Financial Hedging Strategies

A study of the practice in four major Swedish banks

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Executive summary

Since autumn 2007, the entire global financial market has been facing a severe financial crisis that affects almost all sectors of the world economy, especially the banking industry. From the USA to Europe, the world has seen big and small banks collapsing and many others were extremely close to bankruptcy had they not been saved at the last moment. The most affected banks are those operating on the mortgage loans market. This leads to an important question: how in reality does hedging and risk management practice in banks deal with mortgage loans? Some studies have been conducted in this field; still, there is not much knowledge and information about ways banks deal with financial risks and the efficiency of those strategies.

The main purpose of this Master thesis is to study the practice of hedging strategies in four large Swedish banks, operating on the mortgage loan market. The important topic to highlight in this research is the use and practice of hedging strategies in the chosen four banks.

In order to achieve this, I conducted a quantitative study with a deductive scientific method. The collection of the empirical material and data was done by studying the different banks financial and annual reports where the key components for this thesis could mostly be found.

In the theoretical framework, I present the banking basic functions and risks. Therefore, the discussion continues with an introduction of different financial risks and the notion of hedging. This part also goes into detail and presents arguments and theories supporting the use of hedging strategies, and those that are against this practice.

Finally, the analysis of the empirical findings shows that sound and effective risk management is an important part of bank management especially in periods of financial distress. However, this study emphasizes that it is practically difficult to make an evaluation of the effectiveness of the hedging policies used by the four different banks since we do not have sufficient amount of relevant numerical proofs that can support the statement that hedging strategies are useful or not for banks.
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I. Introduction

Since autumn 2007, the world’s economy has experienced serious financial distress that affects almost all the financial markets in the world and especially in USA and Europe. It is common to read in most of newspapers worrying reports that highlight how deep the crisis becomes. Banks collapsing in US and crisis on the mortgage market in Spain. Although the financial distress strikes almost the entire financial sector, commercial and investment banks are those that have mostly suffered from the crisis. Mortgage loan banks, especially in USA, were exposed and are still exposed to huge losses due to credit and interest rate risks caused by an unstable market, especially on the subprime loans. This crisis does not just affect small singular banks, but even some of the world’s most stable and well established banks were close to bankruptcy. There are many dramatic examples that illustrate how deep and far this financial distress has gone. In the US, Bear Stern and Lehman Brothers are the most notorious cases. Fanny Mae and Freddie Mac were saved by a federal government intervention. Even European banks were not kept out of the storm since the financial market has become more and more global. The Icelandic banks with Kaupthing, Glitnir and Landsbanki are among the most dramatic examples of bank crashes. Even other banks around Europe experienced the crisis more or less. Among the victims are the Swiss UBS, the British Northern Rock, the German Deutsche bank, and the Danish Roskilde bank. Several financial analysts consider that the Swedish financial market has not been seriously affected by this crisis in comparison to other European countries. However, it has not been just a blue, unclouded sky for the Swedish banks. As matter of fact, some of them have presented weaker reports since the beginning of the crisis. SEB and Swedbank have reported huge losses due to their investments in the Baltic region. Even Handelsbanken presented a credit loss near to a half billion SEK due to its investment on the Subprime market in the US. The most known case in Sweden is the collapsing of the investment bank Carnegie.

All these circumstances lead to an important and interesting question: what is the risk management and hedging practice like in the Swedish banks? Risk management in the banking business has encountered major changes with the invention and creation of new financial tools to hedge against almost all kind of exposures that banks can face in their daily business. These financial instruments offer a collection of diversified techniques to measure, monitor and control financial risks.

For some time, risks have been of major interest for banks and financial institutions. According to Joel Bessis, the aim of the new financial instruments also called hedging tools is to adopt a more practical management approach that can better define risks and that can use quantitative assessment to measure risks. Furthermore, these tools can more actively control the risks and create more precise measures.¹

There are always several purposes for a company to use hedging tools. One of those purposes is to control and reduce the financial exposures that a company faces. Of course companies can not sweep away the entire financial risks that they are exposed to. But, by using sound and effective financial tools, banks should be able to reduce and to deal with

the different risks they are exposed to at tolerable level. As Dr. Jacques Pezier mentions it in his book; “the financial risk management aims to balance risks and returns in accordance with a stated risk management policy, from tactical dynamic hedging decisions to strategic capital allocation decisions.”

In the case of the banking business, risks are multidimensional with the main financial risks being interest rate, liquidity, credit and the market risks. Interest rate and liquidity risks occur because of variation of earnings caused by variations of interest rate and the costs of funds. In addition, interest rates affect revenues and costs generated by all on and off-balance sheet items. Thus, banks’ earnings are highly sensitive to interest rate moves and to the cost of funds. Credit risk is the risk of incurring losses due to the default of counterparties, and it can be seen as the most important risk for banks. The market risk is the risk of adverse deviations of market value of transactions due to market moves. This risk is now subject to capital constraint regulations imposed on banks.

To what extent a bank should hedge against financial risks is a commonly discussed issue in the financial world. Several researchers have written many theories related to this topic. Still, opinions diverge about the quality and effectiveness of management for financial risks. Moreover, those developed theories can not be taken as general rules since every corporation faces a unique situation, which involves a special policy from the risk management team.

1.1. Problem background

According to the modern corporate finance theory, firms should hedge risks to reduce the variance of cash flow. However, some firms should hedge all risks while other firms should not worry about risks at all. Finally some firms should worry only about certain kinds of risks. Some other researchers like Fite and Pfleiderer (1994) state that even if the amount of corporate resources allocated to risk management create the appearance of such activity adding to shareholder value, risk management does not add value in the absence of market imperfections.

In the middle of the 1990s, Culp and Miller conducted a study which showed that 34, 5 % of the studied firms answered that they buy or sell futures, forwards, options, or swaps. The study also showed that large firms use derivatives far more than small firms, 65% respectively 13%. Another study also showed that 85% of the companies answered that they were using derivatives to manage financial risks, and most of the companies mentioned that their focus of risk management was mostly on transaction exposure.

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3 Bessis, Joel (1998), Risk Management in Banking, John Wiley & Sons Ltd. Baffins Lane, Chichester, England, p.6
these studies show that there is a fairly huge interest in studies and research about financial risk management.

Some other studies like Ludger Hentschels and S.P Kotharis reinforced Stulz’s argument that firms primary use derivatives to reduce the risk associated with short-term contracts since the cash flows associated with these contracts typically represent a small fraction of firm value. 6

Still, there also are theories that predict that firm owners might use derivatives to take additional risks. Jensen and Meckling (1976) and Myers (1977) for example, point out that the owners of leveraged firms can have incentives to increase the firms’ riskiness to transfer wealth from bond holders to stock holders. Derivatives can produce these increases in risk.

Another study by Price Waterhouse conducted in the beginning of 1995 shows that 7% of 386 leading companies based in 16 countries outside US treat their treasury function as a profit center. These firms try to make a profit by actively managing the financial risks, and therefore do not simply hedge passively.7

However, the effectiveness and relevance of using derivatives is still a pressing discussion among researchers. On one hand, some researchers like Markowitz (1952) and Modigliani-Miller (1961) also known as the classic school, argued that there is no vital need for the management of a company to hedge since investors can do it themselves by composing a portfolio of companies that better fit their preferred total level of risks.

Other researchers like Froot, Smith, and DeMarzo argue that active hedging strategies decrease macroeconomic exposure. Their studies demonstrate that there is a lot to gain by hedging.

During the 1990s, two hedging strategies that failed raised the discussion around the financial risk management and put into question the successfulness of hedging strategies used by most of the corporations. This made the issue ever more controversial. The two cases were about Metallgesellschaft AG, a German owned corporation known now under name GEA, and Daimler- Benz which also was a German corporation but known now under name Daimler AG.

Metallgesellschaft bought in 1993, 154 million barrels of oil in short maturity contracts believing that it could get profit from the typical backwardation of oil futures. However, the backwardation of oil futures disappeared for a period of time, which meant that the Metallgesellschaft’s position proved wrong and the company had huge losses for that period of time.

The Daimler- Benz’s case went to the other way. Daimler-Benz reported in 1995 losses of DM 1.56 billions, the largest in the company’s 109 years history. These losses were due to one subsidiary of the company, Daimler-Benz Aerospace that has an order book of DM 20 billion where 80% of it was fixed in dollars. Since the company’s forecasts were too spread, it did not hedge the exchange rate risk and absorbed huge losses. For the

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analysts, Daimler-Benz’s losses were due to a lack of hedging. Daimler-Benz believed that the dollar would stay above DM 1.55 but it fell substantially below that. The extent to which a firm should hedge depends up on its estimate of risk exposure. Although most corporations explain the use of derivatives as a way to hedge the company’s risks and not for speculation, to differentiate the two would be a hard task without knowledge of the company’s risk exposure.

Even if these two examples are from two non-financial corporations, they well illustrate the controversy surrounding financial risk management. It is still debatable whether the use of hedging tools is a good protection for corporations against financial exposures. Moreover, the financial distress that the world’s economy is now experiencing will likely revive the discussion about the effectiveness of different used financial tools.

As I illustrate here, although many studies have been conducted in the risk management field, more knowledge and information is needed about different hedging strategies and their effectiveness against financial risks. Most of the studies were conducted during a time of a stable financial environment. Therefore I am interested in studying the risk management and hedging practice during a time of financial insecurity and distress on the market, like the one we are living in now.

My study will be a quantitative research with a historical analysis of financial data and information from four major Swedish banks in order to detect changes that occur in their financial situations due to this financial crisis. Subsequently, this thesis will study these banks’ hedging policies against financial risks that they are exposed to.

I.2. Purpose and Research question

The main purpose with this thesis is to study the hedging practice in four of the major Swedish banks operating on the mortgage loan market. I will first look at the existing theories on how and why a bank should use hedging strategies and the practical use of hedging strategies in the banking industry. The hedging policies and practices in the Swedish banking business will then be analyzed.

My research question can be summarized like this: “What is the practice of the financial hedging in four major Swedish banks?”

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8 Risk Magazine, October 1995, p.11.
**Main Purpose:**
To study and analyze the financial hedging practice in major Swedish banks.

- To identify the most common financial hedging strategies in the banking business according to the theories.
- To identify which kind of hedging policies are used for financial risks in four of biggest Swedish banks.
- Make an analysis, conclusions and suggestions from the empirical findings

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**I.3. Problem discussion**

Earlier studies about financial risk management and hedging have come to different conclusions. Some researchers argue that financial risk management is a great tool to limit the financial risk exposure of a company. Other researchers argue that companies do not need to use hedging strategies in order to handle financial risks on the market. I will analyze four Swedish banks’ financial data and information for the last eight years to evaluate whether major changes occurred during this period of financial crisis. Since this study will look at the banking sector under both a period of financial stability and a period of financial distress, its results may be a more accurate picture of risk management practice.

Although there is theoretical literature that describes why firms should hedge, empirical studies are needed that can support or question these theoretical statements. Some of these studies conducted earlier did not really give an answer about the use of hedging tools in different corporations. Francis and Stephan (1990) sampled companies that use hedging strategies (hedgers) and those that do not use hedging strategies (non-hedgers). They constructed their sample by searching financial databases for keywords such as hedging, swaps, or options. Later, Geczy, Minton and Schrand (1996) sampled S&P 500 firms with foreign exchange rate exposure and classified them as hedgers upon finding references to derivative instruments in their financial statements. However, we have to keep in mind that comparing derivative users and nonusers to make interferences about hedging can miss-classify hedgers as non-hedgers and speculators as hedgers.9

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In this study I present in detail the kind of financial risks encountered by banks, showing which kind of financial hedging strategies are being recommended in order to manage them. To compare theories and the real world, I analyze the kind of hedging policies the different banks implement to protect themselves against financial risks. Much of the necessary data for measuring the firm’s risk exposure and evaluating the firm’s risk management policy is derived from the firm’s financial and annual reports. To study the effectiveness of a risk management program or to test financial theories of risk management, the firm’s underlying risk exposure must be established. Due to the current circumstance of financial distress, I do believe that the underlying risk exposures for banks are financial risks in general and specifically interest rate, credit and exchange rate risks. Therefore, I choose to analyze the hedging policies for financial risks used by the four banks. More exactly, I analyze how some key financial components vary under the period of financial stability on the market and under financial distress over an 8-years period. Evaluation of the efficiency of hedging strategies is not easy; however there is still much knowledge to learn from the study of the hedging practice in banks.

I.4. The structure of the thesis

In chapter 2, I present the theoretical method of my thesis. This chapter explains why I chose to conduct a quantitative study and describes which preconceptions I had before the writing of this paper. This part also contains the presentation of both scientific and research approaches, the restrictions of the study, how I chose the theories and finally how I selected the sources and their criticism.

In chapter 3, I present the theoretical framework where I describe the basic functions of banks and the notion of risk in banks, especially financial risks. Here, I introduce the notion of hedging where I present why a corporation should or not hedge. Finally I discuss how to manage financial risk in banks.

Chapter 4 introduces the legal framework used in this thesis. This part contains some legal recommendations on how banks should use and present hedging strategies. I also present the risk management guidelines for derivatives of the Basel Committee on banking supervision. Thereafter, the disclosure of derivatives activity in financial reports is presented according to the Financial Accounting Standard Board’s Statement of Financial Accounting Standards (SFAS).

Chapter 5 contains the practical method where I present how I chose the four banks used in this study. Thereafter, I discuss the access, the criticism of the method, and the credibility criteria.

Chapter 6 consists of the empirical study where I present the results. In this part some key elements in the theories are studied in practical by using data and material from the financial and annual reports of the four studied banks. The four banks are briefly presented and their financial risks and hedging policies are reviewed.

Chapter 7 contains the analysis where the theoretical part and the empirical part of this

Finance, April 1997.
study are put together. The analysis is based on the different key elements studied in the empirical part and compared them with the theories.

In chapter 8, I connect my research question, purpose, theoretical framework and empirical findings. Here I suggest future studies and raised some questions for further discussion.
II. Theoretical Method

This part explains why I chose this topic and why I decided to make a quantitative study. I discuss here about how the grasp of reality has affected my study. Finally, I discuss in this part how I made the evaluation of the gathered data and how I made the choice about the used literature.

II.1. The choice of topic

The choice of topic for this thesis was not easy since I had many different and interesting ideas about what can be studied. The choice of this topic can be considered as a result of a long time of thinking and considerations on my side and a practical discussion with my tutor Tomas Sjögren. After my bachelor degree in International Business and Administration, I have been working in the insurance business. Meanwhile, I started my master’s studies in finance. Shortly before I began to write my thesis, I got a position in the banking business as a bank adviser. My big interest for the financial business in combination with some practical experience that I gathered through my professional work leads me to choose this topic.

The financial distress that almost all the banks are facing during these last months was also a crucial factor that triggered my choice of this topic. In my daily work, I face customers worried about increasing interest rates on mortgage loans, credit defaults due to a decrease of households’ purchasing power, and an instable dollar that affects almost all the financial and economic sector. There is a constant growing fear among banks customers since many of well known financial institutions and banks collapsed.

Finally, many banks and institutions operating on the mortgage market have presented quarterly reports with quite worrying numbers showing huge losses. I found that it would be interesting to study their hedging practice since they are supposed to protect companies against huge losses. Meanwhile, I was aware about the complexity of the topic that is the reason why I decided to have a more overall view of the current situation in this field.

II.2. Preconceptions

It is difficult to study such a discussed scientific field without being affected by one’s prior knowledge. My prior knowledge and understanding of this field of study helped me during my research. I used this knowledge in writing this thesis and in analysing this specific area of study that I chose.

Even though I do not have any practical experience of working with financial hedging, there were enough prior studies and researches that allowed me to study and understand this topic. I also took advantage of my previous academic studies in different fields in order to have a wider understanding of the subject and the different theories presented in this study. Most of all, my previous studies in financial accounting and in research methodology in business administration were of great help.

Finally, I used my practical experience in the banking business. In my daily work, I am
facing the consequences of the financial crisis. However, I would like to emphasize that the outcome of this study will not be affected by my preconceptions since most of data and information I used in this thesis are from reliable financial reports and analysis of the studied banks.

II.3. Research approach

There are two different ways to conduct scientific studies and analyses, the quantitative and the qualitative research approaches. The difference between these two approaches is their epistemological foundations. Still, it is the nature and the purpose of the problem in the studied topic that lead to what kind of approach a researcher will choose to use.10 Quantitative research is constructed as a research approach that emphasizes quantification in the collection and analysis of data. This approach entails a deductive approach to the relationship between theory and research, in which the accent is put on the testing of theories.11 This approach is often related with quantitative research where a researcher begins with one or more theories about a topic and then narrows that down into more specific hypotheses in order to test them. These hypotheses can be either confirmed or abandoned, leading to an authentication or a review of the theories.12 The aim of my study is to study the hedging practice in four of the major Swedish banks operating on the mortgage loan market. In order to achieve this goal, I studied the existing theories on how and why a bank should use hedging strategies. Thereafter, I studied how the hedging strategies are used in practice in the selected banks in order to make a comparison. Since the aim of my study is to test the existing theories and see how they are used in practice, I find that the quantitative research approach is more appropriate to my study.

The qualitative research emphasizes words rather than quantification in the collection and analysis of data. This research approach mainly emphasizes an inductive approach to relationship between theory and research, in which the emphasis is put on the generation of theories.13 The aim of my study is not to generate theories since I test the existing theories in practice. Therefore, I find that the qualitative research approach is not appropriate to this study.

II.4. Scientific approach

The other issue for a researcher is which scientific concept to follow in the study before collecting and analyzing the information and data of the study. Here again, Bryman and Bell state that there are two main approaches in a scientific analysis, the deductive and

10 Bryman, Alan; Bell, Emma (2003), Business research methods, Oxford University Press, p.25
11 Ibid.
12 Bryman, Alan; Bell, Emma (2007), Business research methods, 2nd edition, Oxford University Press
the inductive thinking. In the inductive approach, “the researcher deduces the implications of the findings for the theory that prompted the whole study”. The deductive approach instead looks for the use of existing theories in order to test a hypothesis empirically and draw conclusion from these tests.14

The data gathered from the financial reports and analysis will be used as platforms to increase the knowledge about the use of financial hedging strategies in the banking business. Furthermore, my goal is to link and compare the existing theories about financial hedging with the empirical findings from the banks’ financial reports and analysis. Thus, I consider that my study applies a deductive approach.

II.5. Restrictions

In order to conduct a more specific study, I firstly limit my area of research to only four major Swedish banks operating on the mortgage market. It can be unpractical to compare banks from different countries since the reality on the market can be different from one country to another. For example, it would not be practical to compare Icelandic and Swedish mortgage banks now since the two countries have different repo rates: 15, 50% in Iceland and 4, 50% in Sweden.

Secondly, my study will not delve into a discussion about all kinds of risks that banks face. I will study and present financial risks in general and then will focus on what I believe are the three major financial risks in the banking business: the credit, the interest and the exchange rate risks. This will make the study more specific and will take into consideration the situation on the mortgage market right now with higher interest rates, an unstable dollar and high risk of credit default.

Finally, since this topic is wide and complex, the aim of my study is not to go into qualitative details about which policies are used by various Swedish banks for their hedging strategies. Such a study would require a longer time with deeper interviews with bank officials working with risk management. However, it would be difficult if not impossible to convince a bank’s CFO or Chief Treasurer to reveal which kind of hedging strategies are used by their corporation. Hedging strategies are a part of the company’s business strategies; therefore they are kept under secrecy for only internal use. To reveal such strategies could cost a bank or corporation a loss of a strategic position on the market and hence jeopardize its business. I do believe that even if a quantitative study does not go into detail concerning financial structures and policies, it will still give and put further light on this topic and on discussion about the practice of hedging strategies in Swedish banks.

II.6. Choice of theories

Theory is a clarification of observed regularities that helps to guide and influence the

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14 Bryman, Alan; Bell, Emma (2003), Business research methods, Oxford University Press
Since the two key concepts in my study are hedging and financial risks, my choice of theories are those theories related to these two concepts. Financial risks and hedging are two well-discussed areas in the financial field, so there was a lot of information and theories written about them. The first part of my theoretical framework is dedicated to the presentation of banking risks, specifically financial risks. I further narrowed the study to the main three financial risks in the banking business: the credit, the interest rate and the exchange rate risks. Thereafter, I present and discuss the concept of hedging in general and hedging of the three chosen financial risks.

With this process, the reader will get a step by step overview and understanding of the key concepts studied in this thesis. This process also stimulates and simplifies the reading of the thesis as a whole. I chose not to delve in the different existing theories since the study has a quantitative character rather than a qualitative study.

**II.7. Selection of sources and criticisms**

The books used in the literature of this thesis were found in the university library. Most of them are written by well known researchers in their fields which make them reliable and trustworthy. I also used scientific articles found at the university databases via ALBUM on the website of Umeå university library. Other international databases were also used such as Jstor, Business Source Premier and LIBRIS. All these sources are reliable and certified.

Since the topic is well discussed and debated, I had to be selective in the choice of which sources to be used. The choice of scientific sources used in this study meets the high standard required in the conduct of a scientific research.

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15 Bryman, Alan; Bell, Emma (2003), *Business research methods*, Oxford University Press, p.7
III. Theoretical Framework

This chapter contains the theoretical basis for my empirical study and analysis. I present the basic functions of banks in general and the notion of risk in banks with focus on financial risks. Then, I present the notion of hedging and why a company should or should not hedge. Finally, I present the use of hedging strategies in banks with emphasis on hedging for credit, interest and exchange rate risks.

III.1. The basic functions of banks.

The functions of banks can be described by two different perspectives; the traditional and the modern perspectives. The traditional perspective considers banks as financial institutions that act as intermediaries in the process of the allocation of financial resources. The modern perspective treats instead banks as factories engaged in the process of information and deal making.16

The traditional perspective argues that banks have two functions: gathering deposits and making loans. The modern perspective argues instead that banks go further in their functions and get engage in liability management. Banks engagement in liability management helps them to deal with loan demanding by purchasing funds in the financial marketplace.17

By going beyond the traditional business of funding loans with deposits and get involved in the financial market, the banks will be exposed to all kinds of risks existing on the market. Changes in the banking industry during the seventies and the eighties brought the first waves of deregulation of the financial markets and the increasing of competition between banks. Foreign exchange markets with floating exchange rates increased the degree of uncertainty while monetary policies promoted high levels of interest rates and stimulated their volatility. These changes brought risks which increased due to new competition, product innovations, the shift from commercial banking to capital markets, a high level of market volatility and the disappearance of old barriers which limited the scope of operations for many of financial institutions. 18

III.2. The notion of risks in banks

Risks are usually defined by the adverse impact on profitability of several distinct sources of uncertainty. Therefore, to measure risks requires capturing both the uncertainty and its potential adverse effect on profitability. Profitability reassigns in turn to both accounting

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17 Ibid.
and mark-to-market measures.  

There are commonly four different types of banking risks: financial, operational, business, and event risks. I will focus on financial risks.

The financial risks are divided into two different categories: pure and speculative risks. Pure risks include liquidity, credit and solvency risks. When these risks are not well managed, they can lead to loss for a bank. Speculative risks are based on financial arbitrage. They can result in both a gain and a loss depending on if the arbitrage is correct or not. The major categories of speculative risks are interest rate, currency, and market or position risks.

Financial risks are also exposed to huge interdependencies that may significantly increase a bank’s overall risk profile. For example, a bank involved in the foreign currency deal is normally subject to currency risk, however it will be also exposed in addition to liquidity and interest rate risk if it carries open positions or mismatches in its forward book.  

The following figure illustrates the types of bank risks.

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**Figure 2. The principal banking risks**

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21 Ibid.  
III. 3. Financial risks in banks

III.3.1. Credit risk

Credit risk plays a key role on the importance of potential losses. This risk consists of customers default, which means it occurs when customers fail to respect their debt obligations.23

Credit risk consists also of a decline in the credit standing of a counterparty which leads to the increasing of the probability of default. Capital markets rate the credit standing of firms through higher interest rates on the debt issues of the firms, or a decline in the value of their shares, or by a downgrading of agencies’ rating like Moody’s Investors Services and Standard and Poor’s. These agencies’ rating of banks is an assessment of the quality of their debt issues.24

Credit risk is critical since the default of even a small number of major customers can generate large losses, which can lead to insolvency. Normally, banks use classical procedures to monitor this kind of risk. The monitoring systems put an upper limit on the amount lent to each customer or customers within a single industry or within a given country. Moreover, the evaluation of credit applications is conducted by credit officers or credit committees in order to reach a minimal agreement before a risk-taking decision is taken. Finally, there are even risk diversification rules across counterparties.25

Although these practices have existed in the banking business since bank started lending, the credit risk measurement still raise several issues. It is impossible to know in advance the outstanding balances at the time of default. Only time lines that have an amortization plan are contractual. The future uses of overdrafts are unknown given that the usage is left within certain limits to the initiative of the client. Thus, it may be uncertain to measure the amount at risk which can potentially be lost in the occurrence of default.26

Risk can be separated in two dimensions: the quantity which means the amount that can be lost and the quality which consists of the likelihood of default. The quality of risk is often assesses through ratings, both internal to a bank and external from rating agencies. However, even the existing of all the ratings and historical data on defaults by rating class or by industry, it is still not easy to quantify the probability of default. Furthermore, the cumulated credit risk over a portfolio of transactions, either loans or market instruments is hard to evaluate due to diversification effects. All banks protect themselves against risk through diversification, which makes simultaneous defaults very, or totally, unlikely.27

Market transactions also generate credit risk. The loss in the event of default depends upon the value of the financial instruments involved in the transactions and their

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23 Bessis, Joel (1998), Risk Management in Banking, John Wiley& Sons Ltd. Baffins Lane, Chichester, England, p.4. Ibid., p.5.
24 Ibid.p.6.
25 Ibid.
26 Ibid.
27 Ibid.
liquidity. In case of a totally unexpected default, the loss is the market-to-market value at
the time of default. The credit standing of the counterparty can decline but it will still be
possible to sell these instruments in the market, at a discount. Nevertheless, the sale of
over-the-counter instruments like swaps and options is not gladly possible. The credit risk
changes constantly with market movements during the entire residual life of the
instrument. Consequently, the potential values of the transaction during the whole period
are at risk.28

III.3.2. Interest rate risk

Interest rate risk is defined as the risk of declines of earnings due to the movements of
interest rates.29

Several banks’ balance sheet items create revenues and costs which are indexed to
interest rates. Given that interest rates are unstable, so are earnings. Anyone who lends or
borrows is subject to interest rate risk. A decreasing in interest rates leads to a reduction
of the revenues for the lender while an increasing in interest rates leads to higher costs for
the borrower. Both positions are risky because they generate revenues or costs indexed to
market rates. However, these two positions also present opportunities for gains.30

Implicit options in banking products are also another source of interest rate risk. The
borrower can always repay the loan and borrow at a new rate, a right that he will exercise
when interest rates fall significantly. Even deposits bear options due to the fact that they
can be shifted to term deposits earning revenues when interest rates rise. Optional risks
are sometimes called indirect interest rate risks and they result from the behaviour of
customers who compare the benefits and the costs of exercising options embedded in
banking products and make a choice depending upon market conditions. Given the
meaning of those products in the balance sheet of banks, optional risk is far from
insignificant.31

III.3.3. Foreign exchange risk

The currency risk is the risk of observing losses due to changes in exchange rates. The
indexation of revenues and charges to exchange rates lead to variations in earnings. Even
values of assets and liabilities labelled in foreign currencies are affected by this. This risk
is a typical field of international finance and is also a component of market risk. For
market transactions, foreign exchange rates are a subset of market parameters.32

28 Bessis, Joel (1998), Risk Management in Banking, John Wiley& Sons Ltd. Baffins Lane,
Chichester, England Ibid. p.7.
29 Ibid.
30 Ibid. p.9.
31 Ibid.
32 Ibid. p.11.
There is also a further currency risk for all banking or market transactions labelled in foreign currency. The reason of this is that earnings have to be translated into a base currency. The classical way of dealing with foreign exchange risk is to manage risk on a currency-by-currency basis for the banking portfolio.33

III.3.4. Solvency risk

Solvency risk means the risk of being unable to cover losses that are generated by all types of risks with the available capital. This risk is the risk of default of the bank and is identical to the credit risk incurred by the counterparties of the bank. Solvency is defined as the end result of available capital and of all risks taken: credit, interest rate, liquidity, market or operational risks. The solvency risk is capital for regulators. The essential concern of capital adequacy is to define what level of capital should be associated with the overall risk in order to sustain an acceptable solvency level.34

All risks generate potential losses and the ultimate protection for such losses is capital. Capital should be adjusted to the level required to make it capable to absorb potential losses generated by all risks. Consequently, all risks should be quantified in terms of potential losses. A measure of aggregated potential losses should be derived from the measurement of potential losses generated by the different risks. Still, the major challenge of risk management is to implement these principles and define quantitative measures required to obtain the adequate capital, or derive which levels of risk are sustainable given the capital constraints.35

III. 4. Hedging

Hedging is one of the common strategies used by corporations to deal with financial risks. The use of hedging as a strategy for risk management is still a controversial topic with pro and against theories.

Hedging is the official statement of offsetting risks in order to increase the company’s wealth but this is done at the expense of the perfect outcome. One of the major aims of risk managers is to decrease discrepancy of outcomes. By managing financial risks, a corporation wants to fulfil stockholders’ earnings expectations. Though, this brings the need to control a firm’s earnings volatility and particularly when the firm is exposed to financial risks.36

33 Bessis, Joel (1998), Risk Management in Banking, John Wiley & Sons Ltd. Baffins Lane, Chichester, England p.11.
34 Ibid.
35 Ibid.
III.4.1. Why should company hedge?

By using hedging strategies, a company reduces the variability of expected cash flows which leads also in reduction of risk. Controlling variability of expected cash flows gives to a company a competitive planning capability that allows it to set up activities and particular investments that could have been otherwise impossible. Hedging also allows to the management team to get a relative advantage over the company’s shareholders due to the fact that they know the real risk exposure that the company is facing. Therefore, the management may use this advantage to take advantages of the market disequilibrium and consequently increase the company’s value. Additionally, hedging cuts down the probability that the company’s cash flows fall below a significant lowest point and lead to a financial distress. Finally, hedging diminishes agency problems within the company, reduces effective corporate taxes and risk aversion among the management team and other contracting parties.

The most important argument for using hedging strategies is that hedging reduces the company’s cost during financial distress. When the value of a company’s liabilities is higher than the value of its assets, the company may encounter difficulties in paying back its transactional obligations and loans as planed. Insolvency is a critical factor for companies since it presses their financial situation and may lead to their bankruptcy. Therefore, companies have to take measures that keep them away from such a kind of situation.

A company with solid cash flows has the advantage of making planned investments using low funding because acquired external funds are more expensive than internal generated funds. A company with a financial risk management strategy acquires additional cash flows that secure the company to pursue its investment plans that add value and increase growth to the company. Finally, a company with predictable and stable cash flows is stronger enough to stand a higher debt level given that the risk of bankruptcy for such a company diminishes.

Peter Tufano argues in his research that the most important determinant of hedging financial exposure is managerial ownership of shares and the nature of the managerial compensation contract. Firms have a tendency to hedge significantly when their managers own a considerable number of shares so that the volatility of their assets is extensively affected by the volatility of the share price. Firms where management owns a small stake have less use of hedging strategies. For example in a firm with a bonus pool that is not doing well, managers will not expect any bonus unless something dramatic

happens to profits and they take positions based on their views. If they are wrong, they do not get a bonus but if they are right, they get a bonus. However, if they already expect to get the maximum bonus, they do not want to take risks to lose their compensation.41

III.4.2. Why should company not hedge?

A company with a well-diversified portfolio does not suffer from the risk of its macroeconomic exposure. Most of corporate financial exposures are non-systematic; therefore shareholders are able to reduce by themselves these risks by holding diversified portfolio. They then create their own risk management strategy less costly without needing to pay extra for it. This practice allows investors to reduce their earning volatility and to require lower rates of return. Hedging is more a value decreasing than a value added activity for the company. Shareholders have the ability to diversify their risks by themselves than what risk managers can do.42

There is no way of making abnormal gains in an efficient market since information that is freely accessible is already included in the prices. Most of the cases where companies lose a lot of money in derivatives are those cases where companies want to take advantage of a view and then begin to believe that they can make abnormal returns from their exposures. This does not happen if markets are efficient and shareholders who want to take the risks do not need the company to do it for them. The company has no relative advantage in taking these risks. By diversification, shareholders are able to spread the risks of the company except for systematic risks.43

The effective market hypothesis argues that managers cannot outguess the market. Even hedging driven by accounting reasons can not deceive the market since financial exposures that affect the firm’s value are already incorporated into the market price of the company.44

III.5. How to manage financial risks in banks

From 1970s until 1990s, the banking business experienced major changes due to some crucial deregulations. The involvement of financial institutions other than banks increased the competition on the financial market. This situation leads to the need for competitive pricing and an increase in engagement of liabilities that resulted in spread maximization, as well as in controlled exposure to related risks. Spread maximization and controlling of risk exposure are two opposite actions. Therefore, a balancing act between

the two became a focal point in the financial risk management and in the regulation and control of banks.45

Risk is intrinsic and inevitable in banking; the aim of financial risk management is to manage the risk exposure in such a way that different types of risk are held at an adequate level without jeopardizing the bank’s profitability. Financial risk management needs the capacity to anticipate changes and to act in such a way that a bank’s business can be structured and restructured to make profit from the changes, or at list to minimize the losses.46

III.5.1. Hedging of credit risk

Credit derivatives in general are used to hedge credit risks. They are over-the-counter, off-balance sheet contracts and their value is derived directly or indirectly from the price of a credit instrument. They are considered as a set of tools for “grooming” a bank’s loan portfolio. Credit derivatives provide the potential to achieve more efficient risk-return combinations without harming customer relationships. They are popular in banking and lending institutions.47

Credit derivatives are also flexible contracts that can be used to ensure against other mutually agreed-upon events such as rating downgrade of the reference party, or adverse movement in a credit spread. There are two ways of paying credit derivatives: by cash settlement or physical delivery. Cash settlement takes the form of cash payment of the post default market value of the asset against receipt of the strike price and physical delivery takes the form of delivery of the reference bond or loan against receipt of the strike price.48

The most popular credit derivatives are credit swaps which are divided in two categories: pure-credit or default swap and total-return swap. In a pure-credit or default swap, a bank pays a small regular premium to the counterparty of the swap. If the bank’s borrower defaults, which is the credit risk that the bank wants to protect against, then the counterparty compensates the bank for its loss as specified by the contract. If the credit event does not occur, then the option expires and the bank incurs the premium as a cost of the insurance against the adverse credit event. There is no need to inform the borrower about the transaction and will not feel offended. The total-return swap is a little more complicated and involved an element of market risk associated with interest rate movements. The cash inflow to the bank usually is indexed to its cost of fund. Without a credit event, the bank enters a plain-vanilla, pays fixed/receives floating, interest swap. If the index rate increases, the bank hedges its cost of funds. If the borrower’s credit risk

46 Ibid.
48 Ibid.
adversely and positively correlates with rising interest rates, then the bank’s fixed payment is reduced by the depreciation in the value of the loan.49

III.5.2. Hedging of interest rate risk

A key factor to consider while choosing the right financial instrument to use to control interest rate risk is the degree of correlation between the rate on the derivative instrument and the interest rate that creates the underlying risk to be controlled. Another important factor to take into consideration is the liquidity of the instrument. For instance, a position that needs liquidity may not be hedged by an illiquid instrument.50

One of the strategies is the use of futures calls. A company takes a future position as a temporary substitute for transactions that it will make in the cash market at a later date. Any loss encountered by the company from one position (whether cash or futures) is offset by a profit on the other position if cash and futures prices move in concert. A short (or sell) hedge is used to protect the bank against a decline in the cash price of a bond. A long (or buy) hedge is undertaken to protect against an increase in a cash price of a bond. The bank sells futures contracts in order to secure the future cash price and transfer the price risk of ownership to the buyer of the futures contract.

The other alternative for controlling interest rate risk is the use of interest rate swap. The interest rate swap is a package of forwards/futures contracts. They can be used on the same way as futures and forwards to control interest rate risk.51 There are many types of swaps contracts used by banks in their risk management such as liability swaps and asset swaps.

III.5.3. Hedging of exchange rate risk

The exchange rate risk is divided in three different components: the transaction, the translation and the operating exposure. The operating exposure arises when companies operate abroad for example through production facilities, foreign supply contracts, and distribution network or new-product development.

Transaction exposure exists when the future cash transactions of the company are affected by exchange rate fluctuations. The bank has to identify the extent of it, and take a decision if yes or not to hedge this exposure. If the bank decides to hedge this exposure it has to decide which among all various available hedging strategies to choose.52

51 Ibid. p.355.
52 Madura, Jeff (2003), International financial management, South-Western, Thomson learning, 7th ed., p.334 ff.
The bank can hedge its transaction exposure by entering a currency futures contract. The bank is guaranteed to receive or sell a specified amount in a specified currency for a stated price on a specified date. This strategy allows the bank to lock in the amount of its home currency needed to make a specified payment or to be received in the future.53

The bank can also use forward contracts and like futures contracts they are used to lock in the future exchange rate at which a bank can buy or sell a currency. The only different between futures and forward contracts is that the later is commonly used for large transactions, whereas the first is usually used for smaller amounts.54

The bank can use money market on payables and receivables when it has surplus of cash. The bank creates a short-term deposit in the foreign currency that it will need in the future. Currency call options ca also be used and allow the bank to buy a specified amount of a particular currency at a specified price within a given period of time.55

Translation exposure occurs when a company translates each subsidiary’s financial data to its home currency in order to consolidate the financial statements. Some people still believe that there is no need to hedge or reduce this exposure since it does not affect the company’s cash flow. However, some companies are still concerned by the translation exposure due to its potential impact on reported consolidated earnings. Banks can use forwards and futures contracts to hedge against translation exposure. They can sell the currency forward that their foreign subsidiaries receive as earnings and create a cash outflow in the currency to offset the earnings received in that currency.56

54 Ibid.
55 Ibid.
56 Ibid.
IV. Legal Framework: Risk management supervision and policies in banks.

In this chapter, I present some legal restrictions that regulate the risk management in banks. This helps the reader to understand the legal environment of the practice of hedging strategies. I introduce the recommendations of the Basel Committee on banking supervision and I present which recommendations are given by the Financial Accounting Standard’s Statement of Financial Accounting Standards (SFAS).

IV.1. Basel Committee on banking supervision

IV.1.1. Introduction

The Basel Committee on Banking Supervision is an institution created by the central bank Governors of the G-10 countries (Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the UK, and the US) and representatives from Luxembourg and Spain. This committee has in charge the formulation of broad supervisory standards and guidelines and recommendations of statements of best practice in banking supervision. The committee expects that member authorities and other nations’ authorities will take steps to implement these standards through their own national systems, whether in statutory form or otherwise.57

IV.1.2. Risk management guidelines for derivatives

The Basel Committee on Banking Supervision is engaged in several activities aim to strengthen the prudential supervision of banks’ derivatives operations. The committee makes a reconsideration of the key elements of sound management of the risks implicated in derivatives.

The committee distributes guidelines to supervisors worldwide in order to facilitate the further development of a prudent approach to the risk management of derivatives. These guidelines emphasizes on the sound internal risk management that is essential to the prudent operations of banks. Furthermore, sound internal risk management is also essential to promoting stability in the financial system as a whole.58

The committee recommends that banks have to make an oversight of their risk management process. They have to maintain written policies and procedures that clearly outline their risk management guidance for derivatives activities. Risk tolerances of the board of the directors should be identified and a clearly delineate lines of authority and responsibility for managing the risk of these activities should be also identified. The board of directors should approve all significant policies relating to the management of risks throughout the institution. These policies should include those related to derivatives

57 http://en.wikipedia.org/wiki/Basel_Committee_on_Banking_Supervision
58 http://www.bis.org/publ/bcbsc211.pdf?noframes=1
activities and should be consistent with the organization’s broader business strategies, capital strength, management expertise and overall willingness to take risk. The board should be informed regularly of the risk exposure of the institution and should regularly re-evaluate significant risk management policies and procedures with special emphasis placed on those define the institution’s risk tolerance regarding these activities. Before engaging in derivatives activities, management should ensure that all appropriate approvals are obtained and that adequate operational procedures and risk control systems are in place.\(^{59}\)

The committee also recommends that the process of measuring, monitoring and controlling risk will be consistent with the established policies and procedures and those should be managed independently by individuals conducting derivatives activities, up through senior-level of the institution. The personnel staffing independent risk management functions should have a complete understanding of the risks associated with all of the bank’s derivatives activities. A sound risk management process has a comprehensive risk measurement approach, a detailed structure of limits, guidelines and other parameters used to govern risk-taking, and a strong management information system for controlling, monitoring and reporting risks.\(^ {60}\)

An institution’s system for measuring the various risks of derivatives activities should be both comprehensive and accurate. Risk should be measured and aggregated across trading and non-trading activities on an institution-wide basis to the fullest extent possible. Risk measures and risk measurement process should be sufficiently robust to reflect accurately the multiple types of risks facing the institution. Sound risk measurement practices include identifying possible events or changes in market behaviour that could have unfavourable effects on the institution and assessing the ability of the institution to withstand them.\(^ {61}\)

Banks should have a sound system of integrated institution-wide limits and risk-taking guidelines. Such a system should set boundaries for organizational risk-taking and should also ensure that positions that exceed certain predetermined levels receive prompt management attention. The limit should be consistent with the effectiveness of the organization’s overall risk management process and with the adequacy of its capital position. If limits are exceeded, such occurrences should be made known to senior management and approved only by authorized personnel. An accurate, informative and timely management information system is essential to the prudent operation of derivatives activities. The quality of the management information system is an important factor in the overall effectiveness of the risk management process. The risk management function should monitor and report its measures of risks to appropriate levels of senior management and to the board of directors. Management information systems should translate the measured risk for derivatives activities from a technical and quantitative format to one that can be easily read and understood by senior managers and directors,

\(^{59}\) http://www.bis.org/publ/bcbsc211.pdf?noframes=1
\(^{60}\) Ibid.
\(^{61}\) Ibid.
who may not have specialized and technical knowledge of derivatives products.  

Management should ensure that the various components of the institution’s risk management process are regularly reviewed and evaluated. The review should take into consideration changes in the activities of the institution and in the market environment, since the changes may have created exposures that require additional attention. Any material changes to the risk management system should also be reviewed. The frequency and extent to which an institution should re-evaluate its risk measurement methodologies and models depends, in part, on the specific risk exposures created by their derivatives activities, on the pace and nature of market changes and on the pace of innovation with respect to measuring and managing risks.

Policies and related procedures for the operation of derivatives activities should be an extension of the institution’s overall structure of internal controls and should be fully integrated into routine work-flows. A sound system of internal controls should promote effective and efficient operations, reliable financial and regulatory reporting and compliance with relevant laws, regulations and policies of the institution. All significant internal controls associated with the management of market risk, such as position versus limit reports and approval policies and procedures for limit exceptions should also be reviewed.

IV.2. Disclosure of derivative activity in financial reports


SFAS No.105 requires that the information is reported separately for options, futures, and forwards contracts. Subsequently, more detailed disclosure requirements for derivatives have been introduced such as disclosure of fair market value of financial instruments with off-balance-sheet risk and whether these instruments are being issued or held for trading purposes or other purposes. The more recent standards impose higher disclosures requirements on trading positions in derivatives.

Companies are also required to mark their derivatives positions to market and report the changes in market values of the derivatives held for trading purposes in their income statement. Data on the companies’ derivative activity are obtained from notes to their financial statements.

\[ \text{http://www.bis.org/} \]

\[ \text{Ibid.} \]

\[ \text{Ibid.} \]

financial statements.66

The International Accounting standards (IAS) 39 requires consistent accounting for purchases and sales of financial assets for each category of financial assets using either trade date accounting or settlement date accounting. According to the IAS 39, all financial assets and liabilities (included all derivatives) are recognized on the balance sheet. Furthermore, they are initially measured at their costs (transaction cost included), which is the fair value of whatever was paid or received to acquire the financial asset or liability either at trade date or settlement date.67

V. Practical Method

This chapter contains a description and discussion of how I selected, accessed and chose the banks that are included in my study. Furthermore, I will present and discuss the credibility criteria in this study.

V.1. Choice of companies

The main purpose with this thesis is to study the use of hedging strategies in Swedish mortgage banks. In order to choose which of the Swedish banks to include in my study, I firstly studied the current situation on the Swedish financial market.

In Sweden, there are fourteen banks operating on the mortgage market. However, there are only four major actors on the mortgage market playing a more important role than others. These major banks are Swedbank, Nordea, SEB, and Handelsbanken. They are all well established in Sweden for decades and have large positions on the market both for mortgages, investment banking, private banking, asset management and commercial banking. These four banks cover almost 80% of the Swedish market when it comes to lending companies.68

Most of these corporations experienced gigantic losses during the current financial crisis on the mortgage market, mostly due to their positions in the US subprime market. For instance, SEB reported almost over a half billion Swedish crowns of losses during the spring. Even the other corporations reported losses due to the credit crisis on the US subprime market. Moreover, these four banks are those with a more exposure on the global financial, especially SEB and Swedbank in the Baltic region. For instance, the exposure in the Baltic region for these two banks can cost them huge losses.

With these arguments in the background, the choice was clear that I am going to include these four major banks in my study.

V.2. Access and criticism of method

From the beginning I knew that I wanted to conduct a quantitative research. As mentioned before, hedging strategies polices are a part of a corporation business strategies. Good strategy policies can yield huge profits to corporations so each company wants to keep the policies confidential. Meanwhile, bad strategies can lead to huge losses.

The optimal situation for gathering the needed information to use in my study was to make deep and structured interviews with people working with hedging strategies in the chosen banks. However, my short experience in the banking business made me a little bit pessimistic about the success of a qualitative research with deep interviews. Moreover, the current financial situation makes the access to such kind of strategic information more difficult. The uncertainty and nervousity on the financial market lead to a more careful behaviour for most of the banks when it is about which information to give out to the

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68 Annual report Svenska Handelsbanken
Therefore, the only available and reliable information used in my study was found in these corporations’ financial and annual statements and reports. It is hard to believe that through interviews, I could get more than what is already mentioned in their financial reports and statements. This information and data are public, so I had an easy access to get them. One can have access to the companies’ annual reports by visiting the companies’ websites or by ordering home via mail the annual reports. I chose to use the online annual reports for all the four banks since these could save me time between ordering and delivering of the material. Moreover, the online and printed versions of annual reports are identical.

In the beginning I thought there would be detailed figures about how much exactly these corporations invested in different derivatives positions. However to my disappointment, there is not such detailed information but rather a brief description of the kind of the risks that these corporations face and the kinds of hedging strategies used to manage them. It would be interesting to know the amount spent on the derivatives activities compared to the earnings or losses that the corporations made in order to evaluate of their effectiveness. Perhaps this could be a good point for another person interested in researching this area of finance.

V.3. Credibility criteria

Credibility in scientific research means how believable the findings are. By creating the credibility of findings, a researcher guarantees that his/her study was carried out according to the canons of good practice and submits the research findings to the members of the social world who were studied to confirm that the researcher has correctly understood that social world.69

In this part, I chose to present two credibility criteria related to the way I conducted my study; the practical applicability and the reliability

V.3.1. Practical applicability

As mentioned and discussed before, the goal of this study is to study the hedging practice in Swedish banks operating on the mortgage market. Since hedging is a highly discussed and controversial topic in the financial world, I believe that the findings in this study can help those who want further understanding in this topic. Furthermore, this study can contribute to the already existing studies in this area. The information presented in this study comes mostly from financial reports and statements of some of the most leading Swedish banks. Hedging practices in the banking business in particular and in all corporations in general is important, so this study can even be useful to risk managers and those working with hedging of financial risks in the banking business. Finally, I believe that this study is interesting, informative and useful to anyone interested in this financial

69 Bryman, Alan; Bell, Emma (2003), Business research methods, Oxford University Press, p. 288-289
V.3.2. Reliability

The reliability criterion is the stability of a measure of a concept. A scientific study must generate trustworthy and reliable results in order to be considered as reliable. The goal of reliability is to make sure that the quality of the study exists and can be measured. Thus, reliability tests if the same result will be obtained if the research is conducted again.

The data I collected were analyzed in a way that I believe fulfills the required reliability standards. The same information and data used in this study can be easily found by any other researcher who would like to study or analyze them. Finally, the origins of these data are credible and valid since they are coming from well known and established companies and the information is available to the public.

V.3.3. Validity

According to Arksey and Knight, validity is the measure of how correct and precise the research findings are. There are two concepts explaining the validity criteria: the internal and the external validity.

The internal validity defines whether the scientist is investing what he or she is supposed to study in order to answer to his or her research question and if it meets his or her objective. The aim of my study was to study the practice of hedging strategies in four major Swedish banks. In my study, I started by studying the general theories about hedging strategies. Then I studied how the current situation in the chosen banks for hedging strategies is. By proceeding like this, I consider that my study achieves this first concept of the validity criteria.

The external validity is about to what extent the tested theories can be applicable to other parts of the population. I consider that my study achieves even this second concept of the reliability criteria since most of the banks define their financial risks almost in the same way. That means the hedging strategies for financial risks studied in the four banks can also be expanded to other banks if they face the same kind of financial risks.

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VI. Empirical studies

In this chapter, I present briefly the four banks that I studied and analyzed in this thesis. I make a short overview over the companies’ financial structure and position on the market. I also present the results of my findings in different sections covering the key components as presented previously in the theoretical framework.

VI.1. Banks’ presentation

VI.1.1. Nordea

Nordea is the largest bank in the Nordic and Baltic Sea region with a market capitalization of approximate EUR 27 billions and total assets of EUR 411 billion. The bank has the largest distribution network for customers with approximate 1,300 branches of which more than 180 are in five new European markets, Russia, Poland, Lithuania, Latvia and Estonia. Nordea has approximate 10 million customers of which 6.8 million are personal customers in customer programs and 0.7 are active corporate customers. In Sweden the bank covers 280 branches with 3,277,000 customers and a total lending of EUR 60 billion. The largest registered shareholder is the Swedish state with 19.9%. On the mortgage lending, the company has 14.9% of the total market in Sweden.71

VI.1.2. Swedbank

Until autumn 2006 the bank was called Föreningssparbanken and was the first Swedish savings bank founded in Gothenburg. The bank has around 9 million private customers and 500,000 corporate customers in Sweden, Estonia, Latvia and Lithuania. In Sweden, the bank has 4.1 million private customers and 277,000 corporate customers. The bank’s total asset is SEK 1,696 billion with a total lending to the public of SEK 1,131 billion. The largest shareholders are the Swedish savings banks foundations with 23.2% of the total shares. At the end of 2007, the bank had almost 30% of the total mortgage market in Sweden.72

VI.1.3. Handelsbanken

Handelsbanken was founded in 1871 in Stockholm by a group of successful companies and businessmen. Before its expansion between 1910 and 1919, the bank was called Stockholm Handelsbanken. The bank offers a strong market position in Sweden as well as in the other Nordic countries like Norway, Finland, and Denmark. Furthermore, the bank is also present in England since 2000. Its core market is in Sweden and especially on the corporate lending market with market share up to 30%. The major Swedish shareholder is Industrivärden that owns 11.1% of the company’s total votes. By the end

71 www.nordea.com
72 www.swedbank.com
of 2007, the bank’s total assets were approximate SEK 1,900 billion of which lending to
general public were approximate SEK 1,300 billion.73

VI.1.4. SEB

The bank was found by Andre Oscar Wallenberg for 150 years ago under the name of
Stockholms Enskilda Bank. Nowadays, the bank is a North European financial group
with 400,000 corporate customers and institutions, and 5 million private customers. Its
operations are extended to the Nordic and Baltic countries as well as in Germany, Poland,
Ukraine and Russia. By the end of 2007, SEB total assets was SEK 2,344 billion while it
assets under management was SEK 1,370 billion.74

VI.2. Banks’ financial risks and hedging policies

VI.2.1. Nordea

Nordea is using from the beginning of 2007 the new Capital Requirements Directive as
the common framework for implementing the Basel II framework in Europe. The bank
states that its credit exposure in 2007 was in total EUR 429bn, including off-balance
sheet exposure. The credit risk accounts for approximately 92%, operational risk 6% and
market risk 2% of the capital requirement. The corporation has a policy to make a regular
risk reporting to Group Executive Management and to the Board of Directors. They
receive internal risk reporting which covers market, credit and liquidity per main legal
entity.75

Nordea’s credit risks stem mainly from various forms of lending to the public, both
corporate and personal customers, and also from guarantees and documentary credits,
such as letters of credit. This kind of risk includes also counterparty risk, transfer risk and
settlement risk. One important credit risk mitigation technique is pledging of collateral.
Collateral coverage is higher for exposures to financially weaker customers than for those
which are financially strong. The bank uses credit default swaps but to a limited extent,
normal syndication of loans being the primary tool for managing the size of large credit
exposures. The bank uses also risk transfer allowance and provisions for non-investment
grade rated countries such as China. Nordea invariably enters into derivatives contracts
based on customer demand, both directly and in order to hedge positions that arise
through such activities. In order to reduce single counterpart exposures, the bank uses risk
mitigation techniques. The most common used technique is the closeout netting
agreements which allows the bank to net positive and negative replacements values of
contracts under the agreement in the event of default of the counterpart. The exposure
towards other large banks, hedge funds and institutional counterparts is managed by a use
of collateral management arrangements, where collateral is placed or received to cover

73 www.handelsbanken.nl
74 www.sebgroup.com
75 www.nordea.com
the current exposure. Finally, Nordea uses credit derivatives to hedge positions in traded corporate bonds and basket credit derivatives. The bank argues that it does not actively use credit derivatives in connection with own credit portfolio.\textsuperscript{76}

\textbf{VI.2.2. Swedbank}

The company states in its Risk and Capital Adequacy 2007’s report that each of its business units and subsidiaries has full responsibility for the risks that its operations generate and follow the standards set by the Board of Directors as well as the CEO.\textsuperscript{77}

The company’s total credit exposure was at the end of 2007 SEK 1 500bn, of which retail exposures represented 54 percent. Swedbank’s credit portfolio is diversified by number of customers, industries and by region. Moreover, the bank minimizes its credit risks through the establishment of netting agreements with its counterparties. The bank conducts credit derivatives transactions only in connection with counterparty risks. Swedbank argues in the report that the bank currently has no trading operations in credit derivatives.\textsuperscript{78}

The bank states that it offers customers various kinds of qualified financial services and products in different markets which bring financial risks. Swedbank manages its currency exposures by using derivatives, such as cross currency interest rate swaps and forwards exchange agreements. In order to reduce its currency risk, Swedbank’s strategic holdings in foreign operations and subsidiaries are generally funded in each entity’s national currency or in a currency that is linked to the country’s currency. Interest rate risk is managed by the bank’s use of swap contracts where it pays a fixed interest rate. In principle, all of Swedbank’s fixed interest rate loans have credit agreements that do not permit early repayment without compensating the bank for any losses that may arise due to changes in the interest rates since the loan was paid out, known as an early repayment charge. Finally, the exposure to liquidity risk is reduced by the bank through proactive efforts to ensure stable sources of financing, for instance deposits and borrowings from the public and diversified funding from a large number of capital markets. Another important component used to manage this risk is the liquidity reserve in the form of liquid securities held by the Swedish and Baltic operations.\textsuperscript{79}

\textbf{VI.2.3. Handelsbanken}

In Handelsbanken’s annual report for 2007, the bank states that it has a low risk appetite and this can be seen in the fact that the bank avoids high-risk transactions, even if the remuneration is high at that moment in time. The company’s policy is permeated by the responsibility of each bank employee who makes business decisions. The person who

\textsuperscript{76} www.nordea.com
\textsuperscript{77} www.swedbank.com
\textsuperscript{78} Ibid.
\textsuperscript{79} Ibid.
best knows the customer and the market conditions is in the best position to assess the risk. The responsibility held by those who make business decisions is complemented by checking that no excessive risks are taken in individual transactions or local operations.80

According to the bank’s credit policy, weak repayment capacity can never be accepted because good collateral has been offered to the bank. However, collateral may substantially reduce the bank’s loss in case the borrower cannot fulfil his commitment towards the bank. A large part of lending to credit institutions consists of reverse repos. A reverse repo is a repurchase transaction in which the bank buys interest-bearing securities or equities under the agreement that the security will be resold to the seller at a specific price on a specific date. The bank regards reverse repos as secured lending. Moreover, the bank buys credit derivatives to hedge the credit risk in loan receivables to a very limited degree. The counterparty risk is reduced through netting agreements, which involve offsetting positive values against negative values in all derivative transactions with the same counterparty. The bank’s policy is to sign netting agreement with all counterparties.81

The bank eliminates most of its interest rate risks by entering into interest rate swap agreements. Its fundamental approach to liquidity management is based on a prudence concept which includes supplementing daily liquidity management with contingency reserves to meet any disruptions in the market. It holds assets that can be turned into liquidity at short notice through borrowing in central banks or on the capital market.82

VI.2.4. SEB

SEB’s annual report for 2007 states that the Board of Directors establishes the overall risk and capital policy, strategy and limits, based on the review and recommendation of its Risk and Capital Committee, which in turn is supported by the work of the Group Asset and Liability Committee and the Group Credit Committee. The Board’s Risk Policy and capital Policy form the foundations of the Group’s risk and capital management.83

In order to manage the credit risk on each individual customer or group of customers, a total limit is decided, reflecting the maximum exposure that the group currently accepts, given the customer’s financial status and existing business relations. Limits are also established for the total exposure on various countries and for settlement risks in trading operations. SEB’s total credit exposure, including contingent liabilities and derivatives contracts but excluding bonds and repos, amounted to SEK 1 552bn, of which loans and leasing were amounted to SEK 1 113bn.84

In the management of the foreign exchange risk, the company takes currency positions

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80 [www.handelsbanken.nl](http://www.handelsbanken.nl)
81 Ibid.
82 Ibid.
83 [www.sebgroup.com](http://www.sebgroup.com)
84 [www.sebgroup.com](http://www.sebgroup.com)
for example for the net investments in subsidiaries outside Sweden when the corresponding financing is not made in the currency of the share capital; and the translation risk of accrued income in foreign currencies.85

In order to reduce the liquidity risk, the company has diversified its financing by tapping several geographical areas and by using various instruments and currencies. As a complement to this, the company uses payment capacity which is ensured through the holding of a sufficiently large volume of liquid assets, e.g. in the form of bonds that can be pledged in the central banks and transformed into liquid funds within immediate effect.86

VI.3. Empirical study of key components

The aim with my thesis is to make a study of the hedging practice in Swedish banks operating on the mortgage market, so my empirical study is based on a historical analysis of different financial data and information that are related to arguments used for or against the use of hedging strategies. Unfortunately, it is almost impossible to find how much banks spend in their hedging expenses. It would be interesting to see the variation of hedging expenses over a period of time in order to make a deep evaluation and comparison of these strategies.

The empirical study is divided in different sections that cover arguments that argue for or against the use of hedging strategies in corporations. I analyze some key components related to these different arguments. I make a historical analysis over a period, from year 2000 to year 2007. 2008 is an interesting period; unfortunately the annual financial reports are not released, so I use the financial data for the quarter reports.

VI.3.1. Cash flows variability

One of the arguments given by those who advocate the use of hedging strategies is that hedging reduces variability of cash flows.87 In this section, I make an empirical study of how cash flows from the four studied banks vary over the period of time from 2000 until 2007.

In order to make the study more analytical, I analyze the cash flows in comparison to the banks’ total operating incomes. This helps the reader to get a fair picture of the cash flow variation since this component depends on how much turnover the respective bank has for the respective period. Nordea is using the euro as reporting currency, therefore to compare just cash flows for the four banks can be unfair since the three other banks use SEK as their reporting currency. In order to avoid misinterpretation of the data, I use the ratio cash flow/total operating income which can be a more fair way of showing the

86 Ibid.
87 Ibid.
variability in cash flows.

The information about cash flows is found in the respective bank’s cash flow statements included in their banks’ annual reports. The information about the total operating income is found in the income statements in their annual reports. This information will be presented in form of a diagram where we can see variations between the studied years and between the banks.

![Cash flow/Tot. operating income variation](chart)

Figure 3

VI.3.2. Profit per year variations

The second argument given by those who advocate the practice of hedging strategies is that the company increases its value through the use of hedging.88 There are several ways of evaluation of a company’s value. One of the common ways used to value a company is its annual profit.

Even for this component, I study this variable in comparison to the total operating income for each bank. This gives a more accurate picture about how the different banks’ annual

profits vary over time in comparison to their turnover. The information about both profit per year and total operating income are found in respective banks’ income statements in their annual reports.

![Profit per Year/Tot. operating income variation](image)

**Figure 4**

### VI.3.3. Loan losses variations

The third argument stated in favour of using hedging strategies in companies is that the practice of hedging reduces costs during financial distress.\(^{89}\) As matter of fact, one of the most important costs during the current financial crisis in banks is loan losses. This component can be important for banks especially if they are acting in the mortgage market under crisis.

This component is interesting to study in order to see how loan losses vary between stable and unstable period on the financial market. I study this component in comparison to the respective bank’s total operating income. The result is presented in diagrams where each company’s loan losses and total operating income ratio will be presented over a period of time from 2000 to 2007.

VI.3.4. Repo rates and USD exchange rate

There are many different hedging strategies used for interest and exchange rate risk management, so it is important to see how one of the most important rates, the Riskbanken’s interest rate also called repo rate varies over these last eight years. Riskbanken uses the repo rate in order to regulate inflation, so the changes in this rate affect other important components like banks’ interest rate for mortgage loans. Swedish big banks like most of other financial actors in the world have invested in the American mortgage market. It is interesting to study the variation of the USD/SEK exchange rate for these last eight years. In order to include even 2008, I present for both two components, a study of data from the quarter reports for years 2000 until 2008.
VI.3.5 Operating expenses vs. Exchange rate

The exchange rate variations can affect bank’s operating expenses. A position in a currency can lead to losses or earning depending on the market situation and the currency volatility. An evaluation of how bank’s expenses vary in comparison to the variation in exchange rate can give a picture on how effective are the bank’s hedging strategies for the exchange rate variations. In the following figure, I compare how the four banks’
operating expenses vary in comparison to the variation in the exchange rate USD/SEK. Since almost all the four banks have a part of their businesses in the US market and especially in the US mortgage market, it is appropriate to use the exchange rate USD/SEK as a basis for comparison.

![Operating expenses vs Exchange rate USD/SEK](image)

**Figure 8**

### VI.3.6 Cash flows vs. Repo rate

Repo rate is one of the most important parameters that affect other interest rates on the financial market. An increasing or decreasing of repo rate affects mostly banks’ lending and mortgage rates which move in the same position. The risk of an increasing mortgage rate is the increasing of default risk for banks. It is relevant then to study the relationship between cash flows and repo rate variations in order to see how affective is a bank in its hedging strategies against the interest rate risk exposure.
Figure 9
VII. Analysis and Discussion

In this section I present a systematic analysis based on the different topics highlighted in the empirical framework. This part also contains my own opinions about the different results of the empirical findings.

VII.1. Analysis of credit risk and its management in the four banks

Risk is intrinsic and inevitable in banking, so the aim of financial risk management is to manage the risk exposure in such a way that different types of risk are held at an adequate level without jeopardizing the bank’s profitability.\textsuperscript{90}

All four banks are aware of the financial risks that they are exposed to. They all present their organization on how to manage these risks. However, it was difficult to see exactly to what extent and how much money they invest in financial risk management. Almost all the banks give just an overview of the different financial risks that they face and describe what kind of hedging strategies they use to manage those risks. They all emphasize on the credit risk and describe how this risk affects their businesses.

Figure 5 shows a decreasing trend in loan losses for all the four banks until 2006. But after 2006, SEB and Handelsbanken keep loan losses quite stable since Swedbank and Nordea show an increasing of their loan losses. SEB and Handelsbanken are more successful than Nordea and Swedbank in their hedging strategies especially for keeping low their loan losses.

Unfortunately, there were no complete data for 2008. Financial quarterly reports in 2008 show big losses due to credit defaults for both Handelsbanken and SEB. Credit losses have significantly increased for year 2008 for all four banks. It would be very interesting to know exactly how much each bank spent in credit derivatives during the period between 2000 and 2007. This information is important in order to evaluate the effectiveness of the hedging strategies for credit risks used by the four banks. The empirical studies and the theories on hedging strategies show that SEB and Handelsbanken are more successful on hedging their credit losses.

But why both SEB and Handelsbanken which succeeded better than Nordea and Swedbank for hedging their credit losses until 2007 show more credit losses during the half year 2008? Does this depend on passive and ineffective hedging policies against financial distress? The two first quarterly reports in 2008 for both Nordea and Swedbank show less credit losses than SEB and Handelsbanken. Is this a result of active hedging policies from these two banks or their hedging strategies were just more robust to handle financial distress? All these questions may be answered if one conduct deep and structures interviews with the treasury departments and risk managers in the different banks.

Swedish banks compared to other banks around Europe like in England, Switzerland, Germany, Island and more managed to overcome relatively better this financial distress.

\textsuperscript{90} Greuning, Hennie van, Bratanovic Brajovic, Sonja (2003), Analyzing and managing banking risk: a framework for assessing corporate governance and financial risk.
Several analysts claim that this is due to a strong discipline and good risk management in the Swedish banks. Swedish banks experienced a deep financial crisis in the beginning of 1990s, a crisis that shook the entire Swedish banking system. After the crisis, solid regulations and legal frameworks were created in order to hinder a similar situation to occur in the future. This can be a good argument for those who advocate the use of hedging strategies as a tool to limit credit losses in banks.

**VII. 2. Analysis of interest and exchange rate risks and their management**

There is not much information about the interest and exchange rate risks in the four banks’ financial reports. Some information is given but not as much as they give for the credit risk. They all describe shortly in their financial reports their hedging strategies for the interest and exchange rate risks. My impression is that most of the banks do not consider these risks as crucial for their businesses. I could not find any clear information about how Nordea and SEB manage their interest and exchange rate risks. They just describe these risks and show how they measure them. Swedbank and Handelsbanken state that they use interest rate swap contracts in order to hedge against the interest rate risk. Swedbank is the only bank that presents how they use currency interest rate swaps and forwards exchange agreements in order to manage the exchange rate risk. SEB just mentions that the bank takes some currency positions without really specifying what kind of position.

Figure 7 shows how one of the most important interest rate, the repo rate, varies over time. The variation is big depending on which period and especially the period after 2007. The repo rate is the key rate that affects all the other market interest rates.

Figure 8 shows how the USD/SEK exchange rate varies for the last eight years. All four banks operate all over the world and the US financial market is one of the important for them. An unstable USD has to be managed; but which method is the best for it. The use of currency futures contracts, forwards contracts and money market on payables and receivables are some of the strategies that can be use to reduce this risk. Swedbank and SEB present some indices that show that their exchange rate hedging practices have some similarities with what the theories recommend. Nordea and Handelsbanken don’t really present how they manage this risk.

Hedging both interest rate and USD/SEK exchange rate risks is important for banks especially when they operate on the mortgage market and are active in the US market. It would be interesting to see losses in terms of numbers due to variations in interest rate and USD/SEK exchange rate. This information would facilitate the evaluation of hedging strategies used by the four banks for these risks. Unfortunately, this information was not available in their financial reports.

Why the four banks don’t present clearly which policies they use to handle interest rate and exchange rate risks? Is it because they don’t value the interest rate and exchange rate risks as much important as the credit risks? Or, are losses due to interest rate and exchange rate risks so limited that it is not use to spend time, money and resources on these financial risks? Only deep interviews with the risk management teams in respective banks would give a clear answer or more clarification on this issue.
VII.3. Analysis of cash flow and operating expenses

According to theories the use of hedging strategies allows to a company to reduce the variability of expected cash flows which leads also in reduction of risk. By controlling variability of expected cash flows the company gains a competitive planning capability that allows to it to set up activities and particular investments that could have been otherwise impossible.

Figure 3 shows that both Nordea and Handelsbanken keep a quite good control on their cash flows in comparison to their total operating incomes. SEB and Swedbank show variable cash flows in comparison to their total operating incomes. Nordea and Handelsbanken are more successful on hedging the variability in their cash flows since they keep them stable. This can depend on the fact that they have a good planning over their cash in- and outflows and use adapted hedging strategies to handle variability. Swedbank and especially SEB present variable cash flows in comparison to their operating incomes. This can be explained as a failure in their hedging strategies for managing their cash in- and outflows.

However, variability in Swedbank’s and SEB’s cash flows can depend on other parameters such as their exposure in the Baltic countries. For the last years, the two banks made enormous investments in the Baltic countries. Since this region suffers hardly of the current financial crisis, it affects these two banks which earned a lot of money during good days.

A company with a financial risk management strategy can acquire additional cash flows that will secure the company to pursue its investment plans that add value and increase growth to the company. Figure 4 shows that although the current financial distress, all the four banks continue to deliver quite good profits. All four banks succeeded to keep their annual profits high. This can depend on the fact that they keep to increase their operating incomes and try to cut on their operating expenses.

The results in Figures 8 and 9 are almost the same as in figures 3 and 4. Both Nordea and Handelsbanken show a quiet stable variation in their cash flows while SEB’s and Swedbank’s cash flows vary quite a lot in comparison to the variation in repo rate. The two last banks presented fairly weaker financial reports during the last year due to different factors but mostly due to their financial exposure in the Baltic region. However, all the four banks present almost stable operating expenses compare to the exchange rate USD/SEK. This can be considered as successful hedging strategies against their exposure on exchange rate USD/SEK. Still, there are many other factors that can explain the variation in both operating expenses and cash flows. But, it is obvious that the repo rate and the exchange rate are some of the key factors that affect these parameters.

VII.4. The impact of the legal framework on the banks

Both the Basel Committee on banking supervision and the Financial Accounting Standard’s Statement of Financial Accounting Standards (SFAS) affect the way how banks organize their risk management strategies and policies. As the Basel Committee
states in its recommendations, banks should use cautious supervision of their derivatives operations due to the risks implicated in these instruments.

Most the banks state in their financial reports that they almost avoid the use of derivatives in their hedging strategies. Nordea states that from the beginning of 2007, the bank is using a new Capital Requirements Directive in order to implant the Basel II framework. As required by the Basel Committee, the bank has an established Group Executive Management which with the Board of Directors receives internal risk reporting which covers market, credit and liquidity per main legal entity. Even the other three banks have almost similar organizations and structures that control, monitor and establish risks regulations in their entities. Swedbank reports that the Board of Directors and the CEO set up the standards that each business unit and subsidiary follows. The same structure is used by SEB where the Board of Directors establishes the overall risk and capital policy, strategy and limits with reviews and recommendation of its Risk and Capital Committee, which in turn is supported by the work of the Group Asset and Liability Committee and the Group Credit Committee. Handelsbanken states that the person who best knows the customer and the market conditions is in the best position to assess the risk. But there are some signs that show that there is an organization on how financial risk management should be conducted. The bank states in its reports that the responsibility held by those who make business decisions is complemented by checking that no excessive risks are taken in individual transactions or local operations. My conclusion is that almost all the banks follow or try to implement a risk management structure that respects the recommendations of the Basel Committee on banking supervision. The information in financial reports shows which process of measuring and monitoring risks, especially credit risk used by the four banks. However, this information is not so easy to understand by every one. Banks present the different financial tools used for hedging for people with a certain level of understanding and knowledge of financial accounting and instruments.

Do banks do it willingly in order to protect their business? This explanation sounds plausible since this can be an important point in their business strategy.

The recommendation No 105 of the Financial Accounting Standard’s Statement of Financial Accounting Standards (SFAS) states that a company has to disclose information about financial instruments with off-balance-sheet risk and financial instruments with concentration of credit risk. All four banks mostly emphasize on the credit risk when they present their financial risk management in their financial reports. Credit risk is one of the biggest and most expensive risks for banks. It did not take so much time for a problem that started first on the US subprime market to become global and put the entire global economic in deep distress. Reckless financial management of a credit risk and hazardous speculations on the financial market lead to bankruptcy for many banks and financial institutions. Even the interest and exchange rate risks are important and it would be interesting to have a more information about them in the financial reports.

There are many elements that show an increasing interest from banks to use and follow the recommendations and guidelines presented by both the Basel Committee on banking supervision and in the Financial Accounting standard’s Statements of Financial Accounting Standards (SFAS). Banks want to follow the same guidelines and directives for the regulation and reporting of their risk management policies in order to facilitate a comparison between them. Most of the banks are aware of the increasing of the financial
risks on the market and no one wants to stay behind in the application of good management policies.
VIII. Conclusion and Suggestions

In this section I present my conclusion as a discussion in which I give my own opinions about the results that this study shows. I also give some suggestions for the future researches in order to make a contribution for research in this field.

VIII.1. Conclusion

Financial risk management is a complex issue involving several variables and aspects. This practice is hard to evaluate since most of the material found in the different banks’ financial reports do not give any concrete and detailed information of how much exactly the banks invest in their different financial risk management strategies.

The study realizes that the practice of hedging strategies is common in all four banks. In a changing and global financial environment the demand for more complex and sophisticated financial instruments has increased in order to try to handle all kind of financial risks that banks and all other kind of corporations face in their daily businesses.

The study also shows that they mostly follow and try to implement the recommendations from both the Basel Committee on banking supervision and the Financial Accounting standard’s Statements of Financial Accounting Standards (SFAS). These last years, the derivatives market has become very a very lucrative market investing billions. However, this market involves relative high risks under time of uncertainty and financial distress. Derivatives users can experience under crisis, enormous losses that can jeopardize their financial survival. As the study shows it, many banks emphasizes in their financial reports that they are not using derivatives at a great extent. This can be a way maybe to emphasize to shareholders that they are aware of the risks existing in these financial instruments in that they do not want to take hazardous positions on the derivatives market.

There is no doubt that most of the banks and companies in general are aware of the use of sound hedging strategies in their risk management programs. The financial market becomes more and more uncertain and global which makes risk management in general and financial risk management in particular very important and complex for corporations. Corporations’ value is most of the time judged from their production of sustainable expansion, their profits and pay outs to shareholders. Therefore, the need for a sound, efficient and adaptable risk management becomes obvious for corporate managers.

However, this study shows that in order to conduct a deep evaluation of the practice of hedging strategies in the four banks, a deeper study with qualitative interviews with bank officers would be needed. It is almost impossible to find out how much money these banks invest in their hedging strategies. It would be also hard to determine and measure the effectiveness of different hedging instruments since in many cases they are used for both hedging and speculative purposes. To evaluate the effectiveness of hedging strategies when one does not know exactly to what extent the derivatives instruments have been used for risk management or for speculation is not fair. Even if both the Basel Committee on banking supervision and the Financial Accounting standard’s Statements of Financial Accounting Standards (SFAS) recommends to the banks to specify in their
financial reports which derivatives instruments are used for hedging and which are used for speculation, it is still difficult for banks to give out this kind of information easily.

Briefly, my study concludes that due to the fact that the financial market becomes complex, global and unpredictable, there is absolutely a need for companies and especially banks to use sound and effective hedging strategies in their risk management in order to protect themselves from different financial exposures. Still, there are no clear evidences or proofs in this study that can confirm that banks perform better by using hedging strategies since there is a lack of numerical information that can support this statement. As a researcher, I can just speculate and claim that there is so much to lose when the market is not responding as planned. Therefore, financial risk management is still needed in order to limit the financial exposure. Which tools are more efficient than others and to what extent to use the hedging instruments are still good questions for further studies.

**VIII.2. Suggestions for further research**

The aim with my study was to make a contribution for the studies that have been done before in this field. My study raised some important issues that can lead to further research in the future.

I would like to suggest for those who are interested in this field to make a deeper study about the extent to which banks are using derivatives instruments. It would be interesting to know how much banks invest in derivatives instruments for hedging purposes and how much they invest for just pure speculative purposes. However, one should be aware here that it may be difficult if not impossible to get such information from banks because the content of this information may have a strategic purpose. Some shareholders may not be comfortable to know that the management is speculating their investments in hazardous trading even if they know that it can be profitable for them.

It would also be interesting to study how corporate managers react when they face financial distress on the market such as huge credit losses or unstable exchange rates. Are they more affected if they own themselves stock options in the company or if they do not?

My final suggestion is to conduct a deep study of the aftermath of the current financial crisis. It would be interesting to evaluate the effects of this crisis, what bank managers learn from it and which measures to take in other to prevent such happening in the future. The good question here is when we will see the end of this financial crisis? Some say that we are coming close to its end whereas others argue that we had just seen a top of an iceberg and that what is coming is worse. Who is right and who is wrong, only time will tell!
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www.sebgroup.com
Appendix

**Total Operating Income**

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**Profit per Year**

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54
**Loan losses**

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**Repo rate variation**

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4.25
**USD/SEK exchange rate variation**

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