



School of Technology and Society

MASTER DEGREE PROJECT

ENVIRONMENTAL CONCERNS AND BANKING SECTOR IN SWEDEN

Master Degree Project in Finance
Level D, 15 ECTS
Spring term 2007

Elina Rosenfeld
Pierre Douglas Tchape Tchapi

Supervisor: Michael Olsson
Examiner: Louise Holm

ABSTRACT

This study concentrates on two questions – “Should banks take environmental concerns?” and “What is the attitude of Swedish banks towards sustainability?” The theory related to environmental concerns in the financial sector is presented and further on the empirical data describing the situation within the Swedish banking sector is discussed. The empirical data was collected with the aid of a semi-structured interview and offers a real-life example of actions and attitudes of two case banks in Sweden – SEB and Handelsbanken. The aim of this paper is not restricted to presenting and discussing the collected theoretical and empirical data but also to involve the reader in the environmental way of thinking. This text is based on the idea that banks are liable for the indirect impact on the environment and need to acknowledge that some borrowers involve in environmentally harmful businesses.

The research method used for this study is of a qualitative nature, more precisely it is an exploratory research which aims to explain. The semi-structured interview used to study the attitudes of the chosen Swedish case banks, was composed of two types of questions – closed- and open-ended. Special characteristics of a semi-structured interview are the prompts and probes in its structure. These are the approaches to guide the respondent to reach broader coverage and greater depth in his/her answers.

Through the interview results, it became evident that the environmental issues have gained certain visibility within the Swedish banking sector. The given answers pointed towards the impression that maintaining a sound corporate image is the prior concern of a bank and indicated that banking sector in Sweden undergoes external pressure to pursue environmentally friendly activities. It is clear that banks play a major role by financing the continuous damage to our planet, and it is comforting to know the banking sector is undergoing the pressure of becoming more involved in sustainable development. The conclusions and the empirical evidence presented in this study are hoped to give a simplified view on environmental concerns within banking sector.

Keywords: indirect environmental impact, sustainable banking, environmental risks.

TABLE OF CONTENTS:

ABSTRACT	2
1. INTRODUCTION	4
1.1 Background of the Study	4
1.2 Main Objective and Research Questions	5
1.3 Framework and Limitations of the Study	5
2. METHOD	7
2.1 Research Design and Data Collection.....	7
2.2 Qualitative Data	8
2.2.1 <i>Publications and Literature</i>	8
2.2.2 <i>Qualitative Interviewing</i>	9
2.3 Swedish Banks Included in the Analysis	10
2.3.1 <i>Introduction of Skandinaviska Enskilda Banken AB</i>	10
2.3.2 <i>Introduction of Svenska Handelsbanken AB</i>	11
3. THEORETICAL FRAMEWORK	13
3.1 Financial Institutions and Sustainable Development.....	13
3.1.1 <i>Banking Sector and Sustainability</i>	14
3.1.2 <i>The Perception of the Environmental Risk within Banking Sector</i>	16
3.2 Identifying Financial Risk.....	18
3.2.1 <i>Environmental Risk and its Relation to Credit Risk</i>	18
3.3 Relationship between Environmental and Financial Performance	20
3.3.1 <i>Environmental Performance Variables and Determinants</i>	21
3.3.2 <i>Environmental Investments</i>	22
3.3.3 <i>Credit Risk Exposure</i>	24
4. EMPIRICAL STUDY OF TWO CASES IN SWEDEN	26
4.1 Overview of Interview Questions	26
4.2 Summary of Interview Results.....	26
4.2.1 <i>Responses of SEB AB</i>	27
4.2.2 <i>Responses of Svenska Handelsbanken AB</i>	28
5. CONCLUSIONS	29
6. EVALUATION OF THE STUDY	32
REFERENCES AND BIBLIOGRAPHY	33
ATTACHMENTS	38
Attachment 1: Semi-structured Interview	38
Attachment 2: Interview Details	40

1. INTRODUCTION

1.1 Background of the Study

The present study links environmental issues with the financial performance of banks. The ideologies behind sustainable development (SD) in regards with financial institutions (FIs) are observed and analyzed based on available topic-related publications, literature and other available material. This text is written with the goal to involve the reader in the concepts of ecological economics and green finance, and to promote a deeper understanding of the environmental issues in connection with FIs.

Evidence of financial risk associated with poor environmental performance is presented in various studies, which have found a positive correlation between environmental performance and financial performance (Hamilton 1995, Hart 1995, Blacconiere and Patten 1993). More than ever before, FIs are realizing that taking environmental risk into account makes good business sense. A strong example of such growing worldwide awareness are the financial industry guidelines, known as the Equator Principles, which are adopted by major FIs in different parts of the world in order to assess and manage environmental and social risk in project financing.

Many reasons, such as environmental liabilities, can evidently hinder company's market value. Poor environmental practices of a bank's customer may reduce the value of collateralized property and also increase the likelihood of fines or legal liabilities that lower a debtor's ability to repay the loans taken. A company borrowing funds may incur a legal liability to clean up a contaminated site that literally bankrupts them. These preceding points may prevent a lending institution from recovering the funds, for instance if the affected site is part of the property used as collateral to the loan.

Banks, alike any other businesses, are liable for environmental damages caused by their operations though it might not be the primary concern of most banks. It is evident that the direct impacts of banking activities in comparison to manufacturing industries generate a somewhat negligible amount of pollution or environmental harm. In present study the

emphasis is put on observing the environmental liability of the banking system, through debt and equity transactions. We discuss the project financing decisions where environmental effects are present, thus concentrating on the indirect impact of the banks on our environment.

1.2 Main Objective and Research Questions

There are clearly two defined research questions – **“Should banks take environmental concerns?”** and **“What is the attitude of Swedish banks towards sustainability?”**

The authors will first present the theory related to environmental concerns in the financial sector and further on discuss the empirical data (i.e. facts and observations gathered during research interviews) describing the situation within the Swedish banking sector. The empirical data was collected with the aid of a semi-structured interview and it gives a small glimpse at the reality of actions and attitudes within FIs in Sweden. The interviews assisted in bringing the topic to life. The aim is not only to present data used for the analysis but also to involve the reader in the environmental way of thinking.

The thesis explains how environmental risk can be defined or where to look for it, as it is often hidden or under-valued, which makes it hard to quantify. The objective is to answer the defined research questions and through that give arguments as to why FIs should consider environmental issues in their investment activities. The present study is based on the idea that FIs are liable for where their funds are invested and it aims to acknowledge that some borrowers have a negative impact on the environment, thus destroying the world we live in.

1.3 Framework and Limitations of the Study

This paper is structured in a way that helps the reader to sketch the background of the environmental issues within finance before going into specific aspects. The framework of the study consists of theoretical description of the chosen subject, covering the historical as well as current facts collected from various sources and partly relying on some familiar financial

equations. The interviews bring added-value to the analysis, as they allow presenting some real life examples and prove that the need for taking environmental concerns is partly recognized. This extensive topic has been narrowed down to the problem explained earlier, and the conclusions are limited to the posed questions. The authors restricted this paper to the theory and discussion of empirical data, and not aimed to create new financial models to calculate risk as this would have taken the analysis to the whole different direction. Thus the limitations are made to discuss just two questions regarding environmental concerns, within one area – banking sector in Sweden. Also the Swedish banking sector is limited to observing two chosen case banks, which both acted as a vital source of data for the present analysis. Covering more cases would have been barely realistic and time consuming, and also proved difficult as FIs in general were not particularly willing to touch the subject of the environment. These issues are discussed further on in the text, especially when making conclusions.

Following this chapter, the reader is introduced to the method of data collection (Chapter 2) used for this research. It is important to see how the information is gathered in order to understand the connection between the given answers and the research questions. Further on, the reader is briefly taken through the theory of the chosen thematic field (Chapter 3), including the main concepts. The theory helps to sketch the base for the analysis and shows what initiated the authors' interest for it. Chapter 4 discusses the questions used in the interview and summarizes the results. This part of the text is more explicit about the data collection method, giving reasoning as to how and why the interview questions were formed and the way they assisted in conducting the discussion. The answers of both case banks in this part are the pure collected data, not yet analyzed. Finally, Chapter 5 makes conclusions, which show what has been derived from the entire gathered information, followed by the last Chapter 6 which evaluates the process of work of this study.

2. METHOD

2.1 Research Design and Data Collection

The research methods are procedures with the aim to solve problems. Selecting the appropriate method requires a good understanding of the research problem. Various approaches can also be combined, as had been done in this study, in order to complement each other and deepen the analysis.

The design can vary between the exploratory, descriptive and causal. Exploratory research aims at explaining a chosen hypothesis. It does not look for the reasons to reject or accept it, but rather tries to detect patterns. This approach is relevant when the problem is not well understood. The choice of the research design is dependent on the problem that needs to be solved. If the problem questions are not well formulated, the empirical study will lead to misguided conclusions. This is obviously an undesired result.

The present thesis aims to give reasoning for why FIs, and banking sector in particular, should take environmental concerns in order to diminish its indirect impact on the environment. Previous to choosing the research design, it has been established that there is some evidence, of such indirect impact on the environment derived from project financing by FIs. Moreover the issue has been discussed in depth in the available literature as well as in various publications. Since the problem is evident but not understood in full, the exploratory approach is the most suitable for the present thesis. Describing the evidence, reasons and analyzing the attitudes towards the existing problem is the main focus of this work.

There are some key differences between qualitative and quantitative data analysis, as Ragin (1987, according to Creswell 1998) describes - quantitative researchers work with a few variables and many cases whereas qualitative researchers rely on a few cases and many variables. The mentioned ways of data collection do not necessarily exclude each other, but quite on the contrary, using both can advance a better understanding of the research matter. Creswell (1998) advises to first look at the problem from the quantitative perspective before commencing a qualitative study.

2.2 Qualitative Data

Due to small and specific scope of the present analysis, preference was given to qualitative data rather than quantitative one. Ghauri and Grohaug (2005) defined qualitative research as an exploratory type, which is characterized as a research with only partly understood problem. According to these authors, the main purpose of this particular approach is to obtain understanding. In the present thesis, the aim is to unfold empirical evidence of the attitudes and the resource allocation decisions within Swedish banking sector. The main purpose of the chosen approach is to achieve a better understanding; thus qualitative research fits best the purposes of this work. This choice allows studying the defined problem with a greater attention to individual details and gives a deeper view of the issue. Some limitations in terms of cases to be covered in this study had to be made.

Only two banks operating in Sweden were chosen to represent the sector, based on the qualities which were considered relevant for this analysis – the fact that a case bank is of Nordic origin, it is of a major size and it is well known among public. Both case banks fulfilled the criteria. These particular banks, unlike a few other Financial Institutions in Sweden, expressed their immediate willingness to participate in the study.

2.2.1 Publications and Literature

The literature used as a base for the theoretical part of the study, was carefully chosen with the focus on the themes relevant to the analysis. Books related to SD, finance and investments, greening of finance, environmental concerns within banking sector and such, were particularly helpful in making main assumptions and assisting with the problem formulation. There are no accurate statistics available to public concerning the internal decision making of individual banks and the way to gather somewhat valid information regarding the sustainable project financing is by interviewing the actors of the banking sector. Due to these unique challenges, the available literature offers nothing more but a general overview of the issue.

The information available online is utilized as a complementary channel for discovering up-to-date research publications, interviews, professional analysis and such, which might take some time to reach their place in the literature. In the process of conducting this research, the authors have partly referred to some recent online publications.

2.2.2 Qualitative Interviewing

Qualitative interviewing seemed a natural choice of the complementary approach, as there was a need to create discussion around the specified topic. Qualitative interviews are conversations in which a researcher gently guides a conversational partner in an extended discussion (Rubin & Rubin 2005). This type of interviewing is of an in-depth nature, because the interviewer is trying to explore the motives and the reasons behind certain things, such as – environmental concerns and evaluation of risk, in this case. It does not only help to understand the issue, but also to shed new light on a problem. When conducting interviews, it is important not to misguide the conversation nor influence it by individual assumptions. In the delicate subject such as the one of this analysis, any valid information given by the interviewee is extremely valuable.

An important aspect to think of when preparing an interview is the type of questions applied in it. The semi-structured interview used in this study is composed of two types of questions – closed- and open-ended ones. Open questions offer space for a broader answer, based on personal opinions and views; as opposed to the closed questions which aim at getting the respondent to either agree or disagree with the interviewer's statement, or choose among given answer options (Drever, 1997). In the latter type, the interviewer can influence the possible outcome as well as restrict the answers from taking a new, unexpected perspective. Semi-structured interview seems to perfectly match the focus of the present analysis because applying both question types allows creating discussion as well as getting some specific information on certain issues.

Special characteristics of a semi-structured interview are the prompts and probes in its structure. These are the approaches to guide the respondent to reach broader coverage and

greater depth in his or her answers. Simply put, prompt and probes help people say what they want to say (Drever, 1997). Prompts are used to help people add information to their response which they know but have not yet added and probes aim at getting clarification or further explanation on the already given answer. However, it is important that the prompts do not give incentives for the respondent to come up with the information which is in fact not valid and the probes should not be presented in a way that would encourage defending or justifying the already given answer.

When searching for the relevant questions, the authors relied on expressions and wording familiar to the respondents working in banking sector and those responsible for strategic decisions. Ensuring the mutual understanding was emphasized by taking in consideration these important aspects, and helped to avoid misconceptions.

2.3 Swedish Banks Included in the Analysis

To create an in-depth view of the environmental issues within a banking sector, the authors chose to study the attitudes of Swedish banks in regards with the subject. This way the research has gained added-value, presenting reasoning for not only why environmental risk could be considered in project financing, but also introducing the reader to the reality within the banking sector in Sweden.

The two major banks were chosen as cases for the present analysis – Skandinaviska Enskilda Banken AB and Svenska Handelsbanken AB, further shortly referred to as – SEB and Handelsbanken. The choice of cases was based on the significant size of both corporations, and hence they were assumed to have gathered some experience in the environmental issues. Before discussing the interview questions and given responses (Chapter 4), the authors introduce the case banks by giving the reader some descriptive background information.

2.3.1 Introduction of Skandinaviska Enskilda Banken AB

Our first case, SEB, was formed in 1972 after the merger of Skandinaviska Banken and Stockholms Enskilda Bank. SEB is a North-European financial group for private and

corporate customers, and various institutions. SEB's activities do not only include banking services but also a large amount of insurance operations; it is the largest broker on the Nordic and Stockholm Stock Exchanges. The bank is represented in about 20 countries and has gained a strong position on the private market locally (Sweden) as well as in Baltic countries (Estonia, Latvia and Lithuania) and Germany. In these countries the group has 600 branches and about half of its operating profit is generated outside Sweden.

SEB puts main emphasis on its customers; the bank provides financial services and handles financial risks for all its customers, both private and companies. The strategy is to be chosen by customers within the markets in Northern Europe and to lead in financial performances. SEB aims at being - "More local than international banks, and more international than local competitors". The group's latest financial goal is to reach highest ROE among its peers and at the same time achieve sustainable profit growth.

When it comes to environmental issues, SEB wants to take part in SD. The group's activities are based upon gaining the long-term confidence of all stakeholders - customers, employees and society. To achieve this, SEB acknowledges that SD must have a strong role in the daily work, in terms of ethical issues that have a direct connection to the group's stakeholders. When talking of credit policy of SEB and its environmental aspects, the set internal regulations express the bank's role and responsibilities as a creditor. The credit policy includes environmental issues and other aspects of the SD. The environmental policy of SEB pays special attention to environmental factors. The group has signed the UN and ICC's (International Chamber of Commerce) environmental documents and meets the requirements of the sustainability index FTSE4Good.

2.3.2 Introduction of Svenska Handelsbanken AB

Handelsbanken is a universal bank with 615 branches worldwide. It operates in Norway, Finland, Denmark, and Great Britain with additional units scattered all over the world. The bank provides services to the whole banking area and it is viewed as one of the strongest bank in the Swedish market.

As any business unit, Handelsbanken has a number of set goals that provide enough of strengths to withstand competition. Strengths which are the result of high profitability over the past years, have given the bank the opportunity to position itself as the first universal bank in Europe. Handelsbanken has succeeded to lower loan loss ratio for many years now. Decentralization of power, control, management and decision has benefited the company and there is virtually no difference between headquarters and any of its branches. The business philosophy of Handelsbanken is specially focused on customers and differentiation within products in a long term perspective.

Handelsbanken works towards SD by taking measures that aim to minimize negative impacts of the corporate operations on the environment. Though the bank considers the impact of its operations limited to the environment, these issues are vital for the welfare of the organization. Handelsbanken has broken down its environmental impacts into two groups - direct impacts (i.e. transportation and use of energy) and indirect impacts, which are emphasized in this study. Indirect impacts of Handelsbanken are resulting from services and products offered to its customers. When granting credits, offering savings in mutual funds, the focus is on environment and ethical profile. A number of policies are implemented within the group to fight activities that affect the environment. Environmental issues are an integral part of the induction program for the new employees, and are included in the bank's training for credit operations. Environmental threats of projects sponsored by the bank are well monitored and assessed. A number of agreements that comply with sustainability in business are signed by Handelsbanken - UNEP- Banks and the Environment and the ICC Business Charter for SD, among others.

3. THEORETICAL FRAMEWORK

3.1 Financial Institutions and Sustainable Development

The institutions which act as channels for directing the funds between the fund suppliers and the fund users are called Financial Institutions (FIs). This function is described as the indirect transfer of funds because the money is not flowing directly from lender to borrower, but the transaction is made through an intermediary. Although indirect transfer of funds is the essential function of FIs, they have several complementary functions built around it. In the economy today there is a large number of different FIs; such as – commercial and savings banks, insurance companies, mutual funds and credit unions. These institutions might be of different structure, size and performance. If there were no FIs in the economy, the transfer of funds would work directly from the excess funds owner to the excess funds user. This also implies that the flow of funds in the economy would be considerably lower compared to the world with FIs in it, because the fund suppliers would not have enough time or resources to monitor their lent funds in order to avoid the default. (Saunders & Cornett 2006)

FIs have an important economic function and thus impact not only the economy, but also the world that we live in, i.e. our environment. Although the impact can be seen as direct or indirect, or as a combination of both, it does exist, and the authors find the discussion of the relationship between sustainability and the activities of these institutions inspiring. Many FIs today implement environmental strategies or follow some established standards. However, more concern is raised over the less visible impacts caused by lending decisions of FIs rather than over the direct impact caused by e.g. energy consumption or produced waste of the operating offices.

To develop the discussion on the topic, it is necessary to briefly overview the legal SD standards within the borders of European Union as well as some global principles developed for the financial sector.

3.1.1 Banking Sector and Sustainability

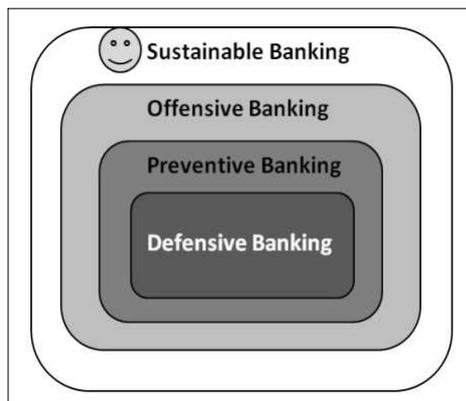
There are two main tools used by EU countries to manage environmental performance of all types of organizations. One of the tools is developed as EU's own voluntary instrument when as the other has a broader geographical application. Eco-Management and Audit Scheme (EMAS), belonging to the schemes developed by EU, has been available for companies since 1995 (EUROPA, European Commission). The second of the two, is a globally accepted tool ISO of International Organization for Standardization. The creator of this scheme is a non-governmental organization which is the largest developer of standards in the world. It is formed of the national standard institutes of over 150 countries, which have jointly created several internationally recognized standard groups (The International Standards Glossary 2005).

As mentioned earlier, the banking sector has an image of a relatively clean sector in terms of the direct impact of its activities on the environment. An example of global SD activities closer related to the financial sector is the UNEP Finance Initiative (UNEP-FI), as part of United Nations Environment Programme (UNEP), which is considered a unique public-private partnership between the UN and the financial sector. UNEP-FI's participants represent a wide range of FIs, such as - investment banks, commercial banks and insurance companies (UN 2005).

Today, several banks have integrated environmental aspects into their various activities - commercial banking, asset management and investment banking (Hugenschmidt et al 1999). The Equator Principles (EP) is another evidence of banks, working in the project finance sector, seeking to develop a set of environmental and social policies to be applied across all industry sectors. In 2003, the first set of EP were launched and adopted by several FIs. The EP is the initiative of a number of banks in cooperation with World Bank Group's International Finance Corporation (IFC). Participants that adopt the EP need to assess, mitigate, document and monitor the credit risk and reputation risk associated with project financing. (EP 2007)

The figure below represents the four steps of a bank’s transformation towards sustainability (Jeucken 2001). The black color represents a bank without any environmental incentives. Movement towards the outer circle represents gaining awareness (e.g. due to external regulations and pressures), up until the point where the SD ideology is well understood and implemented within the organization.

Figure 1: Typology of banking and sustainable development. (Jeucken 2001)



While the first two phases, defensive and preventive banking, focus on costs with the aim of achieving savings through production process and techniques, the offensive banking concentrates on profit and marketing. New opportunities in the market place (specific products and new market) have caused many banks to implement environmental technology. In the last stage of the process, all bank’s activities are sustainable, i.e.

white symbolizing purity. In contrast to offensive banks, sustainable banks are ambitious to operate sustainably in every respect.

The case of UBS AG (Switzerland), a Swiss banking group, helps to illustrate the way environmental consideration can lead to new business opportunities and sustainability.

Bank’s activities in relation with the environmental issues emphasize the business with customers, as presented in the figure below.

Figure 2: Banking and the Environment. (Jeucken 2001)

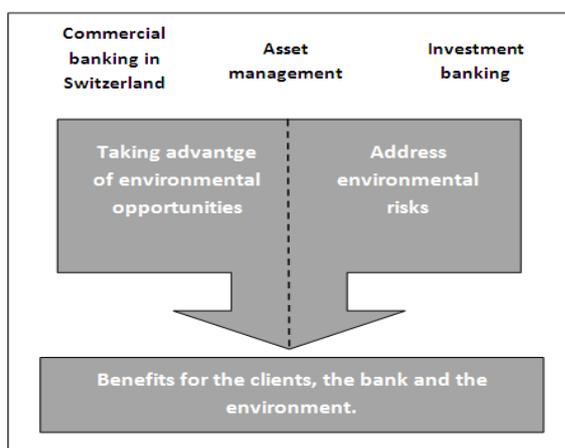


Figure 3 presents the activities of the banking sector, which are - commercial banking, asset management and investment banking. Investment banking activities, as mentioned previously, cover issues of securities, trading, corporate finance etc. Corporate finance provides financial advice on mergers, acquisitions, bid defenses, restructuring and disposals, as well as capital

services to major companies, governments and other institutions (Ross et al 2005). For instance, Initial Public Offerings (IPO) and Equity Underwriting are both thoroughly assessed from the environmental perspective, before pricing and placing potential investors (Hugenschmidt et al 1999).

3.1.2 The Perception of the Environmental Risk within Banking Sector

Although being hidden under other financial risks, environmental risk is, to some extent, taken into account by FIs in connection with lending decisions. The concern has clearly been triggered among banks as well and implementation of policies and regulations to mitigate environmental risk are evolving. For instance, the central bank uses monetary policy and tools to control the interest rate movement within the economy which affects FIs' cost of funds and returns on assets (Saunders & Cornett 2006). Jeucken (2001) feels that the environmental problems connected to the seemingly friendly products are caused by their users – the consumers of bank products. The writer adds that from the financial sector's point of view the external environmental care may seem as interference in their activities and those of their customers, however the pollution caused by the companies financed by FIs should be viewed as the core responsibility of lenders, not solely of borrowers.

Case (1996) and Wanless (1995) define the environmental risk as a formation of three components, as viewed by lenders – direct, indirect and reputation risk. Direct risk is caused when a bank has a direct control over a borrower, i.e. takes over its operations or participates in decision making; or when a bank accepts collateral which is subject to environmental risk (Thompson 1998). There are unfortunate cases, particularly in developing countries, where a bank has incurred direct legal liabilities for cleaning up contaminations caused by insolvent borrower. Indirect risk is the consequence of a borrower's inability to repay a loan due to a poor decision making causing environmental damage. Indirect risk can also be considered an enhanced credit risk, as it may increase the credit risk in the investment made by a FI (Thompson 1998). Reputational risk is vital to any company, not just FIs, which compete in creating an attractive and positive corporate image. New economic theories call it 'a hostage in the hands of the organized consumer', a vital form of capital (Angus 2003). Bank's reputation can be drastically affected by badly managed environmental issues, if they become

public and criticized. This awareness has led some banks to mitigate reputation risk by adopting a policy that forbids financing businesses or projects suspected to be environmentally harmful, although this is regarded as classic niche marketing exercise (Davis 1993, Harvey 1995, Kitson 1996).

Thompson (1998) argues that reputation risk is different from the direct and the indirect one, in the sense that it can also be present when there is no credit exposure, but any transaction between the bank and the customer can be seen partnership in crime. Whilst it does not affect present value of the existing loan directly, it may affect bank's ability to generate future customers. The reputational risk is the most difficult to identify and quantify financially.

The following table presents potential environmental risks faced by the banking sector. These risks are derived from environmental performance of current and potential debtors who are potentially risky. Vaughan (1996) and Rutherford (1994) suggested the classification presented in the table below.

Table 1: Potential Environmental Risk for Banks.

<ol style="list-style-type: none">1. Liability from the banks' own operations.2. Commercial lending and credit extension (debt) risks<ol style="list-style-type: none">a. Reduced value of collateralized property<ul style="list-style-type: none">▶ Cost of cleanup is capitalized into property value▶ Property transactions may be prohibited until cleanup occursb. Potential lender liability<ul style="list-style-type: none">▶ Cleanup of contamination on collateralized property in which the bank takes an interest▶ Personal injuries▶ Property damagesc. Risk of loan default by debtors<ul style="list-style-type: none">▶ Cash flow problems due to cleanup costs or other environmental liabilities▶ Reduced priority of repayment under bankruptcy3. Investment (equity) risks<ul style="list-style-type: none">▶ Effect of environmental liabilities on value of companies in which investment banks or their clients own equity▶ Upstream liability if the bank is a principal or general partner or owner
--

These environmental risks are divided into sub groups which affect the bank's assets, equities and liabilities. The first and the last group affect the liability operations of banks while the second affects bank's assets.

3.2 Identifying Financial Risk

First, this chapter unfolds the concept of risk in general. Further on, the major risks faced within financial institutions are explained, continued with environmental risk and its relation to credit risk, thus also its relevance to banking activities.

Risk is defined as a situation involving exposure to danger. Vaughans (1999) describe it as a condition with a possibility of an adverse deviation from the desired outcome that is expected or hoped for. Thus, this implies that risk is formed of the potential opportunities between the goals of an individual or an organization, and the goals that are actually realized. The management decisions are typically focused on the desired outcome. Choudhury (2003) divides standard types of risk in two groups – pure/speculative risk and diversifiable/non-diversifiable. The first one refers to either a scenario with pure loss or alternatively a scenario with equal possibility of losing or gaining. The latter group is based on financial approaches of dealing with risk, and grouping it accordingly; the risk can either be diversified away or not.

Investment returns, the major concern of FIs, are always associated with risk. Taking more risk is expected to give more return. Saunders and Cornett (2006) list various risks faced by FIs – interest rate risk, market risk, credit risk, off-balance sheet risk, technology and operational risk, foreign exchange risk, country risk, liquidity risk, and insolvency risk. Banks face risks virtually in all daily regional, national, or international transactions.

3.2.1 Environmental Risk and its Relation to Credit Risk

Environmental risk is often a complex and technical issue which can be understood and perceived in different ways by different people or organizations. Environmental concerns most of the time attract a number of stakeholders, as their activities or wellbeing are either directly or indirectly affected. For instance, a building company investing in an area where

the nature is being affected (destruction of forests, extension of species, disruption of the food chain, etc), might awake a number of specific stakeholders. The stakeholders group can include – the building company administration and employees, community residents, legislators for the area, the lender of the project’s loan, and others.

According to Anex and Englehardt (2001), environmental risk is difficult to assess quantitatively. These authors introduced an application of a predictive model to environmental accounting in a subject related journal. The difficulty of defining environmental risk is due to complicated physical processes that underlie environmental accidents and their infrequent occurrence. In their article, Anex and Englehardt (2001) speak of two types of environmental cost; one is caused by environmental accidents and the other is contingent upon the occurrence of these accidents. Examples of such costs are increased insurance rates due to increased risk incurred by a company and interruption of the supply chain which has severe consequences on the overall production. Failing in identifying these risks, from the point of view of a FI which admits loans or insurance to such company, will also lead to the incorrect perceived riskiness of a particular borrower.

But how can a bank evaluate environmental risk without the sufficient information received from the borrowing firm? Often environmental costs are hidden and the information about them is unavailable in the company. The way to quantify them is to conduct “full cost” accounting, which would include the environmental aspects in the risk evaluation as suggested by Anex and Englehardt (2000). These techniques are meant to capture the costs incurred due to environmental risks and benefits that are overlooked in standard accounting. However, the characterization of these risks is challenging and in many companies they are managed in the form of procedural manuals and rules.

Credit risk arises from the possibility that the borrower might default and not be able to repay the loan. While credit risk always exists, FIs have worked out ways to minimize risk taking. Screening and monitoring customers, i.e. the loan applicants, is a major responsibility of FIs because it is clear that the organizations financing projects would like to lend out to creditworthy customers. Risk management has a direct impact on the overall risk and return of the asset portfolio held by a financial institution. However the risk is most often not only dealt with by choosing the right investments but by diversifying the portfolio, i.e. choosing a big enough amount of different investments which correlate with each other.

Credit risk contains two components – firm-specific risk and market risk. Firm-specific risk is also referred to as idiosyncratic or unsystematic risk; it is the risk of default due to the specific projects undertaken by a borrowing firm. (Saunders & Cornett 2006) Diversification reduces this risk, in some cases to zero, which certainly could influence the idea that the possible environmental damage caused by a single project or a single activity of a borrower does not concern the lender, as the risky aspects of it can be diversified away.

The other element of credit risk is market risk, which is often called systematic risk. Both names refer to the entire market, thus this type of risk affects all borrowers in the economy. Economic recession could be the best example to describe the kind of risk all the borrowers are exposed to. (Bodie et al 2005) Although in the case of the unsystematic risk the diversification can possibly reduce the importance of the environmental issues, it is clear that when it comes to default of the entire economy, there will be nothing to prevent the loss.

Financial risk can be dealt with either by hedging (i.e. utilizing the stocks and the correlations between them), or by using derivatives. The well known financial model of diversification is the Capital Asset Pricing Model, generally referred to shortly as CAPM. Hedging means selecting financially risky assets that are in perfect correlation with each other, reducing each other's risk levels.

3.3 Relationship between Environmental and Financial Performance

The influence of environmental issues on financial performance has been a heavily discussed topic for many years within business organizations as a whole and financial companies as it is discussed here. Palmer et al (1995) suggested that the traditional perspective on environmental performance views environmental expenditures, whether on waste treatment and removal or pollution prevention strategy, as a drain on firm resources and a commitment of funds to non-productive uses. Furthermore, others will say that environmental care like pollution prevention, environmental friendly technology, and the associated re-evaluation of a firm's production processes creates opportunity for the firm to strategically alter production while translating innovation into competitive advantage. Cohen and Shameek (1997) argued that business units with sound environmental records are more attractive investment targets

due to the lower perceived compliance costs and liabilities. This also justifies the fact that nowadays the public is easily convinced to trust a business unit that presents itself as environmentally aware. Besides the environmental issues mentioned above, they can affect indirectly banking institutions. The credit risk is more likely to materialize when the borrower is potentially unable to repay the loan because of environmental damages caused by its operations.

Some criticism has emerged regarding the correlation that exists between environmental issues and financial performances when it comes to managing a business such as a commercial bank. According to some opinions the relationship between the two does not demonstrate that environmental improvements cause financial gain or that they control characteristics of an underlying institution, such as management quality, which effects both environmental and financial performance. However, Koehler and Cram (2001, according to Wagner & Wehrmeyer 2002) argued that, environmental issues affect the financial performance of a business entity in three ways:

- Portfolio analysis: the motivation behind it is the profitability obtained while investing 'green',
- Environmental events may have some impact on the stock market returns (abnormal returns) for example of the relevant firms (environmental performance variables), and
- Cross sectional analyses that examine the relationship between firm specific environmental performance characteristics and the firm market value or financial accounting.

3.3.1 Environmental Performance Variables and Determinants

Qualitative and quantitative environmental performance data should be compiled in order to be used as variables. It is advisable for a given company to conduct a survey and monitor the functioning of new items or materials bought to run the business. For example, the variables may be derived from electricity, paper, water and energy consumption of a FI. Environmental threats caused by the bank's customers should be included in the case of the loan repayment being affected by the threat.

If environmental performance has no statistically significant impact on holding period returns, or investors perceive environmental improvements as costly, why do corporations improve environmental performance within their business units, and pursue environmentally sustainable business strategies? What is the catalyst behind voluntary pollution reduction efforts and corporate policy committed to environmental sustainability, if a good environmental performance is the result of increasingly costly production process alterations, innovative product/production design, and continuous monitoring efforts?

This can be explained by managers of FIs (and other businesses) preserving the long term health and viability of their companies, when adopting corporate policies and practices in the interest of shareholder maximization while having the information about the relationship between environmental performance and long run earnings unknown to shareholders.

3.3.2 Environmental Investments

Environmental investments are thought to often have a longer payback period than other types of investment, because the relevant benefits and losses often accrue further in the future. This is not always true, because investments with short payback period in some industries do not give same results. Financial indicators with a focus on long term outcomes are essential, especially for assessing potentially high contingent liabilities and expected high future benefits beyond the payback period. Moreover, managers of FIs need to be aware of possible long-term environmentally induced financial impacts. When calculating long-term financial indicators, managers easily get a general idea of future environmentally induced financial impacts in advance.

Two long-term indicators have been considered and discussed within the context of environmental accounting

Net present Value (NPV)

$$NPV = \sum_{t=0}^n \frac{F_t}{(1+r)^t} \quad \text{Equation (3.1)}$$

F_t is the net cash flow (cash inflow minus cash outflow) in time period t , r is the discount rate (the opportunity cost of capital), n is the number of periods.

When environmental issues are considered important, it could be argued that the concept of discounting is fundamentally unethical because a lower value is assigned to the needs of future generations, as represented by the discounting of future cash flows. An option represents a right but not an obligation, to acquire expected future cash flows by paying the investment outlay and can thus also be defined as the right not to undertake a follow-on investment. Hence, option value takes the NPV as the strategic value of an investment into account.

Tamminen (1996) writes about the pros and cons of discounting.

- Pure time preference indicates that people value close events more than the distant ones.
- Risk and uncertainty, are associated with the long-term future satisfactions because what people want in the future is unknown. However, the basic needs preferences remain, such as – clean air to breathe or clean water to drink.
- The future standard of living is assumed to be greater, thus the value of goods smaller. The opposite argument is that in many countries there is no reason to expect the standard of living to rise; or alternatively, if everything is consumed today why would life be better tomorrow?
- The opportunity cost; the second best alternative is left aside. This presumes that one knows which option is best, in which case the discounting becomes useless. The best alternative is expected to be the best riskless investment. But not many investors actually choose the risk free one.

- The environmental effects are most often irreversible, thus they should not be discounted. On the other hand, these effects can be considered as disadvantages to the future generations and if they are major, they will grow faster than discounting effect.
- Today's preferences (based on individual needs in the market) value incorrectly the preferences of the future.
- And finally, lowering the discounting rate increases the investment activity, i.e. involving more in environmentally harming activities.

3.3.3 Credit Risk Exposure

In order to evaluate credit risk within banking system, the internal ratings-based (IRB) model can be applied. This model allows each bank to hold an internal ratings model to classify the risk exposure of each of its activities, whether or not it is on or off balance sheet. To use IRB approach, the required output should be estimated over one year period, probability of default (PD) and exposure at default (EAD) for each transaction are also estimated. Additional independent estimates for the loss given default (LGD) and maturity (M) are needed to implement the IRB approach. For example, when a bank lends money to a client who is subject to environmental risk exposures, that is environmental risks attached to the client operations may delay or cause a non repayment of a given loan, the bank has to compute the risk weight associates to the loan by incorporating its estimate of PD, EAD, LCD, and M obtained from the internal ratings model and its own internal data system. Expected losses upon default and the risk weight on a loan that is subject the environmental risks exposure can be calculated as follows

$$ExpectedLosses = PD \bullet LGD \quad \text{Equation (3.2)}$$

and

$$RW = \left(\frac{LGD}{50} \right) \bullet BRW \quad \text{Equation (3.3)}$$

where PD, BRW, and LGD are respectively – probability of default, benchmark risk weight, and loss given default. EAD is equal to the nominal (book value) amount of the exposure

outstanding in case of on-balance transactions. In the case of off balance sheet activities, the EAD is calculated while using the BIS.

4. EMPIRICAL STUDY OF TWO CASES IN SWEDEN

4.1 Overview of Interview Questions

The interview was conducted with the aid of two types of questions – closed and open-ended. This semi-structured approach has given interviewers the freedom to guide the discussion in a right direction while not losing the initial designed structure. The questions posed to the respondents were grouped in three themes – environmental tools used within a bank, lending and environmental risks, and credit assessment approaches. Each theme was first approached with an opening question and supplemented further with prompts and probes, with the aim to deepen the conversation on the subject. Both possible outcomes, in this case either the affirmative or a negative answer, were taken into account in the interview structure created specifically for this study. The authors had prepared supporting sub-questions for both of the outcomes, to keep the conversation flow active without losing the main focus. The interview structure is available in the Attachment 1 of this thesis.

In general, the structure proved to be rather efficient and has given some interesting results for this thesis. Keeping in mind that banks have the right and obligations of secrecy, the information retrieved was as specific as possible considering the circumstances.

4.2 Summary of Interview Results

In order to diversify the results and to widen the perspective on the true situation among the banking sector in Sweden, the authors had chosen to interview the decision makers from two different organizational hierarchy levels. In case of SEB, the respondent represented the headquarters of the organization, when as the Handelsbanken case was viewed from the local perspective by interviewing the representative of a local branch.

To begin with, the authors will summarize the responses given by SEB, followed by those of Handelsbanken. In the next chapter the collected empirical evidence will be compared and evaluated, and further utilized for the final conclusions of the research.

4.2.1 Responses of SEB AB

When inquired regarding environmental tools used by SEB, the interviewee explained that the bank is following the ISO 26000 very closely, however the organization is not applying the standards directly. SEB considers important to find something more than just joining the guidelines, therefore the bank closely follows the development and applies the guidelines in their own way. In practice, the ISO standards support the way to conduct business, and they are present in the daily financial activities. The SEB representative feels that on the long run it does bring profit and prevents the risks, however the risk-preventing aspect is a bit underestimated. The bank has a Corporate Social Responsibility (CSR) committee, which looks after activities and their impacts within the thematic field and follows the set goals. CSR committee is formed of representatives from all the divisions, so that the business is led in the right way. A possible failure in one or more areas is followed up in order to make corrections and betterments.

Moving on to the lending and related environmental risks, SEB has certain requirements, including the environmental ones that a customer needs to fulfill before being granted a credit. Of course, environmental requirements might reduce the amount of applications because some of them are turned down based on reasons such as environmental risk, among others. The bank has signed the Global Compact and therefore is obligated to take these environmental issues into consideration and discuss them closely prior to admitting loans. So far this has not affected the growth of customer base, although it might to some extent reduce the loan application amount, as this type of financing might not be chosen by some customers. However, the environmental concerns have not had an evident negative effect, which would result in losing customers. Most of credits admitted by SEB, are to fair countries and fair counterparts.

According to the SEB interviewee, credit approval is strongly linked with the environmental risk assessment, especially in heavier financing projects. SEB, as part of the financial community, considers important to show that the bank cares about these issues; this attitude towards the greening of finance reduces losses and improves the corporate image, as it has

shown in the past that the things considered as being alright today might not be that in the future. The concern about the climate as such, is concern of tomorrow and is therefore linked to the credit approval. The long-term perspective is important in terms of the payback.

General criteria for loan allocation at SEB include many risks - country-, financial-, CSR- and environmental risk. On overall basis, SEB does not have a standardized formula for granting a loan. The bank is following the Equator Principles (The benchmark for the financial institutions to manage social and environmental issues in project financing). In case of some projects a representative inspects e.g. a property, or alternatively a specialist is consulted. This prevents the banks from financing something that is not in fact built, existent, or something that does not fulfill the requirements. SEB aims at being on site and have a feel of their investment, in order to give credit approval. The bank avoids lending to some industries due to ethical aspects, e.g. drug, alcohol, sex, game and weapon industries are avoided. The banking industry is closely linked to GES-standards (Generator Efficiency Standards), thus questioning is important.

4.2.2 Responses of Svenska Handelsbanken AB

The responses on behalf of Handelsbanken were given by an office manager of a local branch. The respondent explained that when processing a loan, Handelsbanken always looks at the company's business and evaluates the risks, including the environmental ones. This is important especially for industrial loans; in which case the bank takes time to carefully analyze the loan application. As far as the environmental clause goes, the bank has no written environmental requirements in the loan agreement, however the issues are discussed previous to granting a credit. The bank, or in this case a lending branch, has a meeting with a borrowing company at least once a year to discuss the yearly result as well as related environmental issues.

When considering a loan application, the bank pays attention whether the applicant is registered for ISO or EMAS. Being registered for the standards is considered as sort of a guarantee for a bank. The lending requirements are amended depending on the company and the amount applied for. The bank feels indirect impact is more important than the direct one,

because it affects the bank's reputation. The direct impact of a bank is cared for by implementing ISO 70799 in its everyday activities and ISF interpretation (BS 7788).

The interviewee stated that although environmental issues in general are indeed important, the level of risk taken by the bank plays a bigger role. Referring to this, the respondent does not feel that it is the bank's responsibility to take the leading role in environmental issues, however it needs to contribute. Regarding reducing the environmental impact on the local level, this particular local office of Handelsbanken doesn't have any specific requirements concerning environment, the representative answered that decisions in regards with these issues are made on the higher administrative level.

5. CONCLUSIONS

When evaluating the interview results, it is evident that the environmental issues have gained certain visibility within the Swedish banking sector. To answer the question posed in this paper – **“What is the attitude of Swedish banks towards sustainability?”** following positive main points came up in regards with environmental concerns.

- Banks consider corporate customers registered for the environmental standards, as desirable borrowers.
- Banks are eager to promote their business as environmentally friendly.
- Banks state that environmental aspects are considered in credit approval.
- Banks are familiar with international standards and guidelines such as EMAS, ISO, and Equator Principles.
- Banks consider their indirect and reputational impact more important than the direct one.

The results pointed towards the impression that maintaining a sound corporate image is the prior concern of a bank rather than the actual implementation of the environmental risk within the credit risk evaluation. Although, both case banks confirmed paying careful attention to the environmental impacts of a borrower, neither one of the representatives gave specific examples of how this aspect is implemented in the actual quantitative measures of the overall default risk. However, referring to the reasons given in the theoretical part of this

paper, the absence of financial models solely concentrating on environmental risks, can be justified. Banks can internally rate (as described in the Section 3.4.3) their loan applicants using the information they have about the business of a customer. But as discussed earlier, not all information is available, for various reasons, and incentives for polluting companies to pursue less environmentally friendly solutions to achieve more desirable results exist.

The collected responses also indicated that banks in Sweden undergo external pressure to pursue environmentally friendly activities. Thus, out of the risk types listed in Section 3.1.2, the reputational risk is revealed to be one of the most important incentives for a bank in Sweden to involve in environmentally friendly activities. However, these particular results should not be generalized to cover the entire banking sector in Sweden. The limiting scope of the present study is criticized in the Evaluation of the Study (Chapter 6).

It is worth mentioning that some of the Swedish FIs contacted by the authors with a request for an interview, refused to participate due to either incomplete process of implementation of SD guidelines, or alternatively due to the total lack of it. There is also a clear difference between the awareness of the employees in the headquarters, where major strategic decisions are made, and the local branches. Although both, Handelsbanken and SEB publicly present themselves as being aware of environmental issues and both clearly admit that SD must lead the everyday activities of all employees, it is unsure whether the statements of the headquarters are the reality in the local branches.

The overall impression, based on the conducted interviews, is that progress is definitely taking place. Also, the related reading material studied in the process of this research has presented extensive evidence of active implementation of SD-ideas in all types of businesses worldwide, including the financial sector. The question is, whether a bank wants to give value to the possibility of default due to environmental risk. The Swedish case banks answered this question affirmatively, but without any tangible specifications. Since environmental risk seems to belong to the firm-specific risk, it can be assumed that banks might not consider it significant within a well diversified portfolio of assets. Banks surely do evaluate the firm-specific risk including the possible environmental harm caused by the borrower, if enough information for such measures is available, but it does not necessarily stop the banks from granting a loan.

The research question posed in the beginning of the present study “**Should banks take environmental concerns in project financing?**” – can be answered affirmatively. It is evident that banks play a major role by financing the continuous damage to our planet, and it is comforting to know the banking sector is undergoing external pressure to become more involved in sustainable development. This is an indicator showing that the ones who care are slowly making the important actors care as well. It is not only a question of financial profit anymore, but also a question of the future of our planet. Should the price of profit be so high? It is possible that if banks demanded more information from their borrowers, the businesses would work out more efficient ways to measure their impacts and risks, or alternatively to better hide them.

The conclusions and the empirical evidence presented in this study is hoped to give a distinctive and simplified view on environmental concerns within banking sector, as the activities of FIs continue to play a major indirect role in the scenario. It is clear that banks, as well as other FI's, have a primary concern of maintaining a sound profit making business. But what does that profit cost us? The tropical areas of the earth lose their forests, over-fishing is happening in many water areas, the amount of carbon dioxide is increasing, expecting to lead to a global warming. Obviously, the banks are not at all solely responsible for these drastic changes, but they are players among the bigger group of participants in harmful activities. Environmental problems confronted by us today are the problems caused by mankind itself. Since people are the only source of these problems, we must also be held responsible for offering solutions.

6. EVALUATION OF THE STUDY

The present study deals with a somewhat sensitive subject which has raised some ground for dispute and will surely continue to do so. It is strongly present on the discussion level worldwide which is a sign of the people's serious concern for the future. Choosing among the available extensive information was one of the major challenges of this research. Especially finding the quantitative evidence to support the background was difficult, thus there is a lack of it in this paper.

We feel like the process of learning for us while studying this subject has been not easy but rewarding. What could have been done better is the actual quantitative representation of the ideas we were trying to transmit throughout our text, but we felt that there was not enough ground for the measurement we were looking for.

It must be pointed out that due to the limited amount of resources available to conduct the study, empirical evidence is very limited. Although some conclusions were made based on the collected information, it can in no way be generalized to the entire sector. Thus the analysis of the attitudes of Swedish banks is strictly limited to these two chosen cases. It would have been desirable to obtain more specific information from the banks regarding their risk evaluation approaches, however it was not possible to achieve in the process of conducting the present study.

In general, we feel satisfied with the results. The interviews in particular brought a touch of reality to the theory and financial reasoning in the text. We feel that the objective set at the beginning was reached. It has been a valuable learning process that has broadened our (the authors) perspective in many ways and hopefully will do the same for the reader.

REFERENCES AND BIBLIOGRAPHY

Articles

- Anex, R.P. & Englehardt, J.D. 2001. Application of a Predictive Bayesian Model to Environmental Accounting. A82 (2001) 99-112 USA: Journal of Hazardous Materials.
- Bruntland, G. 1987. Our Common Future: The World Commission on Environment and Development. Oxford: Oxford University Press.
- Case, P. 1996. Land, lending and liability. Chartered Banker. Vol. 2. Issue 4.
- Cohen, M. A., Fenn, S. A. and Naimon, J.S. 1995. Environmental and Financial Performance: Are They Related? USA: Investor Responsibility.
- Davis, P. & Worthington, S. 1993. Cooperative Values: Change and Continuity in Capital Accumulation - The Case of the British Co-operative Bank. Journal of Business Ethics. Vol. 12. No. 11.
- European Commission. Brussels. 2005. Report ref: COM(2005) 37 final.
- Freixas, X. & Rochet, J-R. 1998. Microeconomics of Banking. MIT Press. Cambridge: MA.
- Ghuri, P. & Grohaug, K. 2005. Research Methods in Business Studies: A Practical Guide. Third edition. Harlow: Pearson Education Limited.
- Harvey, B. 1995. Ethical Banking: The Case of The Co-operative Bank. Journal of Business Ethics. Vol. 14. No. 12.
- Kitson, A. 1996. Taking the Pulse: Ethics and the British Co-operative Bank. Journal of Business Ethics. Vol. 15. No. 9.
- Klant, JJ., & Van Ewijk, C. 1990. Geld, Banken en Financiel Markten. Wolters-Noordhof, Groningen.
- Konar, S. and Cohen, M. A. 1997. Does the Market Value Environmental Performance? The review of Economics and Statistics 83:2. MIT Press.
- Soanes, C. & Hawker, S. 2005. Compact Oxford English Dictionary of Current English. Oxford University Press.
- Thompson, P. 1998. Bank Lending and the Environment: policies and opportunities, The International journal of Bank Marketing. Vol.16. No.6. Emerald Group Publishing Ltd.
- Vaughan, S. 1996. Financing Change: The Financial Community , Eco-Efficiency and Sustainable Development. Cambridge, MA: The MIT Press

Books

Bodie, Z., Kane, A., Marcus, A.J. 2005. Investments. 6. Edition. New York: McGrawHill.

Bradburn, N., Sudman, S. & Wansink, B. 2004. Asking questions: the definitive guide to questionnaire design – for market research, political polls, and social and health questionnaires. Rev. Edition. San Francisco: Jossey-Bass.

Bronfenbrenner, M., Sichel, W. & Gardner, W. 1990. Economics. 3. Rev. Edition. Boston: Houghton Mifflin (Academic).

Creswell, J. W. 1998. Qualitative Inquiry and Research Design: Choosing Among Five Traditions. Thousand Oaks, London, New Delhi: SAGE Publications.

Drever, E. 1997. Using Semi-structured Interviews in Small-scale Research. Glasgow: SCRE Publication 129.

European Central Bank. 2004. Risk Management for Central Bank Foreign Reserves. Editors: Bernadell, C., Cardon, P., Coche, J., et al. Frankfurt am Main: Kern & Birner GmbH + Co.

Hubbard, R.G. 1994. Money and The Financial System and the Economy. New York: Addison-Wesley Publishing.

Hugenschmidt, H., Kermode, Y., Schumacher, I. & Janssen, J. 1999. Sustainable Banking, The Greening of Finance (Sustainable banking at UBS). Switzerland: GMI.

Jeucken, M. 2001. Sustainable Finance and Banking , the Financial Sector and the Future of the Planet. London: Earthscan Publications Ltd.

King, A. & Lenox, M. 2001. Does it Really Pay to be Green? An Empirical Study of Firm Environmental and Financial Performance. The Journal of Industrial Ecology. New York: Massachusetts Institute of Technology and Yale University.

Melicher, R. W., Norton, E. A. & Town, L. 2007. Finance. USA: John Wiley & Sons, Inc.

Melnikov, A. 2004. Risk Analysis in Finance and Insurance (Chapman and Hall /Crc Monographs and Surveys in Pure and Applied Mathematics). London, NY, Washington DC: Chapman & Hall/CRC.

Molloy, L., Ereksion, O.H. & Gorman, R.F. Exploring the Relationship Between Environmental and Financial Performance. EPA Workshop: Capital Markets and Environmental Performance. 2002. California.

Palmer, K., Oates, W.E. & Portney, P.R. 1995. Tightening Environmental Standards: The Benefit Cost or the N-Cost Paradigm. Journal of Economics. Perspectives 9:4.

Porter, M. E. & Van der Linde, C. 1995. Green and Competitive: Ending the Stalemate. Harvard Business Review. Sept - Oct.

Prager, J. 1987. Money, Banking, and Financial Institutions. 2. Edition. New York: Harper & Row, Publishers.

Rubin, H. J. & Rubin, I. S. 2005. Qualitative interviewing: The Art of Hearing Data. Second Edition. Thousand Oaks, London, New Delhi: SAGE Publications.

Rutherford, M. 1994. At What Point Can Pollution Be Said to Cause Damage to the Environment? The Banker. Jan 10-11.

Ross, S. A., Westerfield, R. W. & Jaffe, J. 2005. Corporate Finance. 7th Edition. NY: Tata McGraw-Hill Publishing Company Ltd.

Saunders, A. 2000. Financial Institutions Management: A Modern Perspective. Boston: McGraw-Hill.

Saunders, A. & Cornett, M. M. 2006. Financial Institutions Management. A Risk Management Approach. NY: 5th McGraw-Hill Company, Inc.

Schaltegger, S. & Burritt, R. 2000. Contemporary Environmental Accounting Issues, Concepts and Practice. Greenleaf Publishing.

Shameek, K. & Cohen, M.A. 1997. Does the Market Value Environmental Performance? The Review of Economics and Statistics 83:2.

Tamminen, R. 1996, Environmental Accounting. University of Jyväskylä. The School of Economics. Publication No. 101/96.

Van Deventer, D.R., Imai, K., Mesler, M. 2005. Advanced Financial Risk Management – Tools and Techniques for Integrated Credit Risk and Interest rate Risk Management. Singapore: John Wiley & sons (Asia) Pte. Ltd.

Vaughan, E. J. & Vaughan, T. M. 1999. Fundamentals of Risk and Insurance. 8 Edition. USA: John Wiley & Sons, Inc.

VFU. 1998. Time to Act; Environmental Management in Financial Institutions. Bonn: Verein für Umweltmanagement in Banken.

Wanless, D. 1995. The Gilbert Lecture 1995: Banking and the Environment. London: The Chartered Institute of Bankers. Oct. London.

Online References

Angus, M. 2003. Reputation: Today's Business Critical Asset. Authentic Business. UK. Available in www-format on: <<http://www.authenticbusiness.co.uk/archive/>> (Last accessed 06.08.2007)

Blank, A. & Company Corn Card. USA. Available in www-format on: <<http://corncardusa.com/corncard.asp>> (Last accessed 06.08.2007)

Choudhury, G. 2003. What is Financial Risk? The Wharton School of Finance and Commerce. University of Pennsylvania. Available in Word-format on: <<http://www.theshortrun.com/finance/finance.html>> (Last accessed 01.08.2007)

CSG. 2000. Environmental Report 1999/00. Credit Suisse Group. Zurich. Available in www-format on: <www.credit-suisse.com/en/ecoreport00> (Last accessed 06.08.2007)

EUROPA. 2002-2004. Archives. Available in www-format on: <http://ec.europa.eu/environment/emas/news/archives/finance_en.htm> (Last accessed 16.07.07)

EUROPA. 2007. EMAS - The Eco Management and Audit Scheme. European Commission Homepage. Available in www-format on: <http://ec.europa.eu/environment/emas/index_en.htm> (Last accessed 16.07.07)

Fuji Bank. 2000. Annual Report 2000. Fuji Bank. Tokyo. Available in www-format on: <www.fujibank.co.jp> (Last accessed 06.08.2007)

GES Homepage. 2007. Available in www-format on: <<http://www.greenhouse.gov.au/ges/index.html>> (Last accessed 16.07.07)

NatWest Group. 1988. Environment Report 1997/98. NatWest. London. Available in www-format on: <www.natwest.com> (Last accessed 06.08.2007)

SEB Corporate Homepage. Available in www-format on: <<http://www.sebgroup.com/pow/wcp/sebgroup.asp>> (Last accessed 16.07.07)

Svenska Handelsbanken AB Corporate Homepage. Available in www-format on: <<http://www.handelsbanken.se>> (Last accessed 20.04.07)

The Equator Principles Official Homepage. Available in www-format on: <<http://www.equator-principles.com/>> (Last accessed 16.07.07)

The International Standards Glossary. 2005. Available in www-format on: <<http://www.standardsglossary.com/>> (Last accessed 16.07.07)

UNEP-FI. 2005. Overview 2005. An Introduction to the structure and activities of UNEP FI in 2005. Publication of UNEP-FI Geneva Switzerland. Available in pdf-format on: <www.unepfi.org/fileadmin/documents/unepfi_overview_2005.pdf> (Last accessed 06.08.2007)

United Nations. 1997. Department of Public Information. Available in www-format on:
<<http://www.un.org/geninfo/bp/enviro.html>> (Last accessed 16.07.07)

Wagner, M. & Wehrmeyer, W. 2002. The relationship of environmental and economic performance at the firm level: a review of empirical studies in Europe and methodological comments. *European Environment*. Vol. 12. Issue 3. P 149-159. John Wiley & Sons, Ltd. and ERP Environment. Available in pdf-format on:
<<http://www3.interscience.wiley.com/cgi-bin/abstract/93520936/ABSTRACT>> (Last accessed 16.07.07)

ATTACHMENTS

Attachment 1: Semi-structured Interview

THEME ONE: Questions related to the environmental tools used within the bank:

1. **QUESTION (Closed question, answer yes or no):** Has your organization been registered for a legal environmental standard register, such as ISO or EMAS?

If the answer is **YES**, we use a **PROBE** to develop the answer:

SUB Q (Open-ended): *(we assume that the respondent has said, yes, we have been registered for...)* How does the implementation of the standards function in practice?

Using **PROMPT** if the **SUB** question is not understood in full:

SUB Q (Closed or open-ended): Do you have an environmental liability policy where the investigation is outlined?

Another **PROMPT**:

SUB Q (Close-ended): Have you appointed a person within your organization to be in charge of the environmental risk inspection?

If the answer is **NO**, we use **PROBE** to find out the level of awareness in this issue:

SUB Q (Open-ended): What do you know about ISO and EMAS standards?

SUB Q (Close-ended): Do you pay attention to environmental factors in debt transactions?

SUB Q (Open-ended): Do you consider the environmental risk important from the point of view for your organization?

SUB Q (Close-ended): Which type of environmental risk do you feel is most significant? Choose from **DIRECT**, **INDIRECT** and **REPUTATIONAL**.

2. **QUESTION (Closed question, answer yes or no):** Does your organization have its own standards for the environmental concerns and sustainable development?

If the answer is **YES**, we use a **PROBE** to develop the answer:

SUB Q (Open-ended): Are these standards used on their own or as complementary guidelines to the official standards (ISO or EMAS)?

Another **PROBE**:

SUB Q (Open-ended): Do you amend your environmental policies in case of some particular customers?

Another **PROBE**:

SUB Q (Open-ended): Mention the main reasons for implementing the environmental risk management program in your activities?

If the answer is **NO**, we continue with asking about the standards that they have implemented. If the answer is **NO** for both, official and internal standards, we continue the conversation about the level of awareness in general.

THEME TWO: Questions related to lending and environmental risks

3. QUESTION (Closed question, answer yes or no): Do you apply environmental criteria when making decisions concerning financial transactions, such as project investments and loan allocations?

<p>If the answer is YES, we use a PROBE to develop the answer: SUB Q (Open-ended): How do you apply the environmental criteria?</p> <p>Using PROMPT if the SUB question is not understood in full: SUB Q (Open-ended): Have you included environmental clause in your lending contract terms?</p> <p>Another PROMPT: SUB Q (Close-ended): Do you have a documented environmental program type?</p> <p>SUB Q (Close-ended): Do you perform an investigation before giving a loan to an investor?</p> <p><i>Use PROBE to get explanation, i.e. How? What? When?</i></p>	<p>If the answer is NO, we use PROBE to find out the reasons: SUB Q (Close-ended): Have you faced any external pressure from your stake holders to implement environmental aspects in your activities?</p> <p>SUB Q (Close-ended): Have you integrated any environmental aspects in any area of your business management, if not in financial transactions?</p> <p>SUB Q (Open-ended): What are the investigation steps you take in order to evaluate your future borrower? <i>(This questions aims at finding out what is important, if the environmental impact is not!)</i></p>
---	--

THEME THREE: Questions related to the bank’s credit risk assessment (including environmental risk)

- 4. QUESTION:** Do the bank’s credit risk assessment procedures include an appraisal of environmental risks?
- 5. QUESTION:** Does the bank specifically target, treat differently from other companies, or in some way treat preferentially companies which:
- operate in the environmental technology and service sector;
 - derive a significant proportion of turnover from environmentally friendly products and services;
 - demonstrate sound environmental management (say by some form of affiliation or certification, for example EMAS registration)?

(When deciding whether or not to lend, or in the repayment terms offered.)

- 6. QUESTION:** Does the bank seek to avoid (formally or otherwise) lending to companies operating in certain industries on environmental grounds?
- 7. QUESTION:** Which type of environmental risk do you feel is most significant? Choose from **DIRECT**, **INDIRECT** and **REPUTATIONAL**.

Attachment 2: Interview Details

Interview I:

Date: 03.05.2007

Bank: SEB (Skandinaviska Enskilda Banken AB)

Location: Stockholm, headquarters.

Position of the interviewee in the organization: Group CSR Manager, Group Communications

Interview II:

Date: 10.05.2007

Bank: Svenska Handelsbanken AB

Location: Skövde, local office.

Position of the interviewee in the organization: Office Manager