HAAGA-HELIA
University of Applied Sciences

Basel III: Capital positioning on European banks

Jani Laisi

Bachelor's Thesis

Degree Program in International Business

2012

HAAGA-HELIA
University of Applied Sciences

Abstract

08.10.2012

International Business

Author or authors Jani Laisi	**Group or year of entry** 2009
Title of report Basel III: Capital positioning on European banks	**Number of pages and appendices** 63 + 9
Teacher(s) or supervisor(s) Mika Mustikainen, Tanja Vesala-Varttala	

Banks have been at the centre of the financial crisis since 2008. Thus the European Commission introduced proposals to change the behaviour of European banks. In July 2011 the Commission decided to translate the Basel III regulation to form a new directive in Europe, CRD IV. As part of this the European Banking Authority published on 8th December the formal recommendation related to banks' recapitalisation needs. The banks in the sample were required to strengthen their capital positions and meet the target of 9% Core Tier 1 capital ratio.

The main purpose of this research is to present the current capital positioning of European banks and analyse the development under the Basel regulations.

This research presents the development of the Basel Committee's regulations and the Committee's "from the one-size fits-all to a tailor-made approach" mind-set behind the development. The objective was also to analyse the requirements and the results of EBA's capital exercise. Therefore deeper analysis was performed on risk-weighted assets as a part of the actions required in the capital exercise and also on the impacts of Basel III.

During six months information was collected through qualitative research.The theory was based on relevant academic publications. Quantitative data was acquired from the EBA's and IMF's reports. A couple of bank and financial authority representatives were also interviewed to provide a deeper analysis and to support the quantitative data.

The findings indicated that Basel III will have a clear impact on declining the capital ratios. Also, almost all the banks in the sample of the EBA's capital exercise achieved the required target with a few exceptions. The Finnish banks proved to be on a sound basis with a slight advantage due to the current market situation. It was also indicated that with some exceptions European banks are quite wealthy and have a good capital adequacy situation. Hence, this will not be a problem when the implementation of new regulations begins.

Keywords
Basel frameworks, Basel III, Risk-weighted assets (RWA), Capital exercise, Core Tier 1, European Banking Authority (EBA).

Table of contents

1 Introduction

Since 2007 the financial crisis has revealed a number of important weaknesses in banking regulation. In June 2011 Basel Committee on Banking Supervision published the newest version of Basel III framework. At the same time European Banking Authority conducted an EU-wide stress test. During the past year the European Union has been developing a new directive and act that would comply with the Basel III framework.

While recovering from the global financial crisis the strengthening of capital ratios is one of the key priorities while restoring the confidence on the banking sector. European Banking Authority announced at the end of 2011 the recommendation that required banks to achieve certain capital adequacy requirements. This was an act from the Authority to prepare the banks for the future regulation. They also tried to increase the stability of the financial markets.

1.1 Objectives of research

The main purpose of this research is to analyse the current capital positioning of European banks and the development under the Basel regulations.

The primary objective is to analyse the situation of the European banking sector. This is done by analysing the European Banking Authority's recommendation, capital exercise and its preliminary results. Also the deeper analysis of actions taken by three case study banks was performed. Through these banks and some financial authority's views the Finnish and European financial markets are compared on the capital adequacy matter.

The secondary objective is to introduce the regulations of Basel Committee in a simple understandable way in order to increase the understanding why the certain regulations are developed and why they are aimed to develop the banking sector to chosen direction. This all stems from the Basel Committee's "from the one-size fits-all to a tailor-made approach" mind-set. Also the impacts of Basel III are analysed through case study banks and based on the static balance sheet assumptions.

The third objective is to perform a deeper analysis of risk-weighted assets as they are an important element of risk-based capital. The report concentrates on the development of risk-weighted assets' regulations and the role of risk-weighted assets in the banks' actions to achieve EBA's recommendation.

The data for this research was collected mainly by using existing data from the academic publications. Quantitative data was supported with the structured interviews of representatives from a case study bank and a financial authority. The interviews consisted of open-ended questions. The objective of using these methods was to combine and find new view points from existing data, and by supporting it with the interviews to create a comprehensive package of capital positioning of European banks.

1.2 The commissioning company and benefits

The commissioning company for this study is the Federation of Finnish Financial Services. They represent financial companies and their objective is to secure the operating environment of those companies and a well-functioning financial market in general. The Federation is actively involved in European lobbying and they promote the interests of the financial industry. (Federation of Finnish Financial Services 2012.)

This research aims to provide benefits for students and for the Federation. The Federation benefits from the research by gaining knowledge of European bank's positioning through analyse of the results. This research is a part of a theme group organised by the commissioning party. The theme group's objective is to compare the Finnish and the European financial markets. As part of the theme group this study's input benefits the whole group. From the studies on the theme group a publication is combined and provided to financial specialists on the presentation seminar in December 2012.

With this paper financial students can increase their knowledge of current regulation on the banking sector and the current situation of the European financial sector.

1.3 Structure of the research

The research is structured by using zipper model. As the concepts are wide, the analysis and conclusions are presented after the each wider concept.

The thesis starts with the introduction to the subject and to the objectives of this study. In this part is also presented the commissioning company and the key concepts of the study. After this the data collection and analysis methods are presented.

From chapter three onwards is presented the development of the Basel regulations and the impact analysis of the Basel III. These chapters contain a comprehensive package of the capital requirements set in the Basel regulations. Secondly is conducted a deeper analysis of risk-weighted assets, which are important factor in capital ratios and developed in the Basel regulations. Also the main findings of RWA are presented in chapter 6.

Thirdly is presented the European Banking Authority's recommendation and the capital exercise's preliminary results. After the results is shown the deeper analysis of case companies on this matter and also the results of the interviews in order to create the comparison of European and Finnish financial markets. Lastly is discussed the findings and validity of the results. Also the further recommendations are presented in the last chapter. The overlay matrix is presented in the Attachment 9.

1.4 Key concepts

Here is introduced the definitions of the key concepts of the research. The listed terms are essential to understand the studied phenomenon and analysed theories.

Basel Committee: provides a forum for cooperation between its member countries on banking supervisory matters. The wider objective of the Committee has been to improve supervisory understanding and the quality of banking supervision by developing regulations. (Bank for International Settlements 2009, 1.)

2011 EU Capital exercise: The European Banking Authority published on the recommendation related to banks' recapitalisation needs. These measures are part of broader package to restore stability and confidence in the markets in the EU. The national supervisory authorities were required to demand banks to strengthen their capital positions by establishing an exceptional and temporary buffer by the end of June 2012. (European Banking Authority 2011a, 1-3.)

Core Tier 1 ratio: A ratio that compares the amount of Core Tier 1 capital to amount of Risk-weighted assets. It represents the capital adequacy of the bank. "Core Tier 1 Ratio = Core Tier 1 capital/RWA." (European Banking Authority 2011b, 10.)

Core Tier 1 capital: A combination of the highest quality capital instruments (retained earnings, issued shares) and instruments provided by governments. The definition is based on existing EU legislation in the Capital Requirements Directive which had been developed based on Basel III. (European Banking Authority 2011b, 9)

Risk-weighted assets: The guidelines established a credit risk-weight for all assets. The amount of risk-weighted assets is the book value of the asset is multiplied by the credit risk-weight. The credit risks were divided under classifications that carry different risk weights. (Fabozzi & Modi-gliani 2009, 51.)

2 Methodological approach

This chapter covers the data collection and analysis processes and explains the reasoning why specific existing data was chosen and why certain people were interviewed. Both quantitative and qualitative data was collected and existing data was supported with structured interviews of representatives of a case study bank and a financial authority.

2.1 Data collection

Data sources for this research were very limited. The existing up-to date data was provided only by international institutions and organisations that develop and analyse the data reported by banks. Thus literature was not that much use. The data chosen - publications, news articles and banks reports and press releases – was highly reliable and analysed based on its relevancy.

2.1.1 Existing data

The data for the theory framework was collected from publications of Bank of International Settlements, European Banking Authority and International Monetary Fund. These institutions are the ones that develop the regulations, organise capital exercises or analyse the impacts of regulations and exercises. As they operate both as developers and implementers, they are the only ones that have published data that is relevant to this study. They also have the latest and the most reliable information on the key concepts. It was ensured during the data collection process that all data was relevant to the demarcation of research.

To support this data and as the empirical part of the research three case companies were analysed. The relevant information connected to the objectives was collected from press releases, publications and highly reliable news sources such as Financial Times and Bloomberg. The banks' own data is most reliable as they have the obligation to publish transparent data due to current regulation.

2.1.2 Interviews

To support existing data found on the case companies and to get a supervisory aspect was organised two structured interviews. For the deeper case company analysis was interviewed Mikko Laukka, who is the First Vice President of Regulatory & Economic Capital unit on Danske Group. His area of expertise touches exactly on the most relevant topics of this research. This interview gave an insight to Danske Groups operations during the capital exercise and to the actions that they take on the process of preparation to regulation.

Also two analysts of Finnish Supervisory Authority were interviewed to get an overview aspect of the European banking sector. Their responsibilities include regulations and the European financial markets. Thanks to this interview an overview of current capital positioning of European banks was gained.

All these interviewees were chosen on the basis that their responsibilities were highly relevant to the study. The interviews were planned and organised after all the other data was collected and analysed in order to get the most relevant additional data to the research. The interviews were based on open ended questions so that respondents were able to answer thoroughly as they wished. Therefore, the most relevant additional data was achieved through interviews.

2.2 Data analysis

The objective of this research was to create a comprehensive package of capital regulations of the banking sector by combining existing data about the Basel frameworks. As the available data was very limited only the highly relevant one was taken into this research and the other parts of regulations were left out.

The capital exercise process and preliminary results are also presented by only one single authority. The analysis was once again based on only the most relevant data related to the theory and the objectives of this study.

The case companies were chosen by analysing the data that is mentioned in the previous paragraph. The goal was to get the best comparison possible. One of them was above the required target of capital adequacy even before the capital exercise and was operating well on the sector. The other two banks had some capital shortfall and needed to take actions to achieve the set targets. Thus it was possible to compare a bank that is doing well and the banks that had some issues. This analysis was also supported by an interview.

The aim was also to get an overview of the whole banking sector in Europe and the interview of the supervisory authority was planned and analysed on this basis.

3 History of the Basel Committee

The Basel Committee on Banking Supervision was established by the central-bank governors at the end of 1974. This was due to serious failures in international currency and banking markets e.g. the failure of Bankhaus Herstatt in Germany. The Committee has held meeting regularly three or four times a year since February 1975. (Bank for International Settlements 2009, 1.)

The Committee's members are from Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. Each country is represented by its central bank except when the formal responsibility is carried by some other authority, in which case the authority is the representative. The current Chairman of the Committee is Mr. Nout Wellink, President of the Netherland's Bank. (Bank for International Settlements 2009, 1.)

The Committee does not operate as supranational supervisory authority but it provides a forum for cooperation between its member countries on banking supervisory matters. The wider objective of the Committee has been to improve supervisory understanding and the quality of banking supervision worldwide in three principal ways according to the Bank for International Settlements (2009, 1.):

- Exchanging information on national supervisory arrangements
- Improving the effectiveness of techniques for supervising international banking business
- Setting minimum supervisory standards in areas where they are considered desirable.

The Committee's conclusions do not have any legal force but its goal is to create broad supervisory guidelines, standards and recommendations of best practices. They expect that countries will take steps to implement them through detailed arrangements which suit best for their national system. The Committee encourages common practices and common standards but they do not try to create harmonised detailed supervisory tech-

niques among member countries. The Committee's objective is that there is not any foreign banking institution that could escape supervision and that the supervision has to be adequate. (Bank for International Settlements 2009, 1-2.)

As a result of continuous collaboration in the supervision of international banks, the Committee has collected information examining the obstacles to effective supervision arising from bank secrecy regulations. It has also studied authorisation procedures for new foreign banking establishments. During its history the Committee has devoted most of its time to capital adequacy. In the early 1980s, the Committee became concerned about the deteriorating capital ratios of the main international banks and the growing risks. The Committee members decided to prevent the erosion of capital standards in their banking systems and work towards similar capital adequacy measures. The result was a broad consensus on measurement of the risks on a weighted approach, both on and off the balance sheet. (Bank for International Settlements 2009, 2.)

The Committee recognised the overriding need for a multinational accord to strengthen the stability of the international banking system and to remove a source of competitive inequality arising from differences in national capital requirements. This has leaded the Committee to publish consultative papers such as Basel Capital Accord (the 1988 Accord) and Basel II framework. Basel III framework is under implementation procedure and will be discussed in this research. This paper presents also the main features of Basel Capital Accord and Basel II framework. The main focus is on these consultative papers' capital requirements. (Bank for International Settlements 2009, 2.)

3.1 Basel Capital Accord

In July 1988 the Basel Committee published their first consultative paper "International Convergence of Capital Measurement and Capital Standards". It was the outcome of the Committee's work over several years to secure the international convergence of supervisory regulations governing the capital adequacy of international banks. The framework sets out the details for measuring capital adequacy and the minimum standard to be achieved. The framework and standard were accepted by the Group of Ten's central bank Governors. (Bank for International Settlements 1988, 1.)

The main objective of this new framework was to strengthen the soundness and stability of the international banking system. The capital adequacy as measured by this framework should have been taken into account when assessing the strength of banks. The framework mainly assesses capital in relation to credit risk but also interest rate risk and the investment risk on securities need to be taken into account by supervisors in overall capital adequacy assessment. (Bank for International Settlements 1988, 1-2.)

This framework intended to be applied to banks on a consolidated basis taking into consideration subsidiaries undertaking banking and financial business. The document describes in its four sections the constituents of capital, risk-weighting system, the target standard ratio and transnational and implementation arrangements. (Bank for International Settlements 1988, 3.)

3.2 The constituents of capital

The Committee considered that the key elements of capital were equity capital and disclosed reserves but it also considered that there were a number of other important components of a bank's capital base. Therefore it was concluded that capital was defined in two Tiers. At least 50% of a bank's capital base was supposed to consist of core elements of equity capital and published reserves (Tier 1) and the other elements of capital were admitted into supplementary capital (Tier 2). (Bank for International Settlements 1988, 3-4.)

Capital elements on this framework were thus divided into two categories:

- Tier 1
  a) Paid-up share capital/common stock
  b) Disclosed reserves
- Tier 2
  a) Undisclosed reserves
  b) Asset revaluation reserves
  c) General provisions/general loan-loss reserves
  d) Hybrid (debt/equity) capital instruments
  e) Subordinated debt (Bank for International Settlements 1988, 17).

The sum of Tier 1 and Tier 2 elements will be eligible for inclusion in the capital base with certain limitations. E.g. the total of Tier 2 elements was limited up to 100 % of the total Tier 1 elements and subordinated term debt was limited up to 50 % of Tier 1 elements. (Bank for International Settlements 1988, 17.)

The framework concluded that certain deductions should have been made from capital base for the purpose of calculating the risk-weighted capital ratio. The deductions consisted of goodwill, as deduction from Tier 1 capital elements, and investments in subsidiaries engaged in banking and financial activities which are not consolidated in national systems. (Bank for International Settlements 1988, 7.)

3.3 The risk-weighting system

The Committee decided that the preferred method on assessment of the capital adequacy of banks was a weighted risk ratio in which capital is related to different categories of assets or off-balance-sheet exposure and weighted according to categories of relative riskiness. The Committee believed that the risk ratio has several advantages over the simpler gearing ratio approach. They thought that it provides a fairer basis for making international comparisons between banking systems allowing off-balance sheet exposures to be included more easily into the measure. It allows banks to hold liquid or other assets which carry low risk. The framework divides assets to five weight categories (0, 10, 20, 50 and 100%). These are presented in more detail on Table 1. (Bank for International Settlements 1988, 8.)

Table 1. Risk-weights by category of on-balance-sheet assets (Bank for International Settlements 1988, 21-22)

Risk-weight	Asset
0%	- Cash - Claims on central governments and central banks - Other claims on OECD central governments and central banks - Claims collateralised by cash of OECD central-government securities or guaranteed by OECD central governments
0, 10, 20 or 50% (at national discretion)	- Claims on domestic public-sector entities, excluding central government and loans guaranteed by such entities
20%	- Claims on multilateral development banks and claims guaranteed by, or collateralised by securities issued by such banks - Claims on banks incorporated in the OECD and loans guaranteed by OECD incorporated banks - Claims on banks incorporated in countries outside the OECD with a residual maturity of up to one year and loans with a maturity of up to one year guaranteed by banks in countries outside the OECD - Claims on non-domestic OECD public-sector entities, excluding central government, and loans guaranteed by such entities - Cash items in process of collection
50%	- Loans fully secured by mortgage on residential property that is or will be occupied by the borrower or that is rented
100%	- Claims on the private sector - Claims on banks incorporated outside the OECD with a residual maturity of over one year - Claims on central governments outside the OECD (unless denominated in national currency and funded in that currency) - Claims on commercial companies owned by the public sector - Premises, plant and equipment and other fixed assets - Real estate and other investments - Capital instruments issued by other banks - All other assets

As seen from the Table 1, there are many different kinds of risks that banks have to monitor. The credit risk is the major risk most banks but there are many other kinds of risks also e.g. investment risk and interest rate risk. The central focus of this framework was on credit risk. As seen on Table 1 we can see that credit risks especially concerning private sector are weighted to have the highest risk. (Bank for International Settlements 1988, 8-9.)

3.4 The target standard ratio, transition and implementing arrangements

After few consultations and preliminary testing of the framework, the Committee agreed that a minimum standard was set and that international banks generally should achieve it by the end of the transitional period. The target standard ratio of capital to weighted risk assets was at 8% (of which the core capital element will be at least 4%). International banks in member countries were expected to achieve this ratio by the end of 1992. (Bank for International Settlements 1988, 14.)

The transitional arrangements were set. Additionally there were temporary standard to be met by the end of 1990. Supplementary elements were not allowed to be more than core capital and term subordinated debt within supplementary elements more than 50% of Tier 1. General loan-loss reserves or general provisions were limited at the end of 1992 to 1.25 percentage points. (Bank for International Settlements 1988, 14-15.)

4 Basel II

In June 2006 the Committee published comprehensive and revised version of Basel II framework and it was the outcome of additional proposals for consultations and three quantitative impact studies. The objective of this publication was to revise the 1988 Accord to further strengthen the soundness and stability of the international banking system. The Committee believed that the expected framework would support the adoption of stronger risk management practices. (Bank for International Settlements 2006, 1-2.)

In this revised framework the key elements of the 1988 capital adequacy framework were retained including general requirement to hold capital equivalent to at least 8% of their risk-weighted assets. A significant innovation was the greater use of assessments of risk provided by banks' internal systems as inputs to capital calculations. It was more risks sensitive than the 1988 Accord and provided alternative options for determining the capital requirements for credit risk and operational risk. The framework in its revised form consists of three pillars (minimum capital requirements, supervisory review process and market discipline) but only the first pillar is covered in this report. (Bank for International Settlements 2006, 2-3.)

4.1 Calculation of minimum capital requirements

The first pillar presents the calculation of the total minimum capital requirements for credit, market and operational risks. The capital ratio is computed using the regulatory capital and risk-weighted assets. The total capital ratio must be no lower than 8% and Tier 2 capital is limited to 100% of Tier 1 capital. (Bank for International Settlements 2006, 12.)

The definitions of Tier 1 and Tier 2 capital elements have not changed but Tier 3 capital element is added. Tier 3 may be used for short-term subordinated debt in the sole purpose of meeting a proportion of the capital requirements for market risks. Tier 3 was limited to 250% of a bank's tier capital that is required to support market risks. So according to the Basel II framework the capital of a bank consists of Core capital (Tier

1), Supplementary capital (Tier 2) and Tier 3 elements. (Bank for International Settlements 2006, 244.)

4.2 Risk-weighted assets

According to the revised framework total risk-weighted assets are determined by multiplying the capital requirements for market risk and operational risk by 12.5 and adding the resulting figures to sum of risk-weighted assets for credit risk. (Bank for International Settlements 2006, 12.)

4.2.1 Credit risk

The Committee permitted banks to choose between two broad methodologies for calculating their capital requirements for credit risk. These approaches were the standardised approach and the internal ratings-based approach. (Bank for International Settlements 2006, 19.)

The standardised approach sets out revisions to the 1988 Accord for risk-weighting banking book exposures. It specifies revised standards for risk-weights for assets including credit risk. The risk-weights of the standardised approach are based on the external credit ratings. (Bank for International Settlements 2006, 19.)

Following the internal ratings-based approach the banks are allowed to use their internal rating systems for credit risk if approved by the bank's supervisor. The IRB approach is based on measures of unexpected and expected losses. It defines out minimum conditions and disclosure requirements that banks have to follow when they have been approved to trust in their own internal estimates of risk components in determining the capital requirement for a given exposure. (Bank for International Settlements 2006, 52.)

Basel II introduced also a securitisation framework for credit risk. The securitisation framework must be applied by the banks in order to determine regulatory capital requirements. Because securitisations may be structured in many different ways, this framework laid down the basis for the capital treatment of securitisation exposures.

The capital treatment of a securitisation exposure must be determined on the basis of economic substance rather than its legal form. Securitisation exposures can include e.g. mortgage-backed securities, liquidity facilities, interest rate or currency swaps and credit derivatives. (Bank for International Settlements 2006, 120.)

4.2.2 Operational risk

In the framework the operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. It includes legal risk, but excludes strategic and reputational risk. The framework presented three methods for calculating operational risk capital charges in continuum of increasing sophistication and risk sensitivity i.e. the basic indicator approach, the standardised approach (SA) and advanced measurement approaches (AMA). The target was to encourage banks to implement more advanced measurement approaches for operational risks. (Bank for International Settlements 2006, 144.)

4.2.3 Market risk

Basel II defines the market risk as the risk of losses in on and off-balance-sheet positions arising from movements in market prices. The risks subject to this requirement were the risks pertaining to interest rate related instruments, equities in the trading book, foreign exchange risk and commodities risk throughout the bank. It sets out two broad methodologies of measuring the market risks. The objective of this part of the framework is to ensure that market risks are quantified based on data and by formal measurement methods. (Bank for International Settlements 2006, 157.)

5 Basel III

In June 2011 the Basel Committee published the Basel III framework. It is a set of reform measures to strengthen the regulation, supervision and risk management of the banking sector. The objective is to improve the banking sector's ability to absorb shocks arising from financial and economic stress and to reduce the risk of spill over from the financial sector to the real economy. It also aims to improve risk management and governance as well as to strengthen banks' transparency and disclosures. (Bank for International Settlements 2011a, 1.)

The Committee considered that it is critical that all the countries raise the resilience of the banking sectors to both internal and external shocks. This is done by strengthening the regulatory capital framework, building on the three pillars of the Basel II framework. The Committee introduced these changes in order to minimise the disruption to capital instruments that are currently outstanding. (Bank for International Settlements 2011a, 2-3.)

Basel III introduces also a framework to promote the conservation of capital and the build-up of adequate buffers above minimum that can protect banks during the stress periods. The framework will give the supervisors stronger tools to promote capital conservation in the banking sector. This will provide a mechanism for rebuilding capital during economic recovery. (Bank for International Settlements 2011a, 6.)

The Basel Committee proposed two minimum standards for funding liquidity to complement the principles. The Liquidity Coverage Ratio (LCR) was developed to promote the short-term resilience of bank's liquidity risk profile. The Net Stable Funding Ratio (NSFR) was developed to provide a sustainable maturity structure of assets and liabilities. This was done to improve banks' long time resilience by creating additional incentives to fund their activities with more stable funding sources on an on-going structural basis. (Bank for International Settlements 2011a, 8-9.)

This study focuses on the first pillar of the Basel III framework while it contains the regulation of capital requirements and so is the essential part for this study.

5.1 Capital requirements and buffers

The global banking system entered to the crisis with an insufficient level of high quality capital and the crisis revealed the variance in the definition of capital and the lack of disclosure across the jurisdictions. Thus the key element of new definition of capital - common equity - has the greater focus as the highest quality component of capital. (Bank for International Settlements 2011a, 12.)

In the new framework the components of the capital are Tier 1 (divided to Common Equity Tier 1 and Additional Tier 1) and Tier 2 capital. These elements are subject to the following restrictions according to the Bank for International Settlements (2011a, 64.):

- Common Equity Tier 1 must be at least 4.5% of risk-weighted assets at all times
- Tier 1 capital must be at least 6.0% of risk-weighted assets at all times
- Total capital (Tier 1 plus Tier 2 capital) must be at least 8.0% of risk-weighted assets at all times.

5.1.1 Common Equity Tier 1 capital

Common Equity Tier 1 capital represents the highest quality components of capital. It consists of the sum of the following elements according to the Bank for International Settlements (2011a, 13.):

- Common shares issued by bank
- Stock surplus (share premium) resulting from the issues of instruments included Common Equity Tier 1
- Retained earnings
- Accumulated other comprehensive income and other disclosed reserves
- Common shares issued by consolidated subsidiaries of the bank and held by third parties
- Regulatory adjustments.

All of these have to meet the criteria for classification and for inclusion in the Common Equity Tier 1 capital. Retained earnings and other comprehensive income include interim profit and loss. Dividends are removed and the treatment of minority interest and the regulatory adjustments are discussed in chapter 5.1.4. (Bank for International Settlements 2011a, 13.)

5.1.2 Additional Tier 1 capital

The framework defines the minimum set of criteria for instruments issued by the bank to be included in Additional Tier 1 capital. This component consists of the following elements according to the Bank for International Settlements (2011a, 15.):

- Instruments issued by the bank that meet the criteria for inclusion in Additional Tier 1 capital (and are not included in Common Equity Tier 1)
- Stock surplus (share premium) resulting from issue of instruments
- Instruments issued by consolidated subsidiaries of the bank and held by third parties
- Regulatory adjustments applied in the calculation of Additional Tier 1 capital.

All of these elements have to meet the criteria for inclusion in Additional Tier 1 capital and are not included in Common Equity Tier 1(Bank for International Settlements 2011a, 15).

5.1.3 Tier 2 capital

The objective of Tier 2 capital is to provide loss absorption on a gone-concern basis. Tier 2 capital consists of following elements that are not included in the Tier 1 capital. The elements have to meet the minimum set of criteria (Bank for international Settlements 2011a, 17-18.):

- Instruments issued by the bank that meet the criteria for inclusion in Tier 2 capital (and are not included in Tier 1 capital)
- Stock surplus (share premium) resulting from the issue of instruments
- Instruments issued by consolidated subsidiaries of the bank and held by third parties
- Certain loan loss provisions

- Regulatory adjustments applied in the calculation of Tier 2 capital.

5.1.4 Minority interest and regulatory adjustments

The minority interest arising from the issue of common shares by a fully consolidated subsidiary of the bank may receive recognition in Common Equity Tier 1 only if the instrument giving rise to minority interest would meet all of the criteria for classification as common shares for regulatory capital purposes; and the subsidiary that issued the instrument is itself a bank. (Bank for International Settlements 2011a, 19-20.)

Total capital instruments issued by a fully consolidated subsidiary to third party investors may be recognised in total capital only if the instruments meet all the criteria for classification as Tier 1 or Tier 2 capital. The amount of this Tier 1 capital that is recognised in Additional Tier 1 will exclude amounts recognised in Common Equity Tier 1 capital. If the capital has been issued to third parties out of a special purpose vehicle, none of this can be included in Common Equity Tier 1 capital. This can be treated as if the bank itself has issued the capital directly to third parties and it meets all the relevant entry criteria and thus it can be included in Additional Tier 1 or Tier 2. (Bank for International Settlements 2011a, 21.)

Basel III sets out the regulatory adjustments to be applied to capital. In most cases these adjustments are applied in the calculation of Common Equity Tier 1. The adjustments are either deducted or derecognised (positive amounts should be deducted and negative amounts should be added back) in the calculation of Common Equity Tier 1. E.g. goodwill, deferred tax assets and investments in own shares will be deducted whereas cash flow hedge reserve and gains on sales related to securitisation transactions should be derecognised. (Bank for International Settlements 2011a, 21-27.)

5.1.5 Disclosure requirements

In order to improve the transparency of regulatory capital and the market discipline, banks are required to disclose more information about their regulatory adjustments, main features of capital instruments and comprehensive explanation of ratios that involve components of regulatory capital (e.g. Common Equity Tier 1). The banks are

also required to show on their websites the full terms and conditions of all instruments included in the regulatory capital. Also during the transition phase banks has to disclose the specific components of capital, including capital instruments and regulatory adjustments that are benefiting from the transitional provisions. (Bank for International Settlements 2011a, 27.)

5.1.6 Transitional arrangements

According to the current information national implementation should begin on 1 January 2013. As of the beginning of the year banks will have to have 3.5% Common Equity Tier 1, 4.5% Tier 1 capital and 8.0% of total capital. All of the requirements are in relation to risk-weighted assets. The minimum Common Equity Tier 1 and Tier 1 requirements will be phased-in between 1 January 2013 and 1 January 2015. The capital instruments that will not qualify as non-common equity Tier 1 capital or Tier 2 capital will be phased out. The phase in arrangements are presented in Attachment 1. (Bank for International Settlements 2011a, 27-28.)

5.2 Risk coverage

The risk coverage framework was revised in order to strengthen the capital treatment for certain complex securitisations. This requires banks to execute stricter credit analyses of externally rated securitisation exposures. It requires also higher capital for trading and derivatives activities but also for the complex securitisations held in the trading book. A stressed value-at-risk framework was introduced to help justify periodicity. A capital charge for additional risk that estimates the default and migration risks of non-securitised credit products but takes also into account the liquidity was also introduced. (Bank for International Settlements 2011b.)

One aim of the Committee was to strengthen the counterparty credit risk framework. It included stricter requirements for measuring exposure, capital incentives for banks to use central counterparties for the derivatives and higher capital for inter-financial sector exposures. The Committee proposed that trade exposures to a qualifying central counterparties will receive a 2% risk-weight. (Bank for International Settlements 2011b.)

5.3 Capital conservation buffer

The capital conservation buffer is designed to ensure that banks would build up capital buffers outside stress periods which can be drawn down as losses are incurred. The requirement is based on simple capital conservation rules designed to avoid breaches of minimum capital requirements. When the buffers have been drawn down, the banks should look to rebuild them e.g. by reducing distributions of earnings, dividend payments, share-buybacks and staff bonus payments. The banks may also choose to raise new capital from the private sector. The implementation of the framework will help increase sector resilience both going into a downturn and provide the mechanism for rebuilding capital during the early stages of economic recovery. (Bank for International Settlements 2011a, 54-55.)

The capital conservation buffer of 2.5% is established above the regulatory minimum requirements. The capital distribution restrictions will be imposed on a bank when capital levels fall within this range. The restrictions are imposed only to distributions, not to the operations of the bank. The bank must meet a minimum capital conservation ratio at various levels of the Common Equity Tier 1 capital ratios. E.g. Bank with CET1 ratio of 4.5-5.125% ratio is required to hold 100% of its earnings (no pay outs of dividends etc.). (Bank for International Settlements 2011a, 55.)

The restrictions on distributions include dividends, share buybacks, discretionary payments on other Tier 1 capital instruments and discretionary bonus payments to staff while being applied on the consolidated group level. The banks should not choose to operate in the buffer range during stress-free times simply to compete with the other banks. In order to prevent this from happening the supervisors have the additional discretion to impose time limits on the banks operating within the buffer range. (Bank for International Settlements 2011a, 56.)

The capital conservation buffer will be phased in between 1 January 2016 and the end of 2018 (Attachment 1). It begins at 0.625% of RWAs and will reach its final level of 2.5% of RWAs on 1 January 2019. (Bank for International Settlements 2011a, 57.)

5.4 Countercyclical buffer

The countercyclical buffer aims to ensure that banking sector capital requirements take into account the macro-financial environment in which the banks operate. It will be implemented by national jurisdictions when excess aggregate credit growth is judged to be associated with a build-up of a system-wide risk. This ensures that the banking system has a buffer of capital to protect it against the potential losses in future. The buffer for internationally active banks will be a weighted average of the buffers implemented across all the jurisdictions to which the bank has credit exposures. (Bank for International Settlements 2011a, 57.)

The national authorities will monitor credit growth and other indicators that may signal a build-up of the system risk and make assessments of whether credit growth is the leading cause. Based on the assessment authorities will put in place the countercyclical buffer requirement and release the buffer when the system-wide risk has drawn off. This buffer will vary between 0% and 2.5% of RWAs, depending on the extent of the system-wide risk. The jurisdiction will pre-announce its decision to raise the level of the countercyclical buffer by up to 12 months in order to give banks time to adjust. The decrease of the level of the buffer will take effect immediately. The buffers are determined specifically to each bank based on the geographic composition of its credit exposure portfolio. (Bank for International Settlements 2011a, 57-58.)

The countercyclical buffer will be phased-in at the same time with the capital conservation buffer between 2016 and 2018. However, the jurisdictions may choose to implement larger countercyclical buffer requirements. The maximum countercyclical buffer will likewise follow the requirement of the capital conservation buffer levels (Attachment 1). (Bank for International Settlements 2011a, 59.)

5.5 Leverage ratio

The build-up of excessive on-and off-balance sheet leverage in the banking system was one of the underlying issues of the crisis. Thus the Committee introduced a simple, transparent and non-risk based leverage ratio that act as a credible supplementary measure to risk based capital requirements. The ratio is intended to control the build-

up of leverage in the banking sector and to help avoid instability in financial leveraging processes which could damage the economy and the wider financial system. It also reinforces the risk-based requirements with a non-risk-based backstop measure. The Committee will test a minimum Tier 1 3% leverage ratio from 1 January 2013 to 1 January 2017. Based on the results of this period, the final adjustments to definition and calibration of the leverage ratio will be performed in the first half of 2017. (Bank for International Settlements 2011a, 61-63.)

According to the Sonali & Amadou the leverage ratio and the more complex risk-based requirements work well together. However, opinions about this compatibility vary. The leverage requirement provides a baseline level of capital to protect the safety net, while the risk-based requirement can capture additional risks that are not covered by the leverage framework. The leverage ratio also ensures that a capital backstop remains even if model errors or other miscalculations impair the reliability of the risk-based capital. The leverage ratio promotes the stability and the resilience during difficult economic periods. (Sonali & Amadou 2012, 3.)

5.6 Basel III monitoring exercise

European Banking Authority has conducted a research presenting the results of the Basel III monitoring exercise as of 30 June 2011. A total of 158 banks submitted the data for this exercise. The banks were divided in to two groups. In this study is presented the results of the group one as the 48 banks in the group had a very high coverage of their banking systems. They reached 100% coverage for many jurisdictions. (European Banking Authority 2012f, 2.)

Since the new EU directive and regulation are not finalised yet, there was not any EU specific rules analysed in this exercise. It excludes also management actions to increase capital or decrease risk-weighted assets. So the monitoring exercise is based on the static balance sheet assumptions. (European Banking Authority 2012f, 2.)

5.6.1 Impact on capital ratios

In this research a full implementation of the Basel III framework is assumed as of 30 June 2011. The Common Equity Tier 1 ratio would have declined from an average CET1 ratio of 10.2% to an average ratio of 6.5%. 80% of banks would be at or above the minimum 4.5% ratio while 44% would reach at least the 7.0% target level. This would indicate the CET1 capital shortfall of 18 billion euros at a minimum level and 242 billion euros at the target level. (European Banking Authority 2012f, 3.)

The average Tier 1 ratio showed a decline from 11.9% to 6.7% and the total capital ratio would have declined from 14.4% to 7.8%. Including the capital conservation buffer and the surcharge for systemically important banks, the banks' capital shortfall raises to 361 billion euros of Tier 1 capital and 485 billion euros of total capital. (European Banking Authority 2012f, 3.)

5.6.2 Main drivers of changes

The overall impact on the CET1 ratio can be accounted as almost equal parts to changes in the definition of capital and to changes related to the calculation of risk-weighted assets. CET1 declines by 22.7% and RWA increase by 21.2% on average. The RWA increase is mainly driven under the new framework as the exposures to counterparty and market risks. The deductions in CET1 are mainly driven by goodwill and by the deductions for holdings of capital of other financial companies. (European Banking Authority 2012f, 4.)

Introduction of the credit valuation adjustment (CVA) capital charges result in an average RWA increase of 8.0%. In addition the trading book exposures and the transition from Basel II 50/50 deductions to a 1250% risk-weight treatment are the main contributors to the increase of RWA. (European Banking Authority 2012f, 4.)

A positive correlation between bank size and the level of leverage was indicated in the monitoring results. The banks showed an average Basel III Tier 1 leverage ratio of 2.7%. If a hypothetical current ratio was in place the banks would be at 4.0% leverage ratio. (European Banking Authority 2012f, 4.)

6 Risk-Weighted Assets

While recovering from the global financial crisis the strengthening of capital ratios is one of the key priorities. The banks have to increase the quantity, quality and transparency of capital in order to restore the confidence on the banking sector. Recently the regulators have concentrated their reform action to improve the numerator of capital ratios. The changes to the denominator e.g. RWAs have been more limited. In July 2011 the Basel Committee has announced that it will start working on RWAs.

Still today the credit risks are calculated under Basel I or Basel II. In 2007 by the Capital Requirements Directive Basel II framework was required to be implemented in European banks.

6.1 Developments in RWA measures

Basel I proposed a simple framework which is based on the four broad categories of claims. These categories were sovereigns, banks, mortgages, and corporates. The risk sensitivity of capital requirements was aimed to be improved with Basel II framework. (Sonali & Amadou 2012, 6.)

In 1996 the Basel Committee included the internal ratings-based (IRB) approach to Basel II framework. For the determination of capital requirements for market risk the value-at risk (VaR) approach was incorporated into the Basel II framework. In 2004 a similar approach to credit risk was included into the Basel II. It gave an opportunity for the banks to determine risk-weights by using their own internal ratings systems or external credit rating agencies. The internal ratings system required supervisory validation. The banks were enabled to calculate the parameters of a uniform regulatory formula. (Sonali & Amadou 2012, 6.)

Basel II added simplified approaches for the risk categories. Compared to Basel I for the credit risk was provided a much more differentiated treatment of exposures based on the standardised approach (SA). It allowed risk-weights to vary for each exposure according to the external credit rating agencies ratings (Attachment 2). However, the

external ratings could drive risk-weights higher than 100%, but also they could drive weightings much lower. (Sonali & Amadou 2012, 6-7.)

Basel III is planned to mostly strengthen the numerator but it provides also limited changes to RWAs. The numerator of risk-based capital ratios is significantly improved in the Basel III. It also introduces an international leverage ratio, capital conservation buffer and countercyclical buffer requirements. Basel III requires also additional loss absorbency to be met with a progressive Common Equity Tier 1 from the systemically important banks (SIBs). (Le Leslé & Avramova 2012, 37.)

Over the last decade the risk-weighted assets that banks report to regulator have declined steadily. This and the other signs support the idea that in an attempt to minimise regulatory burdens banks can "optimise" their capital by under-reporting RWA. (Sonali & Amadou 2012, 16.)

"The asymmetry of information between banks, supervisors, and market participants regarding how risky RWA are can lead to increased uncertainty about the adequacy of bank capital, which during a financial crisis can have damaging effects for financial stability." (Sonali & Amadou 2012, 16-17.)

6.2 Differences between regions

During the financial crisis smaller countries were following Basel I regulation while countries in the Asia with large financial sectors followed Basel II. Basel I regulation requires banks to appoint certain risk-weights to assets in specified categories while it tries to minimise manipulation possibilities. Only the largest international US banks were required to implement Basel II regulation by 2012 while rest of US banks continue to follow Basel I. Already before the financial crisis European banks were required to implement Basel II guidelines due to Capital Requirements Directive. As described in Basel II banks were allowed to use own internal modes for risk-weight determination purposes. (Sonali & Amadou 2012, 13-14.)

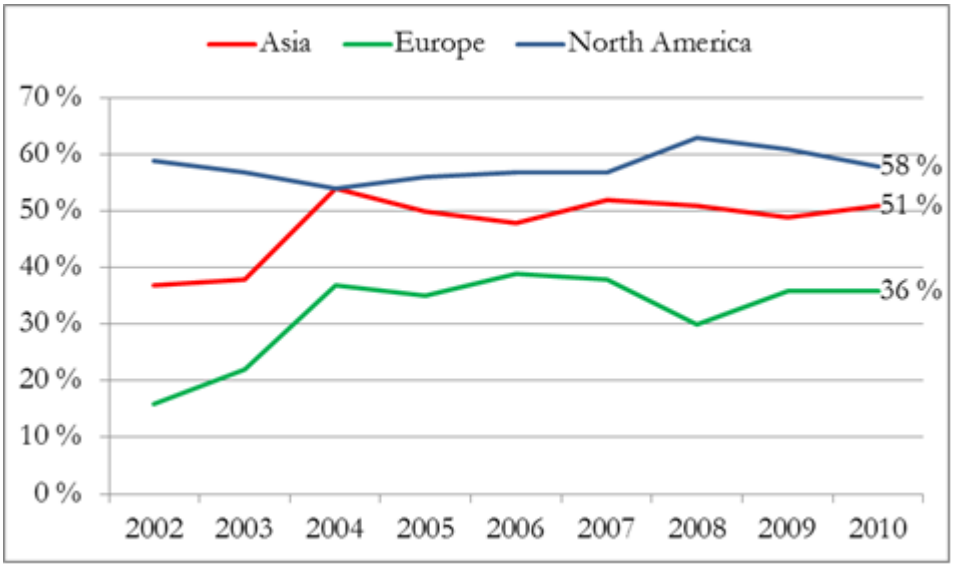

Figure 1. RWAs over Total Assets in Asia, Europe and North America 2002-2010 (Sonali & Amadou 2012, 6)

As the Figure 1 presents, these regulatory differences in RWAs are higher for the US and the Asian banks and lower for European banks. Le Leslé and Avramova (2012, 18) note that "historical default rates in Europe over the last 15 years have been consistently below those in Asia and in the US, which together with the use of the IRB approaches in Europe explain lower RWA reported by European banks."

By using a sample of the largest banks, Le Leslé and Avramova found that "European banks have lower RWA as a share of total assets than the US and Asian banks, even after controlling the differences in the business model and regulatory regime." The retail banks tend to have the highest RWA as a share of total assets and investment banks the lowest, with universal banks in-between. The investment banks are expected to have relatively lower RWA to total assets because of their larger trading books, which until recently required lower risk-weights than banking book assets. The changes to the Basel II market risk framework will require higher levels of capital for some activities such as securitisation, proprietary trading, and mark-to market losses (credit value adjustments). (Le Leslé & Avramova 2012, 8-12.)

6.3 RWAs & stock returns during Eurozone debt crisis

Sonali and Amadou (2012, 12) studied the impact of the risk-weighted assets to banks' stock returns during the crisis period 2007-2008. The study indicated that stock returns

are lower for the banks with higher risk-weighted assets. This also confirmed the findings of Demirgüç-Kunt, Detragiach and Merrouche (2010). Sonali's and Amadou's study pointed out the fact that relationship between the RWAs and the stock returns is remarkable and the banks with a one percentage point higher RWAs to tangible assets ratio have a 0,06 percentage points lower stock return. (Sonali & Amadou 2012, 12-13.)

Banks with higher stock returns usually can achieve more stable funding opportunities, more liquid assets, a lower share of non-performing loans, and a higher accounting return on assets. After all, according to the Sonali and Amadou strong statistical relationship with the stock returns can be seen only on the liquidity of the assets and the accounting return on assets. (Sonali & Amadou 2012, 12-13.)

During the financial crisis the banking stock returns showed a negative relationship between RWAs and stock returns. This can be seen as a sign that investors may use risk-weighted assets as an indicator of bank portfolio risk. During the severe phase of the crisis, from July 2007 to September 2008, banks with higher risk-weighted assets performed worse. When is looked into the on-going crisis in Europe can be seen a similar result. (Sonali & Amadou 2012, 16.)

In the countries where the banks can use own models for calculation of RWA, the relationship between stock returns and RWAs is weaker. The implementation of Basel II before the crisis weakens this relationship.

While comparing regions with different regulatory structures can be seen that the relationship between stock returns and RWAs is weaker in countries where banks have more discretion in calculation of RWAs. It is specifically in countries that had implemented Basel II before the recent financial crisis. In the end RWAs do not predict market measures of the bank risk when it comes to risk measures on stock-market. (Sonali & Amadou 2012, 16.)

7 Capital positioning on European banks

This study concentrates to specific sample of the banks on the European Banking Authority's (EBA) recommendation and to the specific capital ratios presented in following sections. In the study is presented the results of current situation of capital positioning on European banks. In the study was analysed how the banks were able to reach the recommended capital ratios by the end of June 2012. This study presents through the case companies also the possible actions taken to reach the recommendations.

The banks have been at the centre of the financial crisis since 2008. Thus the European Commission proposed to change the behaviour of European banks which amount for 53 % of the global assets. In July 2011 the Commission started to translate the international standards on bank capital, most commonly known as the Basel III agreement, to a new directive in Europe, CRD IV. Europe will be leading on this matter, applying these rules to more than 8000 banks. (European Commission 2011.)

The European Banking Authority (EBA) published on 8th December a formal recommendation related to banks' recapitalisation needs. These measures are part of broader package to restore stability and confidence in the markets in the EU. The recommendation stated that national supervisory authorities should demand banks to strengthen their capital positions by establishing an exceptional and temporary buffer by the end of June 2012. EBA stated that Core Tier 1 capital ratio should reach a level of 9 % before the deadline. The buffers are designed to provide a reassurance to markets about the banks' ability to resist shocks and still maintain adequate capital. 8th of December EBA identified a shortfall of 144.7 billion euros. (European Banking Authority 2011a, 1-3.)

The national authorities required banks to submit their plans describing actions to be taken in order to meet the set targets. The EBA's Board of Supervisors made on 9th of February a preliminary assessment of plans. The review highlighted that the shortfalls would be decreased primarily through direct capital measures which according to EBA

should not have a negative impact on lending into the real economy. (European Banking Authority 2011a, 2; European Banking Authority 2012a 1.)

7.1 Overview of the recapitalisation plans

EBA's recommendation was addressed to 71 banks that participated in the 2011 EU-wide stress test. However, small non cross-border banks were excluded. Three banks had also been identified as undergoing a significant restructuring process and thus were not assessed against the EBA's demand. These banks were Österreichische Volksbank AG, Dexia and WetLB AG. The composition of capital as of 30 September 2011 and banks included in the sample are presented in Attachment 3. (European Banking Authority 2011b, 9.)

Österreichische Volksbank AG was excluded because the group was under deep restructuring and evaluation of its business model. Dexia was also excluded because the group had indeed been restructured. The restructured group will not further develop significant cross-border activity and thus were not remained in the EBA sample. (European Banking Authority 2012a, 3.)

The capital package of Greece had been defined on the EU/IMF programme. The programme already defined a set of targets for banks including objectives for the Core Tier 1 ratio. Thus no new benchmarks had been set for the Greek banks. As an EFTA state of the EEA Norwegian banks are within the competence of the Norwegian authorities when it comes to any requirements and supervisory action pertaining to capital needs. Therefore the focus was on the recapitalisation plans and Board of Supervisors identified 78 billion euros shortfall for the banks left in the sample. (European Banking Authority 2012a, 3.)

7.2 Definition of Core Tier 1

The definition of Core Tier 1 was the same that was used in the 2011 EU-wide stress test and it included existing capital instruments subscribed by governments. It compromised the highest quality capital instruments (common equity) and hybrid instruments provided by governments. The definition is based on existing EU legislation in

the Capital Requirements Directive which had been developed based on Basel III. It takes the existing definition of Tier 1 net of deductions of participations in financial institutions and strips out hybrid instruments, but also recognises the existing government support measures. The Core Tier 1 is a temporary term while the directive is under development. It equals almost to Common Equity Tier 1 definition presented in Basel III framework with the differences stated above. (European Banking Authority 2011b, 9.)

In order to ensure a fully corresponding computation from all banks in sample, the EBA mapped the capital elements of Core Tier 1 to current reporting framework (COREP), presented in Attachment 4. Only the highest quality commercial instruments were included and the inclusion government support measures reflected to the expectation that instruments will be fully available to absorb losses and shelter banks. Government support measures needed to be approved by the European Commission and in line with European State aid rules. (European Banking Authority 2011b, 9.)

7.3 Risk-weighted assets

The risk-based capital guidelines recognised credit risk by segmenting and weighting requirements. The guidelines established a credit risk-weight for all assets. The credit risks were divided under different classifications e.g. Treasury securities were consider to carry 0% risk-weight. The book value of the asset was multiplied by the credit risk-weight to determine the amount of core and supplementary capital that the bank needed to support that asset. Risk-weighted assets were result of this calculation. (Fabozzi & Modi-gliani 2009, 51.)

As in the 2011 EU-wide stress test, banks had been requested to follow CRD III for the calculation of Core Tier 1 ratio (attachments 4 and 5). The banks should have also followed the changes in the trading book and securitisation treatment (Basel II) in the requirement. The risk-weighted assets were computed by multiplying the total capital requirements (including the Basel 1 transitional floor) with 12.5. Thus Core Tier 1 ratio was computed as follows according to the European Banking Authority (2011b, 10.):

"Core Tier 1 Ratio = Core Tier 1 capital/RWA."

7.4 Floors

Banks using advanced measurement approaches for credit and operational risk (IRB & AMA) had been asked by EBA to apply the Basel I floors (80%). There have been a variety of ways in which floors have been adapted nationally and banks have followed different approaches which depend on the national guidance. EBA requested National Supervisory Authorities to choose from two most widely used approaches and instruct the banks to adapt chosen approach to their jurisdiction. (European Banking Authority 2011b, 10.)

Approach 1 assessed the total minimum own funds that would be required under Basel I against the total minimum own funds according to the relevant regulation. The recapitalisation exercise banks were required to apply the CRD III market risk requirement. (European Banking Authority 2011b, 11.)

Approach 2 assessed the total own funds that would be required under Basel I against total own funds as of September 2011. It also applied the CRD III market risk requirement. (European Banking Authority 2011b, 11.)

The main difference between of these two approaches was how the total own funds were assessed. In approach 1 the own funds were assessed against required relevant regulation. In approach 2 the own funds were assessed against amount of total own funds as of September 2011.

Under both approaches the RWAs corresponding to the transitional floor capital requirements were computed according to the European Banking Authority (2011b, 11):

"RWA Floor: 12.5*Transitional floor capital requirement."

7.5 Computation of the target capital buffers

The computation of the capital buffers combined following five steps.

First, prudential filters on EEA sovereign exposures held in the AFS (Available for sale) portfolio were removed. Banks were required to build a buffer of Core Tier 1 capital vis-á-vis prudential filters. If the filter was positive, it implied a negative AFS valuation reserve (potential losses). Also in countries where prudential filters were not applied, the impact of the valuation of assets in the AFS portfolio was directly reflected in capital position. (European Banking Authority 2011b, 13.)

Second, EEA debt sovereign exposures in the held-to-maturity (HTM) and loans and receivable portfolio were valued in a conservative fashion, making use end of September data as a reference for loans and non-traded assets. Thus banks had been required to build a buffer of Core Tier 1 capital (BufferHTM) equal to the difference between the book value of those assets and their revalued amount. (European Banking Authority 2011b, 13.)

Third, banks had been allowed to offset positive and negative value adjustments for the debt securities in the HTM and leverage ratio portfolios. For loans and advances in the HTM and LR portfolios banks could not benefit from potential gains. (European Banking Authority 2011b, 13.)

Fourth, the sum of BufferAFS and BufferHTM had been cabbed to zero, i.e. banks could not end up with a negative buffer (BufferSOV= (BufferHTM + BufferAFS) ≥0) (European Banking Authority 2011b, 13.).

And last the capital shortfall was the sum of the difference between 9% of risk-weighted assets and the actual Core Tier 1 capital plus Buffer SOV. The formula was following according to the European Banking Authority (2011b, 13.):

"Shortfall = (9% RWA – CT1) + BufferSOV."

By the end of June 2012 the shortfall had to be zero.

The shortfall had been set based on September 2011 sovereign exposure figures and a capital requirement determined by the 9% Core Tier 1 threshold. It also noted that the

buffer to be held against sovereign debt exposures was fixed and it was not revised as a result of later market valuation changes and/or changes of the exposures, even though banks had until the end of June 2012 to meet the overall capital target. (European Banking Authority 2011b, 13.)

7.6 Banks' actions to achieve required capital positioning

EBA had set some guidance on the recommendation to banks. They set proposed mix of actions in order to bring the shortfall to zero by June 2012. EBA preferred that the banks should first use private sources of funding to create the capital buffer, including retained earnings, reduced bonus payments, new issuances of common equity and suitably strong contingent capital, and other liability management measures. (European Banking Authority 2011b, 13-14.)

The reductions in risk-weighted assets due to validation and roll-out of appropriate internal models to additional portfolios were not allowed unless the changes were already planned and under consideration by the competent authority. It could simply be used to a transfer contracts or business units to a third party. The reduction in risk-weighted assets as a means of reaching the target was limited to selected sales of assets that did not lead to a reduced flow of lending to real economy. (European Banking Authority 2011b, 14.)

These measures and guidelines limited the possible actions. The banks had option to increase their capital adequacy ratios in two ways: by increasing the amount of regulatory capital held, which boosts the numerator of the ratio, or by decreasing the risk-weighted assets, which is the denominator of the regulatory ratio. The important part of EBA's guidance was that banks were not able to modify their calculation approaches of risk-weighted assets and thus attain the target. (Sonali & Amadou 2012, 3.)

8 The preliminary results of EBA's recapitalisation exercise

Since December 2011, the EBA's recommendation to national authorities required participating EU banks to reach 9% Core Tier 1 ratio. For 27 banks the EBA recognised a shortfall of 76 billion euros. This shortfall should have been filled by the end of June 2012. The banks' options to achieve this were to increase the highest quality capital elements and reduce risk-weighted assets through limited set of actions. These actions should have been performed without impacting into the real economy. (European Banking Authority 2012c, 1.)

The primary objective of this exercise was to strengthen banks' capital positions and thus to increase the confidence to markets in the banking sector. This was really important act during the fight against the sovereign debt crisis in Europe. It was important to show that banks have still ability to withstand shocks and to stay well protected against remaining credit risk. This capital package was an act to reassure investors about the future of the banking sector. (European Banking Authority 2012d, 1.)

8.1 The sample

The sample of 71 EEA banks took part in the capital exercise, of which 31 banks, excluding Greek banks, had a shortfall to a 9% CT1 ratio. The figures include the sovereign buffer. 28 banks outlined their capital plans to comply with EBA's recommendation. The remaining three banks (Dexia, Österreichische Volksbank AG and WestLB AG) are currently under deep restructuring process. Despite that Bankia submitted their capital plan it will be monitored separately as it is also under serious restructuring process. Thus the current report recognises shortfall of 76 billion euros reported by 27 banks. (European Banking Authority 2012c, 3.)

The only Finnish bank included in the sample, OP-Pohjola Group, was above the required 9% CT1 ratio. Thus there were not any requirements for Finnish banks in this recapitalisation exercise. Also Danske Group and Nordea, which operate in Finland, met the requirements beforehand.

8.2 Outcome

According to the preliminary results the banks have followed the schedule of the EBA's recommendation. As of 30 June 2012, the 27 banks reported that they had reached a recapitalisation amount of 94.4 billion euros. This amount was reached as a result of the capital plans. It included the implementation of capital measures and the capital released through the implementation of limited RWA measures. The divisions of different measures are presented in the Figure 2. (European Banking Authority 2012c, 5.)

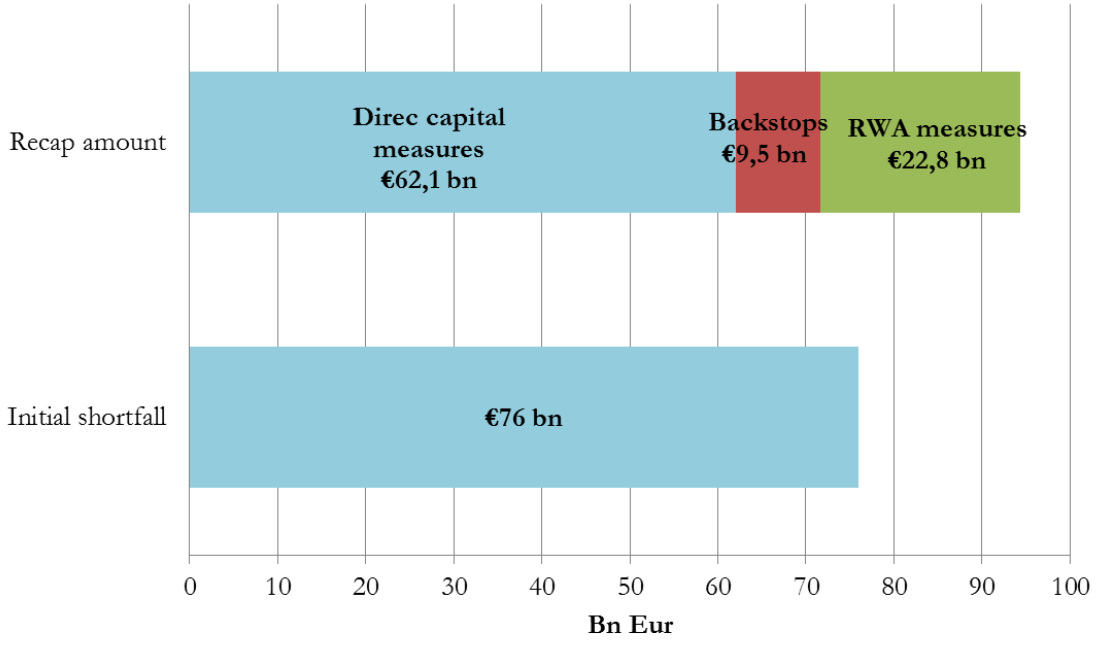

Figure 2. Final recap amount against the initial shortfall (European Banking Authority 2012c, 5)

76% of the total recap amount was collected by implementing capital measures and thus increasing eligible own funds. The execution of RWA measures released a capital that amounted for 24%. The backstop measures mainly consisted of new issuance of capital instruments. The governments directly or through the support of the European Financial Stability Facility underwrote these backstop instruments. (European Banking Authority 2012c, 5-6.)

8.2.1 Direct capital measures

Since September 2011 the 27 banks had increased their core capital (including ordinary equity and reserves) by 41 billion euros by issuing new ordinary shares, payment of dividends in shares, retained earnings and conversion of hybrids into common capital. Ordinary capital had increased by additional 6.4 billion euros, taking into account the scheduled conversion into shares of hybrid instruments. Thus the total amount that the 27 banks had increased their core capital rose to 47.4 billion euros. (European Banking Authority 2012c, 6.)

The banks had also issued Buffer Convertible Capital Securities which complied with the EBA's Common Term sheet. These were issued for total amount of 11.5 billion euros (12% of the total recap amount). These bonds were eligible to meet the EBA's recommendation even though they are not Core Tier 1 instruments. (European Banking Authority 2012c, 7.)

Other mitigating measures impacting directly banks' capital position amounted for 12.6 billion euros. These impacts were due to following actions according to the European Banking Authority (2012c, 7.):

- "Lower deductions from Core Tier 1 capital (e.g. depreciation/disposal of goodwill and intangible assets, disposal of securitisation portfolios, reduction in the difference between expected losses and specific provisions in case of Internal ratings based models, disposal of non-consolidated subsidiaries/stakes on financial firms);
- Consolidation impacts on capital (e.g. increase on minority interest)
- Further impairments on sovereign exposures accounted after September 2011."

The write downs of sovereign exposures were included as additional mitigating measures within the limit of the country component of the sovereign buffer. This was done to avoid double counting of losses, (European Banking Authority 2012c, 7).

The division of direct capital measures described is presented on the Figure 3.

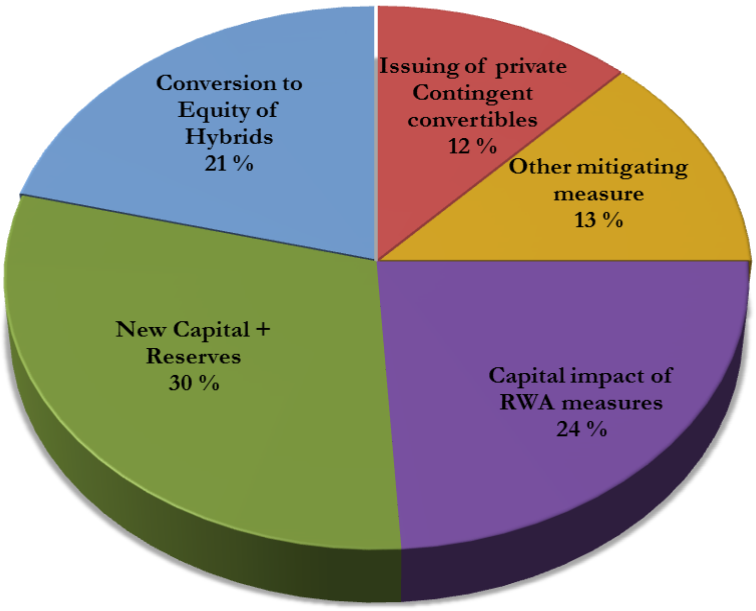

Figure 3. Direct capital impact measures, percentage of the recap amount (European Banking Authority 2012c, 6)

Before the capital exercise when banks would define their Core Tier 1, the common equity and hybrid instruments provided by governments seemed to be favoured by EBA. EBA added also that new issued private contingent instruments (CoCos) were accepted if they were in line with strict criteria and high quality. As a private capital allocation possibility the banks were commanded to use liability management, retained earnings, withholding dividends and bonuses. (Reuters 2011.)

The newly-issued private contingent instruments in the capital structure were accepted because the sovereign situation was deterioration significantly. Since the buffers were intended to absorb potential (contingent) losses, new private Cocos were allowed. By the end of October 2012 the existing convertible capital instruments have to be transformed to common equity in order to be in line with EBA's criteria. (Reuters 2011.)

According to the some hybrid specialists any contingent capital trade would help banks by giving some time for them to get their houses in order. That has been seen as a main advantage of using CoCos. This has been used e.g. in UK and Ireland as a way to

boost their capital level and limit potential further losses on banks' bad loans. (Reuters 2011.)

8.2.2 RWA measures

The capital impact of RWA measures accounted for 24%, detailed information is presented on Figure 4. This was due to a few actions taken during this period. For a few banks some deleveraging actions were allowed in specified agreements with EU and international organisations. These measures were related to a decrease in lending. (European Banking Authority 2012c, 7.)

Disposals of assets lead to a RWA reduction of 90 billion euros impacting positively to capital by 8.1 billion euros. The disposals concentrated mainly on non-core assets (e.g. US dollar denominated assets held outside the EU) in few banks. Deleveraging and disposal of assets were broadly discussed and the host supervisors had chance to show their concerns on measures impacting to their banking sectors. (European Banking Authority 2012c, 7.)

The RWAs were reduced with other mitigating measures by 30.6 billion euros. The reduction was achieved with improvement in collaterals and guarantees and impacts originating from the application of CRD III. In some cases more detailed calculations on the implementation of CRD III led to a reduction on the RWA figures. (European Banking Authority 2012c, 8.)

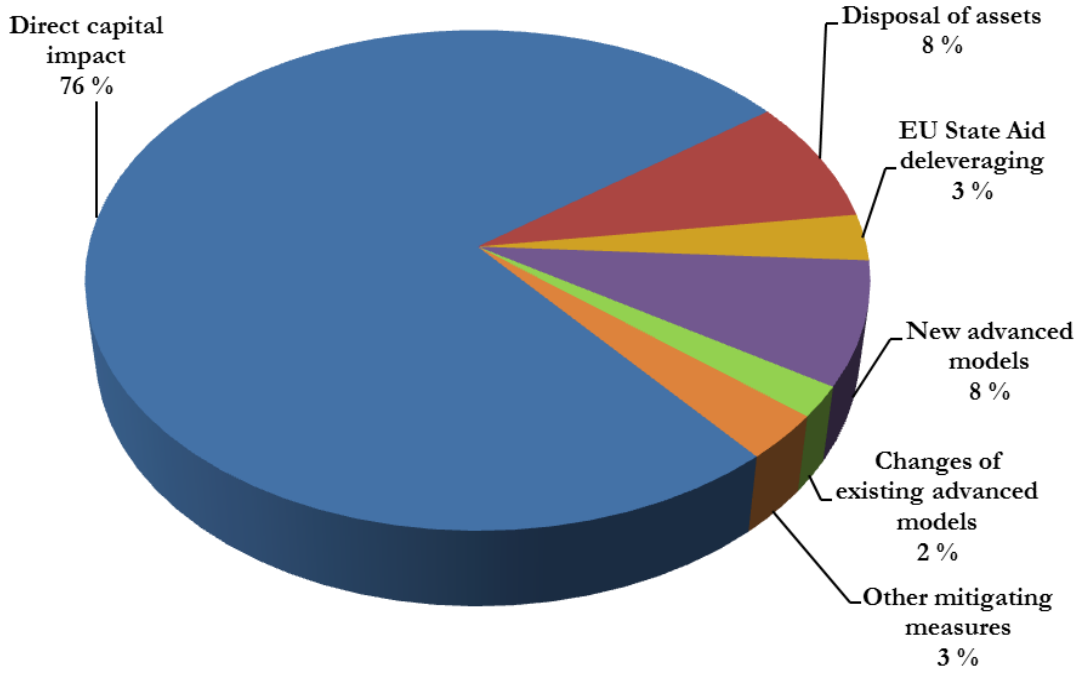

Figure 4. Capital impact of RWA measures, percentage of Recap amount (European Banking Authority 2012c, 6)

In some cases where changes had already been planned and were under consideration by the competent authority the reductions in RWAs were allowed. In the process of reduction on the capital shortfall these were the only cases where RWA were allowed to be reduced due to validation, roll-out and changes of internal models. (European Banking Authority 2012c, 8.)

As clearly stated in the EBA's recommendation, it did not allow banks to "tweak" their RWAs calculations as a mean of reaching the target. Thus EBA tried to ensure that the so called "risk-weighted asset optimisation" would not have been possible. Compared to September the figures showed that the RWAs had reduced only by 0.62% due to the use of the other mitigating measures. The other mitigating measures included improvements of assets quality and impacts originating from the application of CRD III. (European Banking Authority 2012d, 3-4.)

8.2.3 Backstop measures

The public backstops contributed to an injection of fresh capital by 9.5 billion euros (Figure 2). The few banking groups had complied with the EBA's recommendation

and the Core Tier 1 capital requirements with these capital increases. (European Banking Authority 2012c, 8.)

The recapitalisation operations of three Portuguese banking groups (Caixa Geral de Depósitos, Banco Commercial Português Sa and Banco BPI SA) were concluded after the instruments subscribed by Portuguese State were established. The Slovenian Nova Ljublanska Banka reached also the 9% level with the government support. Also the Banca Monte dei Paschi di Siena reached the required level due to government support that took form of capitalisation instruments up to an amount of 2 billion euros. (European Banking Authority 2012c, 8-9.)

8.2.4 Other cases

Nova KBM was above the 9% target as of end of September 2011. They had subsequently shown a shortfall mainly due to the recognition of further credit risk impairments. The bank has submitted a detailed capital plan to the EBA in order to meet the 9% target. The capital plan expects to meet the target by September 2012 through private investors. If necessary the backstops are in place with an ultimate and eventual recapitalisation by the Republic of Slovenia with a deadline of 31 December 2012. (European Banking Authority 2012c, 9.)

Norddeutsche Landesbank –GZ has achieved the 9% core Tier 1 by the end of June after implementing their capital plan. The final validation of the implemented measures is subject to the final formal endorsement by the EU Commission of the on-going state-aid investigation. It appeared that this agreement is on track for a final decision to be taken immediately. (European Banking Authority 2012c, 9.)

Bankia is under restructuring process and they have requested for financial support from the EFSF. Banco de España, with the EU Commission, ECB, EBA and IMF, is currently carrying out a comprehensive asset quality review on a number of Spanish banks. Some of these banks under review are participated in the capital exercise and now their final capital needs are being assessed. (European Banking Authority 2012c, 9.)

8.2.5 Impacts

On the EBA's recommendation was ensured that banks did not reduce risk-weighted assets in order to achieve the target ratio. Disposal of assets due the EBA recommendation reduced risk-weighted assets with 90 billion euros. This is only 1.8% less compared to September 2011. The reductions were due to disposals of non-core assets in predetermined banks. (European Banking Authority 2012d, 4.)

According to the EBA the capital exercise had not negative impact on lending to the real economy. The new lending levels of EU banks' are driven primarily by credit demand, by banks seeking to avoid future asset quality problems, by funding shortages and also by capital restrictions. As part of recommendation some deleveraging measures were agreed to be part of the capital plans. These measures reduced the risk-weighted assets with 30.3 billion euros. The measures were taken in few banks that were predetermined with international and EU organisations. The BIS quarterly review showed that despite the strong pressure for deleveraging in Europe during the final quarter of 2011, there is no evidence that the deleveraging process had become excessive and disorderly, with disruptive consequences on the real economy. (European Banking Authority 2012d, 4.)

However, adjustments to new regulation and capital requirements have tightened credit standards on euro area banks. The banks have admitted that tightened standards have been used in 25 % of euro area banks for loans to large enterprises, in 8% for loans to small and medium-sized enterprises (SMEs). For loans to households the tightening on standards has happened in 12% of euro area banks and for consumer credit in 7% of banks. (European Central Bank 2012, 17.)

8.2.6 Next steps

For all banks included in the sample the monitoring of the fulfilment of the recommendation will be continued by supervisory authorities. To better understand the risks underlying banks' capital positions the national supervisors may undertake a detailed review of individual bank's asset quality. Until the transition to the CRD IV has happened, the recommendation and the 9% core tier capital ratio will remain into force.

The transition will be ensured by capital conservation in 2013 and beyond. (European Banking Authority 2012e.)

8.3 Commerzbank

Commerzbank has outlined its capital raising plans in the media. It has been criticised quite a lot in the media. It has revealed it plans to strengthen its capital alone without state aid. European Banking Authority identified 5.3 billion euros gap on September 2011. Commerzbank outlined in its plans that it could strengthen capital by 6.3 billion euros in total. They did not intend to ask investors for fresh capital. (Financial Times 2012.)

The German government owns 25 per cent of the bank and has given its private support. Commerzbank's plan needed the backing of the Germany's banking supervisors, BaFin. (Financial Times 2012.)

Commerzbank used few different actions to achieve their goal. They boosted their net income by repurchasing some hybrid debt and asset sales. Although, most of Commerzbank's plans relied on scaling back risk-weighted assets, partly through cutting some unwanted business but also through better risk calibration agreed with BaFin. This reduced quite a lot their need for capital. By cutting RWAs they intended to reduce 3.1 billion euros of capital towards the EBA's target. (Financial Times 2012.)

Cutting the RWAs has been criticised in media by many financial professionals. All of them agree that banks are just playing with their calculation methods of RWAs instead of doing any real actions to achieve the EBA's target. (Financial Times 2012.)

Commerzbank intended also to save 250 million euros of capital by paying the staff bonuses in its own shares (Financial Times 2012).

8.3.1 First quarter

By the end of March 2012 Commerzbank had achieved the capital target of 5.3 billion euros and generated additional buffer of 1.1 billion euros. They had reduced their op-

erating expenses during the first quarter by 17% compared to 2011. Due to successful risk reduction Commerzbank had also reduced the loan loss provisions in commercial real estate financing by more than 30% (to 212 million euros) compared to first quarter of 2011 (318 million euros). Commerzbank used their retained earnings to strengthen the Core Tier 1 capital by 0.4 billion euros. Additionally, the reduction in risk-weighted assets contributed 1.2 billion euros, reduction in regulatory capital deductions and other measures contributed 0.6 billion euros. The measures to improve the capital structure strengthened the Core Tier 1 capital by 0.7 billion euros. (Commerzbank 2012a.)

Risk-weighted assets had reduced by 10% compared to previous year and thus Core Tier 1 ratio rose to 11.3%. Compared to 2011 the risk-weighted assets were reduced by 14 billion euros. This was due to a reduction of non-core assets. Additionally the repurchase of hybrid equity instruments amounted for more than 760 million euros in March 2012. A positive impact on the capital base was also on the reduction of regulatory capital deductions. (Commerzbank 2012a.)

8.3.2 First half of 2012

Commerzbank achieved the EBA's capital target of 5.3 billion euros by the end of June 2012 by exceeding the target by 2.8 billion euros. During the first half of 2012, Commerzbank generated a one billion euro operating profit. The measures behind this were the decreased market interest rate level and the customer activity. They also increased their Core Tier 1 ratio to 12.2%. The major measures behind the whole achievement were retained earnings, improvement of the capital structure and reduction in the risk-weighted assets. (Commerzbank 2012b.)

Commerzbank is currently reviewing its all business areas on its annual strategic planning process. However, the Commerzbank concentrates on its customer-centric and sustainably profitable core business while their target is to be well positioned for Basel III capital requirements. The bank expects a 10% Core Tier ratio including all the requirements of Basel III to be met at the beginning of 2013. The Commerzbank continues to reduce risks and capital lockup. (Commerzbank 2012b.)

8.4 Danske Bank

Mikko Laukka from Danske Group was interview for this study. He is the First Vice President of Regulatory & Economic Capital unit. His unit is responsible the Group's credit risk, economic capital and calculation of capital adequacy. They are part of Risk & Capital function where they model e.g. risk parameters. This chapter presents how Danske Group survived on capital exercise and how they are prepared for future regulation. It also includes Laukka's own opinions on reasons behind the development, success and future of Danske Group. Some of these are Laukka's opinions and might differ from the views of Danske Group.

8.4.1 Capital exercise

The Danske Group is and has been a financially sound banking group. The Group has increased its capital adequacy by increasing the amount of capital. This can be seen in Table 2. The Group succeeded well in the stress test June 2011 and was already beyond the European Banking Authority's capital adequacy demand at the point when the EBA's recommendation took in place. At the end of 2011 the Group had Core Tier 1 capital ratio of 11.8% which is clearly above European Banking Authority's 9% target.

Table 2. Danske Group Statement of capital (Danske Bank 2012b, 65)

DKK millions	Core Tier 1 capital	Tier 1 Capita	Capital base	RWA
2010	85,106	124,837	149,745	844,209
of RWA	10,1 %	14,8 %	17,7 %	
2011	106,826	145,017	162,065	905,979
of RWA	11,8 %	16,0 %	17,7 %	

The Group has not updated the capital adequacy targets since the financial crisis started. This due to fact that from the perspective of capital adequacy has been essential to keep and increase their strong capital adequacy ratio because it has on the current market situation even more effect on the price of refinancing. The targets will be updated in the near future and they will take into account the price of the financing, dividends policy and portfolio strategy. (Laukka, M. 28 Aug 2012.)

On the long term the Group's strategy to achieve the set capital adequacy targets by using the high quality ICAAP process, risk management and right pricing strategy for liabilities. The ICAAP process takes into account the earnings, effects of the shocks, dividends policies and the planning of the capital structure. (Laukka, M. 28 Aug 2012.)

8.4.2 Risk-weighted assets

On the development of measurement of the risk-weighted assets the Group has followed the regulations. Before the Group has used measures from Basel I regulation and now days they use mostly IRB approach. On some parts of portfolio they use Basel II standardised approach. Government portfolios, Sampo Banks risks and Northern Ireland's and Ireland's retail portfolios are calculated by using standardised approach. (Laukka, M. 28 Aug 2012.)

The credit exposures of the Group broken by the industry are presented in the Attachment 8. It also shows the division between the IRB and standardise approach used. It shows that credit exposures calculated by using IRB approach accounts for 78.4% of total credit exposures. In cases of central and local governments credit exposures is used only the standardised approach. (Danske Bank 2012a, 136-137.)

The reason to use standardised approach is that they do not have enough loss data on government counterparties so they could have developed sufficient internal models. Also their subsidiary Sampo Bank uses standardised approach. The IRB approach requires the permission from Financial Supervisory Authority. The reason why they do not have the permission yet is that the whole data and model structure changed when Danske Bank bought Sampo Bank. Thus they were partly missing the data history for some new credit risk models and have to build the history before applying for the permission. (Laukka, M. 28 Aug 2012.)

The Group is managing its risk-weighted assets effectively. They monthly report the situation to the senior management, including short term forecast. The ICAAP process is their most important long term tool where they stress test the different level assets and liabilities of the Group. They also take into account the capital adequacy effects on the development process of the model changes and the new products. Risk-weighted

assets are one important factor on the pricing process and thus they try to ensure the sufficient returns on equity while the requirements are increasing. (Laukka, M. 28 Aug 2012.)

The Group can be greatly exposed to the changes in credit risks that occur from the changes in macro economy. The Group ensures with several actions that they are able to keep their high liquidity position despite of these changes. Impacts to liquidity come through sufficient capital buffer. By ensuring the sufficient capital buffer the Group ensures that confidence to institution is high. Thus they can get the funding from the market with reasonable price to ensure the liquidity. (Laukka, M. 28 Aug 2012.)

The overall capital need is assessed on the basis of internal models. By using the model the Group ensures the proper risk management systems. The ICAAP also includes capital planning to ensure that the Group always has sufficient capital to support its chosen business strategy. Stress testing is important tool for this object. (Danske Bank 2012a, 21.)

8.4.3 The future regulation

The group has prepared to the future regulations CRD IV/Basel III with several actions. They follow closely the development of regulation and constantly calculating the impact analysis. They actively participate to the development process by giving comments when European Banking Authority organises workshops. On their operations they have taken critical eye on their own product range by analysing the impacts, especially to proposed liquidity and funding measures. (Laukka, M. 28 Aug 2012.)

The biggest impacts of the regulations to Group come from the new liquidity and funding measures. Through these financial claims are increased for some products that do not belong to balance sheet. Thus these products might need restructuring and the pricing and supply need to be followed. If needed these products have to be changed if market prices do not match the funding needs under the new requirements. (Laukka, M. 28 Aug 2012.)

The impacts of regulation to risk-weighted assets are limited. On the market risk is going to be some changes. On the big picture the biggest change is the new minimum requirements for capital adequacy that react to the economic cycle. Also the quality requirements for capital will change. However, the Group's current capital adequacy and capital structure give a good buffer to meet the future requirements. (Laukka, M. 28 Aug 2012.)

According to Laukka in this market situation there are few things that have to be done when starting to implement the new CRD IV regulation. As the implementation process is planned it is essential the implement the new regulation in phases. Otherwise it would create a risk that lending to the real economy could decline at the point when it is essential to boost the economy. The regulation should be also implemented at the same time and in a same way in all countries in order to keep the competition in balance. (Laukka, M. 28 Aug 2012.)

According to Laukka the Danske Group has prepared carefully to future regulation and they just have to adapt to product and pricing changes on the market. Laukka does not see any significant changes in risk-weights so they do not have any reason to change the current risk position of the Group just due to new regulation. The changes in regulations are implemented to whole market so there effect that would give competitive advantage to any institution on the market. (Laukka, M. 28 Aug 2012.)

8.5 Deutsche Bank

After implementing sovereign buffers the Deutsche Bank had 0.77% shortfall to European Banking Authority's capital exercise 9% Core Tier 1 ratio target (Attachment 3). Deutsche Bank has taken certain actions to develop their Core Tier 1 capital base and risk-weighted assets. Deutsche Bank has also created Basel III simulation.

8.5.1 Development of capital ratios and risk-weighted assets

After the end of September 2011 Deutsche Bank has done several actions to increase their Core Tier 1 capital and risk-weighted assets to required level by the end of June

2012. Also the implementation of revised Basel II framework on fourth quarter 2011 had quite big impact to the development of ratios.

At the end of September 2011 Core Tier 1 capital totalled for 34.1 billion euros. At the end of June 2012 Deutsche Bank had achieved 10.2% Core Tier 1 ratio which totalled for 37.8 billion euros (Figure 5). The biggest increase of Core Tier 1 capital was due to net income amount of 2.1 billion euros. As a result of implementation of revised Basel II framework, the capital deduction items were risk-weighted and resulted the increase in capital by 0.9 billion euros. (Deutsche Bank 2012a, 22; Deutsche Bank 2012c, 11.)

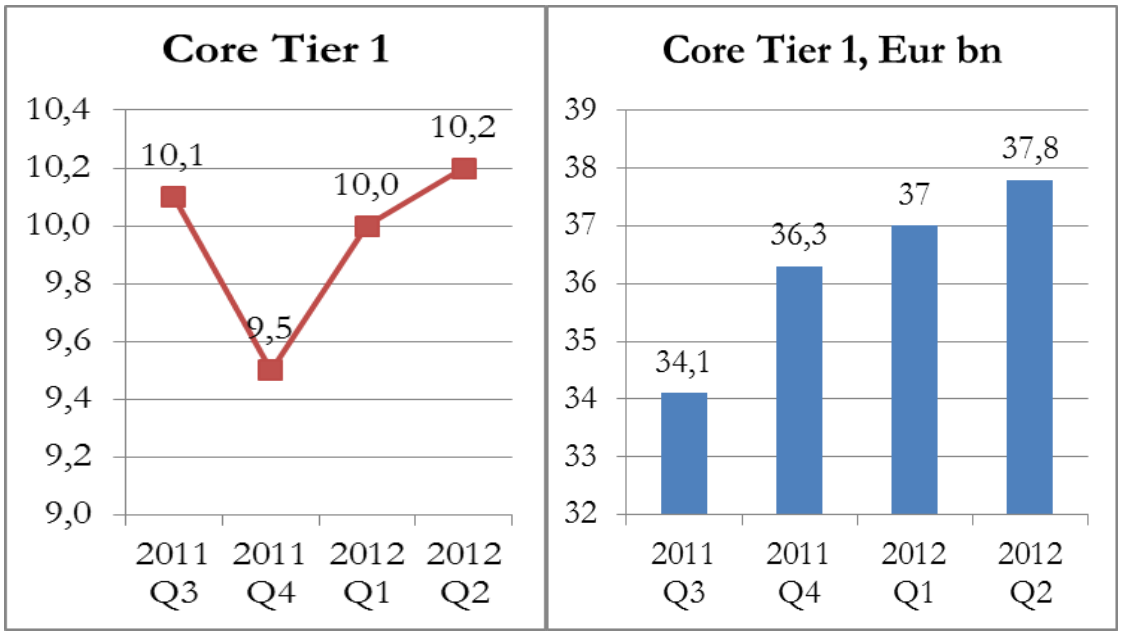

Figure 5. Development of Core Tier 1 capital (Deutsche Bank 2012c, 10)

At the end of September 2011 risk-weighted assets totalled for 337.6 billion euros. At the end of June 2012 Deutsche Bank's risk-weighted assets totalled for 372.6 billion euros. Along the way to the end of June the figures have varied quite a lot due to the several actions. On the last quarter of 2011 the revised Basel II framework was implemented. This caused increase of 54.3 billion euros in risk-weighted assets. Compared to 0.9 billion increase of Core Tier 1 capital this was a lot more. (Deutsche Bank 2012a, 22.)

Operational risks increased also by 14 billion euros. Even though the Deutsche Bank reduced assets containing credit risks by 22.6 billion euros and assets containing market

risks by 6.1 billion euro, the Core Tier 1 ratio decreased significantly to the end of fourth quarter. (Deutsche Bank 2012a, 22.)

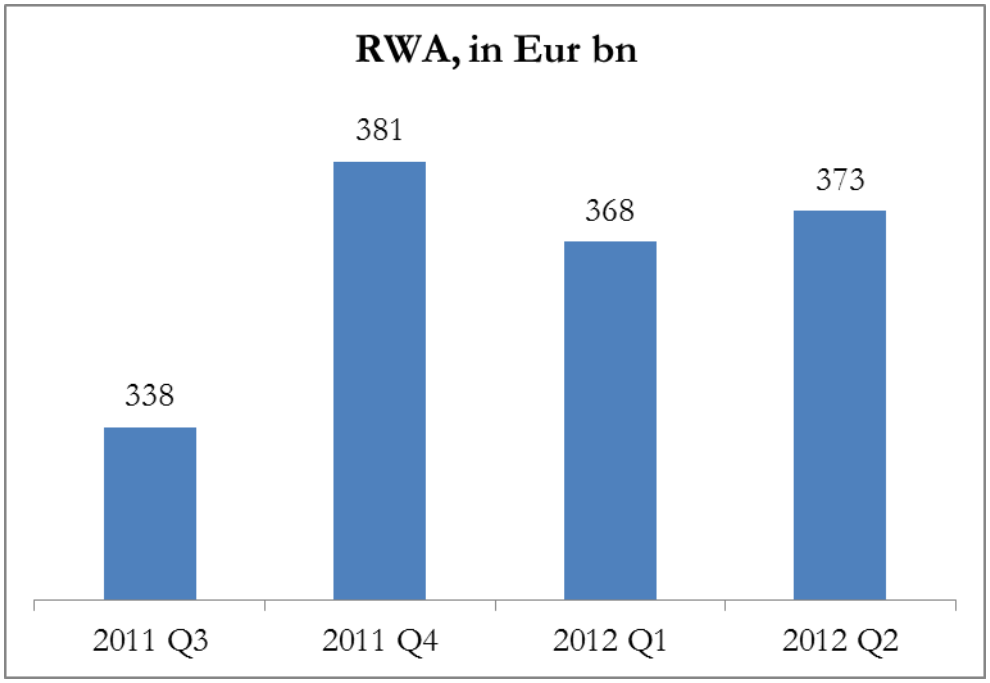

Figure 6. Development of risk-weighted assets (Deutsche Bank 2012c, 10)

In the Figure 6 is presented that on the first quarter of 2012 the Deutsche bank kept reducing assets containing market and credit risks totalling amount of 11.5 billion euros which helped the group increase their capital ratios. (Deutsche Bank 2012d, 25.)

During the first half of 2012 the group managed to achieve the Core Tier 1 capital ratio of 10.2%. This was mainly due to the 8.6 billion euros decrease on risk-weighted assets. This decrease was mainly driven by decrease from credit risk, which was primarily due to portfolio optimisation and model and data enhancements. (Deutsche Bank 2012b, 23.)

8.5.2 Basel III simulation

At the end of second quarter the Group created Basel III simulation where they predict the changes on risk-weighted assets and Core Tier 1 capital. They are committed to manage their capital complying with all regulatory thresholds even in stress scenarios. The strengthening of Core Tier 1 capital remains a priority of management. (Deutsche Bank 2012b, 41.)

Deutsche Bank expects to increase of 12 billion euros of risk-weighted assets by the end of 2012 due to the normalisation of market risk. Thus they expect their risk-weighted assets to total for 385 billion euros before implementing Basel III. After implementation of Basel III and management actions the Group predicts that the total amount of risk-weighted assets would be approximately 475 billion euros with phase-in rules and totalling for 465 billion euros after application of 2019 rules at the beginning of 2013. (Deutsche Bank 2012c, 24.)

The group expect 2 billion euros increase in Core Tier 1 capital based on the analyst consensus for second half of 2012 collected from Bloomberg. At the end of 2012 the Core Tier 1 capital would total for 39 billion euros resulting 10.2% Core Tier 1 ratio. The implementation of Basel III phase-in rules would increase this amount by 3 billion euros. This would mean 8.9% Core Tier ratio. Application of 2019 rules at the beginning of 2013 would result the 9 billion euros on capital and result of 7.2% Core Tier 1 ratio. (Deutsche Bank 2012c, 24.)

By the end of first quarter 2013 Deutsche Bank has planned to increase their Basel III Core Tier 1 ratio to approximately 10% on a phased in basis which would be equivalent to at least 8% after application of 2019 rules (Deutsche Bank 2012b, 41).

8.6 Finnish Financial Supervisory Authority

Two analysts of Finnish Financial Supervisory Authority, Peik Granlund and Anton Tuomisalo, confirmed that Finnish financial sector is currently on sound basis. The market situation is currently quite different in some parts of Europe but the Finnish government's situation is still on sound basis. The government has an effect on banks' capital allocation price and possibilities. The Finnish financial sector is seen in Europe one of the soundest sectors in Europe at the moment. It survived successfully from the European Banking Authority's capital exercise and the banks have organised their capital quite well. (Granlund, P. & Tuomisalo, A. 29 Aug 2012.)

8.6.1 Risk-weighted assets

As mentioned before some banks uses IRB approach and some standardised approach on the measurement of risk-weighted assets. In Finland only the big banking groups use IRB approach. In Europe also the trend is that standardised approach is more used and only big banks use IRB approach. Finnish Financial Supervisory Authority recommends the use of IRB approach. This is due to fact that from the very beginning the Basel regulation has move towards more detailed regulations where institutions have chance to develop their own more detailed risk models that go along with the regulations. (Granlund, P. & Tuomisalo, A. 29 Aug 2012.)

The IRB approach is an asset to the institution since it provides more accurate results, deeper analysis of assets and its more balanced system. The IRB approach also provides lower risk-weighting requirements for assets which also attracts institutions to use this approach. The IRB approach requires thought the approval of the Supervisory Authority. In the approval process is looked e.g. the historical data of assets and the wideness of the data that the models and parameters are based on. The requirements are set in standard that is published by the Supervisory Authority. (Granlund, P. & Tuomisalo, A. 29 Aug 2012.)

The Supervisory Authority looks after the models and parameters. The Banks are required to report very specifically different portfolios. The supervisors make profiles about the banks and portfolios and use large scale comparison to similar kind of profiles to find the possible misapplication of modelling, parameters and risk-weights. Even though the banks have quite a lot freedom to create their own models that correspond to regulation, it would be quite impossible to "tweak" the calculation of assets in larger amount. (Granlund, P. & Tuomisalo, A. 29 Aug 2012.)

8.6.2 Basel III & CRD IV regulations

On the implementation process of new regulations according to Tuomisalo should not only consider the capital requirements but also the other parts too. The importance of new liquidity frameworks LCR and NSFR should not be forgotten when the banks prepare and calculate the impacts of new regulations. The impacts are hard to measure

as the differences rises from the structural differences among the countries and even the banks on same country. The banks value different assets and thus it is hard to say, which assets will get the certain level of impact from the regulations. (Granlund, P. & Tuomisalo, A. 29 Aug 2012.)

The second fact is that there is a lot of new regulation in Europe coming in the future. This makes it hard to analyse the impacts of single regulation. The impact comes in the end from the combination of regulations. The risk-weightings will not have significant changes so this will not affect to banks' risk positions. (Granlund, P. & Tuomisalo, A. 29 Aug 2012.)

In the end does not matters the impacts of single regulation but how the banks have prepared for the future regulations. The trend in Europe seems that banks are quite competitive and the confidence to partners is quite low. The banks try to gain the confidence by allocating capital and increasing their capital adequacy. No one wants to be the one with the lowest ratios. Also everyone tries to gather great capital buffers on the process of preparation to regulations. On this matter European banks are mostly quite wealthy and have good capital adequacy situation, so this will not be a problem when the implementation of new regulations phase in. (Granlund, P. & Tuomisalo, A. 29 Aug 2012.)

9 Discussion

The Basel Committee has presented its recommendation for new regulation a while ago. European Authorities are trying to restore the confidence by implementing these regulations and also at the same time by implementing target capital ratios for European banks. This chapter summarises the impacts of new regulation and the preliminary results of EBA's capital exercise. Also the validity of this study is proved. At the end will be discussed the possibilities of future research.

9.1 Interpretation of results

The regulations have developed significantly to direction that allows banks to use more detailed approaches on risk measurement. While recovering from the global financial crisis the strengthening of capital ratios is one of the key priorities. The banks have to increase the quantity, quality and transparency of capital in order to restore the confidence on the banking sector. The market confidence is not completely restored and the work continues when the implementation of the newest regulations begins.

Basel III will certainly have impact to capital ratios as the regulation of capital quality tightens. It will create capital shortfall. Based on the static balance sheet assumptions the impacts of Basel III predict total capital shortfall of 485 billion euros. In the case of Deutsche Bank they expect significant increase of RWA and some increase to their Core Tier capital. This will be seen also in the future as the decline of capital ratios.

As of 30 June 2012, the 27 banks showed in preliminary report that they have reached a recapitalisation amount of 94.4 billion euros. This was a result of the capital plans.

According to the preliminary results 76% of the total recap amount was accomplished through the implementation of capital measures that increased eligible own funds. The release of capital through the execution of RWA measures amounts for 24%. The increase of core capital was acquired by issuing new ordinary shares, payment of dividends in shares, retained earnings and conversion of hybrids into common capital. Disposals of assets had also a positive impact on capital of 8.1 billion euros. Disposals

led to a reduction of RWA by 90 billion euros, which is only 1.8% less compared to September 2011.

All three case companies either achieved the target ratios or were above the target already when the recommendation was announced.

The recapitalisation operations of five banks were concluded after the instruments subscribed governments were established. Nova KBM had subsequently shown a shortfall mainly due to the recognition of further credit risk impairments but is expected to meet the target by September 2012, if necessary supported by government.

The recommendation has not impacted significantly to lending to the real economy and it will remain into force until the transition to the CRD IV. European banks are mostly quite wealthy and have good capital adequacy situation, so this will not be a problem when the implementation of new regulations begins.

The comparison of Finnish financial markets to rest of Europe shows that banks operating in Finland are in stable condition and even get advantage of current market situations. The situation is a quite different in the Southern European countries at the moment where the banks are in trouble. This has an effect to financial markets also. The confidence is not completely restored to European financial markets but the direction is right. Despite the market situation Finnish banks seem to stand for high confidence. They are well prepared for future regulation and constantly on the up to date.

9.2 Validity of results

The preliminary results of capital exercise contain high validity. Even though there has been a lot of discussion in media about the actions that banks take in order to achieve the target the one thing was sure. EBA tried to ensure that the banks did not reach the target by "tweaking" their RWA calculations and thus the so called "risk-weighted asset optimisation" would not have been possible.

The impacts of single regulation are hard to measure at this situation when there is going to be a lot of new regulation at the same time. While reading the impact analysis

of Basel III it is good to keep in the mind that the impacts are only due to Basel III, not the combination of regulations. The impact analyses are conducted by IMF researchers and bank experts so the studies contain highly reliable information. Of course the impacts of Basel III to Deutsche Bank are conducted by the bank itself and thus should be looked in with a minor doubt.

All the information in this research is conducted from highly reliable sources that were supervisory authorities, organisations, big financial institutions or media representatives reporting daily about financial news. Also few financial experts were interviewed.

9.3 Suggestions for future research

This research contains valuable information about the current changes on the European financial markets. The new regulations are going to be implemented and impacts are shown in the financial market. At the moment the regulations are concentrating on the numerator of the capital ratios and with certain limits to denominator e.g. RWA.

However, in July 2011 the Basel Committee has announced that it will start working on RWAs. This is the right next step and the future research concentrate more to development of denominators of capital ratios. Especially the developments of risk-weightings have to be developed.

The trend in regulations is that they are developed to increase the stability of the financial markets and while trying to avoid the negative impacts to economy. In the discussion with interviewees came up that the new trend of regulations should be that we try to develop new regulations that ensure the stability of the markets but also have positive impacts to the economy. Many of the financial experts have already moved their interest towards this interesting aspect. Probably breakthroughs can be expected in the near future. This is just the matter of time.

The other possible target of future research is that if the new regulations concentrating on the right aspects of the financial markets. European Banking Federation is conducting a research if EU banking sector's structure should be reformed. All the regulations are now concentrating on the regulating the assets and liabilities of the banking group.

This research analyses more the structure of banking sector and if EU banking sector should EU possible follow the examples of Vickers Commission in the UK or Volcker rule in the USA.

References

Bank for International Settlements 1988. International Convergence of Capital Measurement and Capital Standards. URL: http://www.bis.org/publ/bcbs04a.pdf. Accessed: 21 Mar 2012.

Bank for International Settlements 2006. International Convergence of Capital Measurement and Capital Standards: A Revised Version. URL: http://www.bis.org/publ/bcbs128.pdf. Accessed: 23 Mar 2012

Bank for International Settlements 2009. History of the Basel Committee and its Membership. URL: http://www.bis.org/bcbs/history.pdf. Accessed: 2 Feb 2012.

Bank for International Settlements 2011a. Basel III: A global regulatory framework for more resilient banks and banking systems. URL: http://www.bis.org/publ/bcbs189.pdf. Accessed: 27 Mar 2012.

Bank for International Settlements 2011b. Basel Committee on Banking Supervision reforms – Basel III. URL: http://www.bis.org/bcbs/basel3/b3summarytable.pdf. Accessed: 30 Mar 2012.

Commerzbank 2012a. EBA capital target achieved ahead of plan - operating profit of EUR 584 m in the first quarter of 2012. Press release. URL: https://www.commerzbank.de/en/hauptnavigation/presse/pressemitteilungen/archiv1/2012/quartal_12_02/presse_archiv_detail_12_02_9363.html. Accessed: 16 Aug 2012.

Commerzbank 2012b. Operating profit of EUR 1.0 bn in the first six months of 2012. Press release. URL: https://www.commerzbank.de/en/hauptnavigation/presse/pressemitteilungen/archiv1/2012/quartal_12_03/presse_archiv_detail_12_03_9632.html. Accessed: 16 Aug 2012.

Danske Bank 2012a. Risk management 2011. URL: http://www.danskebank.com/en-uk/ir/Documents/2011/Q4/Riskreport-2011.pdf. Accessed 29 Aug 2012.

Danske Bank 2012b. Annual report 2011. URL: http://www.danskebank.com/en-uk/ir/Documents/2011/Q4/Annualreport-2011.pdf. Accessed 29 Aug 2012.

Demirgüç-Kunt, A., Detragiache, E. & Merrouche, O. 2010 Bank capital lessons from the financial crisis. Policy Research Working Paper. URL: http://elibrary.worldbank.org/content/workingpaper/10.1596/1813-9450-5473. Accessed: 7 Jul 2012.

Deutsche Bank 2012a. Analyst Call, 2 February 2012. URL: https://www.db.com/ir/en/images/Krause_FY2011_Analyst_call_2_Feb_2012_Final.pdf. Accessed: 17 Aug 2012.

Deutsche Bank 2012b. Interim Report as of June 30, 2012. URL: https://www.db.com/ir/en/download/DB_Interim_Report_2Q2012.pdf. Accessed: 17 Aug 2012.

Deutsche Bank 2012c. 2Q2012 Results. Analyst Call, 31 July 2012. URL: https://www.db.com/ir/en/images/Krause_2Q2012_Analyst_call_31July2012_final.pdf. Accessed: 17 Aug 2012.

Deutsche Bank 2012d. 1Q2012 Results. Analyst Call, 26 April 2012. URL: https://www.db.com/ir/en/images/Krause_1Q2012_Analyst_call_26_April_2012_final.pdf. Accessed: 17 Aug 2012.

European Banking Authority 2011a. The EBA publishes recommendation and final results of bank recapitalisation plan as part of co-ordinated measures to restore confidence in the banking sector. Press release. URL: http://stress-test.eba.europa.eu/capitalexercise/Press%20release%20FINALv2.pdf. Accessed: 25 Apr 2012.

European Banking Authority 2011b. EBA recommendation on the creation and supervisory oversight of temporary capital buffers to restore market confidence. URL: http://stress-test.eba.europa.eu/capitalexercise/EBA%20BS%202011%20173%20Recommendation%20FINAL.pdf. Accessed: 26 Apr 2012.

European Banking Authority 2011c. Composition of capital as of 30 September 2011 (CRD3 rules) – Danske Bank. URL: http://stress-test.eba.europa.eu/capitalexercise/bank/DK008.pdf. Accessed: 28 Apr 2012.

European Banking Authority 2012a. The EBA's Board of Supervisors makes its first aggregate assessment of banks' capital plans. Press release. URL: http://www.eba.europa.eu/cebs/media/aboutus/News%20and%20Communications/Press-release-EBA-9-02-2012_1.pdf. Accessed: 26 Apr 2012.

European Banking Authority 2012b. 2011 EU Capital Exercise. URL: http://www.eba.europa.eu/capitalexercise/2011/2011-EU-Capital-Exercise.aspx. Accessed: 28 Apr 2012.

European Banking Authority 2012c. Update on the implementation of Capital Plans following the EBA's 2011 Recommendation on the creation of temporary capital buffers to restore market confidence. Overview report. URL: http://www.eba.europa.eu/cebs/media/aboutus/News%20and%20Communications/EBA-BS-2012-149--recap-report-to-be-published-11-July--FINAL.pdf. Accessed: 13 Jul 2012.

European Banking Authority 2012d. Questions & Answers. URL: http://eba.europa.eu/cebs/media/aboutus/News%20and%20Communications/Q-As----FINAL_1.pdf. Accessed: 14 Jul 2012.

European Banking Authority 2012e. Update on the implementation of the capital exercise. Press release. URL: http://eba.europa.eu/News--

Communications/Year/2012/Update-implementation-capital-exercise.aspx. Accessed: 16 Aug 2012.

European Banking Authority 2012f. Results of the Basel III monitoring exercise as of 30 June 2011. URL: http://eba.europa.eu/cebs/media/Publications/Other%20Publications/QIS/EBA-BS-2012-037-FINAL--Results-Basel-III-Monitoring-.pdf. Accessed: 28 Aug 2012.

European Central Bank 2012. The Euro area bank lending survey. 2nd Quarter of 2012. URL: http://www.ecb.int/stats/pdf/blssurvey_201207.pdf. Accessed: 26 Sep 2012.

European Commission 2011. Commission wants stronger and more responsible banks in Europe. Press release. URL: http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/915&format=HTML&aged=0&language=EN&guiLanguage=en. Accessed: 28 Apr 2012.

Fabozzi, F.J. & Modigliani, F. 2009. Capital Markets. 4th ed. Pearson Education. Upper Saddle River, New Jersey.

Financial Times 2012. Commerzbank outlines capital raising plans. URL: http://www.ft.com/intl/cms/s/0/b4e163e0-4282-11e1-97b1-00144feab49a.html#axzz1zvDw4Mnr. Accessed: 8 Jul 2012.

Federation of Finnish Financial Services 2012. URL: http://www.fkl.fi. Accessed: 8 Sep 2012.

Granlund, P. & Tuomisalo, A. 29 Aug 2012. Analytics. Finnish Financial Supervisory Authority. Interview. Helsinki

Laukka, M. 28 Aug 2012. First Vice President of Regulatory & Economic Capital unit. Danske Group. E-Mail.

Le Leslé, V. & Avramova, S. 2012. Revisiting Risk-Weighted Assets. IMF Working paper. URL: http://www.imf.org/external/pubs/ft/wp/2012/wp1290.pdf. Accessed 25 Mar 2012.

Reuters 2011. EBA blesses CoCos but issuance rush unlikely. URL: http://www.reuters.com/article/2011/10/27/banks-recapitalisation-contingent-capita-idUSL5E7LR30P20111027. Accessed 25 Jul 2012.

Sonali, D. & Amadou, N.R. 2012. How Risky Are Banks' Risk-Weighted Assets? Evidence from the Financial Crisis. IMF Working paper. URL: http://www.imf.org/external/pubs/ft/wp/2012/wp1236.pdf. Accessed 7 Jul 2012.

Attachments

Attachment 1. Basel III – Phase-in arrangements

	2011	2012	2013	2014	2015	2016	2017	2018	As of 1 January 2019
Leverage Ratio	Supervisory monitoring		Parallel run 1 Jan 2013 - 1 Jan 2017, Disclosures starts 1 Jan 2015					Migration to Pillar 1	
Minimum Common Equity Capital Ratio			3,5 %	4,0 %	4,5 %	4,5 %	4,5 %	4,5 %	4,5
Capital Conservation Buffer						0,625 %	1,25 %	1,875 %	2,50 %
Minimum common equity plus capital conservation buffer			3,5 %	4,0 %	4,5 %	5,125 %	5,75 %	6,375 %	7,0 %
Phase-in of deductions from CET1 (including amounts exceeding the limit for DTAs, MSRs and Financials				20 %	40 %	60 %	80 %	100 %	100 %
Minimum Tier 1 Capital			4,5 %	5,5 %	6,0 %	6,0 %	6,0 %	6,0 %	6,0 %
Minimum Total Capital			8,0 %	8,0 %	8,0 %	8,0 %	8,0 %	8,0 %	8,0 %
Minimum Total Capital plus conservation buffer			8,0 %	8,0 %	8,0 %	8,625 %	9,25 %	9,875 %	10,5 %
Capital instruments that no longer qualify as non-core Tier 1 capital or Tier 2 capital			Phased out over 10 year horizon beginning 2013						
Liquidity coverage ratio	Observation period begins				Introduce minimum standard				
Net stable funding ratio	Observation period begins							Introduce minimum standard	
	Shading indicates transition periods - all dates are as of 1 January								

(Bank for International Settlements 2011a, 69.)

Attachment 2. Basel I & II Risk-Weights

	Basel I	Basel II Standardised Approach
Claims on **Sovereigns**	OECD: 0 % Non- OECD: 100 %	AAA to AA-: 0 % A+ to A-: 20% BBB+ to BBB-: 50 % BB+ to BB-: 100 % Below B-: 150% Unrated: 100 % IMF, BIS, ECB and EC: 0 %
Claims on **Multilateral Development Banks**	20%	WB, ADB, AfDB, EBRD, IADB, EIF, EIB, NIB, CDB, IDB, CEDB: 0 % Otherwise based on option 2 for claims on banks
Claims on **Banks**	Short-term OECD: 20 % Non-OECD: 20 % Long-Term OECD: 20 % Non-OECD: 100 %	Option 1 AAA to AA-: 20 % A+ to A-: 50% BBB+ to B-: 100 % Below B-: 150 % Unrated: 100 % Option 2 (Short-term (<3 months) AAA to BBB-: 20 % BB+ to B-: 50% Below B-: 150 % Unrated: 20 % Long-term (>3 months) AAA to AA-: 20 % A+ to BBB-: 50 % BB+ to B-: 100 % Below B-: 150 % Unrated: 50 %
Mortgages	**50 %** for residential properties occupied by borrower and secured by first charge on property	**35 %** for residential properties occupied by borrower and secured by first charge on property **75 %** if the loan-to-value ratio exceeds 80 %
Claims on **Corporates**	100 %	National discretion to weigh all corporate claims at 100 % or to use ratings based on: AAA to AA-: 20 % A+ to A-: 50 % BBB+ to BB-: 100 % Below BB-: 150 % Unrated: 100 % For qualifying unsecured retail portfolios: 75 %

(Le Leslé & Avramova 2012, 39.)

Attachment 3. Composition of capital as of 30 September 2011.

Country	Name	Shortfall (Million EUR) before application sovereign capital buffer	Shortfall to 9 % before application sovereign capital buffer	Overall Shortfall (Million EUR)	Overall Shortfall to 9%	Overall Core Tier 1 %
Austria	Erste Group Bank AG	743	0,60	743	0,60	8,40
	Raiffeisen Zentralbank Österreich AG	2,127	1,96	2,127	1,96	7,04
	Österreichische Volksbank AG	942	3,52	1,053	3,94	5,06
Belgium	Dexia	1,539	1,23	6,313	5,06	3,94
	KBC Bank					10,08
Cyprus	Marfin Popular Bank Public Co Ltd	238	0,85	1,971	7,06	1,94
	Bank Of Cyprus Public Co Ltd	837	3,18	1,560	5,93	3,07
Germany	Deutsche Bank AG	2,851	0,68	3,239	0,77	8,23
	Commerzbank AG	393	0,15	5,305	2,07	6,93
	Landesbank Baden-Württemberg					9,11
	DZ Bank AG Dt. Zentral-Genossenschaftsbank			353	0,36	8,64
	Bayerische Landesbank					10,00
	Norddeutsche Landesbank -Gz	2,489	2,99	2,489	2,99	6,01
	Hypo Real Estate Holding AG, München					18,58
	WestLB AG, Düsseldorf	224	0,46	224	0,46	8,54
	HSH Nordbank AG, Hamburg					9,56
	Landesbank Hessen-Thüringen Gz, Frankfurt	1,473	2,67	1,497	2,72	6,28
	Landesbank Berlin AG					13,60
	Dekabank Deutsche Girozentrale, Frankfurt					9,59
	WGZ Bank AG Westdt. Geno. Zentralbk, Ddf					10,24
Denmark	Danske Bank					13,84
	Jyske Bank					12,34
	Sydbank					12,78
	Nykredit					14,04

Spain	Banco Santander S.A.	12,878	2,23	15,302	2,66	6,34
	Banco Bilbao Vizcaya Argentaria S.A.	4,016	1,21	6,329	1,90	7,10
	BFA Bankia	763	0,39	1,329	0,67	8,23
	Caja De Ahorros Y Pensiones De Barcelona	272	0,17	630	0,41	8,59
	Banco Popular Español, S.A.	1,681	1,87	2,581	2,87	6,13
Finland	Op-Pohjola Group					11,11
France	Bnp Paribas			1,476	0,24	8,76
	Credit AGricole					9,22
	BPCE	2,750	0,66	3,717	0,90	8,10
	Societe Generale	2,131	0,58	2,131	0,58	8,42
United Kingdom	Royal Bank Of Scotland Group Plc					10,54
	HSBC Holdings Plc					10,03
	Barclays Plc					9,76
	Lloyds Banking Group Plc					10,09
Hungary	Otp Bank Nyrt.					12,37
Ireland	Allied Irish Banks Plc					19,31
	Bank Of Ireland					12,72
	Irish Life And Permanent					23,81
Italy	Intesa Sanpaolo S.P.A					9,20
	Unicredit S.P.A	5,741	1,22	7,974	1,69	7,31
	Banca Monte Dei Paschi Di Siena S.P.A	-	-	3,267	3,02	5,98
	Banco Popolare - S.C.	2,357	2,53	2,731	2,93	6,07
	Unione Di Banche Italiane Scpa	526	0,56	1,393	1,49	7,51
Luxembourg	Banque Et Caisse D'epargne De L'etat					13,76
Malta	Bank Of Valletta					10,51
Netherlands	ING Bank NV					9,21
	RABobank Nederland					12,32
Netherlands	ABN Amro Bank NV					10,59
	SNS Bank NV			159	0,81	8,19
Norway	DNB Nor Bank Asa	1,520	1,18	1,520	1,18	7,82
Poland	Powszechna Kasa Oszczędności Bank Polski S.A.					11,16
Portugal	Caixa Geral De Depósitos, Sa	762	0,98	1,834	2,36	6,64

Portugal	Banco Comercial Português, Sa	965	1,67	2,130	3,70	5,30
	Espírito Santo Financial Group, Sa	1,476	2,16	1,597	2,34	6,66
	Banco BPI, SA	30	0,12	1,389	5,48	3,52
Sweden	Nordea Bank AB					10,87
	Skandinaviska Enskilda Banken AB					13,59
	Svenska Handelsbanken AB					14,74
	Swedbank AB					13,35
Slovenia	Nova Ljubljanska Banka D.D.	320	2,22	320	2,22	6,78
	Nova Kreditna Banka Maribor D.D.					9,33

Note: Overall Core Tier 1 includes existing government support measures but excludes sovereign capital buffer for exposures in EEA.

(European Banking Authority 2011a, 3; European Banking Authority 2011b, 15.)

Attachment 4. COREP: Capital Elements of Core Tier 1

Composition of capital as of 30 September 2011 (CRD3 rules)

Name of the bank DK008 **Danske Bank**

Capital position CRD 3 Rules	September 2011		References to COREP reporting
	Million EUR	% RWA	
A) Common equity before deductions (Orginal own funds without hybrid instruments and goverment supportmeasures other than ordinary shares)	**14,208**		COREP CA 1.1 - hybrid instruments and government support measures other than ordinary shares
Of which: (+) eligible capital and reserves	17,063		COREP CA 1.1.1 + COREP line 1.1.2.1
Of which: (-) intangibles assets (induding goodwill)	-3,146		Net amount included in T1 own funds (COREP line 1.1.5.1)
Of which: (-/+) adjustments to valuation diffrences in other than AFS assets (1)	**0**		Prudential filters for regulatory capital (COREP line 1.1.2.6.06)
B) Deductions from common equity (Elements deducted from orginal own funds)	**-554**		COREP CA 1.3.T1* (negative amount)
Of which: (-) deduuctions of participations and subordinated daims	-554		Total of items as defined by Article 57 (l), (m), (n) (o) and (p) of Directive 2006/48/EC and deducted from original own funds (COREP lines from 1.3.1 to 1.3.5 included in line 1.3.T1*)
Of which: (-) securitisation exposures not included in RWA according with CRD3 (2)	0		COREP line 1.3.7 included in line 1.3.T1* (50% securitisation exposures in the banking and trading book subject to 1250% risk weight; Art. 57 (r) of Directive 2006/48/EC)
Of which: (-) IRB provision shortfall and IRB equity expected loss amounts (before tax)	0		As defined by Article 57 (q) of Directive 2006/48/EC (COREP line 1.3.8 included in 1.3.T1*)
C) Common equity (A+B)	**13,655**	11,02 %	
Of which: ordinary shares subscribed by government	0		Paid up ordinary shares subscribed by government
D) Other Existing government support measures	**3,497**		
E) Core Tier 1 including existing government support measures (C+D)	**17,152**	**13,84 %**	Common equity + Existing government support measures included in T1 other than ordinary shares
Shortfall to 9% before application sovereign capital buffer	**0**	**0,00 %**	9%RWA-Core Tier 1 including existing government support measures; if >0.
F) Hybrid instruments not subscribed by government	**2,135**		Net amount included in T1 own funds (COREP line 1.1.4.1a + COREP lines from 1.1.2.2***01 to 1.1.2.2***05 + COREP line 1.1.5.2a (negative amount)) not subscribed by government
Tier 1 Capital (E+F) (Total original own funds for general solvency purposes)	**19,286**	**15,56 %**	COREP CA 1.4 = COREP CA 1.1 + COREP CA 1.3.T1* (negative amount)
RWA as of end September 2011 including add-on for CRD3	**123,932**		
Of which: RWA add-on for CRD III as of end September 2011	**3,507**		
Sovereign Capital buffer			
G) Prudential filter (AFS sovereign assets in EEA as of 30th September 2011) (-/+)	**0**		Please report the prudential filter as a positive number if the AFS revaluation reserve for sovereign assets is negative. Please report the prudetnial filter as a negative number if the AFS revaluation reserve is positive. If the bank does not apply a prudential filter on AFS sovereign assets, please fill in zero.
H) Difference between the book value and the fair value of sovereign asstes (Bonds and loans and advances) in the HTM and Loans Receivables portfolios (3)	**-13**		Difference between the book value and the fair value at the reference date. Please provide a positive number if the book value is larger than the fair value of sovereign assets. Please provide a negative number if the book value is smaller than the fair value of the sovereign assets.
Sovereign Capital buffer for exposures in EEA (G+H)	**0**	**0,00 %**	Sum of Prudential filter and valuation. If negative it is set to 0
Overal Shortfall after including sovereign capital buffer	**0**	**0,00 %**	9%RWA-(Core Tier 1 including existing government support measures-Sovereign capital buffer for exposures in EEA); if >0.

Notes and definitions

(1) The amount is already induded in the computation of the eligible capital and reserves and it is provided separately for information purposes.

(2) According with CRD3 it can indude also 50% securitisation exposures in the trading book subject to 1250% risk weight and not induded in RWA.

(3) It indudes also possible differences between the book value and the fair value of: i) direct sovereign exposures in derivatives; ii) indirect sovereign exposures in the banking and trading book

(European Banking Authority 2011c, 1.)

Attachment 5. Example calculation of RWA

Composition of RWA as of 30 September 2011

Name of the bank: **Danske Bank**

(in million Euro)

	Rules at the end of September	**CRD 3 Rules**
Total RWA	**120,425**	**123,932**
RWA for credit risk	**102,482**	**102,523**
RWA Securitisation and re-securitisations	4,66	4,701
RWA Other credit risk	97,822	**97,822**
RWA for market risk	**6,115**	**9,580**
RWA Operational risk	11,829	11,829
Transitional floors	-	-
RWA Other	0	0

Notes and definitions

(1) The RWA calculated according to CRD III can be based on models that have not been yet approved by the National Supervisory Authority

(2) All IRB/AMA banks in the exercise have applied transitional floor which assess the impact 80% of the Basel 1 requirements. However, wide divergences in national approaches to the floors means that two main approaches have been identified and as set out in the methodological note. Transitional floors has been applied according to the following approach: option 2

(European Banking Authority 2011c, 6.)

Attachment 6. Interview questions – Danske Bank

1. How Core Tier 1 capital adequacy and risk-weighted assets are divided among the Group?
2. How the Group manages their risk-weighted assets?
    a. How the management of RWA's has developed?
    b. What measures have used before IRB approach on credit risk measurement?
    c. Why Group uses also standardised approach on the measurement of credit risks in daughter companies and government bonds?
3. What are the Group's targets for capital adequacy?
    a. How you have planned to achieve these targets?
4. How the Group has prepared for upcoming CRD IV capital adequacy standards?
    a. What are the biggest impacts of new standards to Group?
    b. How these standards affect to development of RWAs?
5. What is important for Group when implementing CRD IV under current market conditions?
    a. How the future of the Group looks on this sector?
6. How use of new risk-weights appears on Group's risk-taking?
    a. Do these changes warrant the Group changes your current risk position?
        i. If yes, how?
    b. Does this have operational impacts to Groups operations / level of competitiveness compared to other similar banking groups?

Attachment 7. Interview questions – Finnish Financial Supervisory Authority

1. What is the situation Finnish banks' compared to other Europe?
2. What are the biggest advantages/disadvantages of current market situation to Finnish banks?
3. Why the supervisors recommend the use of IRB approach?
    a. What are the Supervisors' requirements for use of IRB approach?
    b. What are the advantages of IRB approach compared to standardised approach?
    c. Which approach is more used in Europe?
    d. How Supervisors follow and control the development of IRB models?
    e. Is there enough control over banks modelling processes? Can banks change their risk positions in order to gain Core Tier 1 capital?
4. How banks should prepare to CRD IV regulation?
5. What are the biggest impacts of new regulations to banks?
    a. How these affect to the development of RWA?
6. What are the important factors for banks on the implementation process of CRD IV?
7. How the risk-weights will change?
    a. Can these give banks a reason to change their risk position?
    b. Have these some operational impacts to banks operations or competitiveness?

Attachment 8. Danske Bank Group's Credit exposure broke down by industry

DKK millions	IRB Approach	Standardised Approach	Total Credit exposure	IRB %	SA %
Central and local governments	-	115,736	115,736	0,0 %	100,0 %
Subsidised housing companies	75,379	6,638	82,017	91,9 %	8,1 %
Banks	63,575	5,992	69,567	91,4 %	8,6 %
Diversified financials	66,334	4,781	71,115	93,3 %	6,7 %
Other Financials	33,396	26,114	59,51	56,1 %	43,9 %
Energy and utilities	35,575	4,842	40,417	88,0 %	12,0 %
Consumer discretionary and staples	69,889	9,901	79,79	87,6 %	12,4 %
Commercial property	221,112	23,897	245,009	90,2 %	9,8 %
Construction, engineering and building	65,605	12,664	78,269	83,8 %	16,2 %
Transportation and shipping	59,819	3,882	63,701	93,9 %	6,1 %
Other industrials	161,087	89,622	250,709	64,3 %	35,7 %
IT	12,972	753	13,725	94,5 %	5,5 %
Materials	29,863	6,823	36,686	81,4 %	18,6 %
Health care	21,282	2,943	24,225	87,9 %	12,1 %
Telecommunication services	2,514	830	3,344	75,2 %	24,8 %
Personal customers	780,119	151,719	931,838	83,7 %	16,3 %
Other	16,198	4,188	20,386	79,5 %	20,5 %
Total	**1,714,719**	**471,325**	**2,186,044**	**78,4 %**	**21,6 %**

(Danske Banks 2012a, 136-137.)

Attachment 9. Overlay matrix

Research Objectives	**Theoretical Framework**	**Measurement Tools**	**Results**
1) The development and impacts of Basel regulations	**3, 4, 5**	The static balance sheet assumptions.	**5.6, 8.4.3, 8.5.2, 8.6.2**
2) Impact analysis of risk-weighted assets	**3.3, 4.2, 6.1, 7.3**	IMF research, the bank's simulations, capital exercise's results	**4.2, 5.1, 8.2.2, 8.4.2, 8.5.2**
3) The capital position of European banks	**7**	The results of capital exercise, Case companies, interviews	**8, 9**