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Basel III

- A study of Basel III and whether it may protect against new banking failures

Master's thesis within economics

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Abstract

The financial crisis of 2007 until today affected the banking industry to a large extent. Many banks failed or got bailed out by governments. To protect against banking failures and new financial crises the Basel Committee on Banking Supervision (BCBS) has reviewed, renewed and extended the banking regulations. The result is a framework for banking regulations called Basel III. This study examines the Basel III framework and its potential effect on protecting the banks. The study answers the question: if Basel III may protect against new banking failures. The study has used a qualitative approach. The theoretical framework has been built up by the use of the literature review. Literature has mainly been found by use of the university library's online databases. For the empirical results interviews were made with banks and supervisors from Sweden and from Finland to see their view on the emerging framework. The views of supervisors and banks are that Basel III should have tougher requirements than it now has. The capital requirements are seen as too low and the risk-weights are criticized not to reflect the reality. Supervisors are still positive and believe that Basel III will give a better protection, but it will not fully protect against failures. Banks have a similar view, some are positive and believe that it will give a better protection while others do not think it will protect against failures any better.

Preface

My fascination for The Basel Accords started when I was an exchange student at Aalto University School of Economics, Helsinki, in 2010-2011. There I studied a course about financial institutions and naturally the financial crisis of 2007-today and the Basel Accords were brought up in the course. Great guest lectures and good connection to reality may have been what caught my interest from the beginning, but the connection between the Basel Accords and financial crises stayed in my head even after the course was done. When it was time to decide on topic for this study I did not even hesitate on what to write about. I hope my interest shines through this paper and I wish you all a happy reading!

I want to take the opportunity to thank some people that have helped me in the process of conducting this paper and in my academic studies. First I would like to thank the participants in the study for their great contribution and thoughts. Second I would like to thank my supervisor Dorothea Schäfer for good comments and support in the writing process. Also a thank you to Andreas Stephan for always answering questions and providing good comments. Furthermore, Mika Hämäläinen, Sabina Johansson and Outi Hänninen deserve special thanks for helping me out throughout the whole writing process. Also other friends and family deserves a thank you for your great support and help. A second special thank you goes to Eva Hålander, Linnéa Forsberg and Ann Nguyen for the support and good company throughout my education at JIBS. Without all of you this would not have been possible. Thank you!

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Definitions

Moral Hazard: Occurs when an agreement makes one of the parties behave in a way that is against the interest of others (Casu et al., 2006).

Diversification: Diversification is made to reduce risk by investing in many different assets. Typically investment is done in assets that move in opposite direction towards each other so as to even out the risk (Fabozzi, 2009).

Special Purpose Vehicles (SPV): According to Fabozzi (2009) SPVs are created as a firm for a special purpose. Funds are transferred and the SPV creates a derivative or instrument and are the issuer of these.

Stressed inputs: Means that scenarios are constructed so that the bank may handle situations that are not just the best guess. Stressed inputs are inputs that are stressed to correspond to bad scenarios (Casu et al., 2006).

Maturity: The length until a debt has to be repaid to the issuer (Casu et al., 2006).

Off-balance sheet (OBS): Business by banks that does not involve taking deposits or booking assets (Casu et al., 2006).

Group of ten: Consist of Belgium, Canda, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United States and the United Kindom. Eleven industrial countries that cooperates in economic, monetary and financial topics (BIS, 2012a).

I Introduction

This chapter will introduce the reader to the paper and the problem, purpose and method will be defined. Also necessary delimitations and definitions will be explained.

The banking industry is an industry almost everyone uses. Today most of us store our money on a bank account. It is an industry we trust. Trust enough to let banks manage and store our lifesavings. We give trust to an industry that is seldom questioned by the common man. Collapse of a bank is something most of us have not even considered. The financial crisis of 2007 until today came to change this.

The financial crisis of 2007-today gave effect all over the world. It started in the United States (US) and spread throughout the world. Many factors contributed to the rise of the crisis. Expansive monetary policy, flawed financial innovations and collapse of trading are factors that have been mentioned (Schwartz, 2009). The US government stimulated the housing market by helping individuals and families to become house owners. Families with smaller incomes received help to get mortgage loans. House prices boomed. Banks packaged these mortgage loans and sold them as securities. This is referred to as subprime mortgage industry. It has been pointed out that this industry only would work if house prices did not fall (Weaver, 2008). In 2007 the number of home sales and house prices started to fall. Banks started to get in trouble. As interest rates rose so did the homeowners' cost of debt. The subprime mortgage industry collapsed. Leading to bail out of banks and bankruptcy of some. The case of the bankruptcy of Lehman Brothers, what used to be one of the worlds largest investment banks, is a commonly mentioned example (Lehman Brothers, 2008). But the subprime mortgage crisis is just one of the elements in the financial crisis. Poor bank management has been pointed out as another cause for the crisis (Ruddick, 2008).

No matter the causes of the crisis a clear trend could be seen. At the heart of the problem were banks and other financial institutions. The trust for these started to shake. If a bank fail it could take its customers down with it. Individuals with savings deposited at the bank could in principle lose it all. If one bank get affected it may spread throughout the industry. Regulation exists to try to avoid this.

According to Casu, Girardone and Molyneux (2006) one of the main reasons banking regulations exists, is systematic stability, meaning to protect against bank failures. There are dif-

ferent types of regulations focusing on different areas of the financial industry. A bank's capital is an important, if not central, part of the regulation. To regulate this part a committee was created and charged by the group of ten. The group of ten is a group of the ten largest industrialized countries in the world. The committee is known as The Basel Committee on Banking Supervision and is responsible for the Basel Accord (Casu et al. 2006).

1.1 Problem

The Basel Accord for capital adequacy is a framework for regulation and supervision of the banking industry. The Bank for International Settlements (BIS) set this framework. During the financial crisis of 2007-today the framework used was called Basel II. The crisis showed that Basel II was not good enough to protect against banking failures.

In light of the crisis BIS has reviewed Basel II and is trying to address what went wrong the last time. This new framework has been published and implementation of it is in progress. The new framework is called Basel III (Bank for International Settlements, 2012).

Another aspect of regulation is the safety net provided by governments, which may create a moral hazard that is known as too big to fail (TBTF). TBTF is a term referring to the belief that governments cannot let a big firm, or in this case a bank, fail. This is because the effect on the whole financial industry could be serious if a failure would occur. The problem of too big to fail is important to keep in mind when thinking about banking regulation. This might change the intended outcome. And banks may act recklessly in their belief that the government will bail them out in case of failure (Casu et al. 2006).

As the focus now is on this new framework, attention to TBTF is needed. But the main question is whether Basel III will work.

1.2 Purpose

This paper looks at Basel III and analyzes it in terms of bank failures. Investigation of Basel III is done with reference to the Basel III rules text issued by The Basel Committee. The aim of this paper is to describe Basel III and its effect on preventing new bank failures. Basel III is analysed and compared to previous versions of the Basel frameworks and previous research done on Basel III. The too big to fail problem is highlighted since the effects of Basel III may be affected by this problem. The purpose of this paper is hence to answer the question of:

Whether Basel III may protect against new banking failures.

1.3 Limitations

The banking industry is divided into different types of banking i.e. retail banking, investment banking, private banking, corporate banking etc. This paper looks at the banking industry as a whole and is concerned with what is known as traditional banking activities. This is because the paper focuses on the regulation provided by Basel III, which give focus to the banking industry as a whole. Also, Basel III has effect over many areas in the banking industry. This paper looks on the effectiveness of Basel III in protecting against bank failures in light of financial crises.

1.4 Method

1.4.1 Research approach

To start with this study, and to be able to fulfill the purpose of it, it was essential to decide on procedure. Since the study does not start with a hypothesis or a theory that should be tested a more inductive approach has been used. Saunders, Lewis and Thornhill (2009) explain that an inductive approach develops a theory from data that is first being collected. An inductive approach also uses a more qualitative approach, which, as will be explained later, has been used in this study. The other option is to use deduction.

Deduction starts with a ready theory, which is then tested and explored by data. Since Basel III is not yet implemented and ready data does not exist an inductive approach was a better choice. With an inductive approach the researcher does not limit what can be found from data collection or literature review, and might open doors to theories that a deductive approach might ignore. A deductive approach starts with a ready theory and the research looks for data that either support or reject the theory, which may limit the research. A deductive approach offers the opportunity to plan the research more carefully than an inductive approach would because in an inductive approach there are no expectations about the result.

1.4.1.1 Qualitative versus quantitative

Research can be quantitative or qualitative (Patel & Davidson, 2003). Since Basel III has not yet been implemented, comparable data does not yet exist. Therefore a quantitative approach that builds on statistical analyses is difficult to conduct. A qualitative approach

builds on verbal communication and soft data like interviews and was seen as a good approach to conduct this study (Patel & Davidson, 2003).

1.4.2 Literature review

Saunders, Lewis and Thornhill (2009) explain that literature sources may be primary, secondary or tertiary. Primary data consists of reports, theses, emails etc. Secondary data is, for example, journals, books and newspapers. Examples of tertiary data include indexes, abstracts and the like. The advantages of secondary data is that it is available permanently and accessible. What might be the case is that the access may be costly and the quality of the data might be hard to determine. Important when using secondary data is to evaluate the validity of the data. In this paper a mix of primary and secondary data has been used. Primary data has been used from Bank for International Settlements about Basel Accords and Basel III. Secondary data comes from journals, books and newspapers in form of descriptions and analyses.

After deciding to use the qualitative approach should be used the process of search for and review literature began. Textbooks used in university courses were studied to find information about the Basel Accords and to build a basis for the search for new literature. It was found that the Basel Committee develops the Basel Accords and a search engine was used to find information about the Committee. This gave directions to the webpage of Bank for International Settlements. This web site proved to hold a vast amount of information about the Basel Accords and especially Basel III.

When searching for more literature the university library's online database was used. Most of the time the keyword used was Basel III. Where the library's online catalogue did not provide enough information, the search continued through Google Scholar with access to articles and journals through the university account. Jesson, Matheson and Lacey (2011) explain that it is important to search in many different places when trying to find literature. They recommend to first start with the library catalogue and then expand by using different databases and for example Google Scholar with access through library account. They also recommend using keywords that are in the title of the research subject in order to receive good results in the search. Regarding this study, the first review was conducted already during the first search engine searches by looking at the title of the article, the year it was written and other relevant information. This is one of the ways to make a first choice of literature according to Patel and Davidson (2003). After the examined literature qualified these

first brief tests, the reading continued on to the summary and contents. In this way the used literature can be narrowed down eliminating the excess work of reading through unvalid texts. (Patel & Davidson, 2003).

Patel and Davidson (2003) explain that it is important to determine the trustworthiness of the material before using it. Trustworthiness was decided by looking at the author, the place in which the material is found from and by looking at why that material had been created (Patel & Davidson, 2003). Materials from well-known organizations were used in this thesis. As mentioned before, the web site of the Bank for International Settlements was used a lot. This site was seen to be trustworthy because of the organization behind it. This was a criteria used a lot in the search process. Locke, Silverman and Spirduso (2010) explain that looking at the organization is behind the material is a good criterion for finding reliable, high-quality journalistic articles and research papers. The review process before an article is published in a journal is a strong process and if an article has been published in a well-known journal it can generally be seen as trustworthy (Locke, Silverman & Spirduso, 2010). Jesson, Matheson and Lacey (2011) also explain that a critical look at the literature before deciding to use it is important. They lay out the same steps as Locke, Silverman and Spirduso (2010).

When the material had gone through this judgment of credibility, it was read and analysed with more detail. Jesson, Matheson and Lacey (2011) suggest that a first quick scan of the material should be done to find the keywords and sections of interest. This was done with the literature and the irrelevant literature was put aside. Then a second more in-depth skim of the literature was conducted and before writing the thesis a third review of the material was done. This provided a more in-depth insight to the texts and articles. Notes were taken to highlight the essential messages of each book, journal article or newspaper article. This made it easier to utilize the material when writing the theoretical framework for this thesis and the chapter on previous research.

1.4.3 Interviews

To collect data with the qualitative approach interviews were conducted. According to Silverman (2011) a perfectly conducted interview is a good way of obtaining information. Saunders, Lewis and Thornhill (2009) explain that interviews may be either standardized or non-standardized. A standardized interview consists of ready questionnaires that are filled in. Since this study is not based on a specific theory a non-standardized form of interviews

was chosen. Interviews were conducted personally through telephone interviews or personal meetings. The choice of interviewing by telephone was made because of different reasons. The strongest reason was geographical distance. The cost of transportation and use of time made the possible disadvantages associated with telephone interviews compared to personal meeting to even out. Possible disadvantages of phone interviews could be that the effect of body language of the interviewee is missed and that the person gets distracted by other things that the interviewer do not see (Patel & Davidson, 2003). When possible, a personal meeting was preferred because more personal feelings and opinions are voiced in meetings and the body language of the interviewee can be read.

The interviews were conducted in a semi-structured way with predetermined but open-ended questions that the interviewee was able to answer freely. Preparations for the interviews were made by reading books on the subject. Also the interviewer has worked with data collection through telephone interviews before and has received a lot of practice in what to say and in what ways to react to answers. The practice has been done to eliminate the possible biases that might occur from the interviewed person not feeling comfortable with the person conducting the interview. However, there is always some biased interpretation done by the interviewer on the interviewee that cannot be eliminated (Saunders, Lewis & Thornhill, 2009). Patel and Davidson (2003) explain that it is important that the interviewer in a qualitative interview has a lot of knowledge on the subject the questions are asked about. Therefore the interviews were done after the collection of literature and the literature review.

Before deciding on whom to interview the questions for the interview where designed. The questions were designed in a way to be open so that the view of the interview object could be expressed. Interview questions are listed in appendix 1.

1.4.3.1 Participants

The interviewees were selected on the basis of a valid viewpoint. Interviewing solely banks operating in the industry might give a biased result because they are only a part of the regulation. A wider view was preferred. The central banks of Sweden and Finland were contacted because they are a big part of the creation of the regulation. Commercial banks were contacted to get their opinion on the matter. One interviewee was currently in the process of starting an investment bank in Finland and therefore offered an insight of an outsider stepping into the industry.

The biggest problem with finding interviewees was the difficulty of knowing whom to contact. There was little contact information on banks' web sites making the common information addresses first points of contact with banks. Unfortunately many questions remained un-answered making the enquiries last longer. E-mails were sent to different heads of departments with background information about the thesis and about the interview. The e-mails contained also a request to forward the e-mail to a relevant person. Many banks both in Finland and Sweden were contacted but the response rate was quite low, around 25 per cent. The result was still acceptably good because two banks agreed to be interviewed, which gave a somewhat wider view on the subject. When interviews are qualitative the number of interviews should be limited to only a few. In the end a total of six interviews were conducted.

1.4.4 Data analysis

Saunders, Lewis and Thornhill (2009) explain that qualitative data may be analysed in different ways. The data can be summarized, categorized or structured. Patel and Davidson (2003) explain that when analysing qualitative data it is common to do an analysis during the whole process of writing. Unlike in quantitative research where the data is usually collected and an analysis is done at the end. In this report notes has been taken through out the writing process. This has been done to collect thoughts that have risen and to remember those thoughts when a more in-depth analysis should be conducted. Also when writing the interview questions these thoughts were helpful in determining what to focus on. The data from the interviews have been analysed by summarizing. This has been done to narrow down the answers according to importance for this report and to get a better view on the result. The data was not grouped together in order to better see the different views of Basel III. After summarizing the data it was sent to the interviewee for approval. Some changes were made to correct bias and to add additional wishes.

Spiggle (1994) explains different methods for analysing qualitative research. One way is to first categorize the data then make an abstract of it and in the end compare it. This method has been used for analysing the data. The choice of this method has been done because of the spread of the data. A way to organize it after the summarizing was needed. When choosing the categories for the data it felt natural to divide the categories according to the new elements in Basel III and the other aspects from the theoretical framework that re-

quired special attention. Some minor changes were made because some of the categories were similar and could be put together as one.

1.4.5 Validity and Reliability

When data is collected it is important that the data is valid and reliable. Patel and Davidson (2003) explain that in qualitative research there is not much distinction between the two words validity and reliability, often they are combined in the validity term. In quantitative research these are two different concepts. Reliability is concerned with the accuracy of the answers and validity the accuracy of the objects studied.

In qualitative research it is more a question of the research process as a whole being accurately conducted to be valid (Patel & Davidson, 2003). For example this is about making correct analysis when analysing the result of the interviews. . This has been done by summarizing the answers after conducting each interview. After this the text has been sent to the person interviewed and the interview object has got the chance to make corrections if something has been misunderstood or wrongly stated. This has been done to get as valid data as possible from the interviews and to avoid biases. As mentioned in the section of literature review the literature has undergone reviews in order to determine its validity, and only the literature considered valid has been used in the study.

2 Theoretical Framework

This chapter will explain the theory behind regulation. It will guide the reader through what a bank is, regulation of banks and end by a description of different approaches to regulate banks.

2.1 The banking industry

Knowledge about how a bank works helps when analysing its regulations. The knowledge is needed to fully understand the importance of regulations and why the Basel Accord works in the way it does.

2.1.1 What is a bank and how does it work?

As mentioned in the introduction, most individuals use a bank account to store money. Also, many individuals take loans at a bank to finance, for example, a house or a car. Banks can be described as financial intermediaries with the core activity of collecting deposits from savers and providing loans to borrowers (Casu et al., 2006; Howells & Bain, 2008). Funds that have been collected from savers make up banks liabilities. When an individual goes to a bank to borrow money an asset is created for the bank. This transformation process is what characterizes a bank.

According to Casu et al. (2006) there are different types of transformation processes a bank performs. These are divided into three sub-categories: Size transformation, maturity transformation and risk transformation. Size transformation refers to the fact that individuals depositing their money at a bank usually deposit a smaller amount than what borrowers wish to borrow. Banks collect the deposits and repackage them to larger amounts, which can be lent out to borrowers. Generally, deposited funds are deposited for a shorter time period than the loans written by the bank to borrowers. The bank performs a maturity transformation, which turns funds deposited for a short time into funds that are borrowed for a longer time. When funds are lent out there is always a risk that the borrower will not fulfil the agreement and repay the loan. The bank transforms this risk, by diversification, to minimize the effect on an individual saver.

2.1.1.1 Risks

What is in common and special about banks is a type of instability. A depositor expects to be able to withdraw money from the bank account as he or she wishes. It is challenging for banks to predict when a depositor decides to withdraw money and a risk arises in the bank-

ing industry. This risk is called liquidity risk (Howells & Bain, 2008). Liquidity risk is not the only risk a bank faces. Howells and Bain (2008) divide the risks a bank faces into three categories: asset risk, liquidity risk and payment risk. Asset risk is the risk attached to the assets. Recall that banks' assets were the funds lent out to borrowers. It becomes evident that this is a risk associated with the possibility of a borrower not repaying the loan. This risk may also be a sub-category to asset risk called credit risk. Asset risk may also be connected with changes in interest rates, which may alter the value of assets. The last category of risk; payment risk deals with the possibility that the funds to be paid are not available. An example of payment risk is demonstrated when a person writes a check to another person. The receiver of the check wishes to cash in the check. Payment risk means that the funds are not available and the check cannot be cashed in.

2.2 Regulation of banks

It is evident is that banking is a risky business. Individuals are assumed to be risk averse i.e. they want to minimize their exposure to risk. Regulation of banks may reduce risk connected to the industry.

For banks, as with other firms, assets and liabilities should add up. For banks this means that potential losses have to be borne by a bank's capital. This is illustrated in figure 1.

Assets	Liabilities
Cash and liquid assets	Capital
Loans	Deposits

Figure 1 - A simplification of a bank's balance sheet (Casu et al., 2006).

Casu et al. (2006) gives an example where banks lend out money and do not get repaid. This means that the asset side on the balance sheet decreases. Assets and liabilities have to add up, meaning that the liabilities side has to decrease as well. This means that the capital have to bear the losses from bad loans. If the bank does not have enough capital to bear

the losses, deposits will have to cover the rest of losses. This implies that all of the depositors will not be able to withdraw their money whenever they want. If rumour gets out to the depositors about this, they may go to the bank to withdraw their money. This can lead to a bank run. A bank run means the situation when individuals go to the bank withdrawing their money in the belief that the bank may fail. Which might actually cause the bank to fail. This is because the bank may have to liquidate all of its assets or cash them in at loss and the bank may fail (Diamond & Dybvig, 1983).

Failure of one bank may seem like an event that only affects the customers of that certain bank. It is bad if some depositors loose their savings in terms of money deposited but it may look like a single event. Many times this is not the case. The banking industry is an industry that is interconnected. If individuals loose their money from one bank, the individuals may still have money deposited at another bank. In order to pay bills etc. the individuals may go to this bank to cash out money, which could lead to a bank run also on this bank because of the many withdrawals. And a spiral effect of bank runs may occur. If the individuals do not have money at another bank, they might alternatively have an asset they would be obliged to sell in order to cover their bills. If they are in a rush to sell these assets the assets may be sold at under-price, which may lead to a decrease of asset prices. As mentioned before, the decrease of asset prices is a characteristic of asset risk, which is a risk that may lead to banking failures in a similar way as liquidity risk can (Howells & Bain, 2008).

A bank run can occur even with regulations in place. However, one of the reasons regulation exist, is to prevent this from happening. The regulations ensure that banks have enough capital to cover losses and liquid assets in case of sudden withdrawals. Accordingly, regulation for banks' capital structure exists. The Basel Accord is this type of regulation.

2.2.1 Regulation using different approaches

Financial institutions can be regulated by using either a macroprudential approach or a microprudential approach (Hanson, Kashyap & Stein, 2011). Theory for these two approaches will be explained in more detail in this section.

2.2.1.1 Microprudential approach

Hanson, Kashyap and Stein explained a microprudential approach in 2011 by talking about deposit insurance. They explain that deposit insurance may give bank managers an incen-

tive to take on extra risk. Deposit insurances are given by governments to prevent bank runs. By insuring the depositors that they will receive their money even if the bank would fail, the depositors may feel safe and may not rush to the bank to withdraw their money in case of trouble in the bank. Though this is a positive effect Hanson, Kashyap and Stein (2011) explain that this may create a moral hazard. Since bank managers may not be that cautious against bank runs because they know that insurance will cover up. This may induce them to take larger risks. Furthermore, Hanson, Kashyap and Stein (2011) explain that the goal of capital regulation is for the banks to cover up their losses internally and thereby removing the moral hazard by protecting the deposit insurance. They explain that microprudential regulation works if the probability of using the deposit insurance is reduced to a low level.

It is explained in section 2.2 that capital has to bear losses and that deposits have to be used if the capital base is not enough. The goal of having a capital regulation is that the capital base should always be enough and that deposits do not have to be used. In the capital regulation there is an assumption that the capital base will always return back to the minimum per centage level specified by minimum capital requirement, even if it has been used to cover losses. This can be done by either retrieving new capital from the market or by reducing assets. Hanson, Kashyap and Stein (2011) explain that it is in this the critique for a microprudential approach lies. Because from supervisors' view they only care about that the capital base is there and that the requirements are met, they do not care in what way the capital base is returned to the required level. If this is something that only concerns one bank it may not be of that great importance. For example, as Hanson, Kashyap and Stein (2011) explains, if one bank shrink its assets by not lending out more money another bank may do the lending instead. But if many banks are cutting their assets and do not lend out to borrowers this may hurt the economic market.

Zhou (2010) mentions that the focus on individual banks is a flaw of microprudential regulation, since so many banks are interconnected today. But the author concludes that microprudential tools may still be used for the regulation, it is just the view and supervision on the financial institutions that may need a more macroprudential view.

2.2.1.2 Macroprudential approach

Microprudential regulation focuses on individual financial institutions with regulation of capital as a main regulatory tool. The alternative is macroprudential regulation.

Macroprudential approach is more focused on the wellbeing of the whole financial system and not only individual financial institutions. Hanson, Kashyap and Stein (2011) give examples of tools that can be used in a macroprudential approach. For example, they propose time-varying capital requirements, higher-quality capital, regulation of shadow banking system and time variations in banks' capital ratios and lending rates.

The time-varying capital requirements builds on the idea of letting banks vary their capital base according to market movements. In bad times they can be allowed to draw down their capital base and then in good time build up buffers that can be used in bad times. Challenges with this tool is that it has been seen that the minimum regulatory requirements are usually lower than what is required by the market to handle the bad times. Hanson, Kashyap and Stein (2011) says that for this to work the minimum capital requirements have to be a lot higher than what the market requires the bank to have in bad times.

In microprudential regulation there is not much difference between having preferred stocks or common equity in the capital base. But from a macroprudential point there is a difference; common equity is seen as a higher quality capital than preferred stocks. The difference is that if a bank tries to recapitalize by issuing equity and if preferred stocks were in the capital base the issued equity have to first go to the preferred investors. While if the capital base would have had more common equity the newly issued equity could have been used to build the capital base. More new equity is required to build a capital base if the capital base included more preferred stocks than common equity. To solve the problem a macroprudential tool with a requirement of high quality capital could be used (Hanson, Kashyap and Stein, 2011). Using higher quality capital gives more stability to the whole sector because the need for one bank to recapitalize is not as great when the base builds on high quality capital. Thus the problem of recapitalization by banks affecting the whole market mentioned in the section on microprudential approach may be minimized.

By regulating the shadow banking system financial institutions under, for example, the Basel Accords could be better protected. In the financial crisis starting in 2007 a market where many institutions in the shadow banking system were active collapsed. As is explained in later sections this lead to effects in the banking industry as well. Hanson, Kashyap and Stein (2011) say that an important macroprudential tool is to regulate everyone conducting about the same business in the same way.

Ingves (2011) mentions that macroprudential tools are the way forward in regulation. But there are not only positive effects from macroprudential tools. If not coordinated properly with the monetary policy conducted mainly by central banks, there might be more damage than good, since the macroprudential regulation may make monetary policies to not work. Monetary policies are an important tool used to stabilize the market and the effects if this not work may be bad.

The theory mainly used in the Basel Accords has been microprudential but regulation building on a more macroprudential approach is added in Basel III. To summarize; microprudential regulation focuses on strengthening individual banks at bank level. Macroprudential regulation focuses on risks on the whole banking system and tries to minimize those (BIS, 2012b).

3 Background

In this chapter the reader will be introduced to the background of this paper. Description will be made of the Basel Accords and the financial crisis of 2007- today. Also potential obstacles to regulation will be introduced.

3.1 The Basel Accord

3.1.1 Basel I

The first framework to measure banks' capital adequacy was assigned by BIS in 1988 and was called Basel I. The main objectives of Basel I was to make the soundness and stability of the international banking system stronger and to make competition equal among international banks. This accord focused on banking in terms of lending. The focus in the regulation was on credit risk (Eun & Resnick, 2008).

3.1.1.1 Minimum capital adequacy

The minimum capital adequacy for risk-weighted assets under Basel I was set at 8 per cent. Capital was divided into two classes Tier 1 and Tier 2 capital. Tier 1 capital was referred to as core capital. Included in Tier 1 was for example common stockholders' equity and non-cumulative perpetual preferred stocks. Requirements for Tier 1 capital was set to be the capitals risk weight times 4 per cent of risk-weighted averages. The supplementary capital, Tier 2, was for example reserves and long-term and convertible preferred stock. Tier 2 capitals were restricted to be maximum a 100 per cent of Tier 1 capital. Together they outlined the total capital, which was required to be a minimum of 8 per cent of weighted risk assets, times the risk weight. From the capital certain deductions were allowed to be made, goodwill could for example be deducted under certain criteria from Tier 1 capital (Balthazar, 2006; Casu et al. 2006; Eun & Resnick, 2008).

Eun and Resnick (2008) explains that the risk-weighted assets were divided into four categories in which the assets respective weight was set. Assets weighted at zero per cent were assets labelled as no risk, for example US government bonds. Short-term claims were seen as low risk and were weighted at 20 per cent. House mortgages were seen more risky and weighted at 50 per cent. The last category was for the riskiest assets with a respective risk-weight of 100 per cent.

3.1.1.2 Risk-asset ratio

To calculate the required minimum capital an approach called risk-asset ratio was used. Casu et al. (2006) explains this approach in a good way. First the assets should be classified according to risk-weights. Second off-balance sheet assets should be converted to their on-balance values. Third the money value of the assets should be multiplied with their weight and finally the risk-weighted assets should be multiplied with the minimum capital per centage. Figure 2 is illustrating this approach with an example.

Assets of Bank X:

Asset	Amount	Risk-weight	Risk-weighted assets
Government bonds	€ 100	0%	€ 0
Short-term claims	€ 300	20%	€ 60
House mortgages	€ 600	50%	€ 300
Commercial loans	€ 900	100%	€ 900
Total	€ 1900		€ 1260

Minimum capital requirement: $8\% * \text{total risk weighted assets} = 8\% * € 1260 = € 100.8$

Hence, under Basel I Bank X was required to hold at least € 100.8 of capital.

Figure 2- Calculating minimum capital requirement under Basel I (Casu et al., 2006)

3.1.1.3 Critique of Basel I

Balthazar (2006) give critique of Basel I. Seven specific points is laid out as the weaknesses of Basel I. The possibility for banks to keep the risk level almost unchanged while at the same time lower the capital requirements is one. This could be done through securitization using a special purpose vehicle (SPV). Basically this means that the bank sell loans to SPVs and the SPV usually get a subordinated loan from the bank. The SPV issues securities on the loans to get funding to buy the loans. This means that the loans are collected by the

SPVs and packaged to form securities. The securities are then sold by the SPVs. Since it is the loans issued by the bank underlying the securities then the risk level remains at 100 per cent, if this was the risk-weight assigned to these loan from the beginning. But the SPVs has lower risk weight which requires the bank to have a lower capital buffer backing up the loans.

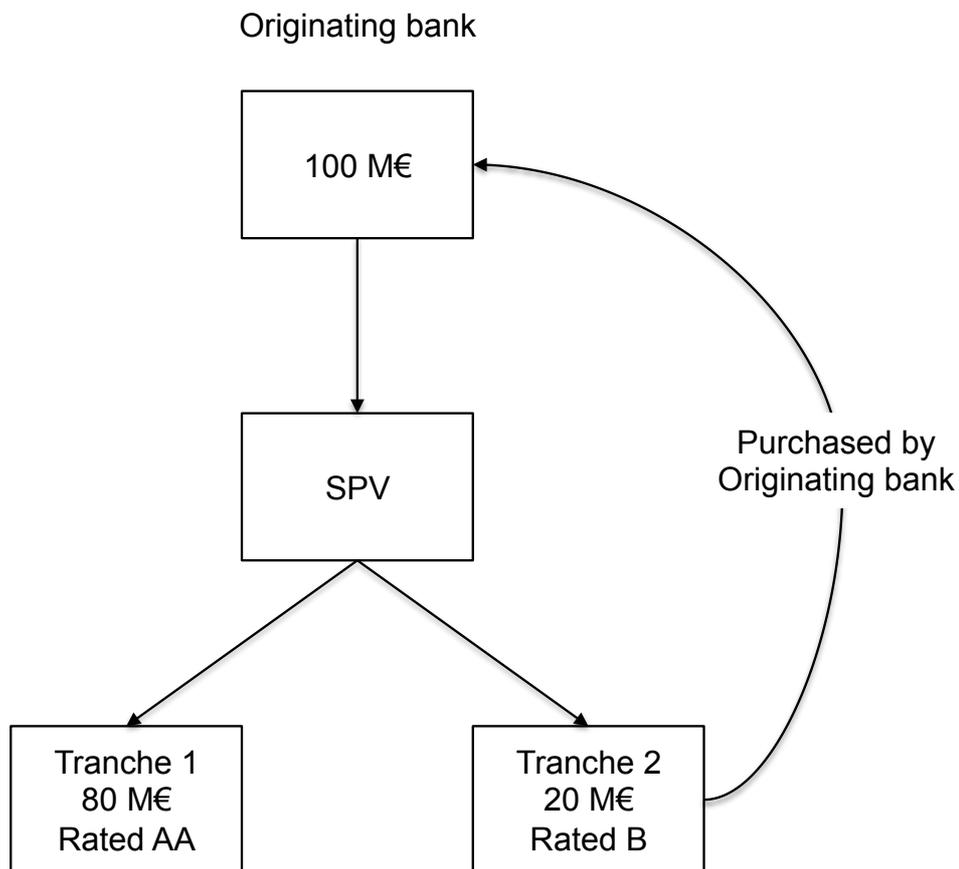


Figure 3- SPV construction (Saunders, A. & Allen, L., 2010)

Example from Saunders (2010) explains how banks arbitrage from securitization. In Figure 3 a bank has 100 M€ BBB rated loans. The bank constructs a SPV (see figure) out of the loans with two tranches. The first tranche is structured to protect against defaults and receives a higher credit assessment rating. The second tranche is low quality. The first tranche is sold to outside investors and the bank or its subsidiaries buy the second tranche.

Because under Basel I these risks were weighted with same weight, having 20 M€ of credit bonds results in a 1.6 M€ capital requirement (see Table 1). That is 6.4 M€ less than with 100 M€ of loans which had almost the same risk as the bonds. The bank arbitrated 6.4 M€ this way, meaning that the capital requirement was 6.4 M€ less.

	Amount (M€)	Risk-weight	Capital charge (M€)	Arbitrage (M€)
Original loans				
Mortgages	100	-	8	-
Basel I				
SPV, tranche 2	20	-	1.6	6.4

Tabel 1 - Arbitrage from securitization (Saunders, A. & Allen, L., 2010)

Other critique by Balthazar (2006) is that Basel I only focused on credit risk. Banks are exposed to more risk than that. Basel I had almost the same requirements for all type of activities of the bank. Meaning that different risk levels etc. were ignored. The lack of recognition of diversification is also pointed out as a critique.

Eun and Resnick (2008) also give critique to Basel I regarding the lack of recognition of other risks. They focus especially on the omission of market risk in the framework, which made banks fail even though they followed the minimum capital requirement set out by Basel I.

3.1.1.4 Regulated and united banking industry

Although Basel I got a lot of critique, the framework paved way for a regulated and united banking industry that worked under same regulations. The goal of equal competition between international banks was closer to be fulfilled (Balthazar, 2006). Casu et al. (2006) also highlight this step forward in regulation that Basel I was. But also describe the critiques that Balthazar (2006) explained.

An amendment to Basel I was published in 1996. This gave some improvements, but it was not enough. For example, market risk was introduced in the amendment (Casu et al. 2006). Because of the critique of Basel I, the Basel Committee started to reconsider the framework and in 1999 the first proposal to a new framework, Basel II, was published (Balthazar, 2006).

3.1.2 Basel II

Basel II has a design of three pillars, see figure 3.

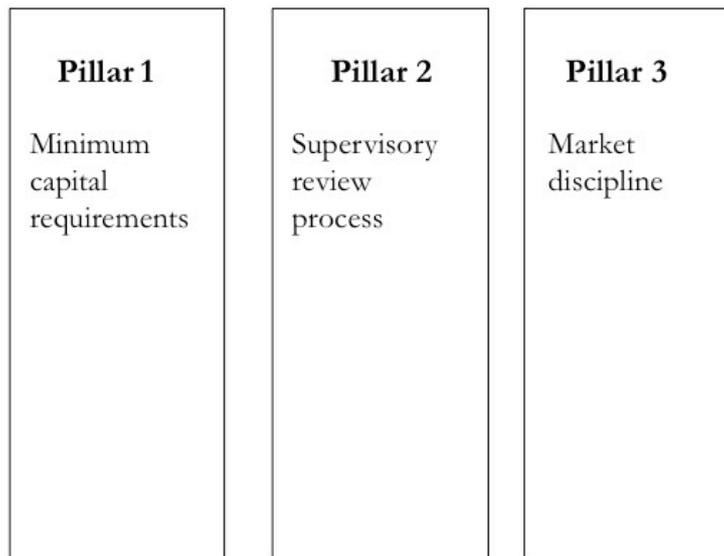


Figure 4 - The pillars of Basel II (Balthazar, 2006).

3.1.2.1 Pillar I - Minimum capital requirement

The Basel Committee on Banking Supervision (BCBS) explained in year 2004 that the first pillar is concerned with the calculation of minimum capital requirements. It is divided into different risk areas: credit risk, operational risk and market risk. The credit risk is divided into three approaches that can be used to find this risk. As with Basel I, the minimum capital requirement is 8 per cent. What has been changed in Basel II is that this requirement now includes adjustment for different risks and, as mentioned, different approaches to calculate the credit risk.

The total risk weighted capital is multiplied with 8 per cent as in Basel I. The difference is that the total risk weighted capital is calculated in a different way. The sum of the risk-weighted assets from credit risk is summed up together with 12.5 per cent of the capital requirements for operational risk and market risk (BCBS, 2004).

According to the Basel Committee on Banking Supervision (2004) banks can use three approaches to find the credit risk; the standardized approach, the internal ratings-based (IRB) approach or a securitization framework. The standardized approach is based on the Basel I

way of calculating the credit risk. Assets are given risk-weights, which will be the ground for capital requirement. The weights given are those decided in the framework. The second approach is the IRB approach and gives the bank a right to use its own internal system to classify the risk-weights given exposure to risk. Banks may use the IRB approach if the bank has received supervisory approval. The securitization framework is the last way of deciding the credit risk for the minimum capital requirement. This means that banks have to decide if a transaction should be under the securitization framework when deciding the regulatory capital. If it is, then it should be backed by capital; the banks have to hold capital that backs up all of their securitization (BCBS, 2004).

Operational risk is defined as risk that may result from internal or external operations conducted through bank activities. Different methods can be used to calculate this risk as well (BCBS, 2004). Eun and Resnick (2008) gives example of operational risk, which could be fraud or computer failure resulting in loss of data.

Trading book activities is the last step in pillar 1. It is here the market risk is found. The definition of market risk that was included in the amendment of Basel I in 1996 is here re-defined (BCBS, 2004). Marking to market value is what decides the market risk. This is the value of the assets to the market and this value should be up to date. If this value is not available or in some other way cannot be used, the marking to model value should be used (Eun & Resnick, 2008).

3.1.2.2 Pillar 2- Supervisory review process

Basel Committee on Banking Supervision (2004) explains that this pillar is for regulators to be able to see that a bank is properly capitalized regarding their risk exposure and to make banks come up with their own internal methods to review processes. This means that pillar 2 should make sure that pillar 1 is fulfilled. Balthazar (2008) explains that this pillar gives the regulators right to take action against a bank that do not fulfill the capital requirements.

3.1.2.3 Pillar 3- Market discipline

This pillar wants to incorporate market discipline into banks; making banks publish information about their risk assessment and the way they will use Basel II. The information will make it easier for market participants to judge banks' soundness (Balthazar, 2006; Casu et al., 2006).

3.1.2.4 Critique of Basel II

Tarullo (2008) explains that the biggest news in Basel II compared to Basel I was the IRB approach that let bank use there own method for setting capital requirements. It is also this method that has got a lot of the critique directed towards Basel II. He explains that this model was developed with the benefit that banks could shape their requirements after the specific risks that they were exposed to. A good thought but it is also here the critique lies. Credit risk models were in the time of Basel II implementation a relative new phenomena and had not been used that much.

Tarullo (2008) explains that it was risky to let banks develop their own credit risk models because knowledge of credit risk models was not that widespread yet. He raises the question of reliability of the banks own models. Five points are laid out concerning the reliability. First, is the question of the model's assumptions. If these are not good the model cannot be good either. It is hard to test these models because good test data did not exist when Basel II was developed. Third, correlations among variables may not be correctly captured in the models. The forth point is an important one. Banking failures and crises are events that are likely to be found in the tails of models, which are important to capture in a good way. The last point comes from the fact that not all risks come from the outside. Risks may as well come from inside the bank and this might not be reflected in models.

3.2 The financial crisis of 2007-today

During the financial crisis of 2007-today Basel II was seen as having some flaws, the IRB approach was one, and it was time for the Basel Committee to gather again and to attend to those flaws. This work led to the framework called Basel III (BIS, 2010). To understand the changes made in Basel III compared to Basel II, background of what occurred during the crisis need to be clarified.

3.2.1 Causes and effects

According to Chang (2010) the crisis started with overvaluation of the housing market in the United States in 2006. Consumers on the housing market received loans easily and there was a belief on the market of increasing house prices. Lenders gave out loans easier to consumers because the rising market of certain financial instruments. These were for example mortgage-backed securities (MBSs) and collateralized debt obligations (CDOs). The-

se instruments transferred the risk associated with the loans to the investors, which made lenders more willing to set up loans.

Fabozzi (2009) explains that MBSs is debt obligations that are issued backed by cash flow coming from a pool of mortgage loans. This pool of mortgage loans is residential mortgages that have been packed together. The principal or interest that investors receive comes from interest payments and principals that are made by the borrowers of the mortgage loans; this is what is meant with that the securities are backed by mortgages. Securitization is the name of the process of creating MBSs. CDOs is securities that are backed by a pool that is diversified and includes different type of debt obligations. MBSs are for example a debt obligation that might be a part of a CDO.

The market for these securities, or financial instruments, grew and investors from all over the world started to invest in the housing markets of United States (Chang, 2010). But in 2006 interest rates rose and house prices started to decline. Which led to the collapse of this market and came to affect not only the United States.

The creation of investment instruments that should meet specific type of risk exposure is called financial innovation. MBSs and CDOs were part of the financial innovation before the crisis. As mentioned these helped in increasing the credit flow, but they are also sometimes mentioned as ways of bypassing regulation (Chang, 2010). But what happened in 2006 was that house prices declined and the housing market collapsed (Acharya, Philippon, Richardson & Roubini, 2009). When this happened it turned out that the new financial innovations instruments were hard to price. And they had larger risk connected to them than expected (Chang, 2010). The instruments were so complex that banking regulators had left the risk pricing to be made by the banks themselves.

3.2.1.1 Shadow banking system

Main investors in these instruments were hedge funds and investment banks. These are part of an industry called the shadow banking system. The shadow banking system is not under the same regulations as the banking industry. The shadow banking system collapsed during the crisis due to high leverage or debt ratio and has been seen as one of the causes of the crisis (Chang, 2010). Investment banks in U.S. like Bear Stearns, Merrill Lynch, Goldman Sachs and Morgan Stanley were all highly leveraged and received some kind of help through bailout programs provided by the government. Lehman Brothers was another big investment bank but got liquidated in the crisis and hence did not receive any help from

the government in the form of a bailout (Chang, 2010). The BCBS also put high leverage in the banking industry as one of the triggers for the financial crisis. Or they state that high leverage was the reason that the crisis became so large (BCBS, 2010).

Fannie Mae and Freddie Mac were two corporations providing MBSs to the market. These corporations existed to help consumers to easier receive loans from financial institutions. But when the housing bubble burst these were placed in conservatorship by intervention of the government (Chang, 2010).

3.2.1.2 Crisis in Europe and Asia

As already mentioned, the investment in MBSs and CDOs were not just made by investors in US, the instruments have been sold in Europe and other places around the globe as well. Chang (2010) describes that it developed to a liquidity crisis in the credit markets. Many countries got affected. In the United Kingdom (UK), Bank of England had to step in to help banks. In 2008 the major banks of Iceland collapsed, partly due to the bank run that had started to occur in the UK. It even led to the Icelandic government taking over the control of banks. Ireland and its overleveraged banks came into a recession in 2008 after have been hit by the crisis. Hungary, Russia, Spain, Ukraine and Dubai were other victims of the financial crisis. Some of these countries even needed to get emergency loans from the International Monetary Fund (IMF) or the European Central Bank (ECB). Greece is another country that got hit hard and is still under the process of being saved through loans from the ECB (Chang, 2010).

3.3 Potential obstacles to regulation

3.3.1 Too big to fail

Governments and central banks throughout the globe have cleaned up after banks in this financial and economic crisis. A question raised from this is the moral hazard that bailing out may lead to. It may send a signal to banks that it is alright to take big risks and loose money because the government will save the bank if things go bad. This leads to the question of banks being too big to fail (TBTF) or too important to fail (ITTF). This is an important question when evaluating banking regulation, because it may have large effects on the effectiveness of the regulation.

Moosa (2010) explains that TBTF is a saying that government cannot let big firms fail because of that they are big. It comes from the thought underlying systematic risk, which is the risk of bad consequences on the whole market if a firm fails. The banking industry is an industry that is very interconnected; the failure of one bank may lead to bad consequences on the whole industry. That is why TBTF is a concept that affects this industry a lot. There are different meanings when talking about TBTF but when it comes to banks and especially in light of the crisis it means that a bank is too big to be allowed to fail.

Firms that are big have advantages compared to smaller firms. This comes in form of greater market power and greater ability to diversify. Diversification means spreading out of risks. And not at least for banks it may come as a benefit of being bailed out in case of failure. Bailing out by the government means that the government steps in and takes over the management of the bank. This protects the depositors of the bank (Moosa, 2010).

Moosa (2010) says that it is a big problem with bailing out of financial institutions. When an institution gets bailed out taxpayers' money is used. This money could have instead gone to health care or school etc. And it leads to future generations being affected. Also a problem with TBTF is that it creates a moral hazard. As already mentioned, if a bank is bailed out when it fails this may give the signal to other banks in the industry that are in the same size that they also are TBTF. This may induce them to take larger risks than before because they now believe that they are being protected.

It is the size of the banks that is in focus in TBTF. Moosa (2010) suggest a solution to the problem; regulate the size of banks. Meaning that banks should not be allowed to get so big that they are classified as being too big to fail. This is an important note to keep in mind when analysing Basel III

3.3.2 Implementation of Basel III

For Basel III to work it is crucial that it is implemented. Avery (2011) explains that Basel III is not itself legally binding. Hence, Basel III will only work if national authorities all over the world implement it. Danske Bank (2011) explains that the framework will be implemented in the European Union through the capital requirements directive (CRD IV). This directive has modified the rules of Basel III a bit but the underlying guideline is that of Basel III. According to Avery (2011) it is expected that Basel III will be implemented in US as well. The Basel Committee's member countries are going to implement Basel III

through their national law or in some other way, like CRD IV for EU countries. Member countries are, except for EU countries and US, for example Australia, China, Russia and countries from South America like Mexico and Brazil (BCBS, 2012).

What can be seen as a challenge is the speed with which Basel III will be implemented since it has to be implemented by national authorities. Implementation in EU is expected to start in middle of 2012 (Danske Bank, 2011). One of the failures with Basel II was that it in many ways was not yet implemented during the financial crisis of 2007-today. Still many countries are implementing Basel II and may not focus on implementation of Basel III for a long time (Chorafas, 2012).

4 Basel III

This chapter will describe the Basel III framework and previous research about Basel III. It explains the theory behind Basel III and what new elements that is included.

4.1 Description of the Basel III framework

According to the Basel Committee on Banking Supervision (BCBS) it is important with a banking industry that is strong and easily able to recover from financial stress (BCBS, 2010a). The reform of Basel II into Basel III wants to improve the banking industry accordingly. The BCBS has reformed the framework to try to amend the market failures that became evident in the financial crisis. The lessons learned from the crisis are coming to use. This chapter will present the new framework as described by the BCBS in the document Basel III: A global regulatory framework for more resilient banks and banking system (2010a).

Basel III builds on the three pillars from Basel II. Focus is on enhancing the quality and quantity of the capital and to have stronger risk coverage. New elements or changes in Basel III are:

- Raising quality of capital base
- Strengthening of risk coverage
- Leverage ratio
- Capital conservation buffer
- Countercyclical buffer
- Systematically important financial institutions
- Liquidity standards

4.1.1 Raising quality of capital base

BCBS (2010a) explains that during the crisis it became evident that it was an inconsistency in the way capital was defined between jurisdiction which made it hard to compare the quality of capital. The need for a capital base of high quality was also revealed. Innovative hybrid capital that in Basel II could be up to 15 per cent of Tier 1 capital will be phased out. Hybrid capital is capital that on one hand is debt and on the other hand is equity. For depositors it acts as equity but for tax reasons it act as debt (Huertas, 2008). Tier 1 capital

is redefined to include high quality capital like common shares or equity and retained earnings (BCBS, 2010a).

The structure of minimum requirements for capital is changed as well. The total capital has to be at least 8 per cent, as in Basel I and II, but the Tier 1 capital now have to be at least 6 per cent of risk-weighted assets. Also out of the total capital requirement of 8 per cent the capital has to constitute of a minimum of 4.5 per cent of common equity tier 1 (CET1). This is what strengthens the quality of the capital base. CET1 capital is for example retained earnings and common shares issued by the bank. The Tier 2 capital has got an objective of providing loss absorption. Also certain items that were deductible to 50 per cent from Tier 1 or 2 capitals under Basel II have now received a risk-weight of 1250 per cent. Examples of these are certain securitization exposures and significant investment in commercial entities. The requirements of raised quality of capital base have to be met by 1 January 2015 (BCBS, 2010a).

4.1.2 Strengthening of risk coverage

Risks associated with derivatives and other on- and off-balance sheet risks were seen in the crisis not to be captured in a right way, the risks were higher than expected. Already in 2009 amendments to this were undertaken by BCBS by reforming the Basel II framework. This meant that by the end of 2011 capital requirements for trading books and some securitization exposures had to be raised. Basel III enhancements will be made by introducing measures that will make the capital requirements for counterparty credit exposure stronger. The goal here is to raise the capital buffers that these exposures are backed by and to reduce the procyclicality in the industry as well as other actions to try to reduce systematic risk. Other actions are for examples by giving incentives to have over-the-counter (OTC) derivatives moved to central counter parties, to reduce counterparty credit risk (BCBS, 2010a).

Landau (2009) explains that procyclicality means that economic variables amplify the trends of the economic cycle. In a boom the trend goes higher than if procyclicality was not present. And during a recession variables makes the recession deeper than just by the swings of the economic cycle. Casu et al. (2006) explains that the OTC market is a market for derivatives that are being customized to the person or institution requesting them. One of the disadvantages with this is that there is no third part guaranteeing these contracts, as it is

under organized exchange, and thus the counterparty credit risk of default is higher. Counterparty credit risk is the risk of the counterparty to default (Casu et al. 2006).

The measures taken in Basel III are that banks must use stressed inputs when determining their capital requirements for counterparty credit risk. Also there will be a charge for something called credit valuation adjustment (CVA) risk, which is a charge for potential mark-to-market losses (BCBS, 2010a). Mark-to-market was the valued value of assets according to their market value. The risk weight for central counterparties (CCPs) will be low which will induce banks to use these because of the need for a smaller capital buffer than through other OTC parties (BCBS, 2010a).

4.1.3 Leverage ratio

From the story about the financial crisis of 2007-2010 in the previous chapter it was seen that high leverage was one of the causes of the crisis. Banks had high leverage and were forced to decrease this during the crisis, which caused an amplification of downward trends in the economic market. Included in pillar 1 of Basel III is now a leverage ratio requirement to constrain the leverage in the banking industry (BCBS, 2010a). A leverage ratio is explained by Berk and DeMarzo (2011) to be a ratio that measures the leverage in a firm so as to see the firm's funding ratio. BCBS (2010a) explains that the goal of the leverage ratio is to potentially capture the risk that may not be captured in the risk-weights for capital requirement measures and to be a complement to this measurement. This to try to limit or constrain the leverage in the banking industry. A leverage ratio of 3 per cent will be tested by BCBS under a period of supervision of banks' leverage ratios. The leverage ratio calculation should be based on the bank's accounting balance sheet and since off-balance sheet (OBS) items have been seen to potentially constitute of large leverage some of these should be taken in with a value of 100 per cent.

4.1.4 Capital conservation buffer

Recognition of the amplifying factors of procyclicality, especially during recent crisis, has made BCBS to take action towards this. In Basel III a capital conservation buffer is included as one of the steps for this. This buffer should be built up by banks in periods where the industry is not under stress and could be used for periods where the banks experience losses. This buffer is the extra capital that banks hold that is above the minimum capital requirements for capital (BCBS, 2010a). Furthermore, during the crisis it was seen that bankers

were taking out high bonuses etc. In case of banks not having a buffer above the minimum capital requirements in a period of no stress, BCBS (2010a) recommend the bank to build up a buffer by for example by reducing dividend and bonus payouts. The capital conservation buffer should constitute of 2.5 per cent of CET1 and will be fully implemented by 1 January 2019 (BCBS, 2010a).

4.1.5 Countercyclical buffer

Another action to reduce procyclicality in the banking industry is the so-called countercyclical buffer. This should protect the banking industry under periods where credit is growing in excess. Protection is needed because banks may experience large losses when a downturn in the economic cycle is preceded by an excess credit growth, which is meant by procyclicality. It is the national authorities that should monitor the credit growth and indicate when an excess period may be. When this happens there will be a requirement on a countercyclical buffer. The size of the capital conservation buffer will be extended with this countercyclical buffer and will be between zero and 2.5 per cent. The percentage will depend on geographic factors that affect the bank through its portfolio of credit exposure (BCBS, 2010a).

To summarize regarding the countercyclical buffer and the conservation buffer: in periods of excessive credit growth a countercyclical buffer should be in place and no need to build on a conservation buffer. And otherwise banks should build on a conservation buffer; while a countercyclical buffer is not needed i.e. these buffers complement each other (BCBS, 2010a).

4.1.6 Systematically important financial institutions

For banks that are seen as systematically important, i.e. they are in the group of systematically important financial institutions (SIFIs), there is a special requirement. Large important institutions are interconnected and may transmit shocks between each other, for this reason they are required to have a loss absorbing capacity that is above the minimum standards. This capacity should be between 1-2.5 per cent depending on how important the banks are in a systematic point of view (BCBS, 2010b).

4.1.7 Liquidity standards

Perhaps the largest change in Basel III is the added liquidity requirements. Potential losses in a bank have to be borne by the bank's capital. For the capital to bear losses it has to be

liquid or be able to be liquidated quickly. Basel I and II were focusing on banks capital, but in Basel III there is an added requirement on liquidity on the outside of capital requirements. Recall from the chapter on financial crisis of 2007-2010 that liquidity became an issue during the crisis. The capital was not able to get liquidated. And capital that is not liquid cannot be used to bear losses. The liquidity standards are set, as with the capital requirement, with a minimum requirement of liquidity. There will be two minimum standards, one for short-term and one for longer-term liquidity (BCBS, 2010a). The liquidity standard has to do with the bank's funding structure. Short-term funding is used to quickly get money and needs to be repaid usually within one year. Long-term funding works to build up a capital structure. The long-term funding has a maturity of over one year. From regulatory purposes long-term funding is preferred because it gives a better security (Casu et al., 2006).

4.1.7.1 Liquidity Coverage Ratio

The liquidity coverage ratio (LCR) is the short-term standard and has the objective to ensure that banks have enough liquidity for a period of 30 days. It works in the way that the bank should make sure that they have enough liquid assets to cover for a specific scenario under stress (BCBS, 2010a). The scenario is explained by BCBS (2010a) to be that the bank should be able to cover for a downgrade in credit rating, partial loss of deposits, loss of unsecured wholesale funding, significant increase in secured funding haircuts and increases in derivative calls on OBS exposures. BCBS (2010c) further explains that the banks should have so many high-quality liquid assets that they can manage under a stress period until day 30. The scenario for which banks have to pass includes many of the features of the recent financial crisis. The figure below provides a picture on how the liquidity standard is calculated.

$$\frac{\text{Stock of high-quality liquid assets}}{\text{Total net cash outflows over the next 30 days}} \geq 100\%$$

Figure 5- Calculating LCR (BCBS, 2010c).

The stock of liquid assets divided by the total net cash flow over the next 30 days should be larger than or equal to 100 per cent. Assets are classified as high quality if they can easily be converted in to cash and with no loss of value or only little loss of value (BCBS, 2010c).

4.1.7.2 Net Stable Funding Ratio

The net stable funding ratio (NSFR) is the second standard and has the objective of making sure that the banks have enough liquidity for a period of one year (BCBS, 2010a). This measure sets a minimum amount of stable funds of a bank for a period of one year. Long-term assets should be funded with a minimum amount of assets that is decided based on the long-term assets liquidity risk (BCBS, 2010c). The figure below describes how this ratio is calculated:

$$\frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} > 100\%$$

Figure 6- Calculating NSFR (BCBS, 2010c).

The available amount of stable funding divided by the required amount of stable funding has to be larger than 100 per cent. The available amount of stable funding means funding that is available over a one-year period and that is seen as reliable. Example of this is preferred stock with maturity of one year or more and liabilities with maturities of one year or longer. The required amount of stable funding is funding that the bank is required to have by supervisors. Supervisors measure the required amount by looking at the liquidity risk the bank is exposed to and then decide how much funding that should be backed by this. This is done with the help of a required stable funding (RSF) factor that basically works in the same way as the risk-weight factors when it comes to how to calculate the required capital (BCBS, 2010c).

4.1.7.3 Monitoring tools

In the liquidity standard, supervisors assign monitoring tools. These should help supervisors to decide the amount of liquidity risk that a bank is exposed to. Monitoring tools are for example a measure of the concentration of funding and the LCR by significant currency. The metrics should be updated continuously so that the LCR and NSFR can be properly calculated. By 1 January 2015 the LCR will be introduced while the NSFR is not introduced before 1 January 2018 (BCBS, 2010c).

The reason for these measures is that during the crisis it was found that supervisors globally had very different ways of calculating liquidity risk. A need for a global standard was seen

because of inconsistency between nations. Monitoring tools are the minimum amount of information that supervisors should use to decide liquidity risk exposure (BCBS, 2010a).

4.1.8 Summary of Basel III

The figure below summarizes Basel III:

Capital			Liquidity
<p><u>Pillar 1</u></p> <ul style="list-style-type: none"> - Capital <ul style="list-style-type: none"> - Quality and level of capital (4.5%) - Capital loss absorption - Capital conservation buffer - Countercyclical buffer - Risk Coverage <ul style="list-style-type: none"> - Securitisation - Higher capital for trading book - Counterparty credit risk - Leverage <ul style="list-style-type: none"> - Leverage ratio 	<p><u>Pillar 2</u></p> <p>Supplemental requirements including capturing risk that is connected to off-balance sheet exposure and securitisation activities.</p>	<p><u>Pillar 3</u></p> <p>Revised disclosure requirements relating to off-balance sheet exposure and securitisation activities.</p>	<ul style="list-style-type: none"> - Liquidity coverage ratio - Net stable funding ratio - Principles for sound liquidity risk management and supervision - Supervisory monitoring
<p>Systematically important financial institutions (SIFIs) These must have a higher loss absorbency ratio than other banks because of the greater risk they are to the financial system. A Tier 1 extra capital requirement ranging from 1-2.5 percent.</p>			

Figure 7 - Summary of Basel III (BCBS, 2010b).

4.1.8.1 Requirements and implementation time of new elements

The table below summarizes the new elements in Basel III and the quantitative details. Also included is the implementation time.

Capital requirements		
	Details	Implementation
Minimum capital requirement	8% Including 6% Tier 1 Including 4.5% common equity capital	1 January 2015
Capital conservation buffer	2.5% constituting of common equity	1 January 2019
SIFIs	Common equity Tier 1 extra capital requirement of 1-2.5%	1 January 2019
Total capital requirements	Non-SIFIs: 10.5% SIFIs: 11.5%-13%	By 1 January 2019
Countercyclical buffer	Range of 0-2.5% constituting of common equity	1 January 2019
Leverage ratio	3% of Tier 1 during a test period (year 2013-2017)	Defined in 2017 Implemented 1 January 2018
Liquidity requirements		
Liquidity coverage ratio (LCR)	High quality liquid assets to withstand stress for 30 days	1 January 2015
Net stable funding ratio (NSFR)	Stable funding to withstand stress of 1 year	1 January 2018

Tabel 2 -Requirements and implementation time of new elements in Basel III (BCBS, 2010a; BCBS, 2010b; BCBS, 2010c)

4.2 Previous research

4.2.1 Basel III Accord: Where do we go from here?

Went (2010) has, in his paper “Basel III Accord: Where do we go from here? ”, analysed Basel III and its possible effects on banking. He starts by describing Basel III and the new rules before analysing it.

In the analysis Went (2010) explains that to reduce the potential devastating effects of banking crises then Basel III has combined risk-based capital and liquidity standards. Furthermore, he states that the effects of Basel III cannot yet be seen and depends on several

intertwined factors. He starts by discussing the likely impact on banking. For the banks to have higher liquidity they will have to have higher amount of low-yielding liquid assets than they currently do. This means that their amount of high-yielding assets decreases which could lead to less earnings in banks and the banking industry as whole. Also, for the capital requirements to be fulfilled the paper suggest that banks will raise new capital, issue new types of financial instruments or in other ways get equity capital that works under the new rules. This is likely to bid up the prices of capital as well as the required return. There are other ways to raise capital; for example could dividend pay outs be reduced. All in all this will lead to banks that are less leveraged than before as well as reduced capital costs, funding expenses and equity risk premiums (Went, 2010).

Went (2010) believes that the banking industry's ability to intermediate credit in an effective and efficient way will be reduced due to that banks have to reduce their exposure to high risk-weights in order to meet the higher capital requirements. The counter-cyclical buffer is seen as a positive effect because it might reduce excess credit creation. Went (2010) see the long implementation time as something positive. He believes that it might help the bank to reduce the higher capital cost that might arise from the new rules. This in turn may imply that the credit cost banks may have to increase may decline again. An interesting point laid out by Went (2010) is that a stronger and more stable banking industry, which is the goal of Basel III, do not need the government to bail-out banks or in other way help the industry. This may reduce the risk premium associated with the risks of the industry.

Went (2010) ends his analysis by highlighting some flashpoints of Basel III: procyclicality, shadow-banking system, implementation, SIFIs and centralized counterparties. He is positive about the measures taken towards procyclicality but he believes that a major point is missing. The shadow banking system, recall that these were hedge funds etc., are not covered by Basel III rules but these are as well providers of credit. Procyclical effects may arise from this system as well as from the banking industry. Countries may choose how Basel III should be implemented. In fact some countries are still implementing Basel II, in what way Basel III will be implemented remains to be seen. But if it is not implemented it does not have effect. A fear of banks moving their business to locations where the rules are not as strong is also pointed out. SIFIs are required to hold larger capital buffer as well as the market for OTC derivatives is moved to central counterparties. Went (2010) explains that this might give a lot of focus to SIFIs and make the central counterparties to become sys-

tematically important. He points out that this effect was seen in the crisis to be something that might be devastating if a SIFI goes wrong. Finally, he states that it is important to learn from the crisis and not let that lesson go to waste and Basel III success depends on how the rules will be implemented.

4.2.2 What will Basel III achieve?

In their paper “What will Basel III Achieve?” Blundell-Wignall and Atkinson (2010a) has analysed Basel III and its possible effects. In the introduction they state that the shadow banking system did not play a large role in contributing to the financial crisis. It was the regulated banking industry and the high leverage of banks in the industry that caused the main damage. After the crisis reform packages developed at national and EU levels. According to Blundell-Wignall and Atkinson (2010a) these are not the most important reforms but the strengthening of capital requirements is. Political negotiations may make the process slow and may give poorly designed rules during the process. Basel III has been under these negotiations and has missed the opportunity for improvements that are meaningful (Blundell-Wignall & Atkinson, 2010a).

Basel III overrides management’s discretion with some of its drastic changes made to prevent recurrence of some of the elements of the financial crisis. This because that the rules are too complex and at the same time implementation period is too long. The definition of capital is under this critique because the many meanings of capital and that some changes in definition of capital is not implemented until 2023. The design of the leverage ratio has given an agreement that is broad and imprecise (Blundell-Wignall & Atkinson, 2010a).

The new definition of capital as well as the acts to dampen procyclicality is seen as good steps. And it is a belief that banks will implement many of the features before the implementation time is up, so the implementation time might not be as long as until 2019. But there are things in Basel III that is not seen as good things; for example the liquidity framework. The liquidity framework resembles the design of capital requirements, which might not be needed. According to Blundell-Wignall and Atkinson (2010a) then banks can manage their own liquidity without rules for it. This applies for banks that are solvent. Where banks are not solvent they think that liquidity issues is only a small part of the problem. They believe that this added liquidity framework draws away attention from the importance of the capital requirements (Blundell-Wignall & Atkinson, 2010a).

Furthermore, Blundell-Wignall and Atkinson (2010a) explains that the fundamental problems do not arise from Basel III but from the original design of the Basel framework. Diversification and its positive effects are ignored. By diversifying, risk can be spread out; this is not acknowledged in the Basel III framework. By not including the effects of this, a bias towards use of portfolios with specific asset classes, low-risk asset classes, is created. During the crisis some of these favoured asset classes were in the center. Critique is also given to the one size fits all approach that Basel III is.

Blundell-Wignall and Atkinson (2010a) gives proposals on the way forward from Basel III. They suggest that a banking industry might not even need the rules from pillar 1 of Basel III, this is because if there was no way for a bank to get bailed-out by tax money then banks would make sure themselves that they have enough capital buffer to absorb losses. They suggest that instead of a capital requirement there should be a leverage ratio that is appropriately designed. This to eliminate the tendency for banks to design their on- and off-balance sheet items to reduce the capital requirement. This would also remove the procyclicality that is caused by minimum capital requirements; left would be only natural procyclicality. To accompany the leverage ratio they suggest that diversification should be rewarded. A rewarded diversification may make banks avoid concentration of portfolio placement that was a main problem in the crisis due to the large investments in the sub-prime mortgage industry. Lack of diversification they suggest to be penalized with a need for a capital buffer (Blundell-Wignall & Atkinson, 2010a).

Blundell-Wignall and Atkinson (2010a) explains that pillar 2 allow supervisors, in some cases, to override pillar 1 rules if they think it is appropriate. But in fact supervisors cannot do all they want to interact and prevent failure in the banking industry; there are both political and other reasons behind this. In the paper they suggest that it is better to let bank managers manage and let the market control. Supervisors showed already in the run up of the crisis that they did not do that much to prevent it even if pillar 2 was under effect. This means that they suggest a stronger market discipline under pillar 3 instead. They summarize by answering the question asked in the title of the paper with the answer “not much” meaning that they do not believe that Basel III will achieve much at all (Blundell-Wignall & Atkinson, 2010a).

4.2.3 Thinking beyond Basel III: Necessary solutions for capital and liquidity

In an article in the OECD Journal: Financial Market trends, Blundell-Wignall and Atkinson (2010b) have again analysed Basel III. This article looks more on details of the different elements of Basel III, but the conclusion is about the same. They direct their critique towards the capital framework and the risk-weighting approach with the statement that the fundamental problems of this approach have not been addressed. However, they believe that the leverage ratio is an important reform as well as having the OTC derivatives traded through centralized counterparties. They motivate the importance of these reforms because of the possible avoidance of excess leverage that can develop into a credit bubble as well as reduction of counterparty credit risk.

The fundamental problems of the capital framework that they point out include the models framework, regulatory and tax arbitrage as well as the need for more capital. The framework problems addressed by Blundell-Wignall and Atkinson (2010b) are the same as in their previous article; the one size fits all approach and the concentration problem that may arise because of lack of positive incentives for diversification. Another problem is the possibility to conduct capital arbitrage and promise shifting through various transactions. This deals with transactions of securitization that was dealt with in chapter 3. A quick recap tells us that this is done through transactions between banks and different firms from for example the shadow banking system. The result is that the capital required for a bank to hold decreases but at the same time the leverage for the bank has increased. The financial promise is in this type of transaction often shifted to an actor in the shadow banking system. Blundell-Wignall and Atkinson (2010b) believe that more regulation on the banking industry will shift more and more transactions to the shadow banking system and they conclude that the same type of transaction should be treated under the same rules no matter if it is conducted in the regulated banking industry or in the shadow banking system.

In the document on Basel III there is a statement that a higher quality of capital is needed (BCBS, 2010a). Blundell-Wignall and Atkinson (2010b) address this with saying that it was not the quality of the capital that was the only problem in the crisis but the lack of capital. They are positive to changes in the definition of capital but say that the importance is to increase capital and reduce leverage, not only increase the quality of capital. Furthermore, they explain that the risk-weight approach and leverage ratio may not work that well to-

gether because of the ability for banks to reduce capital requirement while increasing their leverage. A leverage ratio may, if it is set too high, work as a roof for the level of capital. Banks may only hold so much capital that allows them to have the maximum amount of leverage, meaning for example that banks decide the leverage they want first and then hold the amount of capital corresponding to that leverage ratio (Blundell-Wignall & Atkinson, 2010b). This means that any excess capital, meaning capital that is above the minimum capital requirement, saved in the capital base would change the leverage ratio. And the bank may be induced to take away excess capital to keep the leverage ratio at their chosen level.

4.2.4 Basel III, the Devil and Global Banking

In the book “Basel III, the Devil and Global Banking” Chorafas (2012) has analysed Basel III and its possible effects. With almost 300 pages the book is conducting a real in depth analysis of the banking industry. One of the first thing the book treats are SPVs. Chorafas (2012) says that it is bad that Basel III does not regulate these because they were a great contributor to the crisis. He explains that SPVs were created to avoid regulatory constraints and could be used by banks to hide failed transactions. The reason for that they are not regulated could, for example, be that SPVs are hard to value (Chorafas, 2012).

Basel III does not cover high frequency trading (HFT) and high risk is associated with these type of transactions. High frequency trading refers to trading of financial instruments by computers with help of algorithms (Biais, 2011). According to Chorafas (2012) it is a large mistake not including technical trading and the possibility of flash crash in the regulation. The flash crash is a phenomenon that happened on May 6, 2010 and was a period where the market values fluctuated a lot up and down (Kirilenko, Kyle, Samadi & Tuzun, 2011).

Chorafas (2012) explains that Basel III has been under a lot of lobbying activities. He explains that lobbyists are trying to affect for example regulation to turn out in favour for the company hiring them. One thing under a lot of discussion have been the pay and rewards to bankers. Many bankers are reluctant to change this and are ready to send their lobbyists to protect their shares. The point stressed is that lobbying makes tough regulations hard to implement. And he means that has happened to Basel III leaving it weaker than might be needed to make a change (Chorafas, 2012).

The crisis of 2007-today came from the banking industry itself and not from some event happening outside the industry as has happened in previous crises (Chorafas, 2012). In the

book it is highlighted that it was greed from bankers, bad management and regulatory arbitrage that was the underlying causes. Recall that regulatory arbitrage is used to bypass rules in some way. Basel III is already looked through by the banking industry to bypass regulation by financial innovation. Chorafas (2012) suggest that regulators should more carefully look at ways to bypass regulation to detect all the risks in the industry and be able to regulate accordingly. He says that financial innovation always will take place and regulators cannot cover all possible arbitrage but that it is important that they are aware of the options so as to cover the risks associated with it. Furthermore, he states that under Basel III Tier 1 capital should not be able to be gamed with and that it should be punished hard to do so. This is because the Tier 1 capital is an important part of the banks capital structure and devastating effects could be seen if failure occurs in this capital (Chorafas, 2012).

In the financial crisis some banks got bailed out, according to Chorafas (2012) the banks being saved were too big to be saved. He makes a resemblance with pouring water in a bathtub but the plug is not in the tub. By manipulating capital requirement and risk management the banks were making themselves loose. By bailing these out during the crisis governments created moral hazard and a supervision problem. Chorafas (2012) suggest that institutions that are too large should also be required to have larger capital requirements as well as they should be supervised harder than other banks.

Critique on the implementation time is given especially for the long implementation time for the capital requirements. Chorafas (2012) explains that more capital is needed now and if that not happens a new financial crisis will be possible, because crises will not wait until the requirements are implemented. He also rejects the statement from banks that they need to increase their fees for depositors. Banks should hold on to more of their capital instead of paying it out as bonuses. The narrowed definition of Tier 1 capital is seen positively but, again, the implementation time is too long. He believes that market pressure will make the banks have higher capital and better liquidity already before 2019 and if not the banks will be punished (Chorafas, 2012).

Basel III get critique for not including personal accountability for the CEO, CFO and board members for banks' capital. If this would have been included an incentive from the management would be to really make sure that capital and liquidity was under control and healthy. During the crisis management in many cases did not give attention to the necessary information about risk and capital structure and no one really knew that banks were run-

ning out of capital. Chorafas (2012) again stresses the point that it is ashamed that this has not been regulated and that the implementation time is too long on what has been regulated. He continues by saying that the banking industry in the West cannot afford to have a banking crisis before that implementation date and that the effect can end up really bad if it happens. And that the long implementation time leaves a lot of time for banking industry to come up with derivatives that may bypass the rules, making a crisis occurring again likely (Chorafas, 2012).

Chorafas (2012) explains that the regulators of banking system is not as modern as the market and are usually late when it comes to regulation. Events are regulated after they have occurred. The regulators should always try to be ahead of the curve when regulating. Basel III has been put under political pressure and countries have tried to remove rules that might hurt their own economy. Importantly, he claims, the market discipline under pillar 3 should be left to work more. The policy of banks being bailed out, he claims, is one of the creators of bubbles that might burst into a crisis. He suggest that large banks and financial institutions would have incentive to look closely at their activities and decisions if they knew that they would be allowed to fail and know that they may face prosecution if they do. Another problem with pillar 3 he claims to be that banks themselves choose what information to reveal; information can easily be hidden (Chorafas, 2012).

For financial stability to exist then there is a need for the whole financial and economic system to be treated. Systematic risk runs over the whole industry. What Chorafas (2012) wants to say with this is that capital alone cannot prevent failure. Basel III has included two capital buffers; the normal capital requirement and the countercyclical buffer. But each bank have their own risk profile so Chorafas (2012) says that it would have been better if Basel III included a system for a personalized capital and liquidity calculation. Also Basel III should have addressed the TBTF problem but it does not. Chorafas (2012) mention the extra rules done by Switzerland to increase capital for the largest banks up to 19 per cent of risk-weighted assets as a good approach. The inclusion of deferred tax assets (DTAs) in Tier 1 capital receives critic from Chorafas (2012). He explains that DTAs are used to reduce the expected tax to be paid. These should not be allowed to be included in Tier 1 because Tier 1 capital should only consist of high quality assets, which DTAs are not. For example has DTAs been found as one of the underlying reasons for Basel II's failure in the financial crisis of 2007- today. He says that Basel III does not seem to be better in treating Tier 1 capital than Basel II were (Chorafas, 2012).

Chorafas (2012) comments the LCR by saying that this ratio being over 100 per cent is not enough. He says that the high quality term in the numerator is fuzzy and that the denominator with 30-days cash outflows varies by bank. He suggests that this ratio should be over 200 per cent instead. Also the measure excludes currency risk, which is valid for big global banks. For the NSFR he believes that the one-year period is not long-term at all as it states to be. He comments that if banks protests against this one-year period then they probably have something to hide. After all, he says, that a measure covering only 30 days is almost worthless.

Ending the analysis Chorafas (2012) concludes that one of Basel III's weaknesses is the long implementation time and the political pressure on regulators. He states that few central banks are independent from politics today and that for regulation to fully work this is necessary. Also he thinks that banks have to raise their capital requirement now and not wait until 2019. He believes that banks will continue their business as usual with paying out bonuses of their extra capital until 2019 instead of already now building a buffer. He believes that this may cause a crisis already before Basel III has been implemented because of the bad state of many banks today; the prediction is that the crisis will occur during 2014 (Chorafas, 2012).

4.2.5 Capital regulation after the crisis: business as usual?

Hellwig (2010) has written a paper on capital regulation and reforms after the crisis. In the paper he starts by saying that BCBS has concluded that too little bank capital was an important part of the financial crisis and that they have come up with several points to improve this. He continues by saying that a systematic analysis of why these measures should have a good effect is not presented by the BCBS or why Basel II failed. Analyses of these questions have been something that the banking industry and regulators has been unwilling to conduct. Hellwig (2010) believes that this is the first thing to start with before presenting new regulatory rules.

Hellwig (2010) starts by analysing financial crisis that started 2007 and says that this was not just a matter of a mortgage crisis in the United States but something that ended up taking the financial system down because institutions were highly leveraged, which made them fragile, and interconnected. The shadow banking system got build up during the time before the crisis and provided a new way for banks to invest in securities. This was one thing that made the possibility for banks to have high leverage as well as the model-based ap-

proach of Basel II opened up for this possibility. When most of the shadow banking system fell apart in 2007 then banks needed to raise capital in some way which in many cases was through deleveraging. Recall that when many institutions conduct deleveraging it may lead to assets prices falling, which happened. Central bank intervention was one of the outcomes (Hellwig, 2010).

After a description of the Basel Accord the analysis continues by concluding that focus has been so much on risk that the problem of governance has not been looked at. The governance problem results from two different interests: the interest from the public of financial stability and the private interest from the bank management (Hellwig, 2010). Hellwig (2010) continues with going through risks. The risks had not been properly accounted for in previous risk models especially the risk arising from correlation of credit risks between different mortgages and mortgage-backed securities. Also the correlation between counterparty credit risk and the underlying derivatives and other contracts made with counterparties were not properly accounted for. Hellwig (2010) says that the BCBS has wrong when looking at these problems as technical flaws that could be fixed through measures directed towards those flaws, instead he claims that it is an underlying problem with the model of capital regulation that should be fixed. The model to which risk is based is insufficient because it often builds on a too short time period and the events causing risks are rare and not always observable in the data (Hellwig, 2010).

According to Hellwig (2010) the objectives of capital regulation has never been specified and are thus unclear. Effects of implementing the rules over time have not got that much attention, also concerns that are systematic has been ignored. He says that this is why regulators have not been able to put up that much resistance against the banking industry and have fallen for pressure. Why capital should protect banks and maintain the soundness of the industry has not been clearly defined either. Focus should be more on how to implement capital over time; the two periods approach used now does not work in a modern world. The two periods approach refers to capital now and at a date in future. To match the modern world with investment decision taking on an on-going basis the capital should be adjusted on an on-going basis as well. Enough focus is not given to the systematic concerns especially the correlations mentioned, the systematic impact of deleveraging induced by regulation and the model-based approach (Hellwig, 2010).

Hellwig (2010) suggests two major changes: regulatory capital should not be tuned to detail according to the risks banks are taking and the capital requirement should be higher even up to twenty or thirty per cent. These proposals are based on the idea that capital should ensure the safety of the financial system as a whole. Capital should not be fine tuned according to risks taken because this has proved to decrease capital and create interconnectedness between banks in a hunt for lower capital buffers. All risks are not known; risk not recognized was the risk that in the crisis turned out to have enormous effects. High risk were found in places where risk had seemed low. Having equity as a buffer for risk not recognized is suggested as something that might be a good approach. A higher capital ratio, for example 20 per cent, makes the effect of an unexpected shock likely to be much smaller. As well it is a smaller chance for banks to spread the worries through their interconnectedness to other banks also government intervention is less likely. The deleveraging multiplier is smaller as well i.e. banks have to liquidate less capital than if capital requirements are lower.

Banks usually argue against higher capital ratio with the argument that it will increase the cost of lending. And that it is likely that a credit crunch will develop because of the scarcity of equity. Hellwig (2010) argues against this. The argument from banks typically are that the required return of equity is much higher than the required return on debt and that increase of capital requirement will increase the required return on equity more. And this extra increase of required return on equity has to be paid by the borrowers. Hellwig (2010) says that it is a fallacy in this because of the fact that required return on equity depends on the amount of equity that the bank has and that the returns to equity are riskier than to debt. This because of the fact that shareholders get the extra return that is left after debt and in case of bankruptcy this is usually nothing. From this it can be seen that the risk also depends on how the bank is doing. A bank that is well capitalized runs smaller risk of being bankrupt and the risk associated with equity decreases.

This is why Hellwig (2010) states that the banks are wrong when saying that their costs increase and that they have to increase the cost for borrowers. A bank with more capital decreases their bankruptcy risk, the required return of equity decreases, interest rates on debt decreases as well because of lower bankruptcy risk and the cost for banks' capital decreases. He brings up the Modigliani-Miller Theorem that changing the structure of a firm's capital structure cannot change the required rate of return. The changes will neutralize each other if no additional factors create a bias towards one of the structures. The critique that the

Modigliani-Miller Theorem would not work for banks he says is true when it comes to deposits but nowadays banks have transactions that reminds a lot of transactions for a typical firms and for this the theorem is valid (Hellwig, 2010). However, there is a bias towards debt because of government subsidies and taxes especially if it is expected that the bank will get bailed out. Also the bank's profit is subject to income tax payment but interest payments are not subject to tax. Hellwig (2010) concludes that this makes the statement that equity financing is more expensive valid, but he says that this is a tax issue and should not be an underlying cause for not raising capital requirements.

Hellwig (2010) ends his paper by saying that limiting competitiveness for individual banks should not be of concern for regulators. Rather regulators should look at the effects of the economy. If it is necessary to take actions that might limit competition but may prevent financial crises then these should be taken.

5 Interviews with banks and supervisors

This chapter presents the result of the interviews conducted with banks and supervisors. It starts by presenting the banks and supervisors and continues by presenting their answers to the questions asked in interviews.

5.1 Presentation of banks and supervisors

5.1.1 The Riksbank

The Riksbank is the central bank of Sweden. Among its responsibilities is the task to promote a payment system that is safe and efficient. They do this by monitoring the financial industry including banks and analysing the risks they are taking. Other tasks conducted by the central bank is to issue coins and banknotes and ensuring their value (Sveriges Riksbank, 2012).

5.1.2 Bank of Finland

Bank of Finland is the central bank of Finland. It is member of the Euro system and the European System of central banks. Among the tasks of Bank of Finland is to implement monetary policy decided on in the Euro system, conducting research as well as look after financial markets and statistics, banking operations and maintenance of the currency supply (Bank of Finland, 2012).

5.1.3 Finansinspektionen

Finansinspektionen is the Swedish Financial Supervisory Authority, which is a public authority. Their tasks include supervising, monitoring and authorizing all firms that are operating on the financial markets in Sweden. These firms include banks and other credit institutions as well as insurance companies (Finansinspektionen, 2012).

5.1.4 An investment bank

An interview was conducted with a person in the start-up process of an investment bank. This investment bank is going through the process of clearing by the Finnish Financial Supervisory Authority. Name is kept confidential due to the sensitivity of this clearing process. Below, this person will be referred to as Andersson to avoid misunderstandings.

5.1.5 Nordea

Nordea is a bank operating mainly in Northern Europe where it is the largest financial service group. It is active within corporate merchant banking, retail banking and private banking where Nordea has leading positions. Operates in for example Sweden, Finland, Denmark and Norway (Nordea, 2012).

5.1.6 Handelsbanken

With domestic markets in Sweden, Denmark, Finland, Norway and Great Britain Handelsbanken is a bank providing full-service to personal and corporate customers. In 2011 Handelsbanken reported a core tier 1 capital ratio of 15.6 per cent. Handelsbanken is one of the banks that in Sweden need to follow the higher capital rules set out by the Riksbank (Handelsbanken, 2011).

5.2 Interviews

5.2.1 How is your work connected with the capital requirements of Basel III?

Niemeyer is the representative of the Riksbank in the Basel Committee on Banking Supervision and involved in the work of the Committee.

Jokivuolle is working for Bank of Finland and is sharing his time between the department for financial stability and the research unit. He helps with policy work within financial stability and capital requirements are a large part of that. Through this his work is directly connected to capital requirements and he is also involved with the Basel Accords through his own research.

Bargholtz is the head of banking analysis division at the Swedish Financial Supervisory Authority. This is not a division directly involved with Basel III. Bargholtz explains that they are members of different subgroups in the European Banking Authority (EBA). Basel III is global and for it to have effect in Europe it is detailed out in the CRD IV (Capital Regulation Directive IV). As a part of the CRD IV are different banking authorities. These are organized in different subgroups and Bargholtz division is a member of this. Other roles of his division is discussing rules with Swedish banks and communicate future requirements with individual banks.

Andersson explains that their bank is under the supervision of the Finnish Financial Supervisory Authority, which means that they have to follow the regulations of Basel III. He explains that they have to keep the capital requirements of Basel III in mind in any trade they do.

Alfvén is head of investor relations at Nordea in Stockholm. He explains that Nordea is regulated by the Swedish FSA (Financial Supervisory Authority) and need to comply with the rules of a core equity tier 1 capital at 10 per cent by 2013 and at 12 per cent by 2015. He also explains that they need to have equity and capital for countercyclical buffers. Alfvén explains that they at Nordea currently have a CET1 capital of 11.2 per cent and are already compliant with the 2013 levels of capital. Now they are trying to come up with a solution to match the 2015 requirement of 12 per cent by using existing models and framework at place.

Grip is the head of capital management at Handelsbanken. Basel III influences his work in the way that he does the preparatory work to have board decisions regarding capital targets and capital policy. He is in charge of implementing the capital policy by making sure that the group fulfils the capital targets, by having capital planning in place to capture for example stress scenarios. He also makes sure that Handelsbanken follow new regulations and communicate the capital positions of the group both internally and externally. Furthermore, he communicates the effect of new regulation and tries to influence the final regulations.

5.2.2 What is your view on Basel III? What are the advantages? What are the disadvantages?

Niemeyer explains that he is very supportive of Basel III. Basel III is a good improvement from previous international agreements on banking regulations and it has new additions. The definition of capital is better. During the crisis market participants focused on core equity rather than on the more loosely defined regulatory definitions of capital. In Basel III the definitions of capital has sharpened. Niemeyer explains that this is a big improvement that will make the banking industry more resilient. Niemeyer also points out the increased capital levels as a big improvement.

He explains that the Riksbank support the new leverage ratio and liquidity requirements. Niemeyer says that these are good, even if the implementations of these are not phased in

until later. The effect of the liquidity ratio is a bit unclear since this is a new element in the framework. But in principal these are good ideas. Niemeyer refers to the LCR and explains that it is important and reasonable to demand that banks have liquidity that is enough to withstand some stress during a 30-day period. He says that banks must be able to survive during such a period.

Jokivuolle thinks that Basel III is a big step ahead in making the banking industry safer than it used to be. The crisis showed that banks were not well capitalized. Basel III has made a very large step in increasing the capital that banks should hold. Before the crisis the capital requirement for banks was 8 per cent but out of this there could be a lot of hybrid products and junior class debt. Hybrid products are often more like debt than equity and were shown to not protect against losses. In Basel III the requirements are on holding more equity capital and the extra requirements go beyond 8 per cent.

There is still a problem with risk-weights in Basel III, Jokivuolle explains. This is a problem that has to be addressed in the future. The problem is that sovereign debts are classified in the zero risk class. As the problems around the world have shown, sovereign debts are not without risk. But this is not something that can be corrected at the moment because doing that might make the current problems worse. Raising risk-weights on sovereigns now would require banks to hold much more capital, which is difficult to come by right now. Banks could partly adapt by cutting their lending but this would be bad for the real economy.

On the question concerning what advantages there are in Basel III, Jokivuolle answers that for the first time there are requirements concerning liquidity of banks. There are two parts to this. These are 1) how the bank is funding itself and 2) what its asset structure is in terms of liquidity (Liquidity Coverage Ratio). Banks need to be able to fund themselves for a period of 30 days by liquidating their best assets. The funding structure, the net stable funding ratio (NSFR), is a detailed requirement. Banks have to have enough long-term funding. Many of the deposits are considered long-term funding as well as bonds. Example of short-term funding is repos. The share of short-term funding cannot be too high. The crisis has shown that short-term funding can “run” away very quickly, if there is uncertainty of the bank’s health, leaving the bank in immediate trouble. Also rapid growth of banks’ balance sheets, indicating that credit may be extended too fast, is typically related with banks’ in-

creased short-term funding. Hence, setting limits on the banks' use of short-term funding may be a good way to curb excessive credit booms in the economy.

Bargholtz believes that Basel III is a natural step in banking regulation. The crisis revealed that no one was really prepared when it came to risk management. No one had a core understanding on why banks default and what should be done when this happens. A number of these issues are dealt with in Basel III, Bargholtz explains.

More regulation will in the short run decrease the economic wealth, Bargholtz says, but in the long run it should make it possible to reduce bank crises. Basel III has good intentions and most of them are sound and good. But the pretty detailed level will create some problem and different views on how to use the regulations on national level.

Bargholtz explains that Basel III creates a lot of job opportunities in the regulations industry. Another advantage is that it is harsh regulation on many different areas. This will hopefully reduce future crises. But Basel III might be too far reaching because now areas that has not been regulated previously are being regulated which creates little room for regulation on national level. Also it is hard to measure the impact of the regulation when it is so far reaching, Bargholtz explains.

Andersson believes that Basel III is both good and bad. Bad in the sense that they have a new business and the rules of Basel III requires them to hold a big buffer of Tier 1 capital, which he explains to be hard for a new company because of the amount of liquid assets that cannot be invested. He explains that Basel III is good in the sense that it might prevent against a new financial crisis. And that it gives some confidence for them when dealing with counterparties. This because of that the counterparty also have to follow Basel III rules which may give them a chance to get some of their investment back in case of default by counterparty.

He believes that Basel III may provide their bank with a quality stamp. Because if them meeting new customers they can show that they are trustworthy because of the supervision from the authorities and the rules of Basel III. Andersson explains that it is good that the Basel III rules are global and not just for Europe because this gives the same game rules for all actors in the industry. But the rules are complicated and it is a lot of reporting that have to be made to authorities, so for a new firm this gets really expensive. It is a full time job to keep track of the rules and reporting. For larger banks it is even more complicated and

even more persons have to be involved. Andersson believes that it would be better if an easier reporting system would be set to work.

Andersson talks about the hybrid loans. He believes that it is good that these should be phased out because they are heavy for firms to carry. But he stresses that he believes that they are trying to hard to regulate, they are regulating to much. He explains that if a business want to do something that is prohibited under Basel III then they will find a way to go around it. He is not sure that Basel III really will catch the bad guys in the financial field. He adds that most players in the industry follows the rules but that there are always those few ones that do not.

Alfvén is very positive to the idea of building up a stronger industry. Strengthening of the capital requirements strengthens the industry and builds up a good industry. Nordea is very positive to Basel III. Of course you can argue about the different levels of certain points but over all we are very positive to the regulations.

The Swedish regulations are not harmonized with the EU regulations, which will probably be CET1 at 8-9 per cent, Alfvén explains. This gives us working in not just the Swedish market a disadvantage towards pricing. We need to price our products higher because of the higher capital requirements. That the rules are not harmonized gives a level playing field that is not fair. Also it is arguable what risk-weights one should have.

About Basel III Grip believes that it was developed in a hurry, which may give the effect that a lot of inconsistency and mistakes will be revealed once Basel III is implemented. Grip states that Basel III was developed based on an analysis that was incorrect. He says that the reaction was on losses that were mainly generated in the US. US never implemented Basel II and hence it was not Basel II that was the underlying cause. Instead he points out the leverage ratio regime used by banks in the US as the underlying cause. This regime gave banks incentive to keep high risk at their own balance sheet while they used securitization to keep low risk assets in vehicles that were not under same regulations as the banking industry. Grip states that it is very wrong to implement a leverage ratio as a reaction to the crisis since one of the main drivers of the financial crisis starting in 2007 was the leverage ratio regime used in US.

Grip is negative to the net stable funding ratio (NSFR) as presently defined. He does appreciate the need for long-term funding in banks but believes that the present proposal in

combination with the introduction of Solvency 2 in combination may further dampen the efficiency of the financial markets. He explains that the main buyers of long-term debt instruments are the insurance industry. The NSFR significantly increases the need to issue long-term debt instruments at the same time, Grip explains, the regulators disincentives the insurance companies to hold long-term debt contracts by the introduction of Solvency 2. This creates an inconsistency as well as it is contra productive.

Furthermore, Grip explains that Basel III will introduce a systematic risk in the unregulated industry leading to an increased risk for a new financial crisis. This is due to that the leverage ratio in combination with the exaggerated capital requirements and liquidity requirements will force the lending to customers with low risk to the unregulated industry.

Grip says that the definition of capital is badly written. The focus in Basel III has been on what is defined as equity under international financial reporting standards (IFRS), while what should have been focused on is loss-absorbing capacity of capital instruments. Different jurisdictions have different accounting rules, which will give an inconsistency in the definition of loss bearing capital. Accounting rules are also focusing on assumption of going concern while in regulations the focus is on capital that absorbs losses in case of liquidation.

Grip adds that there has been a lot of focus on giving shareholders incentives to recapitalize the entity in a stress scenario. But as a consequence Basel III has been drafted in a way that the incentives to invest in supplementary capital is very low and the market is just open for the strongest names. Grip says that the rules should have instead been written as to give incentive for the shareholders to act in the best interest of themselves as well as in the best interest of the debt holders.

The thinking of Basel III that there should be extremely high minimum capital requirements in the purpose of protecting the society from incurring losses when regulated entities enter into financial difficulties is wrong. Grip says that instead it is essential to have a capital that is way above the minimum requirements to make sure that breaching the regulated minimum capital requirements is remote. He suggests that this is instead achieved by having a capital buffer that makes sure that the capital base is enough to absorb losses that secures that the entity is able to fulfil its obligations against those that the society wants to protect. Such change in focus would avoid the increased risk that now is going to be implemented, he says. The need for government intervention would occur well in advance of any true

risk of the debt holders actually would be in risk of impairment losses in a non-viability situation. It is the buffers that give the debt holders comfort with an entity's capital situation, not high minimum requirements.

5.2.3 Is there anything you would have liked to see in Basel III that you feel is missing?

The Riksbank would have preferred if the rules of Basel III were a bit more stringent. But these are international minimum requirements and there are many countries involved in the process and have a say so it is hard to make it stringent. The Riksbank would have preferred higher rules. But it is better than before and is definitely a step in right direction. Niemeyer explains that in Sweden the capital requirements for the four largest banks will be higher than the 7 per cent requirement of CET1 that applies under Basel III. The requirement will be 10 per cent by 2013 and 12 per cent by 2015. The Riksbank believes that this will be beneficial to other countries as well since the crisis showed that banks are highly interconnected and conduct more work over national borders than ever before. It will be mutually beneficial since if one country has higher rules this is positive for other countries as well and will make banks in those countries safer.

Niemeyer stresses the point that the Riksbank would have preferred a more stringent definition of capital. And they would have preferred higher capital requirements. But the requirements of Basel III do not exclude countries from applying more stringent rules themselves so it is possible for countries that want higher minimum requirements to have this.

Jokivuolle says that he would like to leave the door open for even higher capital requirements. He explains that Switzerland has capital requirement of 19 per cent, Sweden planning one up to 15-16 per cent and that academic research suggest requirements of up to 20 per cent. But this should not be addressed before we see how things start to work and the current crisis is starting to solve, Jokivuolle adds. Because if it were done now it could reduce lending and that may have a bad outcome for the economic recovery.

On the question if Bargholtz believes that there is anything missing from Basel III he says that from a regulated perspective capital levels should be regulated and it should be made sure that banks have a buffer. As it looks right now, Bargholtz explain, Basel III may be too detailed. It is expected that some of the aspects will be watered down; the focus should be on what is important.

Alfvén explains that they at Nordea are fine with the capital requirements. But they want clarification about the NSFR. The observation period is too long, Nordea want a clear view now.

Grip explains that high minimum requirements in combination with a resolution regime that kicks-in when an entity is in breach of a minimum requirement are a bad combination if society wishes to reduce the risk for government support of the banking industry in the future. The risk of breaching a formal requirement increases when the minimum requirements are increased. And the losses for the debt holders are more severe in a resolution regime since their claims will be written down in a scenario in which there still is large bulks of equity left in the entity.

On the positive side, Grip explains that if the US actually implements Basel III then it would be the first time that Europe and US have similar capital requirements for those entities that are regulated. He believes that this will give fewer incentives for globally active banks to play around with the rules. Furthermore, Basel III will adjust the present underestimation of the need for capital to cover market risk. A problem with Basel I was that Basel I underestimated the need for capital when using internal models. Another positive effect of Basel III is that the definition of capital will be aligned more broadly. Presently, Sweden has a much more prudent definition of capital which has given a competitive disadvantage for Swedish banks.

5.2.4 Do you believe that Basel III may protect against new banking failures?

Niemeyer explains that with Basel III banking failures are probably going to be less likely. And if they do occur they will be less costly. But no regulation can be a full proof system. He explains that we are likely to see and have future crises but at least it will be less likely and occur at a lower cost. He ends by saying: “Basel III gives a better protection, but it is not a full proof system.”

Jokivuolle believes that Basel III certainly will do a better job in preventing banking failures than Basel II did. Higher capital requirements will reduce the probability that banks will fail due to losses from assets. But Jokivuolle again stresses that if risk-weights are not correct then capital requirement rules will not work. It is important to make sure that the risk-weights are correct, which is not the case for all assets for the moment.

Bargholtz believes that Basel III may protect against new banking failures because it reduces the probability of banks conducting risky business. Overall Basel III limits the room for banks to be creative which may have a positive impact. Bargholtz ends by adding that it is important to remember that there are smart people working at banks and they are creative and may conduct regulatory arbitrage by finding loopholes in the regulations. This may lead to negative effects.

Andersson does not believe that Basel III may protect against new banking failures. He explains that a lot of people connected the first Basel regulation with the financial crisis in the nineties and the second Basel regulation with the crisis started in 2007. He speculates that if this is a pattern then if Basel III is implemented in 2019, why not a new crisis in 2021. He explains that banks are starting to follow the rules of Basel III and now are studying the rules to find loopholes. This, he explains, was the pattern of Basel II and he is scared that the same problem will reoccur with Basel III. The problem he is referring to is that many banks are using their internal system when classifying risk asset weights. This system is built on rating agencies like for example Standard and Poor. He says that the problem the last time was that the rating classes for the first four classes are very very low in their probability to default figures, which gives them a low risk weight. The problem the last time was that it was these securities with low risk-weights that defaulted. So if the credit rating agencies are still left as key players, then Basel III will not work.

Alfvén explains that the rules of Basel III are necessary but perhaps not enough to avoid more banking failures. He says that for that to happen the focus should be on funding and not on capital. After all, Alfvén says, the crisis came from funding issues and not capital issues.

Grip does not believe that Basel III may protect against new banking failures. If Basel III will be fully implemented he sees an increased risk of new crises. He also believes that intervention by governments will occur much earlier and be much more severe than under Basel II with the new elements of NSFR, LCR combined with a leverage ratio and the introduction of higher minimum requirements in combination with a resolution regime.

5.2.5 Is there anything you would like to add? : Extra comments

In the end Jokivuolle adds that it is a good thing that Basel III makes a difference between small to normal sized banks and very big banks. Banks that are considered as systematically

important financial institutions (SIFIs) will have higher capital requirement than other banks. This is very important because we have always known, and the crisis reminded us, that it is the big institutions that are a big risk in case of failure. It is hence justified that these should have higher requirements. Academic research is currently exploring ways to measure the overall systemic risk effect of these large banks. In the future we could have a more developed measure on what a SIFI really is and what is the relative extra amount of risk that they are causing to the system.

6 Analysis

This chapter presents the analysis of this paper. The analysis is built upon previous research and the empirical findings. As a foundation for the analysis is the theoretical framework.

6.1 Capital requirements

Basel III has a minimum capital requirement of eight per cent. Six per cent of that has to be high quality capital, so called Tier 1 capital. This requirement is included in Basel III to build up a capital base. From section 2.1.1.2 it has been seen that it is important for banks to have a capital base that can be used to liquidate money. Previous research has been somewhat negative towards this requirement. The financial crisis of 2007-today showed that there were problems in the calculation of risk-weights that were used for finding out the capital requirement for respective banks. The risk-weights were not properly calculated and risks were found where no risks were expected. Previous research highlights this as a fundamental problem of Basel III (Blundell-Wignall and Atkinson, 2010a; Hellwig, 2010). According to Casu et al. (2006) the capital requirements are adjusted to risks taken by the banks and then a capital requirement is calculated based on this. In interviews, both banks and supervisors have been negative towards the minimum capital requirements.

Basel III's foundation of building on risk-weights may not be the proper way to solve the situation. Jokivuolle explained in his interview that the risk-weights used in Basel III need to reflect reality. The problem is that they do not at the moment. For example, sovereigns are risk-weighted at zero for calculations of minimum capital requirements. Sovereigns are today some of the most affected parties by the financial crisis and constitute of risk and in some cases even very significant risk. This was pointed out in the interview with Andersson as well. Section 3.1.1.2 showed that capital requirements based on risk-weights are usable (Casu et al., 2006). But supervisors and banks pointed out in interviews that they are against using risk-weights that do not correspond with the reality. Supervisors said in the interviews that banks are trying to manipulate their risk exposure to get a smaller capital requirement. This was even a view pointed out by banks themselves.

The capital base should be used to protect the bank in case of unexpected defaults or any other events that requires the banks to use capital. If risk-weights are not correctly calculated or even manipulated then a too small capital base will be built up. The whole idea with the risk-weights is that the capital base should be enough to protect against all the risk that

has been identified. If banks neglect those risks the risk-weight procedure falls short. This happens also if the risk-weights are incorrectly defined in regulations, which presently is the case with sovereigns in Basel III. For the capital requirements based on risk-weight procedure to work it has to be correctly defined. Basel III builds on minimum capital requirements. This means what is at least required for banks to have as a capital base. If the requirements then are calculated with the result of being lower than they should, based on the risks that actually are present, then the capital base is below the capital requirement even if it may not seem like that from figures on a paper.

From both banks' view and supervisors' view voices are raised to change the system. Suggestions are to either raise the capital requirements or instead have a capital buffer for banks that is not calculated according to exact risks taken. Bank of Finland, Sveriges Riksbank and Nordea wants to have high capital requirements. A motive behind is that a strong capital requirement gives a stronger banking industry. From theory it was seen that a higher capital base gives a stronger protection in case of default or bank run. Higher requirements give a larger capital base. A high capital base gives a stronger foundation for banks and risks may be better covered. In Basel III there is acknowledgement that risks were not previously captured in the right way. The expectation in Basel III is that moving over-the-counter derivatives to central counter parties will remove some unpredictable risk. Also stressed inputs need to be used when deciding capital requirements for counterparty credit risk. This means that when calculating the risk all possible bad scenarios should be included. With this Basel III is trying to capture as much risk as possible. But still all risks are not predictable. Possible future scenarios are built up to form the base for risk calculations. But these are only possible scenarios identified today and it is hard to predict the future. What happens depends on many different factors and these factors may behave in any way in the future. Hence it is very hard to predict risks and there always remain risks that have not been identified. This is why Bank of Finland, Sveriges Riksbank and Nordea want to have higher capital requirements. The requirements would still be built on risk-weights but a larger minimum requirement would capture unpredictable risk better because it would build a larger capital base. A larger capital base gives better protection, which is the goal from supervisors' view and banks' view.

Why Basel III's requirement of 8 per cent is not enough is not directly commented in interviews. Vague indications are that Basel II had an 8 per cent requirement and that was seen not to be enough. What might explain why Nordea wants to have higher capital re-

quirement than 8 per cent is that Nordea is required by Swedish regulations to have a capital requirement of 10 per cent by 2013 and 12 per cent by 2015. Alfvén explained that since they need to have higher capital requirements than other banks internationally it gives Nordea a disadvantage in pricing. Alfvén says that the level playing field is not fair. Handelsbanken is not worried about this. Because they are already fulfilling the larger requirements required for Swedish banks. They are instead positive and say that currently Sweden has a disadvantage because of stricter rules on capital definition. But Basel III will align the capital definition, which will give positive effects for Swedish banks. From Sveriges Riksbank they are not concerned about stricter rules for Swedish banks, they think it is beneficial for the whole market if the rules are stricter.

With higher capital requirements the problem of not properly accounted risk-weights is still present. Handelsbanken says that it is not good to increase capital requirements instead they suggest a capital buffer that is well above the capital requirements. This is supported by previous research as well. Previous research suggest that it might be good to require banks to hold an extra buffer for risk that are not accounted for. A capital buffer would not be directly built on exact risks and weighted for those risks. This would eliminate the problem of not correct risk-weights. How the buffer should be calculated is not commented on. Handelsbanken says that it is important to have a capital base that is large enough to absorb losses and secure entities that are important for society to protect. Basel III includes two new buffer elements, the countercyclical buffer and the capital conservation buffer. These are extra buffers on top of the capital requirements. These buffers are included in Basel III to protect against procyclicality. The capital conservation buffer could be used by banks in periods were they experience losses. The countercyclical buffer should be used to protect banks when there is an excess credit growth.

These buffers protect against procyclicality and may be used in periods when banks experience losses. This together with capital requirements should build a capital base that protects banks. Basel III gives protection against risks connected with the banking activities through the capital requirement. It protects against procyclicality that is one type of unpredictable risk. These elements are what the industry asks for. But voices are still raised that they are too low. Of the interviewed parties some want only high buffer and others want higher capital requirements without commenting on buffers. It seems like Basel III has been trying to include all elements requested from the banking industry. This leaves the industry complaining that it has been to many compromises and that the regulations are

weak. Sveriges Riksbank says that it is so many that wants to have a say in the process leaving the requirements low to please as many as possible. Previous research has brought this up as well talking about poorly designed rules based on too complicated negotiations that has included lobbying from the banking industry.

A capital buffer would remove the problem of risk-weights that are not accurately determined. But how the buffer should be calculated and what it should be based on is not suggested. Weighting the risks connected with investments is a logic way of determining a capital base. A buffer would somehow also be calculated based on risks that banks are exposed to. Maybe the risks would not be weighted but the author still see these as the starting point for determining a buffer. Then the problem of manipulating risks is still present. A suggestion could be to base the buffer on the size of the bank. But this might not be a good way either because two similar sized banks would be required to hold same sized buffer, but might conduct very different business if looking at risk profiles. This would not be “fair” to the bank with a lower risk profile and would maybe induce them to take higher risks. The circle goes around and come back to risks all the time. Basel III is including both buffers and capital requirements.

6.2 Liquidity standards

Other new elements introduced in Basel III are liquidity standards. For the capital to bear losses it has to be able to be liquidated i.e. holding capital is not enough to cover losses in all cases. Supervisors are in interviews positive to the liquidity standards. They explained that it is important that banks have liquid assets to be able to withstand stress. There is a consensus that the liquidity coverage ratio (LCR) is good. It is reasonable that a bank should be able to withstand stress for a period of 30 days. These are new elements and it is a bit unclear how they will work in practice. Both supervisors and banks have stronger opinions concerning the net stable funding ratio (NSFR). The NSFR were seen in section 4.1.7.2 to be a requirement of banks’ funding structure. The funding should be more long-term and the requirement builds on a one-year period. From Bank of Finland it is explained that this is a very detailed requirement which came from that the financial crisis of 2007-today showed evidence of problems with short-term funding.

Bank of Finland believes that limiting a bank’s use of short-term funding may be good and may limit credit booms. The comment exclude any other view on the NSFR and this is in line with what banks say as well. Nordea says that they want more details on how the

NSFR should work. Handelsbanken is negative to how the NSFR is defined but do as well, as Bank of Finland did, appreciate the need for long-term funding in banks. It seems like the NSFR is not appreciated by banks or by supervisors. According to the interviews the definition is not good or it is too detailed. Agreement in the banking industry is that long-term funding is important and needed but maybe the NSFR is not. From theory in section 4.1.3 it was seen that long-term funding gives a better security. The NSFR should make sure that the banks have enough liquidity for one year. Long-term is usually in economics a period over one year. It might be questionable that the long-term funding here should be available for one year that is the lowest definition on long-term. That has been pointed out in previous research as well. That the long-term funding is not really that long-term if it only should be available for a period of one year. But since this is new elements in Basel III and has not really been tried before it is hard to say what will happen when these ratios are implemented. The logic behind the ratios agrees to a large extent with theory. If it will work in reality is something that has to be seen when it is implemented.

6.3 Systematically important financial institutions

Bailing out of banks by government because they are seen as too big too fail is something that has been mentioned often by now. Basel III's contribution to this is that banks considered systematically important will be required to have stricter requirements. Previous research believes that the movement of over-the-counter derivatives to centralized counterparties may make the central counterparties to become systematically important. From interviews it was only one of the supervisors that brought up SIFIs. Bank of Finland said that it is very important that Basel III require SIFIs to have larger capital requirement than other because of the extra risk they impose on the economy in case of failure. In section 2.1.1.2 it was explained that banks are interconnected and failure of one bank affects others as well. For large institutions this was seen to be even more so at least if looking at how governments acted in the financial crisis of 2007-today with bailing out. Jokivuolle from Bank of Finland explained in the interview that SIFIs are a subject that is currently looked at in academic research and that a measure of what a SIFI really is could be developed further in the future. There is not a clear view existing on what a SIFI is and how much risk they expose to the economy. This was also seen in the crisis of 2007-today with governments saving some banks while letting others fail. It may be argued that the governments thought that the banks they saved were SIFIs.

SIFIs will be required to have larger capital requirements. By theory larger capital requirements gives a larger protection. A bank that is considered a SIFI will then also know that it is considered a SIFI. The author would then like to argue that this might create a moral hazard. From theory about too big to fail (TBTF) was seen that if a bank is seen as TBTF, and knows it, they might take larger risks in the belief that they will be bailed out in case of default. The larger capital requirement for SIFIs will give larger protection and build a larger capital base for the SIFIs. But it might be the case then that the SIFIs take larger risk than they would if not considered SIFIs. If a bank is considered a SIFI it knows that it is very important for the system. This may imply that governments will protect them if they run into trouble. If this is what SIFIs believes it might not matter that they are required to hold a larger requirements if they compensate that with larger risks.

The requirement is still based on risk-weights and is risk-weighted so the larger risks they might take are also risk weighted. But the total requirement will still only be between 9-10.5 per cent. This leads back to the discussion about the level of capital requirement. Jokivuolle explained that in academic research they are talking about requirements of 20 per cent. That is twice as much as is required for the SIFIs. If a bank is systematically important then it is also important that this bank does not fail. If a SIFI fail this does not just affect this bank but may spread between other banks as well because of the largeness of the bank and interconnectedness between banks. It is in the interest of everyone to not let a SIFI fail. That is why governments also have protected them. But a requirement of only 1-2.5 per cent more than smaller banks may not be enough. If the failure of one bank affect the economic market a lot it also should be seen in the regulation of this bank. Because of the consequences of its failure this should be more heavily regulated. If an 8 per cent capital requirement is not seen as enough for banks that are not seen as systematically important, then 9-10.5 per cent is not enough for SIFIs.

6.4 Shadow banking system

Basel III does not regulate the shadow banking system. The shadow banking system affected the financial crisis of 2007-today a lot and their problems spread to the regulated banking sector. Previous research believes that the rules and elements of Basel III will move more and more transactions to the unregulated industry- the shadow banking industry. Among the tasks they deploy, the shadow banking industry provides credit for their customers. Procyclicality means that economic variables amplify the trends of the economic

cycle. In a boom the trend goes higher than if procyclicality was not present. And during a recession variables makes the recession deeper than just by the swings of the economic cycle. Providing credit is one of these economic variables that may cause procyclicality to emerge and that will affect the whole economic market. Hence, that will affect the regulated banking industry as well and the measures taken by Basel III to reduce procyclicality may not be enough. Previous research is drawing the conclusion that the unregulated banking industry will draw systematic risk to the regulated sector. This is what Handelsbanken state in interview as well. Handelsbanken believe that systematic risk will be introduced in the unregulated industry through the introduction of Basel III. Since there is a higher capital requirement in Basel III there is a belief in previous research as well in banks that low risk customers will be forced to borrow from the unregulated sector instead. Grip from Handelsbanken says that this increases the risk for new financial crises.

6.5 Financial innovation

Section 3.2.1 showed that financial innovation was something occurring during the financial crisis of 2007-today. From financial innovation financial instruments were created with one of the objectives to avoid regulation, which was called regulatory arbitrage. Basel III has been trying to reduce this with stronger and clearer capital definition as well as raised risk-weights for some instruments. For example, hybrid loans are phased out which was one of the instruments in the financial crisis of 2007-today that caused problems. Banks are looking through Basel III already to find loopholes and be creative in order to get lower capital requirements; financial innovation is a problem for Basel III.

The Swedish Financial Supervisory Authority are positive to the new capital definition and believes that these new rules will limit the possibility for banks to be creative through various financial innovations. Financial innovation is a topic raised by the supervisory authorities and previous research in section 4.2.4 as something that affects the regulation negatively. Some believe that Basel III has improved from previous regulations and that it is now hard to be creative and find loopholes. While others are more sceptical and say that Basel III has not done enough to protect from financial innovation or capital arbitrage. A unifying agreement between supervisors is that it is not possible to fully protect against this and that there is always a way to find a way around regulations if one really tries.

Even if banks are regulated under Basel III financial innovation may move instruments used by banks to the shadow banking system. Theory explains that banks are buyers of the-

se instruments and are exposed to the risk of the instruments. But as in the case of MBSs the risks of each individual mortgage loan is pooled together with other loans leaving an instrument requiring less capital to back it. The risk is still the same as for the individual loans, but since it is now only one instrument instead of many different mortgage loans the capital requirement is much lower.

Financial innovation and a shadow banking system not regulated under Basel III may create loopholes in the regulation. Basel III has taken actions against this. But what supervisors fear is that it might not be enough. The author would like to see, as previous research also suggests, an industry that is regulating everyone that is conducting same kind of business. If the shadow banking system would be regulated as well then the chance of transferring risks between entities that was done in the crisis may decrease or even disappear. This would leave a stronger industry exposed to fewer threats of defaults and risks. A possible disadvantage with this might be that low risk borrowers find it harder to borrow money. Banks are in many ways like any other firm, their goal is to earn a profit. Low risk borrowers may not give as much profit as high-risk investments do. This was an issue brought up by Handelsbanken as well talking about moving systematic risk to the shadow banking industry by forcing low risk borrowers to this industry. If Basel III's protection against financial innovation, which is bad for the economic market is enough then hopefully more regulation is not needed. But as pointed out by supervisors in interviews, it is smart people working at banks and they will be able to find loopholes. If this is the case then a choice between making it harder for low risk borrowers to borrow money and possibility for a new financial crisis may not be a hard choice. A suggestion would be to somehow regulate the market so that low risk borrowers would not be pushed out of the market.

6.6 Leverage ratio

The leverage ratio is included in Basel III to compliment the capital requirement. With the leverage ratio the risk that has not been covered in the capital requirements through the risk-weights may potentially be captured. BCBS (2010a) explained that when banks change their leverage structure this causes procyclicality. Procyclicality has been explained before as something that amplifies trends in the market and when amplifying a downward trend it may turn out bad as it did in the financial crisis of 2007-today. The leverage ratio should make sure that the banks are not too heavily debt financed. In previous research a potential problem with the leverage ratio was identified. If the leverage ratio is set too high it might

put a roof on the capital requirements. The risk-weight approach and leverage ratio may not work that well together then. Niemeyer from Sveriges Riksbank said in interview that the Riksbank support the leverage ratio and says that this is good even if the implementation of this does not happen until later. Grip from Handelsbanken is not as positive. He says that it was a leverage ratio that was used by banks in the United States that caused the financial crisis of 2007-today from the beginning. In the interview he also said that it was from this banks got opportunity to keep risks high while keeping low risk assets in the shadow banking system. He says that it is very wrong to implement a leverage ratio since this was one of the drivers of the financial crisis of 2007-today.

The views on the leverage ratio are very different. Section 4.1.3 explains that a lower leverage ratio means lower risks for banks since they have more funding from own capital to depend on. The level at which the ratio should be set is not yet determined. It will be decided on later after a period of supervision. Hence the effects of it will not be seen until later and the supervision process will be the base for how it is outlined. Conducting an analysis of something that is still in the designing process is hard. The author agrees with the underlying ideas. But points that were pointed out by previous research should not be ignored. The supervision procedure will be very important and may correct potential flaws that may be seen.

Including a leverage ratio is, again, one of the steps from the BCBS to manage the effects from the crisis of 2007-today. One more point to correct. Correction has been made to almost all trigger events during the financial crisis. Not possibly can a new financial crisis occur now, can it? When supervisors were asked in interviews they are very positive to Basel III but if it will protect against new banking failure, there is no real unifying thought. From Sveriges Riksbank the belief is that Basel III will give a better protection against banking failures but they believe that new crises will occur. Jokivuolle from Bank of Finland says that Basel III will do a better job than Basel II did and he believes that it will reduce probability of crises due to losses on assets side. But he adds that if risk-weights are not correct it will not give that much protection. From the Swedish Financial Supervisory Authority the focus is on financial innovation. They believe that Basel III will protect against banking failures and that it limits the room for banks to be creative. But that if banks finds loopholes in the regulation it may give negative effects.

When banks were asked the question if they believe that Basel III will protect against new banking failures the answers were different compared to the supervisors. The banks are quite negative to Basel III. From Nordea Alfvén says that the rules may not be enough to protect against banking failures. He says that the financial crisis of 2007-today came from funding issues while Basel III has most of its focus on capital issues. Grip from Handelsbanken sees increased risk of new crises if Basel III is fully implemented. He thinks that the new elements in Basel III will make the governments intervene in the market much more earlier and intervention will be much more severe than under Basel II. He does not believe that Basel III will protect against new banking failures. Andersson from the investment bank has the same belief. He does not believe that Basel III will protect against banking failures, he says that financial innovation will make it fail.

7 Conclusions: Can Basel III protect against new banking failures?

In this chapter the conclusions drawn from the empirical result and analysis is presented in regards to the researched question: Can Basel III protect against new banking failures?

This study aimed to answer the question if Basel III can protect against new banking failures. After building up theory, analysing the interviews and looking at the arguments the answer to that question is somewhat indecisive. Basel III has tried to correct many of the flaws that the BCBS found to be causes of the financial crisis of 2007-today. Many of the interviewees agreed, that Basel III is better than previous regulations. However, some open issues remain in the regulations that have not been fully addressed. From the basis of the analysis, the conclusion can be drawn that Basel III will protect against new banking failures if risk-weights are corrected to better reflect reality, if loopholes in the regulation are eliminated, if the shadow banking industry is brought to be under the regulations as well, if SIFIs are under stronger regulations than smaller sized financial institutions and if the capital requirements are raised. In the current version of Basel III this is not the case.

The most important argument brought up is that the risk-weight system is not properly reflecting reality. If the risk-weights, especially for sovereigns, are not corrected to reflect reality then the success of Basel III to protect against banking failures will be small. The whole underlying idea with the risk-weights does not work if the risk-weights are not correctly determined. The capital base may not be large enough to protect the bank. Furthermore, if loopholes are found in Basel III through financial innovation then the capital base may not be correctly built up either. And from supervisors' and banks' view loopholes are likely to be found.

Basel III is a step towards the right direction. But for this regulation to protect against banking failures it has to set higher targets and be more extensive. When Basel III is fully implemented in 2018 it will give a better protection. However, it seems likely that the protection will not be sufficient to entirely protect against new banking failures.

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Appendix 1- Interview questions

- How is your work connected with the capital requirements of Basel III?

- What is your view on Basel III?
 - o What are the advantages in Basel III? Why?
 - o What are the disadvantages? Why?

- Is there anything that you would have liked to see in Basel III that you feel is missing?

- Basel III has developed from lessons learned during the recent financial crisis. Do you believe that Basel III can protect against new banking failures? How?

- Is there anything you would like to add?