



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Internal Adoption of Basel II in a Centralized Bank

A Study of the Application of Basel II when Making Business Credit Decisions
in Nordea

Bachelor Thesis in Business Administration

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Abstract

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Title: Internal Adoption of Basel II in a Centralized Bank – A Study of the Application of Basel II when Making Business Credit Decisions

Background and Problem: Basel II is a regulatory framework introduced by the Basel Committee of Banking Supervision. Its aim is to improve international capital supervision. Banks have to apply this legislation in order to have a sufficient level of capital in case of unexpected defaults. There is, however, room for different local interpretations, given the nature of the new regulatory framework. Banks can, for example, make judgments of capital requirements internally if national authorities approve them. In times of financial crisis it is of great importance that banks handle risk correctly. Thus, in the current situation, it is especially interesting to study how the regulatory framework, aimed to create stability in the financial system, is applied internally in banks. Previous research has shown that the support of Basel II has been greater in centralized banks, and for that reason we wanted to take this further, by making a study of how the application is pursued in a centralized bank.

Purpose: To describe how a centralized bank applies Basel II internally in the process of business credit decisions.

Limitations: The focus of the thesis lies on Nordea, one of the four largest Swedish banks. The thesis does, however, not intend to describe the mathematical and technical details of Basel II, but primarily concerns credits given to businesses. Its primary target of study is the first pillar of Basel II.

Method: We have chosen to make a qualitative study in which we interview people at different hierarchical levels within Nordea, in order to obtain a deeper understanding of the processes involved in giving credits to businesses together with applying Basel II. The regulatory framework of Basel II and previous research concerning management of banks will be used for analyzing the empirical data acquired through interviews and other data published by Nordea.

Results and Conclusions: There is awareness at local- as well as at central level that Basel II is applied. The knowledge of how the framework is applied, however, deviates between the different functions of Nordea. Centrally in the organization the instructions for credit decisions are seen as well integrated with the internal system of economic capital and Basel II. At local levels the knowledge of Basel II is, however, deficient to a great extent, and credit decisions are based on clear guidelines for decision-making processes given by the central levels.

Keywords: Nordea, Basel II, Business Credits, Capital Requirement

Abbreviations

| | |
|---------------|---|
| Group of Ten: | USA, Canada, Japan, Great Britain, France, Germany, Italy, Netherlands, Belgian, Sweden, and Switzerland. |
| IMF: | International Monetary Fund |
| FI: | Finansinspektionen (Swedish Financial Supervisory Authority) |
| Nordea: | Nordea AB (publ) |
| IRB: | International Rating Based Model |
| PD: | Probability of Default |
| LGD: | Loss Given Default |
| EAD: | Exposure at Default |
| M: | Maturity |
| UL: | Unexpected Losses |
| AMA: | Advanced Measurement Approach |
| UC: | Upplysningscentralen (Swedish Credit Information Agency) |
| ERM: | Enterprise Risk Management |
| SME: | Small- and Medium Enterprises |

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1. Introduction

T*his chapter gives an introduction to the researched subject. We discuss the regulatory framework of Basel II and the organization of the Swedish financial market and banks. Furthermore, we present the research questions in order to clarify the purpose of the thesis. Finally, we give an outline of the thesis.*

1.1 Background

“It is time for Basel III” (Billing, 2009). “The situation is going to get worse before it gets better. Regulators failed to regulate. They thought that excesses were random and that the market would always come to equilibrium. They were adopting the wrong paradigm” (The Economic Times, 2008). The financial crisis spread rapidly and surprised many people that thought banks worked according to the traditional textbook idea of accepting deposits and transforming their liquidity into loans. Today’s banks are financing the main part of their lending rather through own borrowing, than through deposits (Eriksson, 2008). The fact that large banks have problems in spite of brilliant financial ratios is, according to Billing (2009), a sign of a regulation system that is not sufficient and should be reformed. These types of comments are common and come at a time of a deep crisis for global financial and stock markets.

Banks carry great responsibility for the adequacy of the system as saving institutions and providers of credit (Karling, Jacobson, Lindé & Roszbach, 2002). It is evident that banks are collapsing although they apply the regulation and even though some of them have higher buffers than demanded in Basel II. Thus, the opinion that the Basel Committee on Banking Supervision should revise the current international bank capital regulations seems to be shared by many authors. Other authors do, however, not subscribe the problem to Basel II. Agnetha Jönsson (2008) states, that overoptimistic lending is to blame for the crisis, rather than deficiencies in the regulatory framework. The banks hunting for returns in combination with insufficient risk judgment, and a blind faith in rating caused today’s crisis and Basel II can scarcely be accused for any of the situation mentioned above (Jönsson, 2008).

1.1.1 Regulatory Framework

It is important to form restrictions on banks, although it needs to be stressed that these should not restrain credit provisions to an unnecessary extent (Karling, et al, 2002). Fallout of this is a supervisory committee called the Basel Committee that was formed as a consequence of serious disturbances in the financial markets. It was founded in 1974 by the central banks of ten countries (Group of Ten) that had decided to make resources available to the International monetary fund (IMF) in 1961, to ensure that the international financial system remained stable (Nationalencyklopedin, 2009). The aim of the Basel Committee was to promote better supervisory understanding and to improve the international capital supervision. The committee did not possess any authority or legal force. Its purpose was to give recommendations and best practice guidance and it worked according to two guiding principles: “no foreign banking establishment should avoid supervision” and “supervision



should be adequate” (Basel Committee, 2007).

The first published guidelines; Basel I were directed at assessing capital in relation to credit risk, aiming at a capital ratio of at least 8 % by using five different risk weights to different types of credits (The Basel Capital Accord, 1988). As banks started developing more sophisticated ways to avoid the regulations, and as the markets of financial instruments turned more dynamic, it was necessary to rework the guidelines (Forsell & Lönnqvist, 2004). The revised framework of capital adequacy was called Basel II and it consisted of a three pillars approach:

- Minimum Capital Requirements
- Supervisory Review
- Market Discipline Retaining Elements

Basel II is generally based on the same foundation as Basel I with capital requirement of at least 8 % of the risk-weighted assets key. A significant innovation of the new framework is the extended use of assessments of risk provided by internal systems of banks as inputs to capital calculations. Basel II does, further, have more focus on counterparty risk as opposed to the focus on individual credits, which can be found in Basel I (Basel Committee on Banking Supervision, 2006).

1.1.2 The Financial Market

The financial market is a necessary element of the economical infrastructure in every society that turned away from the self-sufficient household phase. According to Lundgren (2000), the three principal functions of the financial market are:

- Financing
- Risk Management
- Payment Transfer

Financing means, that real resources are borrowed today towards a promise of payback at a later date. The second task of the financial markets is to manage the risk, systematic-nonsystematic, associated with all types of activities. The third principal function embraces payment transfers, the area in which banks are central players (Lundgren, 2000).

A major development of the financial market has been accomplished; Lundgren (2000) argues that there are no signs that indicate a further growth of the financial sector in developed economies. A fast structural transformation is occurring though. Joint ventures and acquisitions within the financial sector result in a concentration of larger but fewer banks. There are a number of forces behind this development, one of which is economies of scale. Banks see an advantage in working with other banks because some of the fixed costs decrease as a result of the ability to share computing systems and analysis competency (Lundgren, 2000).

In a period of 25 years, the Swedish financial market has been reformed. It has been transformed from being one of the most regulated financial systems of the Western world into



one of the most liberate (Lybeck, 1999). In the beginning of the 1990s, the liberated regulations resulted in a crisis. According to Lybeck (1999), the outcome of this crisis was nonetheless a triumph, because the Swedish bank sector got through it with higher efficiency than those countries, which did not experience a similar crisis. Moreover, the focus was shifted towards competition and cost efficiency.

During the last 10-15 years the Swedish banks have developed into financial groups of companies with considerable international activities. There are four main categories of banks on the Swedish market: Swedish commercial banks, foreign banks, saving banks and co-operative banks. The largest Swedish commercial banks are Swedbank, Handelsbanken, Nordea, and SEB, the four major banks. These banks are represented in the financial market and are able to offer most types of financial services. Moreover, they account for 75 percent of the total deposits from the Swedish public (Svenska Bankföreningen, 2008).

1.1.3 Organization of Banks and Adaption of Regulation

Banks need to establish own systems for estimating capital requirements to control their exposure to risk although they apply the regulatory framework. The nature of Basel II gives room for different perspectives depending on the management structure and strategies of the banks. Banks can moreover make internal estimations of factors involved in the calculations of external capital requirements, if national authorities approve them. The amount of capital held will therefore depend on internal judgments in the banks (Forsell & Lönnqvist, 2004). Banks can gain advantage through lower capital requirement by using own internal methods for calculations that measure risk on a daily basis (Wahlström, 2009).

The banking industry has traditionally been centralized with hierarchical decision-making. There has, however, been a change towards decentralization, led by Jan Wallander, former CEO at Handelsbanken (Wallander, 1998). Nevertheless, the other three large Swedish banks¹ including Nordea have remained relatively centrally organized. The leaders at the top of the chart make the strategic and organizational decisions, which means knowledge, information and ideas are concentrated at the top, and decisions are cascaded down the organization (12manage, 2009). Thus higher-level managers at Nordea make key decisions including the framework that every division has to apply. The framework builds on clear definitions assigning the parts and fields of responsibility, common equipment, and routines (Nordea, 2009A). Wahlström (2009) has in previous research stated that the support of new regulations such as Basel II has been greater in centralized banks, as their organizational culture tend to support central instructions for decision-making. We are therefore interested in taking this statement further by studying the processes of applying the regulation.

¹ Nordea AB (publ), Swedbank AB (publ), SEB AB (publ)



1.2 Purpose and Problem Formulation

The purpose of the thesis, derived from the previous discussion, is to describe how a centralized bank applies Basel II internally in the process of business credit decisions. We intend to give an explanation as to how a centralized bank applies the regulatory framework of Basel II within the organization, at different hierarchical levels. Hence our research questions are:

- *How does a centralized bank apply Basel II when making decisions regarding business credits?*
- *How does the bank communicate the regulations to decision-making units?*

1.3 Limitations

We will limit our study to Nordea, one of the four largest Swedish banks, which has a traditional, rather centralized organization (Svenska Bankföreningen, 2008). Moreover, we intend to give an insight of how the application of the regulatory framework works internally in a relatively centralized bank.

Our focus lies on the internal management perspective of the banks, hence, we will not consider the technical and mathematical details of Basel II and therefore we will not analyze how measurements are made within the regulatory framework. The thesis will moreover be focused on the Swedish branch of Nordea and will not concern their insurance business.

Our emphasis will further lie on decision-making concerning business credits and not all the credits given by the bank, as we want to be able to give a sufficient, but not too comprehensive explanation of how the application of Basel II is made. The focus does therefore, regarding the framework of the thesis, lie on the first pillar concerning capital adequacy.

1.4 Target Audience

The target audiences of the study could firstly be the general public. People could have a great interest of finding out how the regulations could potentially have affected the outcome of the crisis. It does however need to be pointed out that a fair knowledge in business and economy is necessary to be able to fully appreciate the thesis.

Secondly, employees at centralized banks and at Nordea making credit decisions concerning business loans will presumably be interested in our thesis as it gives a different perspective to their daily work. Thirdly, investors interested in the risk profile of the banks and its capital adequacy could be a target group. Lastly, students who want to acquire a deeper perceptive of the legal framework that banks have to follow and the internal application of this framework, could be seen as target audience of the thesis.



1.5 Outline of the Thesis

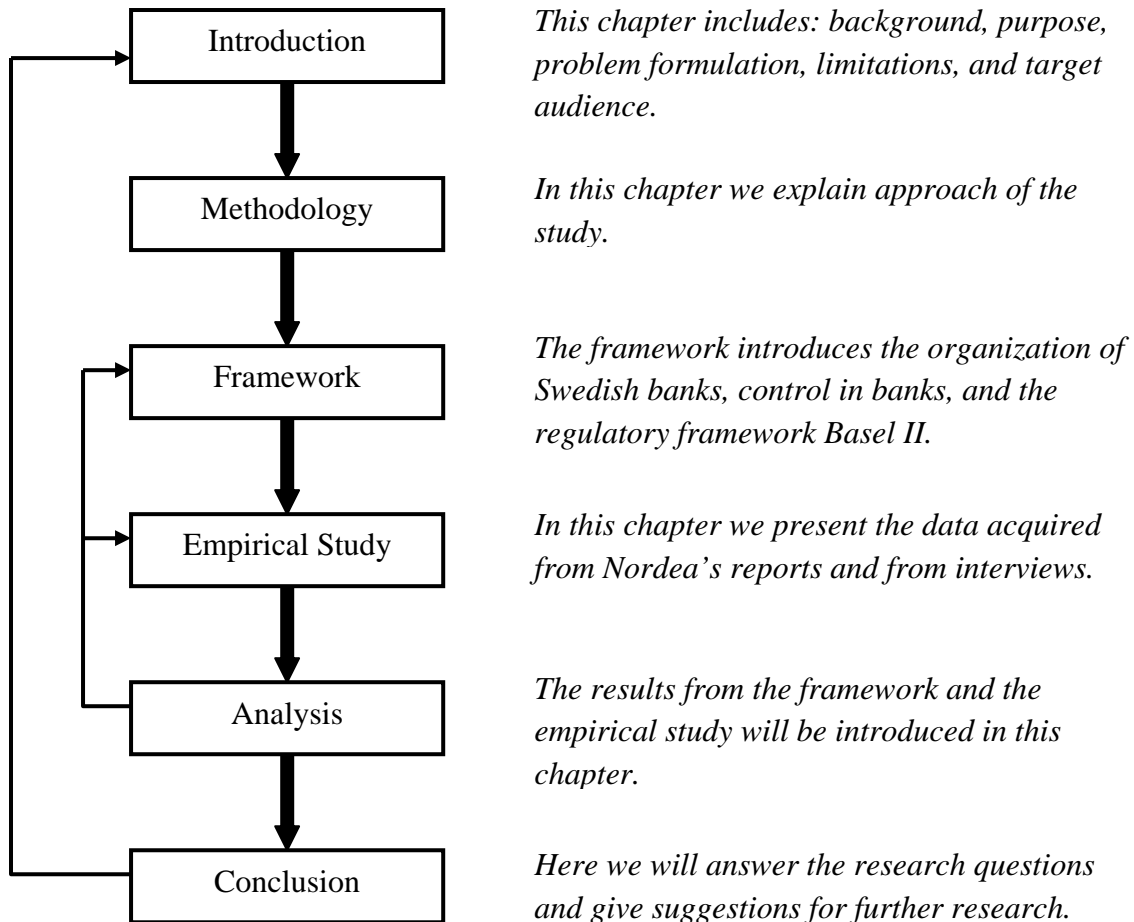


Figure 1: Outline of the Thesis



2. Methodology

T*he aim of this chapter is to describe the methodological approach of the thesis and the research process. We will explain the choice of research method and its implications on quality, validity and reliability of the study.*

2.1 Research Approach – Explain and Create Deeper Understanding

In social science there are two different research approaches: qualitative- and quantitative research (Andersen, 1998). We started our study with considering the need for information in the thesis and what type of information that would fulfill the need. As a result, we realized that we would not be capable to draw relevant conclusions about the enterprise in focus without having contact with people in the organization, which were directly concerned with the background of the research question. We wanted to create an understanding of the internal processes concerned by the regulations and how these worked. By doing qualitative research one can create a deeper understanding of the problem as a part of the ‘big picture’ (Andersen, 1998).

As we did not intend to focus on the technical approach of how the organizations work and apply a certain method, we decided to make a qualitative study. It is possible that some of the aspects of quantitative research, such as the statistical approach of the application of Basel II could be interesting. Nevertheless, as we wanted to create an understanding and explain how Nordea works, and not the technical processes of how it applies the regulation, a qualitative research will provide a better basis.

2.1.1 Bank in Focus

We have decided to study Nordea, because it is centrally organized and relatively similarly to the largest part of the other major Swedish banks (Svenska bankföreningen, 2008). We aim to provide an overall understanding of how Nordea, as a centralized bank applies the regulatory framework of Basel II at different levels of its organization when making credit decisions.

2.2 Qualitative research – to Interpret and Understand

With its focus on process and meaning, qualitative analysis deliberately encompasses complexity, uncertainty, context, rich description, and multiple analytical methods. Another distinctive feature of qualitative research is the researcher’s role and his ability of interpreting a careful and deep understanding. Besides that, a qualitative research gives us a unique opportunity to encounter people’s actual experiences. Furthermore it gives us insight in their day-to-day decision-making. Qualitative research requires involvement and participation and it can therefore be a vital strategy, which allows us access to otherwise hidden sources of information (Burton & Steane, 2004).



2.2.1 Secondary data

We wanted to acquire data, which could help us understand and explain the background and content of the regulatory framework as well as the nature of the organisation and management control of the bank. Since it would form the basis of knowledge for our essay, we wanted to use secondary data with scientific foundation, which could improve the validity of the information. This did, however, create an importance of critique towards sources and we needed to cover a larger area of sources to make sure that we took in all different viewpoints.

The primary source of secondary data was scientific articles in the area concerning banks and Basel II, which were published in the database Science Direct. Furthermore, we intended to use the available articles in the database of the library to find other national articles examining the given subject, in order to obtain a Swedish perspective. Information regarding well-established models and management was gathered from academic literature.

Moreover, data was gathered directly from the Basel Committee, which is the primary source of information concerning the regulatory framework of Basel II. We intended to use this information together with information collected from other sources to increase the liability and validity of our framework. The focus lies on the first pillar of Basel II as it concerns the subject of the thesis to a greater extent than the other two pillars. Within the first pillar the emphasis lies on the exposure towards corporate- and retail credits, because it is the credit decision concerning these types of exposures that is the focus of our thesis. We do, however, provide an overview of the other pillars as well.

In our empirical research we used data from the Risk Management Pillar 3 Group Reports of Nordea, which was published according to the third pillar of Basel II, as a complement to the information we aimed to acquire from interviews. This information, further, provides a basis and a deeper understanding as a preparation prior to the interviews.

2.2.2 Primary Data - Interviews

Interviews as a research method give us the advantage to look at the 'real world' and get a direct perspective from the bank as a primary source. We therefore found this research method preferable in our thesis. An interview mediates knowledge, experience, opinions, attitudes, and valuation from the person being interviewed to the interviewer (Jacobsen, 1993). What is noteworthy concerning an interview is that both its shape and content can go beyond what the participants could conclude by their selves. Furthermore, one has the chance to control the conversation and get those themes illuminated, that the interview intends to content (Jacobsen, 1993).

There are two different types of interviews, those made through telephone contact and those where you meet the respondent personally. It is recommended to use personal interviews, when the questions are complicated and the answers acquire a large amount of time. Nevertheless, telephone interviews are practical and expeditious, and have become more common. It is difficult to say, whether a phone interview or a personal interview is best, but there are nonetheless some elements linked to telephone interviews that require attention. The most important aspect to concern is the absence of body language, which is often informative of factors that you cannot directly read from words. Another factor is the ability of the respondent to escape from the interview, for instance by coming up with an excuse (Jacobsen, 1993). In our thesis we combined personal interviews and phone interviews.



Choice of Interviewees

The emphasis when using interviews as a research form needs to lie on interviewing the right people. It is therefore of great importance to make sure that the information received is trustworthy based on its source. We wanted to acquire a broad perspective of the application of Basel II within the organization of Nordea. Therefore we intended to interview people at different levels of the organization, a central- and local level. We adjusted our questions, based on the knowledge of the person interviewed, although all interviews were based on a core of general questions. Our interviewees have been given the opportunity to read the results of our study to ensure the validity of the results.

At central level, we interviewed Johan Giertz and Barbro Rolén, who work with interpreting the regulatory framework and Göran Lind, the former executive credit manager of Nordea Sweden, who worked within the internal Basel II project group of Nordea the last period before his retirement². We made the judgment that he would be appropriate as an interviewee nonetheless, as he was very experienced and still involved with prior work to a great extent. At local level we interviewed Anders Brodin, corporate director of the business division and Elisabeth Traung, manager of sell support for business loans and analyzers, both at the branch, Östra Hamngatan in Gothenburg. The interviewees were selected by using our contacts within Nordea. We talked to people at different levels of the organization and were assisted to find the right persons that would be able to answer the relevant questions for our thesis. We did moreover make some background research to find out whether the persons we had chosen would be appropriate to the study, through using internet based search tools such as Google, to find out more about their position in Nordea and their previous and current assignments.

| Placement | Position | Name |
|-----------------------|---|-------------------|
| Head-office Stockholm | Group Risk Modeling | Johan Giertz |
| Head-office Stockholm | Group Risk Modeling | Barbro Rolén |
| Head-office Stockholm | Former Executive Credit Manager Nordea Sweden, and involved in Basel II Project of Nordea | Göran Lind |
| Branch in Gothenburg | Head Manager of SME Business Branch in Gothenburg | Anders Brodin |
| Branch in Gothenburg | Manager of Sell Support to Business and Analyzers in Gothenburg | Elisabeth Tranung |

Figure 2: Interviewees selected for the study

Basing our study largely on interviews with employees within Nordea could be disadvantageous as the bank most likely aims to provide us with information, which will put them in a favorable position. We, nevertheless, argue that interviewing the persons, who work within the areas we focus on, would give us better understanding, since they have a broad and deep knowledge. As a consequence it is crucial for us to keep an objective perspective by ensuring that another researcher could potentially verify the information acquired.

² Göran Lind retired a week before our interview with him after 40 years within Nordea



Presentation of the Results from the Interviews

During an interview meeting there are two parts, which are able to lay their marks on the raw material and affect its contents. After the interview only the person revising the material will produce a conclusion based on the information gathered, which could mean that personal beliefs could impact the results of the study. Despite the fact that this could be a problem it is believed that interviewer will have incentives for acting in a desirable as s/he wants to appear serious and professional. The purpose of the interviews is to get information about how the respondents are doing their jobs and thus, we have to revise the material without losing this important aspect (Jacobsen, 1993).

All our interviews were recorded and the material from the interviews was constructed and its content was estimated as soon as the interviews were finished, in order not to forget or misunderstand the information we had gathered. After that, we edited the material, in order to provide a suitable structure to the interviews in the context and to reach coherence. The answers and utterances from the interviewed persons were used and the empirical study was build up on them. Those parts, which did not link to our study, were not included.

2.3 Validity and Reliability

Validity is the ability of the measuring instruments to measure what the researchers set out to measure. It concerns both external and internal validity (Eriksson & Wiedersheim-Paul, 2006). Internal validity includes the design of the research, the care taken to conduct measurements, and the decisions concerning what was and was not measured. External validity refers to the extent to which the results of a study are possible to generalize or to transfer. Transferability is the extent to which a study invites readers to make connections between elements of the study and their own experiences (Palmquist, 1995).

The extent to which any measuring procedure yields the same result on repeated trials is referred to as reliability. Reliability has to do with the quality of measurement and is the “consistency” or “repeatability” of it (Trochim, 2006). A study is considered reliable, if other researchers would get the same result by using the same method. In order to reach high reliability, the method should be independent of the researcher and, depending on the extent of generalization one aims to achieve and the unit to be researched (Eriksson & Wiedersheim-Paul, 2006).

We wanted to assert, that by having advantage to interview persons with the right knowledge within Nordea, the validity and reliability of our study would be upgraded. We intended to emphasize on constructing the right questions, and moreover look to verify the statements in other secondary material. A criterion when drafting our interview questions was that the framework of our thesis supported them. We wanted to assure that we would be able to base the questions on a framework of information both concerning the regulatory framework and previous research. The interview questions were therefore selected after our initial studies with basis of the framework of our thesis.

Concerning the external validity in terms of transferability, we did not aim to provide results that can be directly generalized to other banks. Instead, we aimed our thesis to have validity for the bank in focus and to provide an insight of the application of Basel II in banks.



Furthermore, we intended to complement the part of our thesis, which involves interviews with secondary sources that have higher reliability and validity. As we based our analysis on these together with the interviews, we believed it could increase the reliability and validity.

2.4 Model of Approach for Analysis

The material gathered through the Internet and literature will be used to build up an understanding and knowledge base for the studied subject. This information will be presented as a framework of the thesis. As we have to limit ourselves to the most important material to the purpose of our study, we will have to sort out information that is less important and relevant in the context. The core of information will help us to use our empirical data and to make a commendable analysis, which will lead us to a relevant conclusion.

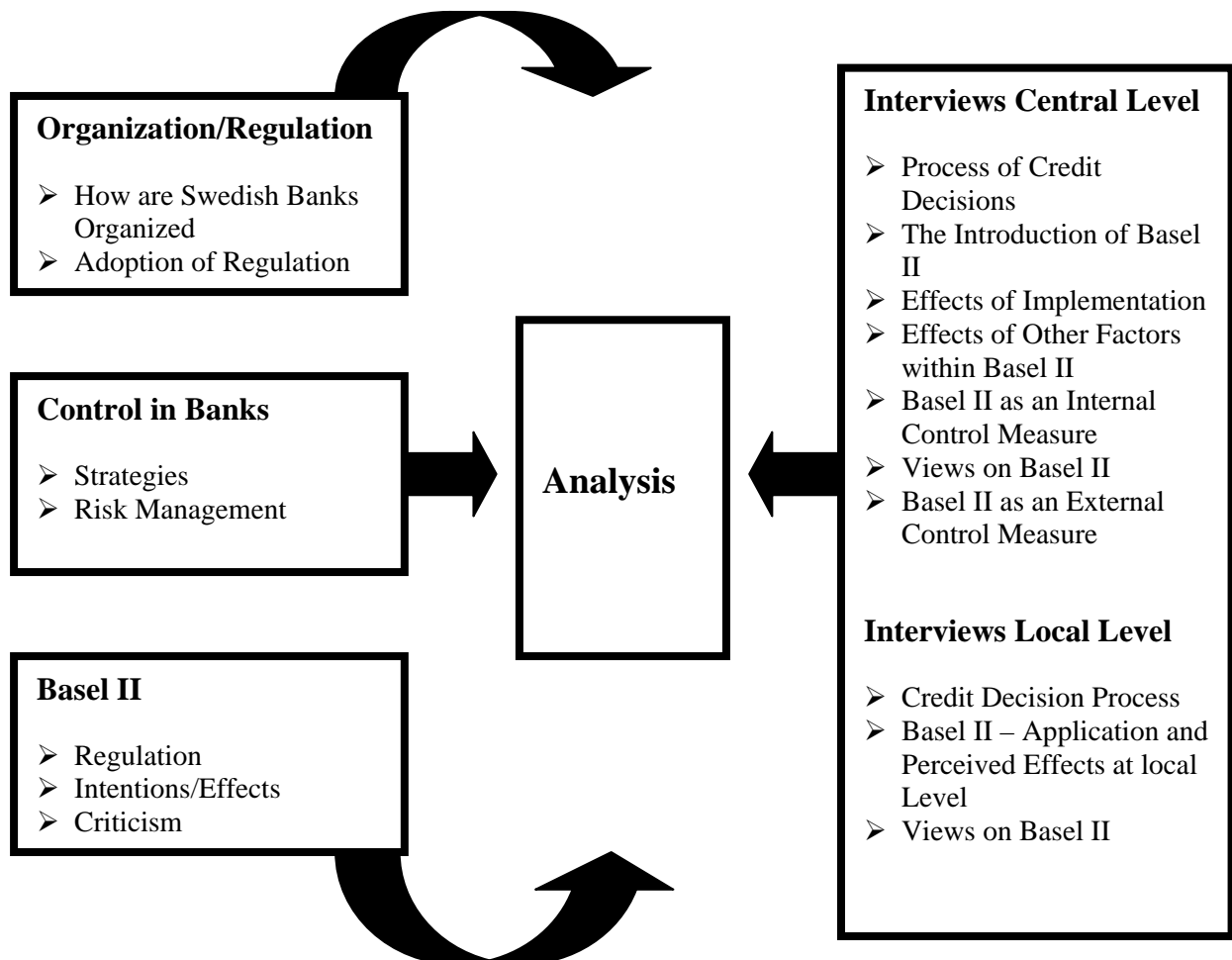


Figure 3: Approach for Analysis



3. Framework

The basis of our thesis lies within the regulatory framework of Basel II set by the Basel Committee. To outline this we will start with an introduction of the organizational nature of Swedish banks and Nordea, and the previous research done in the subject. We will continue with research in the field of risk management and management control in banks. Finally, we will give a description of Basel II: the regulatory framework, its intentions, and its effects.

3.1 Organization and Regulations of Banks

Most Swedish banks, including Nordea, have a centralized organization with credit authority on top. Centralized decision-making aims to avoid control problems and can be one of the central elements of an organization's management control system. Strong forms of centralization can exist in large businesses, whose top managers reserve some of the most critical decisions, which fall within their authority. Common candidates for centralization are decisions regarding major acquisitions and divestments, major capital expenditures and organization changes. However, in most organizations it is not possible to centralize all critical activities and other control solutions are necessary (Merchant & Van der Stede, 2007).

Previous research by Wahlström (2009) has shown that the support of legislation, e.g. Basel II, is greater in banks that are centralized than in those that are not. Employees in centralized organizations are acquainted to following different sets of rules. Moreover, the value of centralized management practice is enhanced by legislation, since it leads to increased uniformity and control, and results in a further concentration of power at the headquarters of the banks. This could be disadvantageous for banks with a decentralized management structure. As Robbins and Coulter (2002) state, centralization is helpful for companies that need stability or are facing a crisis, and need a source of decision-making to lead them. In a decentralized organization, this could potentially harm the existing decision-making procedures (Wahlström, 2009).

The framework, Basel II, is largely dependent on quantitative models. These are in some cases rejected by banks that are decentralized, as they stress the importance of subjective judgments that are built by a strong relationship with customers. The result of that is that there will be a conflict of interests between making credit decisions centralized, based on knowledge of mathematical formulas, and making credit decisions decentralized, based on personal contact (Wahlström, 2009).



3.2 Risk and Management Control in Banks

Risk management and strategic management are, according to Mikes (2009), often not as integrated as they could potentially be. Further, the involvement of risk management in high-level strategic decision is perhaps the most important lesson that needs to be taken in the current credit crisis. The awareness of risk management has nevertheless increased under the name Enterprise Risk Management (ERM). The expression of ERM has also been promoted by the Basel Committee when introducing their capital requirements as it is interested in motivating a stronger focus on integrated risk approaches throughout firms (Mikes, 2009).

The amount of capital kept by banks is an important regulatory, as well as a managerial question. The new types of calculations that determine how much capital banks should hold are more dependent on economic calculations of risk than on accounting calculations. These are advocated by a new type of controllers, risk managers, as a tool for presenting risk profiles. These types of calculations can be used for capital allocation and management control of different business units with basis of the risk-adjusted returns (ibid).

The way, by which banks work with risk management in cooperation with strategic decisions, does, according to Mikes (2009), further depend on the calculative culture of the firm, that is, in what extent the risk managers are willing to rely on quantitative measurements. Mikes distinguishes between calculative idealism and calculative pragmatism, where the former means a willingness to manage risk by numbers and the latter means distrust in numbers and calculations for managerial decisions.

There are different ways to use management control systems concerning risk. They can either be used interactively where the calculative practices are involved in the strategy formulation and are actively used to create new strategies, or diagnostically where top managers only receive information when outcome falls outside the predetermined limits (ibid). How risk is managed is, according to Mikes (2009), dependent on the nature of decision-making and management within the organization.



3.3 Basel II – Regulatory Framework

3.3.1 Historical Background

Basel II are guidelines for supervision of banks that have been developed by the Basel Committee, an organization with the aim to create stability on the financial markets, which was founded in 1974 as a result of disturbances on the financial markets. The committee does not possess any supranational- or legal authority, it does, however, establish guidelines for the individual authorities to implement (Basel Committee, 2007).

The first guidelines, Basel I, were created when the Basel Committee became concerned about the capital ratios in banks and the lack of international convergence of regulations. A consultative paper was circulated and the Group of Ten countries decided to implement the new standards in 1988. The main aims of the standard were to promote soundness and stability, and moreover, to ensure a high degree of consistency and fairness in its application. It aimed at a capital ratio, based on five different weightings, with a focus on counterparty risk. Basel I stated that the ratio should be at a minimum of 8 %, although national authorities can decide that there is need for higher capital coverage (The Basel Capital Accord, 1988).

It did, however, turned out that the capital ratios declared in Basel I were not adequate to create stability in the financial markets. Banks established ways to avoid the regulations and Basel I was no longer able to reflect the capital ratio and the risk profile of banks. Several attempts followed as to improve the framework. These gradually build up the new regulations called Basel II (Karling, et al, 2002). The new framework was the result of a process to create regulatory guidelines for internationally active banks that should govern their capital adequacy. Through the new revised framework the Basel Committee aims to promote a stronger risk management. It is stated that there has been a positive reaction from banks and other interested parties, concerning the new regulations (Basel Committee, 2006).

3.3.2 Intentions

The aims of the new rules for capital requirements were to contribute to the stability in the financial system, to create an increased level of fairness in competitive market of banks, and to increase the risk sensitivity of the system. The regulations were formed primarily with focus on banks that are internationally active, but could, however, be applied on other banks as well (Finansinspektionen, 2001).

A significant change from the previous standard is the opportunity of banks to use internal measurements (Basel Committee, 2006). Further, the new regulation aims to create incentives for an effective way to handle risks and control (Forsell & Lönnqvist, 2004). It aims to provide a better risk sensitivity measurement, with a greater coverage of risks that appear in the financial system. The new regulations aim to survey the processes of risk control to a greater extent and increase transparency (Finansinspektionen, 2001). The bank should be given incentives for using methods that are more risk sensitive and thereby measure the capital need with more precision (Finansinspektionen, 2002).



3.3.3 Pillar 1 – Minimum Capital Requirements

This pillar consists of three different parts: credit risk, operational risk and market risk (Basel Committee, 2006). It states how much capital the bank must hold to cover its credit exposure, which is the part that can be found in previous regulation as well. The capital ratio stating a minimum of 8 % remains, though there are some changes made in the measurements (Finansinspektionen, 2001). The capital base, which you use to calculate capital ratio should be based primarily on equity capital and disclosed reserves, as it is the only element that is equal in all banking countries. There may, however, be other constitute of capital that could be included.

Credit Risk

The capital requirements for credit risks can be calculated either through a standardized approach, which is similar to the method for calculation in Basel I, or through a method based on internal rating (Basel Committee, 2006).

The standardized method differentiates from Basel I by using different frameworks for risk weighting. These are based on an external credit assessment by an institution which is recognized by national supervisors. It is necessary that the external credit assessor meet five different criteria given in the regulatory framework. By using the ratings of the credit assessor a risk weight of a certain exposure will be given, depending on the type of the exposure. Claims on sovereigns and central banks with a very high rating should be weighted lower than claims on corporates with the same rating. Credits that do not have guiding ratings have risk weights specified in the regulatory framework (Basel Committee, 2006).

The Internal Rating Method (IRB) approach allows banks, approved by the supervisory authority, to use internal ratings when measuring credit risk (ibid). The purpose of this model is for the bank to be able to use existing internal models for measuring counterparty risks, as these are made as a part of their core business, and thus are seen to be relatively reliable (Karling, et al, 2002). When applying the IRB method banks calculate Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EAD) and Maturity (M). Banks may, however, be obliged to use a standardized value provided by the supervisory authority for some of the components (Basel Committee, 2006). A minimum requirement for applying the IRB approach is that they can provide an estimate of PD, which makes them eligible for the foundation IRB approach. The advanced IRB approach involves internal assessment of the other parameters as well, meaning that the demands are higher to be approved by the national supervisor for applying it (Finansinspektionen, 2001).

The risk weights given through the IRB approach should express the probability that the losses during a specific period will be extra high, while the normally expected credit losses should be covered by incomes. Hence, the risk functions are based on calculation of unexpected losses (UL) and expected losses are treated separately (Basel Committee, 2006).

For the calculation of risk, the portfolio of the bank is divided in to five different types of exposures: (a) corporate (b) sovereign (c) bank (d) retail and (e) equity. In this essay the focus lies on corporate and retail exposures. Corporate exposures are, according to the Basel Committee (2006), defined as: “a debt obligation of a corporation, partnership, or proprietorship”. The borrower is typically an entity, which needs finance to operate physical assets. The exposure gives the lender substantial control over the assets/income generated by the assets. The borrower generally does not have capacity to repay the credit, in any other way



than paying part of the generated income. The primary source of repayment is as a result the income generated by the assets. When calculating capital requirement for credit exposure to corporations the banks needs to calculate PD within the foundation IRB approach and whilst under the advanced approach they need to provide estimated of all factors (PD, LGD, EAD and M) (ibid).

A retail exposure consists of exposures to individuals such as revolving credits or lines of credits, mortgages, and loans given to small businesses, where the credit is smaller than €1 million or where there is an individual that is personally liable. Within the retail exposure there is no distinction between foundation and advanced IRB approach and the bank need to estimate PD, LGD and EAD (ibid).

There are several risk-weight functions for all these different exposures, given in the regulatory framework. As within the standardized method, a function for e.g. retail credit is different from that of a credit to a corporate. Estimates of risk, leading to risk component factors are done by the bank or given by the supervisory authority (risk components). These are transformed into risk weighted assets and capital requirement through risk functions. The usage of these functions to arrive at capital requirements is mandatory within the foundation- as well as the advanced IRB approach (Basel Committee, 2006).

It is expected that once banks use parts of the IRB approach, they should apply IRB for the entire bank group. It is, however, expected that it will be a gradual process and national supervisors may allow banks to apply a gradual adaption. When the banks use the IRB approach for a specific asset class, however, they need to use it for that asset class within all business units. The bank further needs to provide an implementation plan, describing how they intend to build up the process of applying the IRB approach (ibid).

| Credit requirements | Standardized Method | Foundation IRB | Advanced IRB |
|----------------------------|---|--|----------------------------------|
| Corporates | Calculation through external ratings and given risk weights | Estimation of PD, given values of EAD, LGD and M | Estimation of PD, EAD, LGD and M |
| Retail | Weighted at 75% ³ | Only one method for IRB | Estimation of PD, EAD and LGD |

Figure 1: Calculation of capital requirement within Pillar 1, credit risk. Source: Basel Committee, 2006 and table processed by the authors.

³ If the banks has fulfilled the requirements provided by the Basel Committee (2006) and been approved by the national supervisory authority.



Operational Risk

According to the Basel Committee (2006), operational risk is defined as: “the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events”. It involves the risks that result from mistakes, errors, accidents or crimes that can cause losses (Finansinspektionen, 2001). The operational risk will be calculated through different models (i) the Basic Indicator Approach, (ii) the Standardized Approach and (iii) Advanced Measurement Approaches (Basel Committee, 2006).

The Basic Indicator Approach means that the bank must hold a percentage of gross annual income over the last three years to cover for operational risk. Internationally active banks with significant exposures to operational risks should, however, use a more sophisticated approach than the Basic Indicator Approach. In the Standardized Approach the banks activities are divided into different business areas where the need for capital to cover operational risk is calculated on the gross income of that business area and multiplied with a factor, assigned to the business line (Basel Committee, 2006).

Under the most advanced model, AMA, the banks will use an own method to calculate their operational risk (Basel Committee, 2006). The committee has, based on historical information from the large banks, decided that the approximately 20 % of the demanded capital should be derived from operational risk. This could mean that the capital derived from credit risk decreases, as the committee does not aim the total capital demand to increase, even though operational capital increases (Finansinspektionen, 2001).

Market Risk

The third and final part of the first pillar is market risk. It is the risks of losses as a result of changes in market prices: the risk related to interest rate instruments and other equities in the trading book, foreign exchange risk and commodities risk. As for the other risks under this pillar there is one standardized alternative and one alternative based on an internal model, which requires supervisory recognition to be applied (Basel Committee, 2006)

3.3.4 Pillar 2 – Supervisory Review Process

The second pillar forms four founding demands that cover the tasks of the supervisory authority and of the bank (Finansinspektionen, 2001). Firstly, banks should have a process for determining their overall capital adequacy and a strategy for maintaining capital levels. Secondly, supervisors should review the methods the banks use for capital assessment and make sure they comply with regulatory capital ratios. Further, they can take supervisory actions if they are not satisfied with those methods. Thirdly, supervisors should expect the banks to have a higher capital ratio than the one set by regulatory standards. They are allowed to require banks to hold more capital than the minimum demand. Fourthly, the supervisory authority should seek to intervene at an early state to avoid capital to fall below the required, and should require immediate action if capital is not maintained or restored (Basel Committee, 2006).

Although a minimum level of capital is stated through the first pillar the bank need to keep greater capital reserves to have a buffer for unexpected events. Especially as the means of measurements are more risk sensitive and the capital reserves demanded may increase drastically if the economy goes in to a recession. This does further increase the demands on the supervisory authority (Finansinspektionen, 2001).



3.3.5 Pillar 3 – Market Discipline

The third pillar aims to use market powers to create stability by increasing the information demanded from banks. It is important that customers, investors and other stakeholders have information about the banks, to be able to judge their financial strength and risk profile. Providing this information will further create incentives for the banks to behave in a way that reduces risk. It is of great importance, however, that the information demanded is not too high, as it could display confidential information, at the same time, as it is important that the information is comprehensive enough. It is included in the responsibility of the supervisory authority to control how the banks apply the information requirements (Finansinspektionen, 2001).

3.3.6 Effects of Basel II

The aims of Basel II are, according to Finansinspektionen (2001), to increase the resistance of the financial system against economic disturbances and to contribute to an increased economic efficiency. This should be achieved by having large capital requirements for banks with higher risk level, at the same time as the capital requirements for banks that are only exposed to low risk should not be as high. If the capital requirement is very standardized, as with Basel I, there is a risk that the banks need to keep a capital buffer that is excessively high and thereby transfer too large cost for loans to their customers. If, on the other hand, the capital requirement is too low the loans will be overly cheap and the stability in the system will decrease (Finansinspektionen, 2001).

The change in cost structure as a result of the regulations means that the structure of the financial sector changes. This change in structure leads to the fact that it could be favorable for customers that want credit for projects with low risk, as opposed to those that want credit for high risk projects. It could be suspected that the prices to customer (interest rates) will be affected by the new regulations, as the capital requirements are lower to customers that run lower risk. It should, however, not be expected that the changes in prices will be significant, as the primary aim is not to increase the cumulated capital requirement in the banks (ibid).

According to Finansinspektionen (2006), the capital requirements for the four Swedish banks will decrease by 1.2 percent, according to the standardized method, and 25.8 percent, according to the foundation IRB method. The calculations within the other pillars can, however, mean an increased capital requirement. Part of the reason for the large decrease in capital requirement could be that the framework allows the capital requirement for retail credit to decrease. Retail credits contribute to relatively large part of the credit portfolio in Swedish banks, in comparison to in banks from other countries. Thus, Basel II means great changes, demands and consequences for the financial sector through giving the banks opportunities to have lower capital buffers, and further give them a greater ability for management control, if able to use the regulations in the right way. It gives the banks an opportunity for more efficient risk control, and further provides an instrument for control of the business (Forsell & Lönnqvist, 2004).



3.3.7 Critique of Basel II

The criticism of Basel II has its roots in the general problems of measurement models. Within the traditional risk modeling methods forecasting requires historical information, which may not be fully comparable with current conditions and with what will happen in the future. Many historical examples show that it is not possible to predict the future with models based on historical information. Further, when estimating risk there is always a problem when using methods based on mean and standard deviation measures, as given by the law of large numbers. Finally, the problem of logical reasoning by investors always leads to concerns about risk models. To be able to use risk models at an operational level for management control it is important that the models actually provide a realistic view. If not, it will neither be helpful for management and control, nor for improved decision-making (Wahlström, 2009).

It has furthermore been shown, according to Blum (1999), that capital requirement can actually increase riskiness of banks. If a regulation reduces future profits, capital regulations further increase the incentive for equity in the future and therefore higher risk today. Kirsten (2002) shows that external ratings are better to estimate risk than internal ratings, although banks have better diagnostic skills than external assessors.

Wahlström (2009) does in his research, furthermore, show that negative views of Basel II have been stated within the organizations applying it, concerning the resource intensive nature of the new regulations. The fact that there is a knowledge gap between banking staff members concerning the regulation, lack of applicability at operational levels, and opportunities for different interpretations are other negative statements. The negative opinions stated were, however, larger in banks with a decentralized organizational structure.



4. Empirical Study

In this part of the thesis, we will present our analysis of the Risk Management Pillar 3 Group Reports published by Nordea and the result from the interviews. We begin this chapter with a short description of the organization of Nordea and continue with the analysis of the Risk Management Report and finish with the answers gathered from the interviews.

4.1 Organization of Nordea

Although Nordea is one of the youngest bank names in the Nordic countries its roots are among the eldest. The bank is in fact 189 years old. In 1997, Nordbanken became MeritaNordbanken after a merger with the Finish Merita Bank and in 2000 it merged with Unidanmark and became the leading financial corporate group in the Nordic- and Baltic Sea Region under the name of Nordic Baltic Holding. In 2000 the Norwegian bank, Christiania Bank og Kreditkasse, was included in the corporate group as well. After a period of mergers, the group decided to change its name and 2001 the new brand name, Nordea, derived from Nordic Ideas, was launched (Nordea, 2009B).

Today, Nordea is the largest financial group in the Nordic countries and the Baltic Sea Region. Moreover, it is a leading actor in the corporate segment as well as in the retail- and private banking segment. With about 1400 branches in all Nordic countries Nordea, furthermore, has the greatest distribution in the area. Among the Nordic financial groups Nordea has the largest customer basis consisting of 10 million customers from the Nordic countries and the new European markets, whereof 0.7 million are corporate customers (ibid).

Nordea emphasizes a high focus on results leading to an emphasis on costs, risk, and capital management. Nordea aims to have a common strategy and common guidelines for the whole group. Nordea's strategy is based on organic growth, and includes various components. For example, one component means making more deals with existing customers as well as enrolling new customers (Appendix 4, Figure 5) (Nordea, 2009A).

Nordea has an organization structure through which they want to assure clear functions of responsibility (Appendix 4, Figure 1). They want to achieve operational efficiency through their integrated operation model (Appendix 4, 2), which is meant to support their strategy of organic growth, secure the relations with customers, and shorten the time lags for product launches (ibid).



4.2 Risk Management of Nordea

Nordea is, according to its Risk Management Pillar 3 Group Reports of 2008, applying the Swedish Capital Adequacy and Large Exposure Act and the regulation of the Swedish Financial Supervisory Authority (FI) as well as general guidelines regarding public disclosure of information concerning capital adequacy and risk management.

The ultimate responsibility for risk exposure lies with the board of directors. They decide if the credit committees should be given power-to-act. The CEO has the overall responsibility for effective risk- and capital management within Nordea. Together with the group of executive managers s/he determines the goals for the risk management of the group (Appendix 3, Figure 4, governance structure of risk and capital management). Within Nordea, Group Credit and Risk Control together with Group Corporate Center are responsible for risk, liquidity, and balance sheet management. Each customer and product area is primarily responsible for its own risk, while Group Credit and Risk manages risk on a group level (Nordea, 2009C).

Of the risks discussed credit risk is the most important to control, contributing to 90 percent of the risk weighted assets for Nordea. Relevant credit decision authorities at different levels of the group make decisions regarding credit limits and the responsibility for credit risk lies with the unit that has customer responsibility. Nordea uses credit rating and scoring to assess the default risk of its customers. Rating is used for corporate- and institutional exposures, while scoring is used for retail exposures. Nordea (2009)C defines a rating as “an estimate that exclusively reflects the quantification of the repayment capacity of the customer, i.e. the risk of customer default”. Rating is based on the belief that you can derive a probability of default for a customer by using historical data for defaults of other customers based on their characteristics. In general, rating models are based on a framework in which financial- and quantitative data are combined with qualitative information. Scoring models are based on pure statistical data and are used for credits to household as well as credits to smaller corporate exposures (ibid).

The main exposure of Nordea lies within retail- and corporate credits. Nordea has permission to use the IRB method to calculate capital requirements for retail credits since December 2008, meaning that they make an internal estimation of Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD). Concerning credits to larger businesses, i.e. corporate credits, the foundation IRB approach is applied by making their own estimations of PD and using standardized values for EAD, LGD and Maturity (M). It is, however, expected that Nordea will gain approval to use the advanced IRB method for corporate exposures in 2010/2011 (Appendix 3, Figure 3, implementation process) (ibid).



4.3 Interviews – Central Level

At central level, we have interviewed Johan Giertz, Barbro Rolén and Göran Lind. Barbro Rolén and Johan Giertz were interviewed on the same occasion. They work within Group Risk Modelling in Stockholm and are responsible for the interpretation of the regulatory framework, internal instructions, and reporting of risk capital to authorities. Furthermore, they create models for calculations, set requirements according to Basel II, and have a coverage responsibility to coordinate regulations within Nordic banks. Their external responsibility is the contact with Bankföreningen, other authorities, and banks throughout Europe. Göran Lind was⁴ the executive credit manager at Nordea Sweden between 2000 and 2006, meaning that he was responsible for the credit processes at all the Swedish branches. After 2006, he worked with Nordea's internal Basel II project and in the Business lead project⁵, both at Nordic level.

4.3.1 Process of Credit Decisions

According to Lind, a credit decision is always based on a calculative analysis combined with an analysis of complementing factors concerning for example future cash flows and corporate structure of the company. He states, that the level at which a credit decision is made, depends on the size of the credit: "There is a decision-making hierarchy within Nordea, which means, that the larger the loan is, the higher up in the organization the credit-decision is made" (Lind)

Giertz and Rolén point out that Nordea has very accurate guidelines regarding business loans that include credit instructions as well as central- and local credit policies, which are in accordance with each other. Within these you can find guidelines for the credit committee, also called credit delegation, which makes the final credit decisions. The members of the credit committees are recruited very decisive and each committee consists of 3-4 members. In order for a decision to be accepted, at least 3 members must be in agreement. "A decision concerning a business credit is never made by a single employee" (Giertz, Rolén).

4.3.2 The Introduction of Basel II

According to Giertz and Rolén, the regulatory framework of Basel II was not "big news" for Nordea, since its own system, termed Economic Capital that had been built up internally and adopted since 2001, was very similar to Basel II. "We were prepared for Basel II as we believed in systems based on internal capital calculations" (Giertz and Rolén)

According to Lind, Nordea had a method for measuring customer profitability similar to Basel II before its introduction. The capital requirement for each customer was based on the rating of the specific customer and thus, the cost for equity and the expected loss were included in the calculation for each customer. Economic profit was not completely transferable to Basel II, although the two systems shared several factors, according to Lind.

Concerning the differences between Basel I and Basel II Lind's opinion was firstly, that Basel I was not as flexible as Basel II. Secondly, Basel I was singly controlled by five exposure classes, which only left small room for differentiation. Further, he states that Basel I was largely controlled by the type of security and less by the quality of the lender. It did not allow

⁴ Lind retired shortly before we interviewed him

⁵ A project aimed to increase the efficiency of the process of private credits (Lind)



price setting based on counterparty risk in the same way as Basel II. “Basel I was to a large extent inflexible” (Lind)

When comparing Basel I and Basel II, Giertz’s and Rolén’s opinion is that Basel I was less regulated and had a reduced focus on different risk parameters. Moreover, they state that Basel II and the internal system (economic capital) give more similar outcomes concerning the capital requirement for customer, than Basel I did. As the internal- and external Basel II requirements are rather similar now and focus on the same risk parameters, the interviewees found the current regulatory framework more logical.

4.3.3 Effects of Implementation

According to Giertz and Rolén, neither credit instructions nor credit guidelines have changed due to the implementation of Basel II. In large, they did not find great changes in decision-making as a result of Basel II. They did, however, state that local branches could experience a stronger focus on regulation now, due to the financial crisis. Giertz and Rolén further explain that, concerning very large credits, which require deference to the minimum requirement in Basel II, the Group Risk Modelling group could be advised to ensure that the credit does not affect the overall external capital requirements of Nordea. Smaller credit decisions are, however, and have previously been based on economic capital, which is greatly in accordance with Basel II. Therefore they state that no significant changes have appeared in the decision-making process. “The changes perceived are probably depending more on the current financial crisis than on Basel II” (Giertz, Rolén)

Lind emphasizes two changes as a result of Basel II concerning credit decisions:

1. There has been a change in local decision-making authority. The better rating a customer has, the larger the local decision-making authorization is. This is derived from the fact that better rating leads to less risk and thus smaller capital requirement.
2. The importance of calculations of returns has increased and Nordea now sets prices more explicitly depending on risk level. Regarding business loans, every customer must have been rated and the customer responsible employee has to consider the solvency of the customer, the risk of insolvency within 12 months, and the value of the security. These calculations are made prior to each credit decision and at least once a year.

“Pricing and decision-making authority are the greatest changes, when looking at the internal processes” (Lind)

4.3.4 Parameter Implications

There is, according to Giertz and Rolén, a parameter chart for the probability of default (PD), credit commercial factors, and loss given default (LGD), which is determined, calibrated, and controlled by Group Risk Modelling and has to be accepted by the Swedish Financial Supervisory Authority. The PD measurement, which is based on the internal rating, existed already in the economic capital measurement that was introduced in 2001 but has become a much more important part of the credit analysis now. The effects of the adaptation of PD measurements in Basel II involved more work, but they did not result in principal differences.



The limits for credit decisions are notwithstanding decided at the same levels as earlier. A substantial difference, according to Gierz and Rolén is that authorities are supervising now.

According to Lind, rating has been given a greater emphasis than before. The customer responsible employee, who can be permitted to grant a credit after considering it with the credit committee, is the one responsible for the rating of the customer. The rating can thereafter be translated into a statistical PD. Nordea has collected a major default database that helped them deciding at which level the parameters should lay. As stated above, Lind describes that concerning retail credits Nordea makes own calculations of Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD). Concerning corporate credits they do, however, use standardized measures for LGD, EAD and M and only estimate PD internally when they make calculations of external capital requirement. According to Lind, they do nonetheless make internal calculations of these measures within their internal measurement methods of Economic Capital and Economic profit and thereby receive different capital requirements based on internal methods. “Standardized measures are always standardized; there are weaknesses in using the given measures for LGD, EAD and M for corporate credits, similar to those of Basel I” (Lind)

4.3.5 Views on Basel II

According to Giertz and Rolén, Nordea has a positive opinion about Basel II, as they gained recognition for their own way of working, considering that their internal system was very similar to that of Basel II. Further, they state that Basel II accepts that there are different risk levels for different types of customers, which thereby, in their opinion, is a step in the right direction. According to Giertz and Rolén, the regulatory framework could beside the mentioned benefits have decreased the effects of the current financial crisis, if it would have been completely implemented.

Lind states that an additional effect of Basel II is that Nordea does not need to retain unnecessary amounts of capital beyond those for the actual risks it bears and thus, this means that Nordea theoretically has a smaller capital requirement. The framework does further allow a more individual judgment of the quality of a customer, and a more precise capital allocation. Moreover, it is easier to charge risk where the risk actually arises, i.e. to price low rated customers higher than high rated customers

The negative effects of the regulatory framework are according to Giertz and Rolén, firstly, that it is expensive to implement, that is, it demands very high costs to achieve the requirements stated within Basel II. Secondly, Basel II could worsen the fluctuations of the economy, which can, however, not be proved at the moment, because Basel II has not come completely into force yet. Thirdly, the capital requirement could fluctuate up and down from time to time. Additionally, when a company has started to apply the IRB models, it is difficult to enter new markets and built up new portfolios, which is hardly achievable without historical data.

According to Lind, Basel II is a rather complicated framework and thus difficult to educate throughout every level in the organization. Nonetheless, in order for it to function correctly, every customer responsible employee has to have knowledge of the rating system. He also points out that the capital crisis is not a result of credit losses that exceed earnings but a worsen rating due to Basel II, which requires more capital. What theoretically seems quite easy is rather difficult to realize. For instance, it is difficult to charge more of customers



bearing larger risks but easy to charge less of those bearing a minor risk or those who are aware of Basel II and its meaning.

4.3.6 Effects of Other Factors within Basel II

Part of the decision, whether to grant a credit or not is, according to Giertz and Rolén, based on the customer's profitability judgment, which takes operational risk into account. When a customer is applying for a credit limit, the profitability judgment can furthermore include products that concern market risks. However, according to Giertz, Rolén and Lind, neither operative risk nor market risk is considered in a credit decision. Regarding Pillar two, supervisory review, it is possible that discussions with authorities could affect credit decisions and thus, result in a decreased lending. Market discipline and supervisory review are respected during the process of analysis and do not have a direct influence on credit decisions but are important on a central level.

4.3.7 Basel II as an Internal Control Measure

According to Giertz and Rolén, employees within Nordea came in touch with Basel II rather late. In their opinion they did however already have the right way of thinking, as they were using internal measurements for economical capital and knew how the risk parameters were affected by different decisions. They stated that employees are educated in economic profit and the economical capital model.

According to Lind, Nordea has devoted a great amount of time to educating its staff, but he does not believe that "everyone is an expert" of Basel II. Only the board of directors and top management employees have to be privy to Basel II pursuant to pillar 2.

"Basel II is definitely a control tool" (Lind). Lind further states that Basel II, internally known as economic capital, undoubtedly is a control tool. Nordea newly discussed how they could use risk-weighted assets more efficient and talked about the adjustments they could make in order to rationalize the capital usage and minimize the risk-weighted assets. According to Lind, Nordea uses Basel II as a management control system, as they measure result in economic profit. Initially, there were many negative thoughts concerning Basel II due to the administrative changes the framework meant but these thoughts are becoming more and more positive.

According to Giertz and Rolén, Basel II is not a complete measure for credit risk and capital adequacy. They argue that there are several factors that control and limit the operations of the bank and that it is not possible to regulate everything. Further, their opinion is that Basel II is not a sufficient control tool regarding more advanced products, which do not fit in the regulatory framework. They nonetheless state that Basel II offers a satisfactory measurement, because it has similarities with the internal system. They furthermore point out the importance of not attempting to regulate everything, as it could have systematical effects on banks. Banks could for instance be cumbered with the adoption of Basel II and thus not have the time to look at other risk areas. Moreover, they argue, that large parts of the regulations in Basel II are taken from the operation and experience of the authorities, which may not be applicable for banks.



4.3.8 Basel II as an External Control Measure

According to Lind Basel II it is difficult to answer the question of how Basel II provides an effective measurement tool for credit risks and capital adequacy today. The answer depends on whether capital will be sufficient to cover losses due to the current financial crisis. It is of great risk, when failure appears so rapidly, that the rating model cannot forecast it. This situation appeared with Subprime Obligations in the USA. Although the obligations were highly rated, they crashed because the change came faster than anyone had projected. According to Lind, Basel II is the bear the same type of risk, though it was considerably larger in Basel I.

According to Giertz and Rolén, when customers decrease in rating due to the current economical situation, the capital requirement of banks increases, and thus, they do not have the opportunity to grant as many credits as desired.

Finally, Lind states, that the financial crisis and recession may show how well Basel II and the internal rating models are performing, if they are adequate in downturns, and if there is a need for improving the regulation. According to Lind, both banks and their customers must get used to the fact that the price setting is depending on the individual risk. Thus, a customer cannot expect to pay the same price year after year and must accept that the price will depend on the individual successes of his business.



4.4 Interviews – Local Level

At local level we have interviewed Anders Brodin and Elisabeth Traung at Nordea's branch Östra Hamngatan in Gothenburg. Anders Brodin is the head manager of the branch for SME businesses in the central part of Gothenburg. It means that he is responsible for the unit, which supplies services to businesses of normal size (there is a special branch dealing with public companies). Elisabeth Traung is manager for the sell-support function and the analyzers at the same branch and is thereby responsible for the administrative work.

4.4.1 Credit Decision Process

According to Brodin and Traung a credit decision at the branch always starts by having contact with a customer. The smallest amounts, exact numbers depending on the customers' nature, are processed by a central customer center. There is a standardized method, based on statistics, UC⁶, and a number of different factors that decides whether the credit is granted or not.

According to Brodin the customers who have an own contact person or a larger concern within the Nordea will, however, always be processed internally. Traung explains how the employees that are customer-responsible continually visit the businesses to keep contact with their customers and make new deals. They bring credit applications, together with background information such as annual reports, prognoses, and budgets to the office and hand them over to the analyzers. The analyzers use the information supplied to create documentation and to write credit-PMs. In the PM the financial situation and the predicted future for the customer is stated. Further, the analyzers give each customer a rating. If they, however, in the process discover that the business will not be able to receive the credit, they can contact Anders Brodin who as head manager of the branch can deny the credit application.

Traung further explains that when the analyzers have finished their credit-PMs a specific person at the branch collects the PMs daily. The amount of PMs can vary from around four to ten per day. These PMs are forwarded to the so-called credit delegation or credit committee, which makes the actual decision whether to grant a credit or not. This delegation consists of four managers employed at the branch, including Traung and Brodin. According to the "four-eyes" principle, at least two persons must participate when granting a credit. There are clear instructions of who is allowed to make a credit decision in agreement with whom, and what amount of credit they are allowed to grant, depending on the rating of the customer. In the instructions, it is further explained how the capital regulations affect and should affect decision-making. Brodin who is the head manager of the branch is allowed to make individual decisions; he does, however, very rarely use this opportunity.

According to Traung, the employee that is responsible for the customer contacts the customer when the credit has been granted, at the same time as a person at the sell-support department is asked to administrate the credit. As soon as the customer signs the papers the person at the sell-support department "presses the bottom" and the credit appears. The process from the application to the finished credit takes approximately 1-2 weeks.

⁶ Upplysningscentralen: Swedish credit information agency



4.4.2 Basel II – Application and Perceived Effects

Neither Brodin nor Traung have gone through any internal education concerning Basel II within Nordea. Traung is rather new in her position and states that the rest of the staff (analyzers and the persons with customer contact) have greater knowledge of the regulations and their own internal system of economic capital and economic profit than her. Brodin states, that the customer-responsible staff as well as the analyzers have knowledge of the overall meaning of the regulation. Further, he states that he is aware of the effects that Basel II has on their day-to-day business. He moreover says that he has been given internal instructions and information that has provided him with the necessary knowledge.

I have worked here for one year, and I have not participated in any internal education. There are, however, internal instructions, and since my co-workers have knowledge of these questions I do not need to be as familiar with them (Traung)

Brodin answered most of our questions concerning Basel II as Traung did not see herself as experienced enough to be able to draw any comprehensive conclusions. He states, that the processes by which credit decisions are made, have not changed since Basel II was introduced. The regulations have, however, changed the type of information that a credit decision is based on. Previous regulations for capital requirements led a focus on securities; the capital requirements were different depending on the type of security. Private real estate and industrial real estate did for example require different amounts of capital. The way of handling securities did in a way control the credit decisions of Nordea. “Now the financial situation of the debtor and counterparty risk lies in focus” (Brodin)

According to Brodin, the credit decision at the local branch is affected by the rating. The rating should, furthermore, affect the prices to the customers. A favorable rating should mean lower prices to the customer, and a poor rating should result in higher prices. In this way Basel II leads to great changes, as the capital requirements will be higher when giving credits to customers with poor financial numbers, although they have sufficient securities. Earlier this requirement was solely based on securities.

Both Traung and Brodin stress the importance of rating as a part of Basel II, when making a credit decision. Traung explained that the rating is given by the analyzers and that it affects the way the customer applications are treated. Customers with a rating lower than two on Nordea’s internal rating scale are surveyed around four times per year in order to assess the risk. Customers with a rating above three will be assessed once per year and credits given to these are not examined as thoroughly as those to customers with a lower rating and thereby a higher risk.

The credit decision does, however, not solely depend on the rating. Both Brodin and Traung state that there are other external factors such as the quality of the security, the feeling for the customer, and the belief in the business statement that affect the decision. Although the customer has bad numbers other factors may lead to the granting of the credit.



4.4.3 Views on Basel II

Brodin emphasizes the positive influence the regulation has on the focus of counterparty risk concerning capital requirements, and on the price adjustment based on the risk of the customer. Traung believes that the regulations are helpful as a support when making decisions, by providing a sense of security for making a correct decision.

The negative effects of the regulation are, according to Brodin, that there is a risk in trusting numbers excessively; there is less room for the “good feeling”. According to him, it is important to stress that although the measures of Basel II are largely based on the historical data it is necessary to complete this with what is expected of the future. If it is believed that the trend is negative, the rating will strengthen that view. If it is, however, believed that the future development will be positive the rating of the customer can cause problems when making a credit decision. “The room for making decisions based on the gut feeling has decreased” (Brodin).

Brodin and Traung do not believe that Basel II has affected the way they work to a large extent. Brodin states, as mentioned above, that he has to take new factors into consideration, e.g. that the counterparty risk is more important. Traung has not worked much with the previous regulation and is not able to make a comparison. She does, however, state that the capital requirement has gained a larger focus lately with the increased need of capital in banks as a result of the economical downturn. Capital requirement has, however, always been included in the basis for decision-making as it is known that lower rating mean higher capital requirements, which means that low rated customers are not coveted.

Finally, Brodin states that there was probably not a complete awareness of the consequences of the regulations in a financial crisis when Basel II was developed. Today, a decreased rating on customers means that the capital requirement increases. In his opinion the need for issuing new shares is partly derived from the fact that existing lending requires more capital as the customers have migrated to lower ratings. In general, he thinks that the regulations of Basel II have led to greater accuracy by using more and better information as a basis for credit decisions. It has as a result, become more difficult for some companies to receive credits.



5. Analysis

T*he aim of this chapter is to describe the results from the framework and from the empirics we have acquired through our study. We will, further, couple this to the purpose of the thesis.*

5.1 Organizational Strategy of Nordea

In the annual report of Nordea it is stated that they have high focus on results, leading to emphasis on costs, risk, and capital management. Further, it is stated that Nordea wants to assure clear functions of responsibility and avoid overlapping functions (Nordea, 2009A). In our empirical study we show that the decision-making process is influenced by the centralized nature of the organization. Our study, furthermore, shows that every employee has a certain role and task when it comes to making decisions. The instructions are clearly given from a central level of Nordea and are very important for the process of credit decision-making. Hence, decision-making is largely based on what central levels state.

5.2 The Process of Credit Decision-Making Connected to Basel II

Basel II aims to provide incentives for improved quality of capital requirement calculations, by allowing banks to use internal measurement and encouraging them to develop their own systems for risk control (Finansinspektionen, 2001). Nordea does, according to our interviewees at central level, have a clear involvement of Basel II in their credit decision-making process through their own established system of economic capital. They state that there are clear guidelines, which explain how a decision should be made, in accordance to Basel II and the system of economic capital. At local level the influence of Basel II is not evident in the same way.

Locally, they are aware that Basel II affects decision-making, but not in what way. Our study shows that the focus lies on deciding whether to grant a credit or not, based on the instructions that are given and does in large not consider the underlying factors of the capital requirements of the bank. Thus, it seems that the involvement of Basel II is not as important the involvement of guidelines, on this level. There are already clear routines that states how a decision should be built up, based on instructions provided from central level.

When it comes to making a credit decision at local level, it is recognized that the granted credit affects the external capital requirements of Nordea. The technical details of the internal calculations of capital requirements derived from the granted credit, such as calculations Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EAD) and Maturity (M) are, however, not known. This connects to the instruction-based decision-making, perceived by the interviewees at local level (as described above).

An important part of the first pillar of Basel II when calculating capital requirement for credit risk is according to the Basel Committee (2006) and Nordea (2009)C, the estimation of PD, which is derived from the rating. At local level the rating is emphasized when making credit decisions; the interviewees do, however, not seem to be aware of the processes through which the rating affects the capital requirements in Basel II. This connects to the nature of a



centralized organization described in the framework. The overall instructions are provided from a higher level of the organization and employees at local level follow them and make their own adjustments, although they do not deviate from or question the given guidelines (Merchant & Van der Stede, 2007). The employees at local level know that the rating is important but they do, however, not know how the rating is taken further in to the external capital requirements of the banks.

5.3 Effects of Basel II

As stated in our framework, the effects of Basel II are: a less standardized framework that supports more effective risk management, a greater importance of the risk of the debtor, and further, a capital requirement that depends on the risk for a certain exposure (Finansinspektionen, 2001). In our empirical study we show that these effects are more evidently perceived at a central level as they continually work with regulations such as Basel II. The interviewees at central level emphasize the importance of pricing after risk and the recognition of internal methods.

Although the awareness of the effects of Basel II is not as clear at local- as at central level, the importance of pricing after risk is, nonetheless, emphasized on both levels. According to our interviewees, Basel II means that capital requirements for the bank decrease when the customer has high rating. Customers with higher rating therefore tend to require lower prices, as they are aware of the effects of their higher rating for Nordea and thereby have a bargaining position. When it comes to lower rated customers, Basel II means higher capital requirements. It is, however, difficult to transform these into higher prices to those customers as they are used to stable prices, independent on risk.

Our empirical study, further, shows that at local level, it is perceived that the underlying factors for determining whether a credit should be granted or not, have changed. With previous capital regulations the securities were the basis for a decision. Now, Basel II and the capital requirements in Pillar 1 for credit risk, has meant a shift in focus toward counterparty risk. The effects perceived locally are thus, mostly concerning what directly causes changes in their every-day operation.

At central level Group Risk Modelling does, however, state that there are no significant changes due to Basel II. They believed that the changes perceived at local branches rather depend on the financial crisis and Nordea's change to the system of economic capital in 2001.

5.4 Basel II as a Management Control Tool

According to the article of Mikes (2009), it is rather unusual that the risk management and the strategic management of banks are tightly connected. There is often a gap when it comes to setting strategic goals versus controlling risk. Basel II is in its nature a measure that can be used for internal risk control. In our empirical study we have shown that it is not very clear how Basel II is used for management control. According to Lind, Basel II is definitely a control tool. He stated that Nordea measures result in economic profit and thereby Basel II provides a control tool. Nordea has, further, discussed how capital can be used more efficient based on risk. The use of Basel II as a control tool does, however, seem rather limited. At a



local level the awareness of Basel II as management control tool is deficient. There is an awareness of the overall meaning of Basel II, but not in a broader extent, and it does not seem to affect the daily credit decision-making of the interviewees.

Group Risk Modelling argues that Basel II is not sufficient as a control tool for the organization. Derived from Mikes' research, such a group may not be involved in the management control, as their primary goal is to control risk (Mikes, 2009). That could be the reason why they could not give a fully explaining answer as to how Basel II is a control tool in Nordea. According to Mikes (2009), Basel II could be used as a control tool. It does, however, seem that Nordea does not apply this to a large extent.

As stated in our empirical study, most of the employees do not seem to be very familiar with the regulatory framework. At a central level, however, they state that Basel II is actually something that most employees have knowledge of and understand the impacts of. It is, however, very unclear if this knowledge really exists, and it may therefore be difficult to implement Basel II as a control tool. Neither of our interviewees at local level have had the opportunity to participate in any internal education concerning Basel II, although they both hold managerial positions. Group Risk Modelling states that only Nordea's top management and board of directors have to be educated in Basel II, according to Pillar 2. It does, thus, seem that Nordea has not pursued this educational demand any further within the organization, yet. The Group Risk Modelling interviewees do, however, state that the employees are educated about their internal system of economic capital. In our study, however, we have not been able to show this.

5.5 Internal Deviations from Basel II

In our empirical study we ask about internal systems adjacent to Basel II. It seems that the knowledge of such complements differs greatly between our interviewees at different levels of Nordea. According to Group Risk Modelling, Basel II is not complete as a guideline for credit decisions. There are several other factors involved, such as internal systems of economic capital that primarily controls the credit process. Lind goes along with this and finds Basel II only partly complete for assessing capital requirements. According to him, the external requirements may need to be complemented with internal measures, e.g. concerning corporate exposures, where Nordea needs to apply the foundation IRB method externally, but decides to make internal calculations according to the advanced IRB method.

At local level the awareness of the differences between internal measurements and required external measurements is absent. They know that there has been a change in the credit decision-making process due to new regulations, but are not aware whether their instructions are based on external requirements or internal complements. The system of economic capital, described by Group Risk Modelling, cannot be differentiated from Basel II by the local interviewees.



5.6 Views on Basel II

According to our empirical studies, positive views are stated throughout the organization, on a local as well as on a central level. At central level it seems that the positive view is strengthened by the fact that Nordea had their own internal system that was similar to that of Basel II and that they thereby gained recognition thereof. As Wahlström (2009) has shown in previous research, it is easier for regulations and instructions to gain recognition in a centralized organization, as employees in such organizations are used to follow guidelines. It seems that Nordea has had clear guidelines for decision-making prior to the introduction of Basel II, which helps them to implement such regulation as Basel II. In appliance with Wahlström's (2009) research the employees at local level of Nordea also give a positive view of the regulations as they see them as a helping guidance that provides a sense of security in credit decision-making.

The advantages of Basel II that are stated in our framework, such as the decreased capital requirement and the ability to make more flexible calculations (Basel Committee, 2006), are confirmed by the interviewees at central level of Nordea. They are, however, cautious about the effects Basel II will have, given the current financial crisis. At local level, the awareness of these advantages does not seem to be as high. They instead emphasize the changes, which have appeared in the basis of a credit decision, and what underlying factors that decide whether a credit should be granted or not.

The disadvantages of Basel II that are stated in our framework, concern both its calculative nature, and its inability to predict the future. At a central level of Nordea, it is stated that a disadvantage could be that the capital requirement will fluctuate as a result of the state of the economy. They, further, agree with the criticisms concerning the difficulties of predicting the future with historical data. Lind states that the regulatory framework is rather complicated and therefore, it is hard to make all employees familiar with it, although it is important that the knowledge is high. At local level, the disadvantages stated are not fully in coherence with those stated at central level, although they also state that the trust in numbers may be disadvantageous if it is taken too far. They, further, state that the room for trusting their "feeling" or other factors than the rating has decreased as a result of the new regulations.



6. Discussion and Conclusion

In this part of the thesis a conclusion will be drawn with basis of the analysis above. The research question will, further, be answered and suggestions for further research will be given.

6.1 Discussion of Research Question

The questions, on which we have based our study, were introduced in 1.2 and are as follows:

- *How does a centralized bank apply Basel II when making decisions regarding business credits?*
- *How does the bank communicate the regulations to decision-making units?*

Through our study we have discovered that Basel II is seen as rather complicated by our interviewees. There is an awareness of the fact that Nordea applies Basel II at both investigated levels; the knowledge of how, and in what way the framework is applied does, however, deviate depending on the position of the interviewee.

When a credit decision is made, it is based on a clear set of principles where every employee has a certain task. Basel II is included in the process of credit decision-making, by being integrated in the instructions formulated by the central functions, which provide the basis for decision-making. From the central function it is stated, that both the internal system similar to Basel II, and Basel II provide a basis for a credit decision. At local level, however, the awareness of the differences between the internal system and Basel II is deficient. It is assumed that they base a credit decision on capital requirements and rating, factors that are determined by regulations, which are managed centrally in the organization.

It seems that Basel II has been interpreted centrally in Nordea and transformed into guidelines, which have been distributed to lower levels of the organization. The knowledge of the framework is relatively high at a central level, as our interviewees seem to work more closely with the contents of the regulations and the interpretation of it. At local level, however, the knowledge is primarily based on instructions and is not very comprehensive. They are able to perform their everyday work without having deep knowledge of Basel II as the external capital demand of the bank is communicated to decision-making units by guidelines, regarding to which local credit decisions are made.



6.2 Suggestions of Further Research

During the process of writing our thesis we discovered that the subject is very comprehensive and we came upon several ideas for further research. We find the thought of enlarging the topic of our study in to including greater perspectives of interest. It would therefore be engaging to make a study based on one or more of the topics stated below:

- To focus on a decentralized bank and see what differences that can be found in the application of Basel II in comparison to a centralized bank.
- To make a quantitative study to see how the capital requirements have been affected by Basel II
- To make a comparison between application/view of Basel II in recession vs. boom of the economy
- To compare the application of Basel II by banks in different countries/cultures



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8. Appendix

Appendix 1 – Interview Questions Central Level

Credit decisions (business)

- What is your position at Nordea?
- Which is your area of responsibility?
- How does the procedure regarding business credit decision look?
- At what level of the organization is the decision taken? Where is the line drawn regarding who is authorized to make the decision?

Basel II

- What line /attitude is your organization taking with distinction on Basel II and the regulatory framework?
- Did the introduction of Basel II lead to a different procedure for business loans?
 - ✓ What differences did you identify in Basel II when comparing to Basel I?
- How does the capital regulation in Basel II influence a credit decision?
 - ✓ Decisions at the branch on a daily basis?
 - ✓ Decisions at a higher level of the organization?
- Do you work with the different measurements for capital adequacy when making decisions? If yes, to which extent do you consider them?
- Pillar 1:
 - ✓ To which extent do you use internal based measurements? Which effect do they have on credit decisions?
 - ✓ How are judgments embedded in the calculation of credit risk?
 - ✓ How do you determine PD? Does the customer get a rating determined at a lower level in the organization or is the top-level management making the internal PD decision for a specific loan?
 - ✓ How does the first pillars regulation on operational and market risk affect the credit decision?
- How do the second pillar (supervisory review) and the third pillar (market discipline) affect a credit decision?
- What positive effects do you see in the new framework?
- What are the negative effects of the new framework?



- Does the people' working with loan decisions get any internal education in Basel II?
- How is Basel II used as a control system?
- Is Basel II used to give instructions to decision-making divisions?
- Has the nature of controlling the organization change? Was the change due to Basel II? If yes, did it change the way of how the organization is controlled?
- Do you assess that Basel II give a good measurement of credit risk and the need of capital adequacy in banks?
- Did the capital requirement in banks decrease due to the adaptation of Basel II?

Appendix 2 – Interview Questions Local Levels

Kreditbeslut

- What position do you have at Nordea?
- Which is your area of responsibility?

Basel II

- Are you aware of the content and meaning of the Basel II regulations? Have you taken part of internal courses concerning the regulation?
- How does the process look, by which you make credit decisions for a business credit?
- Is the credit decision made by a single employee with customer contact or at a higher level of the organization?
- Did the introduction of Basel II lead to differences when of credit decision-making?
- How is a credit decision affected by Basel II?
 - ✓ Decisions made at a daily basis at the local branch?
- To you work with the different capital measures given in Basel II when you make a credit decision? If so, how? And if not, what other measures are used?
- Do you have internally based measures as a complement to Basel II? If so, how do these affect credit decision?
- Do you decide Probability of Default (as given in the regulatory framework), already at the local branch by giving a rating to the customer or are these ratings given at a higher level of the organization?

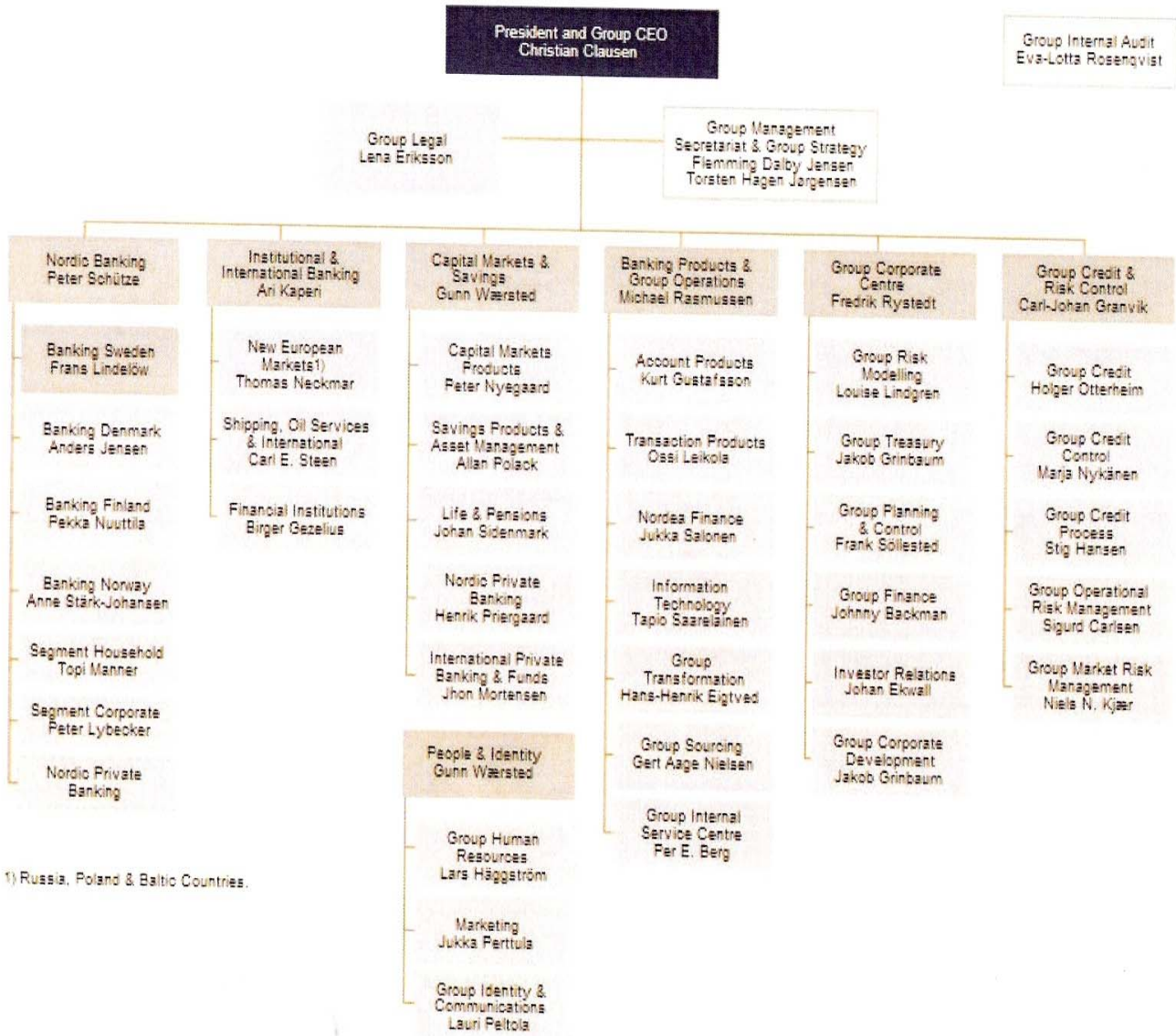


- Does the other parts of the first pillar of Basel II: Operational risk and Market risk affect a credit decision? If so, how?
- How does the second pillar (supervisory review) and the third pillar (market discipline) affect a credit decision?
- Do you see positive effects of Basel II? If so, which?
- Do you see negative effects of Basel II? If so, which?
- To what extent is your daily work affected by Basel II?
- Do you receive instructions concerning Basel II from central parts of the organization?
- Do you experience that Basel II has changed the management control of the organization?
- Do you think that Basel II provides a good measurement of credit risks and capital requirement in Nordea?
- Do you think that the capital requirement has decreased due to the introduction of Basel II?



Appendix 3 – Charts of Nordea

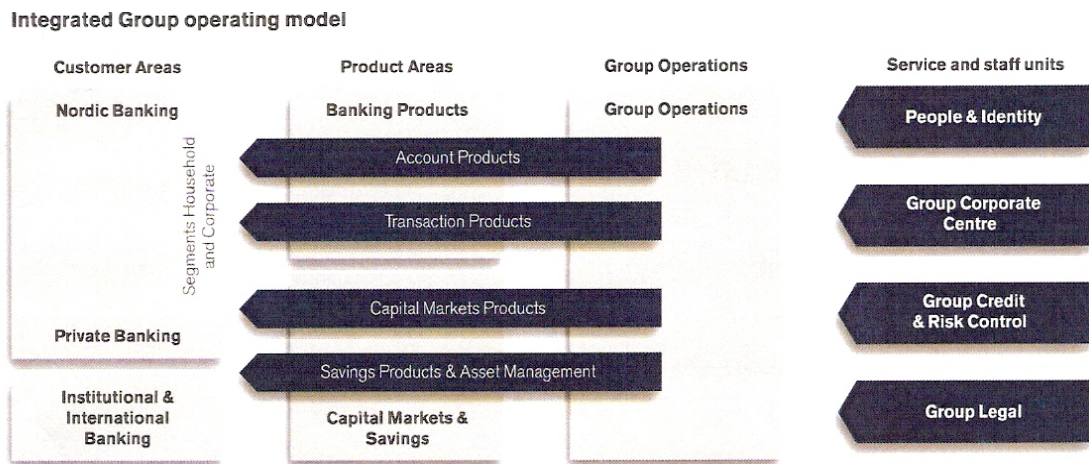
Figure 1: Organisation Chart of Nordea



Source: Nordea (2009) A

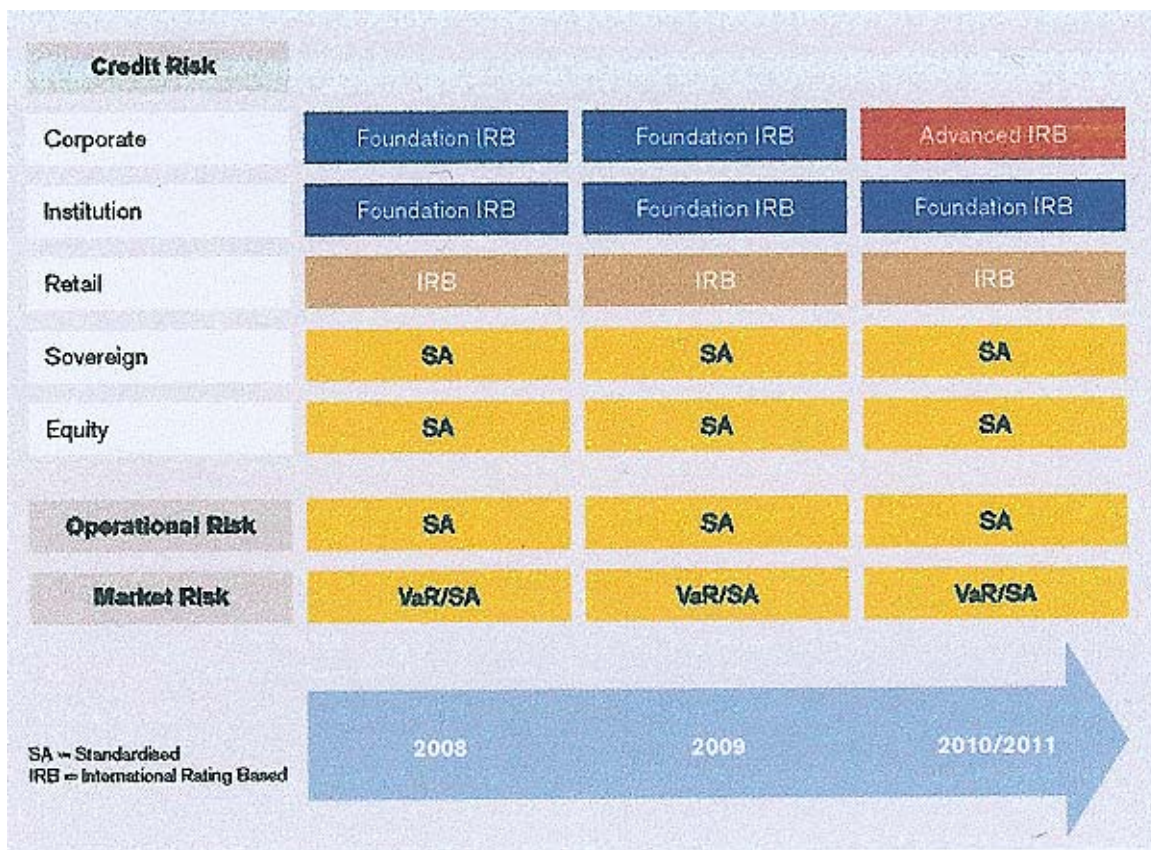


Figure 2: Group Operating Model



Source: Nordea (2009) *Annual Report 2008*

Figure 3: General Roll out Plan



Source:

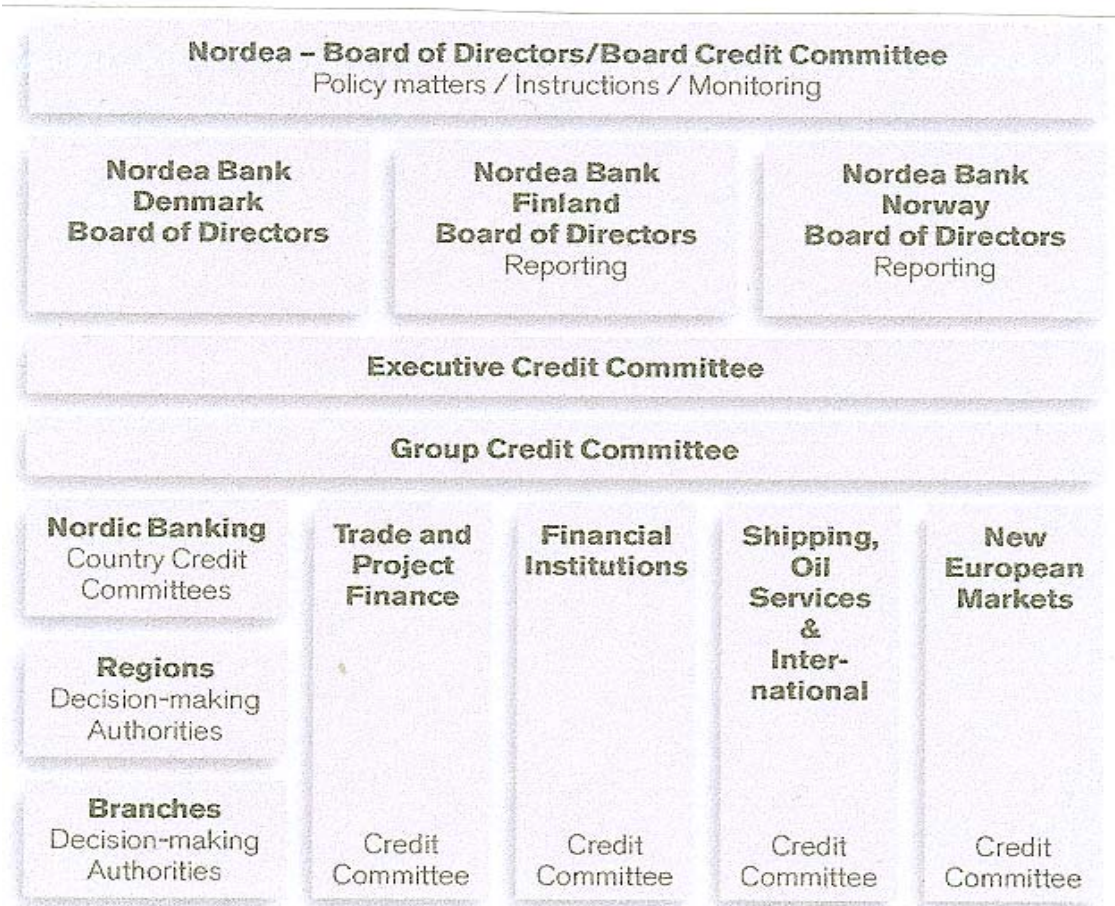
Nordea

(2009)

C



Figure 4: Risk, Liquidity and Capital Management Governance Structure



Source:

Nordea

(2009)

C



Figure 5: Description of Growth Strategy

Clear organic growth strategy

Increase business with existing Nordic customers and attract new customers

- Strengthen position in relationship-driven customer segments
- Support the relationship banking strategy by a focused product strategy
- Strengthen the implementation of further differentiation of service levels among and within customer segments
- Enhance accessibility for all customers and secure efficient servicing - in particular, of non-relationship banking customers

Exploit Global and European business lines

- Continue to leverage positions within shipping and wealth management

Supplement Nordic growth through investments in New European Markets

- Continue the profitable, risk-balanced growth
- Further integrating with the rest of the Group

Take Nordea to the next level of operational efficiency and support sustained growth

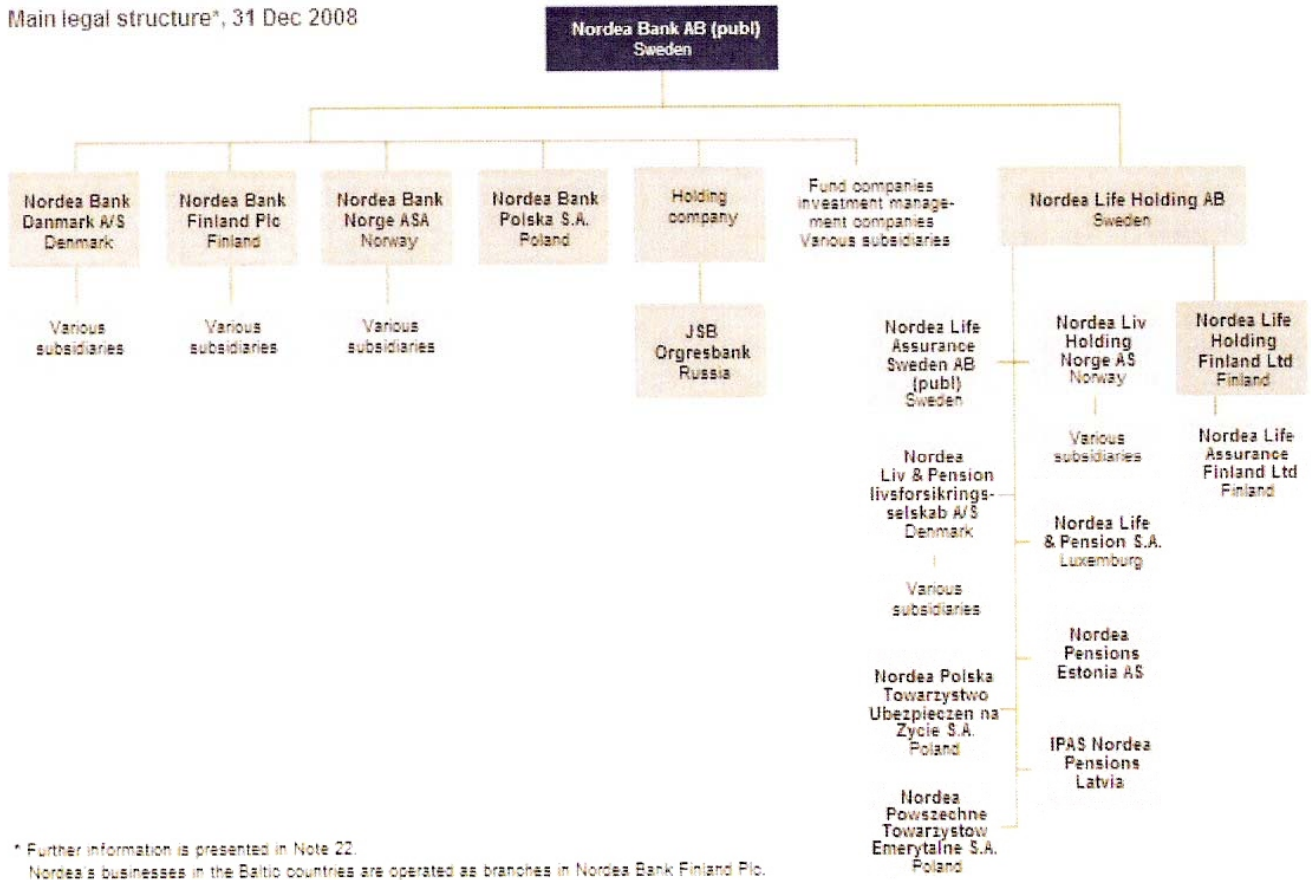
- Free up resources across the value chain - developing channels, customer service concepts and further streamline processes and IT-systems
- Invest in product development, IT-systems and IT-infrastructure
- Develop employee competencies and leadership capabilities

Source: Nordea (2009) A



Figure 6: Main legal structure

Main legal structure*, 31 Dec 2008



* Further information is presented in Note 22.
Nordea's businesses in the Baltic countries are operated as branches in Nordea Bank Finland Plc.

Source: Nordea (2009) A