built from relevant theory and literature of the field. Based on this discussion, we believe that this study fulfills the validity requirement.

6.4.3. Generalizability

According to Bryman & Bell (2015, p.159), generalizability deals with the external validity of the research, meaning whether the results of the study can be generalized beyond a particular context. The authors chose to limit the study to a European context, and all the banks included in the sample operate in various European countries. The sample selection was somewhat limited by the ability to obtain financial information about social banks, as not all of the potential social banks were able to provide their financial reports. These banks had to be excluded from the sample. The results of the study are generalizable within the European context, however due to the fact that banks are always influenced to some degree by the environments in which they operate, the results of the study are not applicable to social and conventional banks all over the world. Instead, this paper can be used as a starting point for further research on social and conventional banks in the context of other countries.
6.4.4. Replication

The replication of a study is often considered an important criterion to assess the validity of a study in social sciences. Replication deals with the ease at which a similar study could be performed again repeatedly Bryman & Bell (2015, p. 165). During the course of this paper, we have attempted to describe our choice of data, methodology, and analysis tools as explicitly as possible to ensure the ease of replicating this study. Replicating this study should thus be relatively easy, as the financial data used should be consistent over time and the statistical and other methods used have been described throughout this paper. Therefore, if another researcher were to perform a similar study using the same data and method applied here, it should provide the same results.

6.5. Limitations and suggestions for further research

This research contributes to the literature on the field of social banking, however there are still some limitations:

- First of all, the data on social and conventional banks had some important limitations, mainly in terms of timeframe. Some banks had data available until 1998, whereas some others only had data available until 2010. This limits the number of observations especially for years before 2010.

- Secondly, because of limitations on data availability, not all social banks in Europe could be analyzed because they did not provide financial data despite our best efforts. Thus the sample only consists of ten social banks, and ten conventional banks to match them.

- While conducting statistical analysis to estimate the impact of being a social bank on various performance measures, we constructed a model that includes several control variables to account for other differences between banks. It is, however, impossible to account for every single other difference.

- Finally, the amount of research conducted on social banks is still rather limited, and thus the authors in some cases faced a challenge in finding previous research relevant to explaining the differences between social and conventional banks, and the impact of the financial crisis on social banks.

We would like to share some suggestions for future research on the field of social banking:

- Similar studies could be conducted in other countries where social banks operate, such as the US to bring the research into a new context and provide results that could be compared to the results of this study.

- Different types of social banks could be examined, such as microcredit banks operating in developing countries.
• Similar studies could be conducted with a longer timeframe to get an even better understanding of how being a social bank affects performance in the long run. This suggestion might require closer cooperation with the social bank(s) in order to obtain the required data.

• Studies focusing on the performance of social and conventional banks during the financial crisis could be conducted with a larger sample that includes banks that defaulted as a result of the crisis. This would help determine whether the results of this study regarding profitability and default risk of banks during the crisis were due to survival bias.

• Finally, more elaborate statistical models could be used to further explore the effect that being a social bank has on performance.

6.5. Societal and ethical considerations

As researchers, we have tried our best to maintain high ethical standards while conducting this research. All choices regarding data collection, methodology, and analysis were made in accordance with the philosophical and methodological choices. All data used in this research has either been publicly available or provided to us by the banks in question on their own will. Thus, we did not have to face any ethical dilemmas regarding the use or publication of data, because the banks themselves have decided to make the data in question public and by so doing allow the opportunity for people to analyze it.

This study has addressed the differences between social and conventional banks, and the impact of the financial crisis, on pure analytical grounds, using theory, literature, and quantitative analysis of data to establish whether social banks or conventional banks have any advantages in their way of conducting business over each other. There is, however, another possible dimension for this discussion that we have ignored so far, which is the question of ethics and morals. So far in this paper, ethics have been treated merely as a choice of practices made by certain businesses, and the impact of this choice has been measured by using numerical data on financial performance. We have abstained from presenting any discussion on whether or not the choices made by either social or conventional banks are morally right or wrong, because this kind of discussion is out of scope for an analytical research paper such as this one. As business researchers, when conducting quantitative analysis on different banks and the choices they make we cannot judge the choices based on what is the ethical thing to do, or what is the morally right choice. This remains the case even if one of the reasons that originally sparked our interest in this topic is the ethical aspect of social banking.

Because of the nature of this topic, and the heavy focus on sustainability and social responsibility on this paper, it is still important to acknowledge the role of ethical considerations in business. Conflicting views about this have been presented throughout time, and probably the most famous critics of the idea of corporate social responsibility is Milton Friedman. His famous quote “The social responsibility of business is to increase its profits” (Friedman, 1970, p. 173) sums up the criticism on the idea of companies having another responsibility to society other than staying profitable. Not everyone shares Friedman’s view, however, and the emergence of approaches such as
corporate social responsibility, triple bottom line, and even social banking itself demonstrates. It seems clear that there is a demand for the ethical approach as an alternative to the traditional wealth-maximization strategy. And as the results of this and other studies on social banks confirm, the responsibility approach does have its advantages as well, even if social banks fail to achieve the same level of profitability as conventional banks.

Although this study focuses on evaluating social and conventional banks based on quantitative financial data and analysis and does not attempt to provide an ethical judgement on the practices of either side, it is still important to acknowledge the role that ethics plays in the real world. The perfectly rational investor will, of course, make his or her investment decisions based on utility maximization, and thus in comparing social and conventional banks he or she will be most interested in the measures of financial performance. In the real world, however, many of those that choose social banks over conventional banks or a socially responsible investment strategy over a profit-maximizing strategy do so because of ethical, and not financial or economic reasons. Therefore, it is important to recognize that ethics can have an impact on the choices that people make, even if the purpose of this study is not to provide an ethical evaluation of said choices.
REFERENCE LIST


