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DECISION-MAKING IN CORPORATE LENDING

The use of information in bank loan context

Master´s Thesis
in Accounting and Finance

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1 INTRODUCTION

1.1 Background of the subject

Banks' role as a source of finance for companies is significant, although large companies have recently preferred securities markets to banks. However, the importance of banks in financing large corporations remains significant especially during an economic stress. (Saidenberg & Strahan 1999, 1) Figure 1 illustrates the amount of loans granted in Finland for non-financial corporations between January 2003 and January 2008.

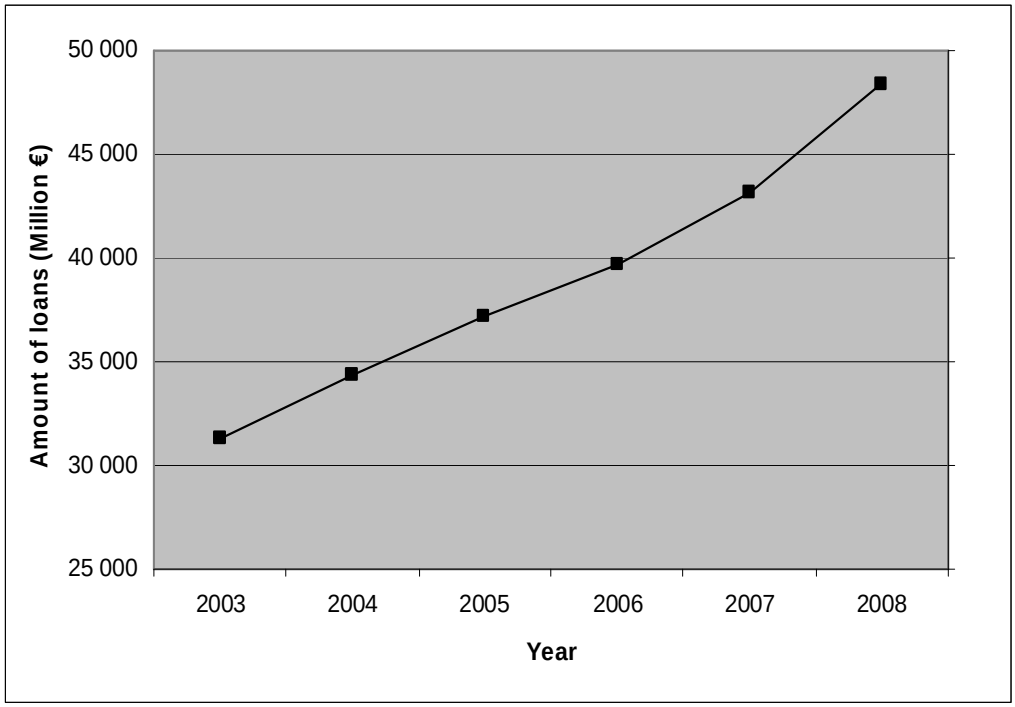

Figure 1 Corporate loans granted by financial institutions in Finland (Bank of Finland)

As can be seen from figure 1, the amount of corporate loans granted by financial institutions has increased rather steadily during the whole observation period. According to Financing inquiry of companies[1] (2007), banks were a primary source of

[1] Since 1994 the Bank of Finland, Confederation of Finnish Industries EK, and The Ministry of Trade and Industry (currently The Ministry of Employment and Economy) have conducted a study concerning companies' financing needs and the availability and the costs of financing. The Financing inquiry of companies 2007 was conducted by Statistics Finland in August 2007. The inquiry was responded by 1011 companies of different size within different industries. The response rate was 72.

external finance for large corporations in 2007. The banks' share of external finance of large corporations was approximately 60% in 2007, and in 2006 the share was approximately 68%. (Financing Inquiry 2007) In 2007, the annual growth rate of corporate loans increased approximately 10 per cent compared to the previous year. The total value of new corporate loans granted by banking institutions in 2007 was 42.7 billion euros, which is 8.3 billion more than in 2006. 72.9 per cent of these new loans granted were large loans of over one billion euros. (Money and Banking Statistics 2007)

In general, large and medium-sized companies do not have difficulties in getting finance from banks when needed, whereas small firms, which generally have the greatest need for external finance from banks, tend to have more often difficulties in getting bank finance, and the problem seems to be even more serious within the so-called micro companies, which have less than 10 employees. (Financing Inquiry 2007) The reason why banks might prefer lending to large and medium-sized companies is due to the fact that, generally, these companies tend to be more profitable, and thus, the probability of repayment is greater with these companies. However, due to the companies' good profitability and sufficient internal finance, those companies, which from the banks' point of view would be the most desired lending customers, do not usually need for credit from banks.

A lending process consists of many separate decisions, such as decisions about the general credit conditions, assessment of a borrower's credit quality and overall business potential, decision about the acceptable level of risk related to credit granted, and the final decision whether or not to grant the applied credit. The final approving or rejecting decision should be based mainly on the overall business potential of the borrower, and therefore, all of the above-mentioned decisions must be taken into consideration altogether (Donaldson 1995, 1). These decisions are usually made by different people in the bank organization, but the decisions are still closely connected to each other. The decision-maker, who makes the final credit decision, either approving or rejecting, has to be aware of, among other things, the interest charged, the bank's general credit policy, and, naturally, also specific information about the credit applicant. The size of the credit requested will also affect the decision-making process, and, in general, the larger the size of credit requested is, the more complex and also partly more subjective the decision-making process will be. (see e.g. Heinonen 1981, Ahtokari 1990)

Every credit decision has financial consequences that from the bank's point of view are either negative or positive, and the seriousness of these consequences depends, among other things, largely on the size of the credit. In order to avoid financial losses it is important that the quality of the credit decision-making process is high. One important part of this process is the acquisition of appropriate information, and when gathering that information it is of the essence to know what information credit professionals consider relevant. Furthermore, by focusing on gathering only relevant infor-

mation, a bank may also reduce its costs of information gathering. In addition, although the gathering of information has become more and more convenient and easy, for example, due to the use of computers, it should be remembered that the capacity of the decision-maker to process that information is still limited, and therefore, selectivity in information gathering will be important (Pitkämäki 1984, 101-102) Thus, it is justified to say that the more is known about the actual need of information related to credit approvals, the more improved the whole lending decision-making process will become.

According to Knüpfer and Puttonen (2004), a finance professional needs a wide range of expertise in several fields of science, such as, accounting, national economics, statistics, and mathematics. Making credit decisions requires a great deal of expertise since the decision-maker has to be able to assess all the information received in a rational sense and with care. (Knüpfer & Puttonen 2004, 16) However, all information is not needed in every decision, and, in fact, by using all information available, the decision-maker may be misled.[2]

Although credit professionals are generally highly experienced and often well educated, it should be noted, however, that even the most experienced expert makes mistakes just like all people, and it should be noted that expertise and accuracy are not always related. Therefore, it is important to understand both the conditions under which professionals perform well and respectively conditions under which they do not perform well. (Surowiecki 2004; Camerer & Johnson, 1991) In addition, in order to be able to improve the training of new credit professionals, it is as well important to understand how novices process information.

1.2 Previous studies

Decision-making behaviour altogether has been studied extensively. However, studies concerning decision-making within corporate credit approvals, especially lending to large corporations, have not been as common. Although expertise has also been the focus of some of the previous studies (see e.g. Shanteau 1992), these studies have usually examined, for example, expertise within health care, and thus, the role of expertise in credit approvals has not gained much attention.

Many previous studies made in the field of bank loans have focused merely on consumer credits or lending to small and medium-sized companies. Studies made within corporate credit approvals, either to small or large companies, have concentrated, for

[2] In a way, however, when the decision-maker decides not to use a particular piece of information it may also be regarded as a usage of information. Therefore, it might be rather difficult to separate the case of usage of information from the case of non-usage of information. For the sake of simplicity, in this thesis the usage of information refers only to cases where the piece of information is actually used.

example, on the use of financial information in credit decisions (see e.g. Danos, Holt & Imhoff 1989; Berry, Faulkner, Hughes & Jarvis 1993). Burghof (2000) studied information related to different kinds of corporate credit customers within one German bank. Although the study was conducted within a small sample (data from six corporate customers), and thus, the possibilities for generalization of the results may be limited, the results of this study will give valuable insights into the credit professionals' use of information and decision-making behaviour.

Many studies concerning the role of the decision-maker's background, such as education and work experience, have concentrated on the amount of information used by the decision-maker, and, as mentioned earlier, these studies have often concerned some other domain than credit granting, for example health care. (see e.g. Shanteau 1992) In addition, there is little empirical evidence about what type of information credit professionals actually consider relevant for a credit decision.

In this thesis, lending to large corporations is under examination, and it should be noted that decision-making processes related to lending to small and medium-sized firms may vary a great deal from the process related to lending to large corporations. Usually, lending to large corporations requires more subjective perspective compared to lending to small firms, which may often be a rather formal process, and which, in general, may be regarded as more like "lending to the person", i.e. an entrepreneur (Berry et al. 1993, 135).

Andersson (2004) has argued that previous studies concerning experts' decision-making processes have seldom examined decision-making in a naturalistic situation (Andersson 2004, 471). Studies concerning credit approvals have usually been carried out either by asking the respondents, i.e. the credit professionals, to mark the information they consider relevant on the list represented (see e.g. Stanga & Benjamin 1978), or giving the respondents a credit proposal, and asking the professionals to make the credit decision, either approving or rejecting, based on the information on the application as if the proposal in question would be a real credit application received from one of the bank's customers, or alternatively from a potential new corporate customer. In some of the studies students have also been used as one respondent group, and thus it has been easier to find out differences between real professionals, who already have practical experience at least to some extent, and students, who may have no practical experience related to credit approvals or finance, but who, on the other hand, are presumed to have the appropriate knowledge to make the credit decision in question. (see e.g. Andersson 2001; Andersson 2004; Nutt 1989) Furthermore, some of the previous studies related to decision-making in corporate credit approvals have examined the use of a computer as an assistant in decision-making process (see e.g. Cohen, Gilmore and Singer 1966; Ahtokari 1990; Andersson 2001, 123-143). Although by using computers many analyses within credit approvals are much easier and convenient

to prepare, computers will not fully replace human decision-makers in credit approval since many credit applications need a more or less detailed analysis, which cannot be made without a human contribution.

In the previous literature on decision-making, many researchers have examined the amount of information used by experts and novices in their decision-making process. Some researchers have made an assumption based on the so-called Information-Use-Hypothesis, which implies that the amount of information used in decision-making should reflect the degree of expertise, and thus, experts should use more information compared to non-experts. (Shanteau 1992) This assumption is based on the idea of rational decision-making, which, at least according to some researchers, will require the use of all information available. However, rationality in making decisions does not assure that the decisions made will be consistent or optimal (Simon 1983, 23). Therefore, the Information-Use-Hypothesis has received little support since studies related to experts' decision-making behaviour have shown that experts are heuristic in their decision-making, which means that experts make use of the so-called "mental rules of thumb" in order to facilitate the process of arriving to a final decision. In addition, heuristics seem to be necessary for expert decision-makers since the cognitive processing capacity of the human brain is limited, especially if there are several decisions to be processed. (Simon 1983, 20-29; Shanteau 1992)

Although few researchers have given support for the above-mentioned hypothesis concerning information usage, there is however, for example, a study made by Andersson (2004), which suggest that the Information-Use-Hypothesis is valid in the context of credit granting. The results from Andersson's (2004) study have shown that experts searched for significantly more cues compared to non-experts. One important reason for the differences in the results of the previous studies, especially results concerning the amount of information used, would be due to the fact that the studies were made within different domains, and as Shanteau (1992) has argued, decision-making within different domains should be judged separately (Shanteau 1992, 83). Therefore, the results of this thesis may be primarily compared to the results from Andersson's (2004) study.

The type of information needed in decision-making has also been under examination in some of the previous studies related to credit granting. The results from these studies have shown that, for example, historical financial statements and forecast information are considered important by credit professional in their decision-making. In addition, as might be expected, financial information seems to be especially relevant in lending decisions. (Stanga & Benjamin 1978; Berry & Robertson 2006)

1.3 Objectives of the thesis

This thesis examines the decision-making behaviour in lending to large corporations, and compares decision-making behaviours within novices (business students) and credit professionals. The objective is to learn the importance of practical work experience, and to find out possible differences in decision-making behaviour between novice and experienced credit decision-makers. In addition, the aim of this thesis is to shed light on what kind of information is considered most important by credit professionals, and since there have been differing views about the validity of the Information-Use-Hypothesis within experts' decision-making, one aim is also to find out whether or not this hypothesis is valid in the context of credit approvals. From the theoretical point of view the intention is to introduce the credit decision-making process in general and also the means to interpret corporate credit quality. The research problem can be summarized to following questions:

- Is there a significant difference between how a professional and a novice make their loan decisions?
- What type of information is considered most important by credit professionals in corporate lending?

A great deal of this thesis consists of the comparison of professionals' and novices' decision-making behaviours within credit approvals, and therefore, for the purpose of this thesis it would be beneficial to define what is meant with the terms *professionals*, *expert* and *novice*. According to Shanteau (1988), "novices are decision makers who may have considerable knowledge and experience, but have yet to reach the level of the experts", whereas experts "are those who have reached the pinnacle of their profession". (Shanteau 1988, 206) It would be reasonable to assume that to become an expert requires a great deal of experience. However, experience alone is not adequate to reach expert competence, and the ability to learn from the experience is more important than the experience itself (Brehmer 1980). Thus, it should be noted that experience does not necessarily equal to expertise.

In this thesis respondents are classified first into two main groups, namely novices and professionals. Secondly, the professionals are classified further according to their experience and the level of expertise into groups of experts and intermediate experienced professionals. Thus, the terms used in the thesis are *novices*, *intermediate experienced professionals*, and *experts*, and the classification is made according to the respondents' work experience, job description, and other possible relevant factors.

Even though the approach in this thesis is rather similar to the study made by Andersson (2004), it should be noted, that in Andersson's study the novices were both business students and Ph.D. students in business administration, whereas in this thesis only business students are used. The term expert is used to refer to a person who is in-

volved in tasks requiring high degree of expertise and responsibility and who also has many years of work experience (10 years or more) in the field of credit approvals and finance. The term intermediate experienced professional, in turn, is used when referring to a person who has less work experience in finance and credit approvals and who is involved in tasks requiring lower degree of expertise and responsibility. However, the number of years mentioned is only normative in nature, and therefore, the classification of respondents is at least partially context-sensitive, and the job description of the respondents has a significant role in making the classification. When referring to both experts and intermediate experienced professionals the term professional will simply be used. The term novice, in turn, is used when referring to business students since they lacked practical experience on decision-making and finance. An interesting aspect of this thesis is, therefore, the comparison of students and professionals, who are already in working life since, generally, students have some knowledge about making credit decisions, but another issue would be whether students have adequate ability to use the knowledge obtained at university, or a similar institution, in practical real-life situations.

The purpose of this thesis is not to inform readers about different types of credit granting processes, and therefore, in this thesis, attention is not paid to credit granting processes within different bank organizations. Furthermore, this thesis focuses on lending to large corporations, and therefore for example, lending to households and possible other services offered by banks, such as collaterals, are excluded.

1.4 Methodology and methods

Some researchers have argued that the users of financial statements, especially their decision-making processes together with the information needs, should be the starting point for research in the field of accounting and finance. This argumentation is based on the decision-usefulness approach of the research. The decision-usefulness approach, in turn, has stimulated behavioural accounting research, which aims to study the production and the use of financial information. Within behavioural research there are four main methods which may be used, namely surveys, field studies, laboratory experiments, and field experiments. (Ryan, Scapens and Theobald 2002, 102-103)

The methodology in this thesis is explanatory in nature, and the aim will be to study credit decision-makers by using naturalistic methods. Naturalistic methods are, in general, highly useful when the aim is to study, for example, the everyday behaviour of some group of individuals, which in this thesis are going to be credit decision-makers. In this thesis the main emphasis is, as mentioned earlier, on the examination of the credit decision-makers' use of information. Thus, the decision-usefulness approach is going to be one of the main approaches on which the thesis is going to lean on. The re-

search will be conducted by using a descriptive survey as a research method, and the survey was carried out by using a questionnaire, which included also a hypothetical executive summary of a credit proposal[3]. (Ryan et al. 2002, 35)

Surveys, in general, are useful methods to collect data when the population to be studied is large. In this thesis, survey was used as a research method mainly because by using a questionnaire and a hypothetical executive summary of a credit proposal, the credit decision-making situation under examination was close to a naturalistic situation in credit professionals' everyday job. This thesis follows Andersson's (2004) suggestions, and aims to create a naturalistic setting with a highly realistic credit proposal written by and tested with experienced credit professionals.

1.5 Empirical setting

The survey was conducted among two samples. The first sample was conducted among corporate credit professionals at one Nordic bank with important operations in Finland. The second part was conducted among business students at the Lappeenranta University of Technology. Students have been used as a test group also in some of the previous studies, and by using students as one sampling group, useful information about the role of the education, especially finished degrees, is also obtained. A survey was carried out by using a questionnaire (see appendix 1), which consisted of a cover letter, questions about the respondent's background information, questions concerning the credit proposed, and the executive summary of a credit proposal. The cover letter and the executive summary of a credit proposal are not published upon the request of the bank where the survey was made.

The questionnaires were sent to 88 credit professionals who are involved in credit decisions within large and medium sized companies, either as contributors to the writing of credit applications, or involved in the approval of the applications, and to 35 business students who participated in a particular specialisation course of finance and corporate funding at the Lappeenranta University of Technology. Thus, the sampling method within this thesis was purposive in nature, which ensured that the respondents were serving the purpose of the thesis. Usable responses were received from 33 professionals and 16 business students.

[3] An executive summary of a credit proposal refers to a brief but comprehensive summary of a business plan or an investment proposal, which highlights its key points and is generally adapted for the external audience (BusinessDictionary). Typically such summary is a main driver of the evaluation by a decision-maker, and if the executive summary fails to convince the decision-maker, the likelihood of a positive decision may decline significantly.

1.6 The structure of the thesis

The rest of this thesis is organized as follows. The second chapter of the thesis represents some features of credit approvals. The aim of the chapter is to present a lending process in theory and decision-making related to this process. The focus will be in lending to large corporations. Since the possible relationship with the potential borrower affects also the final credit decision, the basic issues related to relationship banking are also discussed in the second chapter. In addition, typical characteristics of the credit decision-maker and some decision-making strategies will also been discussed in the second chapter.

The third chapter of the thesis concerns interpreting corporate credit quality. The chapter begins with a discussion of company analysis and its main purposes. Other issues discussed in the third chapter, credit risk assessment, financial statement analysis, and credit rating, are, in a way, parts of the company analysis, but still these issues are discussed separately since the main idea will be that all these elements are equally important in lending decisions. After chapters two and three, there will be a brief summary of the main issues discussed in these particular chapters. The issues discussed in the second and the third chapters of the thesis form a comparison basis for the empirical study made within the thesis.

The fourth chapter of the thesis deals with empirical part of the thesis. In the fourth chapter, the background of the empirical study is presented, and at the end of the chapter, the results of this study are discussed together with the conclusions. The thesis ends with a summary, and in addition, the aim is to give some suggestions for possible follow-up research.

2 FEATURES OF CORPORATE CREDIT APPROVAL

2.1 Credit approval from theoretical perspectives

2.1.1 Information asymmetry

Credit approvals may be considered as a game between a debtor and a borrower, and information asymmetry is an important factor in that game. In theory, information asymmetry in the context of credit granting is defined as a situation where either the borrower or the bank has better information on financial conditions or prospects of a project or a company than their counterpart (Bruns 2004, 33). Usually large corporations offer more information for banks than small firms, and therefore, the problem of asymmetric information is also more severe within lending to small firms compared to lending to large corporations (Lehmann & Neuberger 2001, 343). Furthermore, large corporations are generally better known in banks, whereas small firms might be completely unknown by banks' personnel, which also supports the idea that information asymmetry is more severe within small companies than within large, well-known corporations (Cressy 1995, 292).

When the borrower has information asymmetries, it is usually due to so-called private information about the actual condition of the company. Private information, in turn, refers to information such as costs and benefits related to a specific business plan or information about possible outcomes of a specific project. The borrower tries to make the company appear less risky, which makes it more difficult for the creditor to predict accurately the borrower's behaviour, intentions, and incentives. Sometimes credit might be approved with complete information, but since there is asymmetric information, the credit is actually rejected. However, experienced credit professionals are trained to assess all kinds of information, and they are accustomed to analysing whether or not the information is trustworthy. Therefore, professionals are usually able to make accurate judgements and decisions despite of information asymmetries. (Andersson 2001, 21; Milgrom & Roberts 1992, 140)

Although information asymmetry has usually been considered problematic especially in a business relationship between a bank and a customer, asymmetric information occurs also between different banks. When a bank has a customership with the company, the bank learns more about the corporate customer compared to other banks. Thus, the bank, who has a relationship with the company, obtains private information

about the borrower, which, in turn, leads to informational advantages over other banks because the bank is, for example, able to better assess risks related to the borrower. Therefore, the bank is also able to set, for example, loan prices and covenants in appropriate level according to the actual risk level related to the borrowing company. (see e.g. Sharpe 1990, 1069; Rajan 1992, 1381)

In contrast to information asymmetry there is also a possibility that the borrower does not know the actual condition of his or her business, and therefore the information may actually be symmetric in nature. However, usually this kind of situation applies only to small businesses and businesses in early stages of their life cycle. (Cressy 1995, 293)[4]

2.1.2 Problems of moral hazard and adverse selection

According to Milgrom and Roberts (1992), information asymmetry may also result in adverse selection, which is a very common problem in the insurance industry, but possible also in the banking environment. (Milgrom & Roberts 1992, 149) Adverse selection refers to a situation where, for example, an increase in interest rate results in attracting borrowers with poor economic viability. In other words, credit-worthy borrowers are adverse selected due to the high loan costs. (Stiglitz & Weiss 1981, 393; Andersson 2001, 22). Another example of adverse selection is a situation where the borrower, who is already the bank's customer, asks additional finance, i.e. extended credit, only for high-risk projects. (Mishkin 2006, 174-175)

A phenomenon termed as moral hazard is closely related to adverse selection. Moral hazard means that the borrower will have an incentive to change the intended behaviour after the loan agreement has been signed. In other words, the borrower will behave purposely in a way that will reduce the bank's possibilities for repayment. (Mishkin 2006, 174-175) The described situation is due to the fact that a borrowing company's interests are not necessarily consistent with the bank's interests. Usually the company's shareholders want to invest their equity in projects with certain profits, whereas borrowed capital is preferred to invest in high-risk projects. (Milgrom & Roberts 1992, 183; Bruns 2004, 36-37) If a high-risk project turns out to be successful, the company, and its shareholders, gain additional benefits, whereas the bank gains only a limited profit, i.e. the interest agreed and the repayment of the loan capital. Thus, the bank does not get

[4] In certain situations it might be possible that a bank has information advantages, but this situation would probably apply better within lending to small companies than lending to large corporations. The bank may, for example, have wider experience compared to the management of the company applying credit, and thus, the bank may, for instance, have better understanding of possible risks, as well as prospects, related to a particular market area or overall business plan. (see Bruns 2004, 33)

compensation for bearing a high risk, nor does it receive any possible additional profits even if the project would yield additional returns. From the borrower's point of view, the possible losses of the unsuccessful project are partly limited since the bank bears most of the losses in that situation since it does not gain either the interest or repayment of the loan capital unless the bank has some guarantees or covenants. (Bruns 2004, 36-37)

Collaterals may be used as a one way to solve the problems of moral hazard and adverse selection. By using collaterals the bank may be able to deter the borrower's incentives to change intended behaviour after signing the loan agreement. Furthermore, collaterals may also induce the borrower to reveal risks which otherwise would be hidden. (Lehmann & Neuberger 2001, 343) However, even guarantees or covenants do not always protect the bank's receivable.

2.1.3 Credit rationing

According to the market equilibrium, supply and demand are generally equal, and if demand exceeds supply, prices will increase, which, in turn, will decrease the demand or increase the supply until the demand and supply are equal. Within bank loans, however, this is generally not the situation because of problems of adverse selection and moral hazard. (see e.g. Jaffee & Russel 1976, 651; Stiglitz & Weiss 1981, 393; Milgrom & Roberts 1992, 153) Credit rationing is one way to deal with problems of adverse selection and moral hazard, and it is related to a situation where the demand for credit is higher than the supply of credit. In credit rationing a bank either refuses to lend any funds for a particular borrower, even if the borrower would be willing to pay higher interest rate, or restricts the size of credit to less than what the borrower has actually requested. (Swank 1996, 182; Mishkin 2006, 220)

In the first-mentioned form of credit rationing, total refusal of lending to a particular borrower, the connection to adverse selection is rather obvious. The most risky companies are, according to theory of adverse selection, exactly those ones who are willing to pay higher interest rates since they are aware of their own risks and the fact that in the case of possible default, the bank will bear most of the risks. In other words, the bank's mix of credit applicants becomes worse when the interest rate is increased. (Stiglitz & Weiss 1981, 393-396; Mishkin 2006, 220; see also Jaffee & Russel 1976) Furthermore, a higher interest rate gives the borrower an incentive to undertake more risky projects, which refers to a situation of moral hazard. Therefore, if the potential borrower is willing to pay higher interests, this might imply that the borrower is going to change its intended actions, and invests the lent funds into a more risky project than what was actually intended. (Swank 1996, 183)

The second form of credit rationing, restriction of the size of credit granted, is related to moral hazard. The benefits gained from moral hazard would be the higher, the larger the amount of credit granted is. Furthermore, the borrowing company would probably feel that it would not be a wise thing to hurt the company's reputation and credit rating because of a small amount of credit. Therefore, by restricting the size of credit actually granted, the bank may also reduce the borrower's incentives to take actions which would reduce the possibilities of repayment. (Mishkin 2006, 220)

2.1.4 Psychology in credit approval process

Credit professionals aim to make a deal which will be profitable in the future, and in order to do this, a lot of different kind of information is needed. When making credit decisions, credit professionals are faced with a wide environment full of many kinds of information items, and usually credit professionals do not settle for only the information gained directly from the credit applicant, but they also seek extensively for more information[5]. Some of these information items are relevant to the decision, but many of them turn out to be irrelevant. Irrelevant information items may at worst be highly misleading. Therefore, the careful assessment of information is of the essence in credit decisions.

The acquisition of information needed is only the first step in the process of credit decision-making. When the appropriate information is gathered, the decision-maker has to assess this information in a meaningful manner. However, many kinds of biases may make the assessment of information rather difficult. A so-called halo-effect, among other things, is an example of a bias, which may hamper the processing of information in an unpleasant way. A halo-effect is a cognitive bias, which was named by Edward Thorndike in 1920, and in the context of credit approvals it means, for example, that a company, which is generally thought to be reliable and responsible, may also be assumed to have a skilful management. Often the decision-maker also pays attention to features that confirm rather than disconfirm his or her original impression about the credit applicant. (Andersson 2001, 23; Plous 1993, 44-46) In addition, usually a credit applicant also tries to distort his or her statements, and that is why the decision-maker has to consider every statement with caution. Thus, although the credit decision-making requires an ability to search more and more information, the decision-maker also has to be able to recognise and discard irrelevant information. (Andersson 2001, 23).

[5] However, often credit applications are required to be dealt with considerable speed, and therefore, the credit decision-maker does not always have enough time for gathering more information. Thus, the professional, who prepares the executive summary of a credit proposal, is in fact often the one, who needs to gather additional information when needed.

A psychological aspect of credit decisions is also related to decision-making in groups, which in the context of credit approvals are generally termed as credit committees, and usually at least the biggest and the most important credit decisions are made in credit committees (Ahtokari 1990, 35). In groups there is a tendency to seek conformity with other members of the group. This, in turn, may lead to a situation, where a member of the credit committee does not express his or her real thoughts about the credit proposal in question. A situation like that may also be called "groupthink". (Plous 1993, 203)

According to Surowiecki (2004), groups make the best decisions if every individual within that particular group acts independently. Larger groups will, in general, perform better than groups with few members. The reason for this lies in diversity. Due to the wider diversity of the group, the individuals' expertise and experience will be better utilized. When everyone in the credit committee brings his or her own ideas and experience into the decision-making situation, the best solution will be found more easily compared to a situation where every single member of the committee would make the decision alone. (Surowiecki 2004, 29-41) However, the decision made by a group is not always better than the decision made by an individual decision-maker, and the group's accuracy depends, for example, on difficulty of the decision, the competence of the group members, and the way that the group members are allowed to interact (Plous 1993, 211). Collective knowledge is an important factor in decision-making, but it does not mean, however, that it will not matter at all how informed the members within a group are. Even though, a less experienced decision-maker may bring valuable ideas into the group, these individuals should still be at least to some extent informed. Thus the collective wisdom of completely uninformed people would not be greater than the wisdom of an individual expert. (Surowiecki 2004)

In general, credit decisions need to be made often with considerable speed, and some credit committees deal with such a large numbers of credit requests that the time available for an individual credit decision may be very limited. Sometimes a rapid response is needed due to the nature of the customers' requests. A corporate customer may, for example, prefer to leave the credit application for an acquisition relatively late when the plans for acquisitions are already rather far reaching in order to limit the number of parties who hold confidential information about the company's actions, and in a situation like that, the credit decision needs to be prepared rather rapidly.[6]

[6] The Head of Debt Advisory within a Nordic bank with important operations in Finland is acknowledged for useful comments concerning credit committees.

2.2 Relationship banking

The term "relationship banking" is a rather newly established expression in general literature of banking, and there is no clear definition for this term. Generally, the term refers to a close, long-term relationship between a bank and a customer, and the purpose of relationship banking may be regarded as meeting all the financing needs of a customer (Boot 2000, 9-10). Generally in relationship banking, the essential elements are the several interactions with the same customer and the obtaining of customer-specific information, which otherwise would be difficult to obtain. Another important factor in relationship banking is trust, though trust plays an important role also in the so-called transaction banking, which is not based on any particular kind of long-term relationship. However, due to the pronounced role of social interactions in relationship banking, also the role of trust is more significant in relationship banking compared to transaction banking. Furthermore, the quality of the relationship is strongly based on trust. (see e.g. Lehmann & Neuberger 2001, 345; Cosci & Meliciani 2006; Gill, Flaschner & Shachar 2006, 387).

Long-term relationships between a bank and a borrower are generally considered to be beneficial from the borrower's point of view[7], but a long-term relationship benefits also the bank. From the bank's point of view, the key benefit gained from a long-term relationship with important corporate customers would be the decreased costs of information production. Relationship banking is said to be inherently related to an access of information about the customer, and relationship banking seems to be highly beneficial especially in resolving problems of asymmetric information. In addition, in case that the bank offers also other services besides lending, there will be at least some information synergies gained from the relationships with companies, which use also other services of the bank. On the other hand, however, if a long-lasting relationship with a corporate customer ends, the bank is faced with sunk costs of information gathering. (Lehmann & Neuberger 2001, 339-341; Bharath, Dahiya, Saunders and Srinivasan 2007; Boot 2000, 8-11; Cosci & Meliciani 2006, 78)

Relationship banking may also improve and facilitate the whole credit approval process since flexibility is increased compared to an ordinary bank-borrower relationship (Boot 2000, 12-13). Therefore, a bank has an incentive to try to establish such an intense and long-lasting relationship with large corporate customers. However, by

[7] From the borrower's point of view, the key benefits obtained from relationship banking are better availability of credit in the future and the decreased costs of lending (see e.g. Boot 2000, 9-10; Lehmann & Neuberger 2001, 339-341; Cosci & Meliciani 2006, 78)

accepting that the corporate customer has a relationship also with other banks[8], the bank may via diversification reduce risks related to a particular customer. On the other hand however, for example, in a case of possible bankruptcy of the borrower, the bank has decreased the probability of receiving full repayment if the borrower has multiple banking relationships since presumably all of these other banks have also receivables from that particular borrower. (Cosci & Meliciani 2006, 80-81)

If a bank wants to gain some benefits, such as informational advantages, from relationship banking, the bank has to realize that together with possible benefits there will probably be some problems as well. Two most typical problems related to relationship banking are the soft-budget constraint problem, which is especially harmful from a bank's viewpoint, and the hold-up problem, which, in turn, is harmful especially for the borrower. Indirectly, however, both of these problems cause harms for both the bank and the borrower. (Boot 2000, 16)

The soft-budget problem refers to a situation where a (relationship) bank cannot easily deny additional credit even though the extending of credit would not be reasonable. Typical example would be a situation where a company is close to a default. In a situation like that a relationship bank may decide to extend the borrowing company's credit in order to assure the repayment of the bank's existing credits, whereas another bank would probably not grant any additional credit since the probability that the borrower will pay back the principal and the interest is poor. (Boot 2000, 16)

The hold-up problem, in turn, is harmful for the borrower, and it means that due to the information obtained through the relationship with the borrower, the bank will get an information monopoly, which, in turn, gives the bank a possibility to charge higher interests on new loans, or threaten not to lend any additional credit. Unfavourable loan terms would make the borrower reluctant to borrow from the bank, and the corporate customer may start to seek competing offers from other banks. Competition between different banking companies will reduce the hold-up costs, but, on the other hand, if the company has a relationship with many different banks the probability of being denied credit may be increased. (Sharpe 1990, 1069-1070; Rajan 1992, 1379-1381; Ongena & Smith 2000, 27; Boot 2000, 16; see also Coulter & Coulter 2002).

Studies have shown that the stronger the relationship with one bank, the greater the availability of credit and the lower the requirements of collateral (Bharath et al. 2007, 369). The hold-up problem, however, might worsen the loan terms, and therefore,

[8] The number of bank relationships depends in part also on the country where the company operates, industry, and firm specific factors, such as company age and size. The range of banking services needed by a corporation will also affect the number of bank relationships. According to Ongena & Smith (2000), a situation where a company has only one bank relationship is rather uncommon, and according to their study, less than 15% of the companies that participated in their study had only one bank relationship, whereas 20% of the companies had a relationship with eight or more banks. (Ongena & Smith 2000, 27)

though the credit might be more easily available, the terms might be uncompetitive. However, empirical evidence shows that along with the duration of the relationship the loan terms also improve, and this, on the other hand, would imply that the hold-up problem is not such a huge issue when talking about long relationships (Boot 2000). In fact, according to Lehmann and Neuberger (2001), the hold-up problem seems to occur only if the relationship with one, a so-called main bank is almost exclusive (Lehmann & Neuberger 2001, 344). [9]

2.3 Corporate credit approval process

2.3.1 Typical credit approval process

A word "credit" originates from a Latin word "credere", which means "to trust someone". Basically, the question in credit granting is whether or not the potential borrower will be trustworthy, in other words, will the borrower be able and willing to meet his or her obligations. (Andersson 2001, 9) However, banks do not have to depend only on their instinct and trust since they may take advantage of different kinds of guarantees and collateral in order to hedge the loan granted. In addition, by setting covenants, for example, banks are also able to better control the credit relationship.

Usually credit processes are roughly similar between different banking institutions, although there are some differences depending on the banks' internal practices. When a large credit is requested, or the corporate customer is very important, the procedure may be highly complicated, and decision-making may be taken to different departments and levels of the bank's organization (Ahtokari 1990, 35). In addition, it is also possible to make distinctions between different types of customers, who are requesting credit. It is possible that a company, which is already the bank's customer, applies for additional credit either for its existing business operations, or for a new business plan. Another situation is, when a completely new corporate customer requests credit either for a new business, or an already existing business. (Berry et al. 1993, 135)

The credit approval process may be regarded as interaction between the bank and the borrower. The procedure begins with a credit request received from the potential borrower, and after that the bank will probably ask for additional information in order to assess the credit risks and other relevant factors related to the borrower or the credit in

[9] The Head of Debt Advisory within a Nordic bank with important operations in Finland is acknowledged for suggestion to take into account certain issues related to relationship banking.

question. (Andersson 2001, 19) Figure 2 represents a typical procedure for credit assessment based on the procedure represented by Cohen et al. (1966). The thicker arrows shown in figure 2 indicate the main flow, i.e. the procedure used in most of the cases (approximately two thirds). (Cohen et al 1966, 223-224)

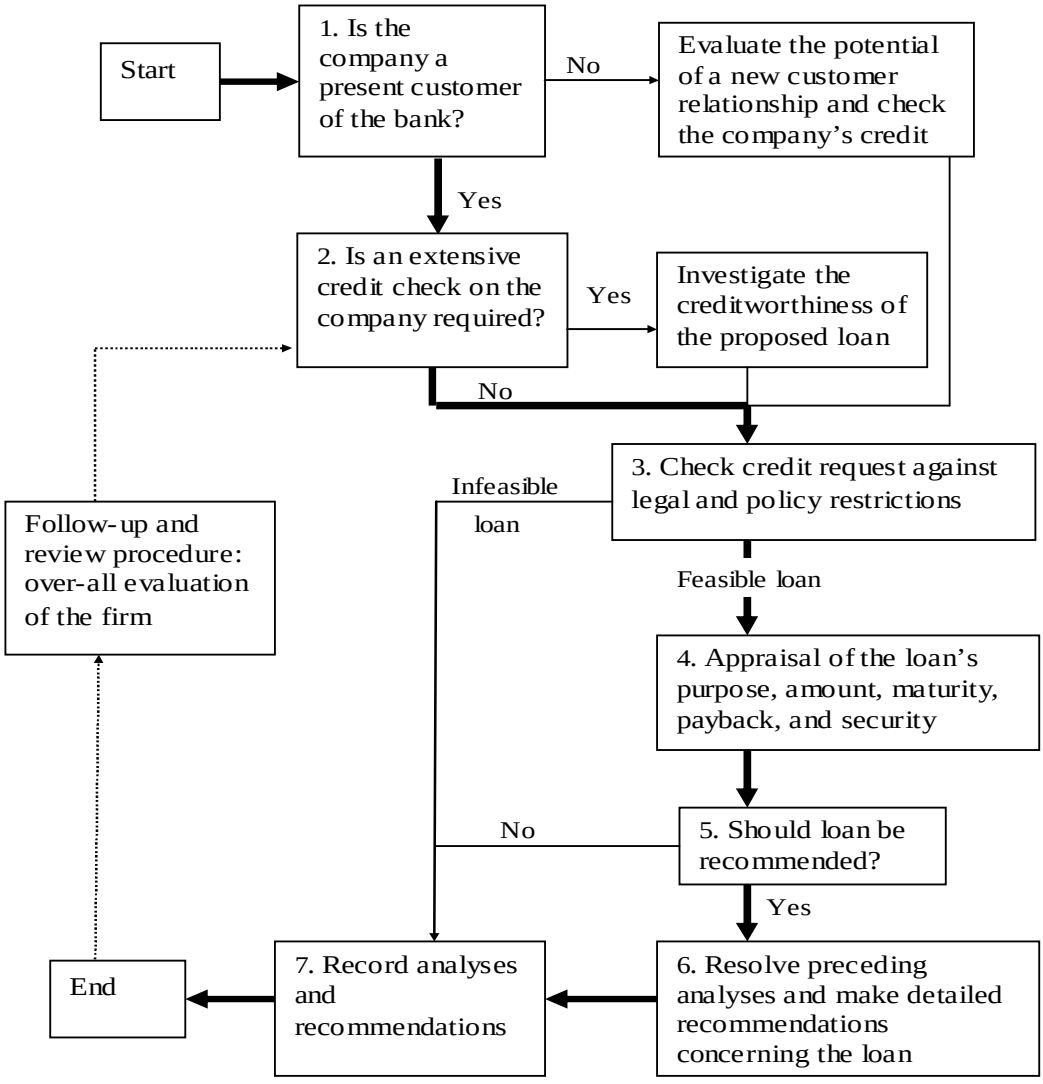

Figure 2 A procedure for analysing corporate credit request (Cohen, Gilmore and Singer 1966, 224)

The procedure shown in figure 2 starts with a question of whether or not the potential borrower is the banks customer. Usually the answer for this question would be yes, and therefore, the more detailed assessment of the borrower is not necessarily required due to previous knowledge about the customer. However, even if the borrower is already the bank's customer, it might still be necessary to investigate the customer's creditworthiness, especially in the light of the loan requested. The reason for re-evaluation of the customer may be due to, for example, debatable reputation of the company as a

customer and the bank's experience with the customers' previous loans. (Cohen et al. 1966, 224-225)

In cases where the company which applies credit from the bank is not already the bank's customer, there will be an assessment of the potential of long-lasting customer-ship with the particular company. Sometimes, however, the loan might be approved, even if there is no potential for future relationship with the customer, in a case where the direct profitability of the loan requested will be significant. (Cohen et al. 1966, 230)

The legal restrictions represented in figure 2 refer to, for example, deposit limits set by regulatory authorities. These limitations have to be considered together with the amount of credit requested. The questions represented in phase 4 in figure 2 (purpose, amount, maturity of the loan, repay ability of the borrower and security requirements) are first considered independently, and finally together taking into account the combine effect of these factors. Although the actual lending process ends with recording and filing the results of the analyses made within the actual lending process, there will still, however, be a continuous process of controlling: evaluations and follow-up actions are also performed during the whole credit relationship. The follow-up processes vary also depending on, for example, the amount of credit approved, risks related to the borrower, and the credit rating of the borrower. The factors related to the borrower's credit-worthiness are same regardless of whether or not the borrower is already the bank's customer. (Cohen et al. 1966, 224-239) Therefore, if a company is presently in poor economic condition, the outcome of credit assessment will be the same no matter how long a relationship the company has had with the bank.

It would be reasonable to assume that more experience in credit granting would also bring better ability to avoid being misled. Thus, it could be assumed that, at least to some extent, differences may be observed in the decision-making behaviour within experts and less experienced credit professionals already in the second step of the credit granting process, namely in the encounter with the borrower. More experienced profes-sionals may be more skilled to analyse the trustworthiness of the information repre-sented in the credit application, and more experienced professionals may also perform better in gathering of appropriate information. In addition, there would probably be differences also in the manner of how different professionals assess the information obtained. Thus, the decision-maker needs to be careful when assessing the potential borrower and the information related to that company, and usually banks also prepare their own analysis concerning the credit applicant. The analysis is based on all infor-mation acquired from the potential borrower and other possible sources, for example, publicly held records. (Stanga & Benjamin 1978, 17)

2.3.2 Types of credit

Corporate lending may be divided according to the intended use of the credit requested, and the most typical types of corporate loans are working capital and investment loans, which may also be termed as transaction loans and project loans. Transaction loans refer to working capital loans, and project loans, in turn, refer to investment loans. (Broomé, Elmér and Nylén 1982, 167) Investments consist typically of capital expenditures, such as machinery and equipments, whereas working capital refers to the amount of capital employed in a company's everyday operations. Furthermore, corporate lending may be divided according to the length of a loan period into short-term (under 1 year maturity), medium term (1 to 5 year maturity) and long-term credits (over 5 year maturity). (Riihimäki 1993, 26; Kontkanen 1996) A loan period is generally defined according to the amount of credit needed. In addition, the intended use of the credit applied and the company's plans for the future may also affect the duration of the desired loan period. (Riihimäki 1993, 27)

Loans with maturity of more than one year are called term loans, excluding, however, real estate and consumer loans. Generally, the maturity of a term loan is limited to 10 years, and a typical maturity for term loan is two to five years. Typical intended use for a term loan is, for example, acquisition of fixed assets. One type of term loan is a so-called revolving credit loan, which is rather similar to short-term credit line, but, however, in revolving credit loan, the loan period is typically longer than in a short-term credit line. (Hempel et al. 1986, 390)

A typical long-term credit has a maturity of more than 10 years, and usually long-term loans are needed, for example, in the starting phase of a company or in order to make a large investment, such as machinery or in the acquisition of premises. The most typical form of the long-term loan is a debenture loan, which gives the borrower the agreed amount of credit and which requires the borrower to pay back the loan capital during the agreed loan period. (Riihimäki 1993, 28-30)

When a company's internal finance is not sufficient, and the company needs more finance, alternatives are either to raise equity or to raise debt. Besides these alternatives there is also a so-called mezzanine capital, which is a mixture of both equity and debt. Equity and borrowed capital differ from each other to some extent: for example, the position in a possible bankruptcy situation, costs, and the right of voting are usually different within these forms of capital. The forms of corporate finance are not discussed further in this context, and to see more information on that subject, see e.g. Reuvid (2002) and Knüpfer & Puttonen (2004).

The need for credit may be due to a variety of reasons, such as the fluctuation of working capital or inadequacy of internal finance. When a company is applying credit from a bank, the bank has to assess carefully the reasons why the credit is applied. A

fluctuation in the company's working capital is in most cases only natural since the working capital may fluctuate, for example, because of seasons, and especially in a start-up phase many companies need additional finance before the business starts making profit. If, on the other hand, the credit is applied because the company's internal finance is insufficient, the reasons for this may be that the company's management is not able to run the business properly, which, in turn, may later cause defaulting also in the repayment of the loan capital. To cover possible shortfalls in working capital, companies are offered seasonal open lines of credit or a cheque account on credit. These credit lines are usually short-term loans, and they are, in general, offered for financially strong borrowers, which are known to be creditworthy. Credit lines are useful, for example, due to their flexibility (see e.g. Hempel, Coleman & Simonson 1986, 388-389; Riihimäki 1993, 28-30), and for large corporations the short-term credit lines offered by banks are especially important in providing liquidity during periods of economic stress (Saidenberg & Strahan 1999, 1). Possible other types of short-term loans are, for example, bills of exchange and foreign currency credits. These types of credit are not discussed further in this context, and to see more information on different types of corporate credit see e.g. Kontkanen (1996), Hempel et al. (1986), and Riihimäki (1993).

2.4 Lending decisions and information related to lending

2.4.1 Foundation of credit decisions

From a theoretical view a credit decision may be defined as an ordinary decision-making situation, which consists of a decision-maker (or decision-makers) with his or her (their) objectives, restrictions for the decision-making, alternatives, and background information. (Ahtokari 1990, 37-38) According to Simon (1960), a credit decision process may be divided into three stages, which are intelligence activity, design activity, and choice activity. In the intelligence activity stage the necessary information is acquired, and this information will be used in the design activity stage in order to form an overall picture of the situation and to define possible alternatives. The final decision is made in the choice activity stage. (Simon 1960, 2)

Decision-making has been studied extensively, and many classifications related to it have evolved. Examples of these classifications are programmed and non-programmed decisions and open and closed decisions. In addition, decision-making is often classified into decisions made by individuals and decisions made by groups, which in the context of credit decisions would be credit committees. (Simon 1960, 5-8; Ahtokari 1990, 6-8)

According to Simon (1960), decisions may be divided according to the classification of programmed versus non-programmed decisions (Simon 1960, 5). Keen and Scott Morton have later used terms structured and non-structured instead of programmed and non-programmed since they considered that the original terms were too much computer-based. (Ahtokari 1990, 6-7) Programmed, or structured, decisions are generally repetitive and routine, and there are usually clear rules related to programmed decisions. Non-programmed, or non-structured, decisions, in turn, are irregular and there are no clear rules related to these kinds of decisions. Often non-programmed decisions require much subjective assessment since the problem in question has not appeared previously or the subject is so important that a more detailed analysis and a tailored outcome is needed. (Simon 1960, 6)

It is rarely possible to classify a credit decision purely as a structured or non-structured decision. Instead, a credit decision would be better described as a semi-structured decision, which means that the amount of structured elements in a credit decision varies depending on the complexity of the decision in question. Thus, in a simple decision-making situation the amount of structured elements is large, whereas in a more complex situation non-structured elements are more important. (Ahtokari 1990, 39) For example, in a situation where a long-term customer, who is known to be trust-worthy and who lends regularly from the bank, applies credit, the decision would probably be much like a programmed decision, i.e. routine, which will not require much customisation and assessment, whereas, in a situation where an entirely new corporate customer applies credit from the bank, much more assessment and analysing would probably be required. Furthermore, lending to small companies, in general, would be more like a programmed decision, whereas lending to large corporation is more like a non-programmed decision since lending to large companies requires usually more tai-loring and human contribution.

The theory of open and closed decision-making models was originally established by Wilson and Alexis in 1962 (Ahtokari 1990, 6-8). The closed decision-making model is a classical decision-making situation, where the decision-maker confronts a known set of alternatives. The open decision-making model, in turn, coordinates with an adaptive model, and usually this kind of model is used in more complex decision processes. Both of these models consists of the same set of six basic decision-making elements, which are 1) “the set of nature”, 2) “the decision-maker”, 3) “the goals or ends to be served”, 4) “the relevant alternatives and the set of actions from which a choice will be made”, 5) “a relation which produces an ordering of alternatives in some arrangement”, and 6) “the choice itself”. Open and closed decision-making models differ from each other mainly in regard to the recognition and the degree of emphasis accorded to some of the elements. (Wilson & Alexis 1962, 150-151)

In general, the process related to lending to a large corporation may be regarded as an open decision-making model. When making a credit decision, the decision-maker tries to find a solution which would be "good enough". It is not meaningful even to try to discover every single detail about the credit applicant. There are also many facts that are difficult to assess, and in a credit decision the decision-maker has to rely on uncertain assumptions about the borrower's forthcoming behaviour. However, in a simpler credit decision, the situation would be more like in a closed decision-making model. In a situation like that, there is a limited set of alternatives, for example a set of alternative interest rates. In addition, there are usually also so-called objective rules, which are used in order to reach a solution. (Ahtokari 1990, 38-39)

Generally, there exist two types of errors in making credit decisions: *Type I* and *Type II* errors. Type I error means that a loan is granted to a company with poor economic viability due to a misclassification made in the assessment of company's credit quality. Thus, when the credit is approved, the bank is probably faced with credit losses. The Type II error is an opposite of the Type I error, and thus, the Type II error means that a company, which would actually be successful and creditworthy, is classified to be unsuccessful, and the credit is rejected. Usually, credit professionals are more careful about making the Type I error since lending decisions which finally end up to credit losses will, in general, be more harmful compared to a situation of type II error. Furthermore, a credit decision, which results in significant losses, may also be harmful for the credit professional's own career. (Andersson 2001, 17-18) Therefore, the banks, generally, try to avoid credit risks as firmly as possible. However, risks cannot be fully avoided, and therefore, banks also have to be prepared to bear credit risks to some extent. (Bruns 2004, 43)

2.4.2 Information gathering within lending decisions

The costs of information gathering and the means to control these costs will be an important subject of concern during the lending process. Therefore, during the assessment of potential borrower's creditworthiness the aim is to weigh the benefits from obtaining further information and preparing extensive analyses against the costs of information gathering. Generally, banks will continue to search more information on a potential borrower until the expected marginal benefit of search equals zero. (Cohen, Gilmore and Singer 1966, 230; Lehmann & Neuberger 2001, 341)

According to Danos, Holt and Imhoff (1989), the information gathering related to credit decisions may be divided into three phases, which are introduced in figure 3.

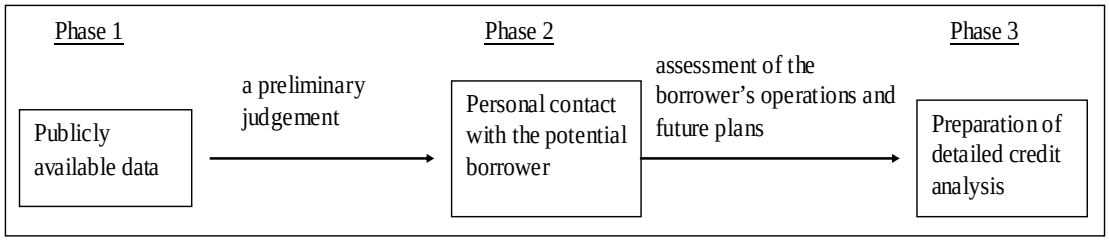

Figure 3 Sources of information in making credit decisions (Danos et al. 1989, 236-239)

Figure 3 clarifies how the decision-maker makes a preliminary judgement based on the publicly available information, and afterwards completes this information with additional information. When the decision-maker has obtained adequate information for the credit decision, the credit assessment is performed, and if the decision is not rejected in this stage, the next phase is where the loan proposal is prepared for the credit committee, which makes the final decision (approves or declines). (Danos et al. 1989, 236-239; see also Broomé et al. 1982, 51 and Andersson 2001, 19)

According to Burghof (2000), banks use the so-called cheap information more than information which might be considered expensive. However, if some problems appear during the lending relationship, the relative importance of expensive information tends to increase. With cheap information Burghof refers to information which is rather easy to obtain or to information which would be available anyway if the borrowing company complies with legislation. With expensive information, in turn, Burghof refers to information which is rather difficult to obtain, and which is prepared especially for the informational needs of bank. (Burghof 2000, 291-292)

The process of gathering appropriate information about the potential borrower is partly influenced by the type of corporate customer requesting credit from the bank. Generally, if a credit applicant is not already the bank's customer, the bank needs to gather much more information compared to the situation where the applicant already is the customer. (Berry et al. 1993, 135; see also Cohen et al. 1966) Much of the information needed in credit approval process may be gathered from public sources, such as trade registers, and publicly available information might be considered especially useful when assessing the potential borrower's past performance (see Burghof 2000). Usually, however, publicly available information about the potential borrower is not considered adequate, and, for example, according to the study conducted by Burghof (2000), banks used significantly more private information than publicly available information. (Burghof 2000, 290-291) Therefore, it seems that in order to prepare an analysis about the borrower, the bank also needs, in addition to publicly available information, additional information. On the other hand, though, many creditors feel that much less of this additional information should be necessary since usually the financial reports are

prepared by certified public accountants, and these accountants should be aware of the creditors' information needs. (Stanga & Benjamin 1978, 17)

Usually the actual credit application received from the potential borrower consists of the basic information about the credit applicant. Typical pieces of information represented in the credit request are, among other things, basic information about the credit applicant and the intended purpose of the loan requested. Naturally, since the aim of the borrower is to obtain credit, the borrower has an incentive to represent all information in an as positive light as possible. Sometimes banks want to organise a meeting with the prospective borrower before the final credit decision is made in order to obtain additional information, and many banks prefer a personal visit to the borrower's place of business with the intention to size up the borrower's operations and future financial and operating plans. These kinds of meetings are, in general, highly useful, but if the meeting is not structured properly, they can also be misleading. (Danos et al. 1989, 236–239; Andersson 2001, 23) However, if a bank has a well-established relationship with the borrower, and the size of the loan may be considered normal, the approval process may not need any extra meetings with the borrower. [10]

In general, the information received from the credit applicant may be used as a sign of the potential borrower's creditworthiness. The borrowing company may, for example, be reluctant to give certain information to the bank, and this kind of an event may be considered as a negative sign. On the other hand, the potential borrower may want to confirm its creditworthiness, and thus, the borrowing company is more willing to give information to the bank. The borrowing company's overall performance and co-operation is, therefore, a rather good implication of the borrower's intentions and behaviour in the future. (Burhgof 2000, 296)

2.4.3 Decision-making strategies and characteristics of the decision-maker

Expertise may be defined as "a rare skill that develops only after much instruction, practice, and experience" (Camerer & Johnson 1991, 195). A word "*expert*" originates from a Latin word "*expertus*", which refers to a person who has extensive skill or knowledge in a specific field. In addition, the term may be used also in a form of "experto credito", which means "Trust one who has proved it". However, in everyday life the term expert is used rather generously when speaking of a person who has knowledge in a particular field. In other words, people use the term expert even when a

[10] The Head of Debt Advisory is acknowledged for useful comments and the suggestion to take into account certain issues concerning the credit approval process.

person in question does not have an actual expert competence in comparison to his or her colleagues. (Andersson 2001, 45)

In the light of the definition of an expert, and especially if taking into account the knowledge required from the expert, it is not surprising that it is not an easy task to achieve the expert competence. In addition, according to Surowiecki (2004), there is no actual evidence that a person may even theoretically become an expert in such an area as "decision-making" since decisions are regularly based on the decision-maker's predictions about the future, and there are no guarantees that even the most sophisticated predictions would be accurate. (Surowiecki 2004, 32) Especially within credit decisions the credit professional has to live with uncertainty, and therefore, it would be reasonable to assume that it requires not only adequate knowledge but also other elements and characteristics on the part of the decision-maker in order to become an expert in the field of credit granting. (Kontkanen 1996, 51).

According to Shanteau (1988), there are many useful strategies which might be used in experts' decision-making, and these strategies are, in general, also discriminatory factors between novices' and experts' decision-making behaviours. Experts make, for example, adjustments in their initial decisions with the intention of making corrections, which is usually more important than being consistent. Novices, on the other hand, are generally rigid, and blindly committed to their previous decisions. Usually experts also learn better from past experiences, and they seem to be aware of the fact that it is not only a good thing to make changes when needed, but sometimes it may also be necessary in order to make rational decision. In addition, experts have a tendency to rely on others when making decisions. In order to avoid biases related to heurictics[11], experts tend to make use of informal decision aids. An example of informal decision aid would be a written record of previous credit decisions, which serve as a memo to avoid decisions which have previously turned out to be unsuccessful. Furthermore, the so-called divide-and-conquer strategy seems to be rather popular within experts when making decisions, and in general, it is meaningful to break one large dilemma into several small and more manageable problems, and then try to find a solution for these problems. After finding a proper solution for every "sub-problem" the decision-maker puts everything together again. (Shanteau 1988, 207-208)[12]

The use of the above-mentioned strategies is an important element which distinguishes experts from novices in decision-making behaviour. In addition, many experts seem to have certain characteristics which also separate them from novices. Experts

[11] Experts tend to be heuristic in their decision-making, which means that they make use of the so-called mental rules of thumb (see introductory chapter)

[12] It should be noted that the characteristics of experts may, and probably will, vary at least to some extent according to different domains, but the characteristics mentioned above would be a good insight into possible characteristics of experts at the general level.

have, for example, developed perceptual abilities, and thus they have an ability to notice information which novices would ignore. Furthermore, experts also tend to be able to distinguish relevant information from irrelevant, and this ability seems to be one of the most important differences between novices and experts. An ability to simplify problems, which is closely related to the use of the above-mentioned divide-and-conquer strategy, is also typical for experts. In addition, experts tend to have rather good communication skills. However, experts generally are poor in describing their decision-making processes properly, and therefore, it may sometimes be difficult for experts to rationalize their decisions since they lack the ability to verbalize their thoughts behind the decisions made. (Shanteau 1988, 209-211)

Experts and novices differ also in their tolerance of stress and how they react when facing difficulties. Experts seem to be able to make efficient decisions even when facing misfortunes or adversities, whereas novices tend to lack this ability. In general, under a stressful situation experts also make more efficient decisions than novices. However, in order to make efficient decisions, the decision-maker has to know how to act efficiently, and experts seem to be superior to novices also in this field. (Shanteau 1988, 210) When it comes to the final decision, experts, in general, tend to have a better performance compared to novices, but after obtaining training novices would perform as well as experts (Camerer & Johnson 1991, 200).[13]

2.4.4 Credit conditions and other criteria for credit approval

From a bank's point of view, in corporate lending decisions the aim is, on the one hand, to minimise risks to the bank itself, and, on the other hand, to maximise the bank's profit. (Cohen et al. 1966, 222) In order to reach these goals the bank determines specific terms for the loan, and in addition, banks have their own internal procedures and standards for lending decisions, which will be used as guidelines in reaching a proper credit decision. Sometimes the original terms of the loan turn out to be inappropriate, and the decision-maker may consider that the credit could be approved only if the terms are modified. The possibility to modify the original terms of the loan will ensure that the bank's profit is maximised. However, the modification of the loan terms will require more expertise than purely rejecting or approving the requested loan. (see e.g. Cohen et al. 1966, 219)

[13] Camerer and Johnson (1991) argue that training will help decision-making and judgment, whereas additional experience will not. The suggestion was based on the finding that trained clinicians and graduate students were more accurate than true novices (untrained students or secretaries). Therefore, due to the different domains within which studies were made, the findings of Camerer & Johnson may not necessarily be completely generalizable to credit approvals.

The interest rate reflects the risks related to the borrower in question, but usually the fact of how good of a customer the particular company is for the bank may also affect the interest rate (Ahtokari 1990, 33; Kontkanen 1996, 118). In addition, special features related to the potential borrower, such as labour difficulties or pending lawsuits, may result in the charging of a higher interest rate. These kinds of factors should always be considered separately. (Cohen et al. 1966, 231) An interest for a loan may be either a fixed or a floating rate of interest. The fixed interest rate will be the same during the whole loan period, whereas the floating rate of interest will be connected to some reference rate, for example, the bank's own prime rate or a long-term market rate. (Kontkanen 1996, 117-118)

Criteria, on which a typical credit decision is based, may be divided into three groups, which are: criteria related to a company applying credit, criteria related to the whole economy, and criteria related to a bank's own interests. The combined effect of these criteria is taken into consideration, and each criterion should be weighed appropriately. (Heinonen 1981, 122)

Criteria related to the borrowing company set demands for the borrower's credit quality. The main emphasis is on the company's profitability and the company's long-term potential to prosper in business operations. (Heinonen 1981, 122) To mitigate the credit risks, a bank may require some kind of guarantee from the borrowing company. However, a loan should not be granted only on the grounds of these guarantees. The nature of guarantees should only be an additional way to ensure the repayment. In other words, if there are no other arguments which would support loan approval, and especially if the company applying credit has no prospects for success in the future, the loan should be rejected regardless of possible guarantees. (see e.g. Kärävä 1984, 66; Heinonen 1981, 123)

Criteria related to the whole economy limit mainly the total amount of credit granted by banks. If the economic situation in a particular country or region is positive and stable, banks will offer more credit for companies, as well as other parties, and if the economic situation is poor, the total amount of credit granted by banks will probably be smaller altogether. Because of the economic fluctuation, the company's profitability may vary a great deal at different time periods. A bank should assess the borrower's economic situation from a wider perspective, and general economic fluctuation should not be the main reason for rejecting a credit request. Instead, the decision should be based on the company as a whole and its prospects of continuity. (Heinonen 1981, 121)

Banks' own interests are the grounds for every credit decision made in a particular banking institution. Often the term credit culture is used when referring to a bank's own interests. Credit culture, in general, refers to an attitude against risks, in other words, the credit culture of the bank will determine the bank's overall risk appetite. In addition, the bank's credit culture may be regarded as a framework for how different kinds of credit

applications should be handled by individual credit professionals. Furthermore, within the credit culture, many banks establish also different kinds of standards for dealing with credit applications. Typically, standards concern, for example, the definitions of required analyses on which the decision may be based, return requirements, and directions concerning the general credit conditions, such as pricing of the loan, covenants, and guarantees. (Donaldson 1995, 101-105) Standards determined by the bank's management team may also concern, for example, how different kinds of customer will be treated when they apply credit. The bank may, for instance, prefer companies that are already the bank's customers. (see e.g. Broomé et al. 1982, 60) In addition, many banks aim to create long-term relationships with corporate customers, and therefore, standards concerning the building of relationships with customers are also rather typical in banks' own procedures (Heinonen 1981, 127)

2.5 Summary for credit granting

This section summarizes the main points presented in the second chapter of the thesis. The intention of the second chapter was to present corporate lending in theory. Important theories related to lending operations are, for example, information asymmetry and adverse selection, which concern the theoretical perspective of credit granting. In addition, decision-making in groups and biases, such as a halo-effect, are also related to lending operations, and these may be considered to be a part of psychological perspective of lending.

When making the credit decision, the decision-maker has to take into consideration also the possible effects of information asymmetries. Information asymmetry exists due to the fact that the information related to credit decision has not been distributed uniformly between the bank and the borrower. In other words, the borrower may be better aware of, for example, prospects of the investment planned, or the borrower has so-called private information concerning the company's actual condition. Typical types of problems related to asymmetric information are adverse selection and moral hazard. Adverse selection refers to, for example, a situation where credit-worthy borrowers are adversely selected due to the high loan costs charged by banks. Furthermore, adverse selection may lead to a situation where the bank's customers apply additional credit only for their riskiest projects. Moral hazard, in turn, means that the borrower will behave purposely in a way which might reduce the bank's possibilities for repayment. This kind of behaviour is simply due to the different interests of the bank and the borrowing company. One way to deal with problems of adverse selection and moral hazard would be credit rationing, i.e. either the limitation of the total amount of credit approved, or the total refusal of credit granting to a particular borrower. It should be

noted, however, that it is rarely possibly to clearly distinguish the way in which a particular decision-maker takes into account problems such as moral hazard and adverse selection. Instead, the credit decision-maker's decisions concerning the actual credit request, i.e. decisions concerning, for example, the terms of the loan or a rejection of the credit request, are rather implicitly related to the problems such moral hazard and adverse selection.

Psychology is also a part of credit decision-making, and, for example, a halo-effect and decision-making in groups may be considered to be a part of psychological perspective of credit granting. The halo-effect in the context of credit granting means that if, for example, the borrowing company is known to be responsible, the credit decision-maker may also assume that the company will also have a skilful management team. In addition, the decision-maker tends to pay attention to traits which confirm rather than disconfirm his or her original impression about the credit applicant. In regard to the decision-making in groups, in turn, decisions made by groups may probably be more often more accurate compared to decisions made by an individual, but, on the other hand, there are also some problems related to group decision-making. In groups there might be, for example, a tendency to seek conformity, which, in turn, might lead to situations where individuals within groups do not express their real thoughts about the credit request in question. It might be reasonable to assume that often the decision-makers themselves do not become aware of the psychological problems related to their decision-making process.

Relationship banking was also one subject discussed in the second chapter since, especially nowadays when the competition has increased between different banking companies, long-term relationships with important corporate customers are of the essence from the viewpoint of the bank's profitability. Relationship banking has both advantages and disadvantages for both the bank and the borrower, and in order to gain benefits from a relationship with a corporate customer, the bank has to be prepared for some problems as well. The key benefits gained from relationship banking from the banks point of view are decreased costs of information gathering. In regard to the actual credit decision-making process, and especially in regard to the research question at hand, relationship banking will probably be more frequently taken into consideration by credit professionals than novices since credit professionals are presumable assumed to take into account also factors which are not necessarily directly related to a particular borrower's creditworthiness. Examples of these kinds of issues might be competitive issues.

Credit granting as a process may vary a little within different bank organizations, but it is, however, possible to give a general idea of a typical procedure for credit decision-making process. Gathering of appropriate information is the first step in the process of credit decisions after the actual credit application is received from the potential

borrower. Although the actual credit approval process ends with recording and filing the results of the analyses made within the actual lending process, there will still, however, be a continuous process of controlling and follow-up actions, which are performed during the whole credit relationship. The follow-up processes vary depending on, for example, the amount of credit approved, risks related to the borrower, and the credit rating of the borrower.

In the end of the second chapter there was a discussion about different kinds of characteristics of expert decision-makers, as well as some decision-making strategies within experts' and novices' decision-making. Based on these characteristics and strategies, it is very likely that there will be some clear differences in the way in which novices and experienced credit professionals gather information and especially in the way they assess this information.

3 ELEMENTS OF CORPORATE CREDIT QUALITY

The main concern in lending decisions would be whether or not the potential borrower will have the ability to repay the principal and the interests on time. Banks may use different kinds of methods to assess potential borrower's credit quality, or credit-worthiness, and some of these methods are discussed next.

3.1 Company analysis in lending decision-making process

The corporate lending decision is based mainly on knowledge about the customer, i.e. the company which is applying credit. In order to assess the company's credit quality, and especially in order to ensure that the bank's credit decisions are sound, a bank has to understand the main aspects of the business in question and also the direction of the business development. In other words, the bank has to form an overall picture of the potential borrower and its business operations. For this purpose there are different methods of company analysis. (see e.g. Kontkanen 1996, Asikainen 1981)

Company analysis, per se, may be defined as an overall assessment of a company. In company analysis, the concern is always about the whole company as one entity, and thus, if the company under analysis is a part of the group, the analysis should be widened to concern the whole group (Kontkanen 1996, 128). However, within a company analysis it is possible to distinguish different kinds of sub-elements, such as the financial statement analysis and the simple calculation and interpretation of financial ratios. These elements are discussed later in the thesis, and the relations between a company analysis, financial statement analysis, and financial ratio analysis may be represented as follows in figure 4.

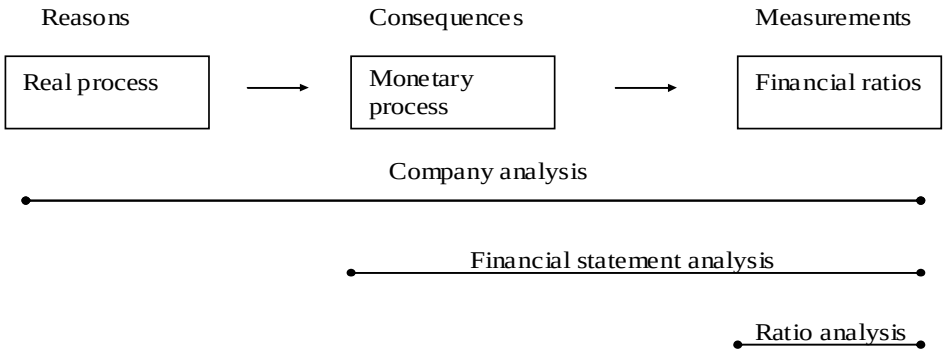

Figure 4 Relations between company analysis, financial statement analysis, and ratio analysis (Niskanen & Niskanen 2002, 9; Vieru 2008)

As can be seen from figure 4, a financial statement analysis is a part of the company analysis, and ratio analysis, in turn, is a part of the financial statement analysis. A company analysis is an essential part of the credit decision, and the analysis is normally made only once, in the beginning of the customer relationship. However, the information needs to be updated continually, and from the bank's perspective there may be a need for preparation of a company analysis also even after a long relationship with a corporate customer. Typical examples of these occasions would be a situation where a company applies a sizeable amount of credit, or where the profitability of the company turns worse. In addition, a company itself may also ask for an analysis as an outside assessment of its own operations and profitability. (Asikainen 1981, 279-280; Riihimäki 1993, 50-51; Kontkanen 1996, 127)

The aim of a company analysis is to improve the knowledge about the borrowing company and the industry where the company operates. Analyses are used to get information about the company's overall situation, to assess company's new business projects, and the finance of these projects. (Asikainen 1981, 279-280; Riihimäki 1993, 50-51; Kontkanen 1996, 127) A company analysis consists of both quantitative and qualitative factors. Typical examples of quantitative factors are profitability, liquidity and coverage, and examples of qualitative factors are organization, production and administration. Qualitative factors cannot be interpreted in figures, but their importance may be very significant in the final analysis. (Heinonen 1981, 124-125)

3.2 Financial statement information in assessing credit quality

3.2.1 Financial statement analysis

Much of the information needed to assess the company's credit quality is related to financial statements. Three important financial elements of the assessment of credit quality are financial flexibility, capital structure and cash-flow stability (Teinilä 2007). For the purpose of assessing these elements, the company's financial statements would be highly useful. Figure 5 shows a typical process of assessment of credit quality by using financial information.

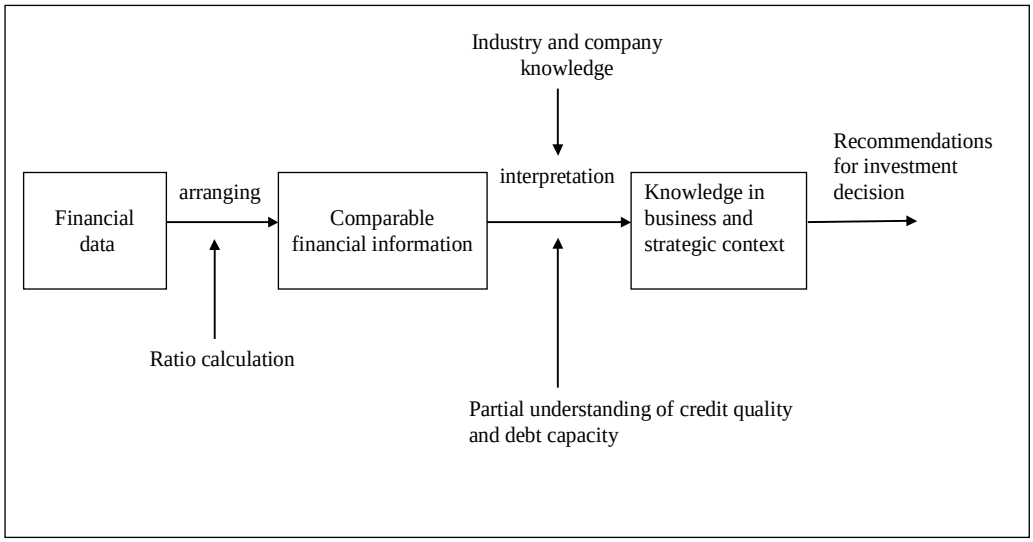

Figure 5 An analysis of the borrower's credit quality (Teinilä 2007)

As can be seen from figure 5, the process for analysing borrower's credit quality begins with the gathering of appropriate information. Using financial data obtained from financial statements, many kinds of financial ratios can be calculated, and these ratios, in turn, will be highly useful in comparing the borrower to other companies operating in the same industry. Ratios and especially the information obtained from comparisons made with other companies will give the decision-maker an overall picture of the borrower and its credit quality, and with this information, the decision-maker is able to make his or her recommendation for investment. (Teinilä 2007)

In the procedure represented in figure 5, the differences between novices and professionals would probably be seen, at the latest, after the information has been arranged, and the information should be interpreted by the decision-maker. Novices might also gather information in different manner than professionals, which, in turn, will affect the whole interpretation process. In addition, it might be possible that since novices have little, if any, practical experience in the field of credit approvals, novices might handle the information concerning the industry and company differently compared to credit professionals who are used to tolerating risks in their decision-making. Furthermore, since novices probably make their decisions based much on theoretical knowledge, it might be that novices analyze, for example, financial ratios purely according to normative values given for different financial ratios. (see e.g. Shanteau 1988; Shanteau 1992; Andersson 2001; Andersson 2004)

3.2.2 Financial ratios

Different kinds of ratios are used to describe the company's profitability, leverage, and liquidity, among other things. In this context most typical ratios are discussed in brief, and more detailed formulae of these ratios are presented in appendix 2[14].

3.2.2.1 Profitability ratios

A company's profitability refers to the company's ability to produce net income (Kallunki & Kytönen 2002, 74). Profitability may be divided into absolute and relative profitability. Operating income or net profit, for example, may be used as a measure for absolute profitability, whereas ratios calculated from financial statement are measures for relative profitability. (Niskanen & Niskanen 2003, 112)

Profit margin, which is calculated by dividing the company's net profit with net sales revenue, is generally suitable for assessing an individual company's development. In some occasions profit margin may also be used for comparison within a particular industry, but generally it is not suitable for comparing different companies within different industries. (Niskanen & Niskanen 2003, 113)

Return on capital employed (ROCE, return on investment (ROI); see appendix 2) measures relative profitability, and it tells the profit which is earned on the capital invested in the company. ROCE value should always be greater than the cost of borrowing since otherwise an increase in interest rates will decrease shareholder value. Therefore, the company's ROCE value is primarily compared to the company's average costs of capital. According to the Committee for corporate analysis (2005), a good value for ROCE ratio would be over 15 per cent, and values between 9 and 15% are still satisfactory. However, normative values will not always tell the whole truth, and therefore, ROCE, as well as other financial ratios, should be assessed together with other relevant factors concerning a particular company. (Suvas 2007 8-9; Committee for corporate analysis 2005, 59-60)

Sometimes it may be reasonable to measure the company's profitability only from the shareholders' points of view. Return on equity (ROE; see appendix 2) may be used for this purpose, and the value of ROE tells how much profit is generated with the money shareholders have invested in the company. The profit demand of the shareholders' defines a minimum level for ROE. A company may try to raise the value for ROE via leverage. If the company raises the amount of debt, this will affect the value of

[14] See also appendix 3, which concerns financial ratios represented later in table 5.

ROE since amount of debt does not affect the company's amount of equity (which is the denominator of the ROE formula). (Kallunki & Kytönen 2002, 77-78)

3.2.2.2 Leverage ratios

A company's solvency, which may also be termed as leverage or solidity, describes the company's capital structure, and typical ratios used to describe solvency are equity ratio, or solvency ratio, net gearing and relative indebtedness, i.e. debt to sales ratio. In addition, debt-to-equity ratio is an important ratio for banks when assessing potential borrower's creditworthiness, and usually banks are rather reluctant to borrow funds for a company, which is highly indebted. A company may be considered to be solid if it is able to meet its interest payments in the long run without the continuity of the company's operations being threatened. (Reuvid 2002, 76; Niskanen & Niskanen 2003, 130)

Equity ratio (see appendix 2) is a measure of a company's tolerance to losses and ability to meet its long-term obligations. According to the Committee for corporate analysis (2005), a good value for equity ratio would be greater than 40 per cent, whereas a value of lower than 20 per cent indicates poor solidity. (Committee for corporate analysis 2005) Usually the improvement of the company's profitability improves also the company's self-sufficiency (Kallunki & Kytönen 2002, 81).

Relative indebtedness, or debt to sales ratio, is a highly industry-specific ratio. Therefore, relative indebtedness is suitable for comparison between different companies only if these companies are from the same industry since companies within different industries usually have different kinds of cost structures, and thus the level of indebtedness which may be considered appropriate varies also depending on industry. (Committee for corporate analysis 2005) In the beginning of an investment project, the debt to sales ratio may rise quite a lot and rapidly since it usually takes time before the investment begins to generate returns. However, if the company is able to run the business properly, and the company's investment projects are profitable, the debt to sales ratio should also decrease as the investments begin to make profits. (Donaldson 1995, 90)

The company's leverage may be measured also with the debt-to-equity ratio. However, there are many variations of this ratio, and in some context the debt is used to refer only to long-term debt, whereas in other context also short-term debt is taken into account. (Argenti 1983, 7) Here, however, the debt-to-equity ratio, which may also be termed as gearing, refers to the ratio of total liabilities divided by shareholders' equity. If, however, the calculation is made by using net figures, i.e. interest bearing debt reduced by cash and equivalents, the ratio would be better termed as net gearing. (see

appendix 2) Debt-to-equity ratio, and its variations, may be considered to be good if the value is below 1. However, it should be noted that in case the value is negative, this may be due to negative equity, which, in turn, makes the company's solidity poor. (Kallunki & Kytönen 2002, 83-84; Committee for corporate analysis 2005, 63)

Furthermore, often banks are also interested in the potential borrower's interest coverage ratio (see appendix 2), which will at a very basic level tell whether or not the borrowing company is able to service its debt. (Reuvid 2002, 77) Interest coverage is a so-called income gearing ratio, and if compared to the above-mentioned debt-to-equity ratio, i.e. capital gearing ratio, interest coverage may be regarded as more useful since it is more discriminating, and it also measures the company's ability to service its debt instead of measuring merely the relative size of debts. (Argenti 1983, 7) The interest coverage ratio tells the number of times a borrowing company is able to pay interest out of its earnings before interest and tax (EBIT), and the lower the ratio is, the more difficult it probably will be for the company to service its debt. (Reuvid 2002, 77; Niskanen & Niskanen 2003, 134-135)

3.2.2.3 Liquidity ratios

Liquidity means the company's ability to meet its short-term financial obligations on time. Two generally used indications of liquidity are current and quick ratios (see appendix 2), which are termed as static ratios of liquidity since they indicate a company's liquidity at the date of financial statement. Thus, these ratios do not tell much about the company's liquidity during the accounting period. In addition, due to the static nature of these ratios, it is rather easy to distort the values of these ratios. Both these ratios indicate a company's abilities to meet its short-term obligations, but in current ratio the review perspective is a little wider than in quick ratio since current ratio assumes that also a company's inventories may be liquidated in order to meet the company's short-term obligations. (Niskanen & Niskanen 2003, 118-121; Committee for corporate analysis 2005)

The Committee for corporate analysis has given normative values for quick and current ratios, and although the liquidity requirements may vary depending on industry, these normative values give some guidelines for assessments. Quick ratio value of 1 or greater may be considered good, and in general, the higher the value of quick ratio, the better the company's ability to meet its obligations. Current ratio, in turn, is said to be good if the value of the ratio is greater than 2. (Committee for corporate analysis 2005, 66-67)

Together with generally used liquidity ratios, current and quick ratios, the ratio of net working capital per turnover and the turnover times of working capital (see appendix 2)

are also used to indicate the company's liquidity. Since the level of the company's income financing affects also the company's liquidity, it is reasonable to assess the time that it usually takes before accounts receivables are received from customers. On the other hand, by assessing the time that it usually takes before the company itself pays its accounts payables, it may be observed how efficiently the company takes advantage of favourable terms of payment. If the company has sufficient liquidity, it may take better advantage of shorter, and cheaper, payment times offered by suppliers. Therefore, if the company's turnover times of accounts payable are above normal payment times used in that particular industry, it may be an indication of liquidity problems. The ratio of net working capital per turnover tells how much the company has liquid or easily liquidated capital, which, in turn, indicates the company's financial flexibility. (Kallunki & Kytönen 2002, 88-90; Niskanen & Niskanen 2003)

Table 1 shows some values for financial ratios within profitability, leverage, and liquidity and the likelihood of payment defaults within these values.

Table 1 Values for some financial ratios and the likelihood of payment default (Suvas 2007, 10-15)

Current ratio	Likelihood of payment default (%)	ROCE	Likelihood of payment default (%)	Equity ratio	Likelihood of payment default (%)
< 0,5	8,11	< -20	10,02	< 0	16,11
0,5-1,0	7,21	-20 / -10	7,09	0-10	8,49
1,0-1,5	4,3	-10 - 0	4,18	10-20	5,37
1,5-2,0	2,55	0-10	2,97	20-30	4,01
2,0-2,5	1,51	20-20	2,46	30-40	2,53
2,5-3,0	1,51	20-30	2,01	40-50	1,97
3,0-5,0	0,97	30-50	1,85	50-60	1,25
5,0-10,0	0,95	50-100	2,49	60-75	1,14
>10,0	0,8	>100	4,06	75-100	0,72

As can be seen from table 1, there are possibilities for payment default even if the company's financial ratios may be considered to be good according to normative values given by the Committee for corporate analysis. Interestingly, the likelihood of payment default increases in case of very high ROCE value. There seems to be no clear reason for this, but it may be possible that, for example, the company in question has undertaken some unusual and risky arrangements, which, in turn, has lead to unusual return on capital employed. (Suvas 2007, 10-15) By examining the values on table 1, it is rather easy to understand that even if there are some normative values for financial ratios, these values do not always tell the whole truth, and therefore, it is always reasonable to assess ratios together with other ratios as well as other relevant factors concerning the company in question.

3.3 Credit risk assessment

3.3.1 Risks in credit decisions

Risks are always involved in credit decisions, and the decision-maker can never be absolutely sure about the borrowing company's ability and willingness to fulfill its obligations. Therefore, when approving credit for a corporate customer, a bank will set the price for the loan according to the default risk directed to the particular company. In other words, the probability of the borrower's default affects the price of the loan, and thus, the bank will get a compensation for bearing the risk of possible default and non-payment through the price of the loan. The probability of the default risk, in turn, is determined by company-specific factors, i.e. so-called unsystematic factors. However, although company-specific factors are important when assessing the probability of the borrower's default risk, it is also important to compare the borrower and its risks to other companies operating in the same industry. (Knüpfer & Puttonen 2004, 129-130)

Since risks are an inherent part of the credit professionals' every day work, credit professionals could be considered to be accustomed to tolerating risks, at least to some extent. Novices, on the other hand, are generally inexperienced to tolerating risks, and thus, they would be more reluctant and more careful in supporting projects where extensive risks are involved. However, it should be noted that as mentioned earlier in the thesis, credit professionals are rather careful in taking any unnecessary credit risks, and especially type I errors, i.e. approving a credit request of a company with poor economic viability, are carefully avoided (Andersson 2001, 17-18). Thus, the assumption that professionals would be more accustomed to tolerating risks does not imply that professionals would be more willing to take risks. Instead, the assumption only implies that there is a possibility that novices are even more careful when compared to professionals what it comes to risk bearing and ability to tolerate risks. The reason for this may be, for example, that novices, in general, lack experience to separate an acceptable risk from an unacceptable risk.

A typical risk related to credit approvals is credit risk, i.e. the risk of loss because the borrower does not pay back the loan capital or interests or neither on time. A credit risk may materialize due to different kinds of other risks, such as interest rate risks, country risks, or counter side risk (known also as delivery risk). (Ahlstedt et al. 1989, 110; Kontkanen 1996, 65-69)

Nowadays banks operate often with companies, which have subsidiaries or other operations abroad. International operations cause their own types of risks, and one typical risk related to international operations is a country risk. A country risk is a typical

form of credit risks, and this kind of risk means that any borrower in a certain country is able to fulfill his or her obligations. Another type of risk, which is related to country risk, is a so-called sovereign risk. A sovereign risk materializes when a borrower, who has taken up a loan in foreign currency, is due to sovereign intervention prevented from making the foreign currency interest on principal payment to the lender. For example, this has happened when central banks, under the threat of running out of foreign currency reserves, have imposed restrictions on the transfer of foreign currency out of the country. (Ahlstedt et al. 1989, 110; Kontkanen 1996, 65-69) It should be noted that sovereign risk is not necessary the same as country risk. When a company operates with foreign currency, it will be exposed to currency risk and interest rate risk. An interest rate risk means risk that the revenues or the expenditures change because of the changes happened in interest rates. A counter risk, in turn, materialises if the counter party does not want or cannot deliver the agreed payment. (Ahlstedt et al. 1989, 110; Kontkanen 1996, 65-69)

Banks use security or collateral in order to minimise credit risks, but usually the risk still remains, it is just in different form and less serious. Credit risk is compounded when banks lend only to a small number of borrowers, or only to companies representing one branch of industry. Thus, diversification is an important element in avoiding bank's credit risks. (Ahlstedt et al. 1989, 110; Kontkanen 1996, 65-69; Knüpfer & Puttonen 2004, 183-187)

3.3.2 Information related to credit risk assessment

The aim of the credit risk assessment, which is also termed as credit evaluation or credit examination, is to evaluate the likelihood that the borrower will pay back the loan including the interests on time. The judgement is forward-looking, and is based on the present situation and on forecasts about the future. Credit decisions are mainly based on future expectations, and events happened in the past are relevant only if they may explain the future. Banks are usually well aware of the events happened in the past, but the future expectations are almost in every occasion only speculations and also rather uncertain. In short, the credit risk assessment consists of information about the firm, information about the market, and information about the economy. (see e.g. Heinonen 1981; Pitkämäki 1984, 103; Andersson 2001, 10-11)

Credit risk assessment is largely based on financial information of the potential borrower, though non-financial information, such as information concerning the company's management, industry and operations, is also taken into account. Financial information is used, for example, with the purpose of obtaining information about the company's incomes, costs, assets, and liabilities. An advantage in the use of financial

information is that it is rather reliable since this kind of information is usually based on financial statement, which, in turn, is normally, especially within large companies, audited by an authorized public accountant. Furthermore, financial information is usually easily obtained from public sources. (Andersson 2001, 12) However, the reliability of financial information cannot be taken for granted since if the company, which is applying for credit, is in financial distress, it takes usually some time before the distress can be seen in financial figures. In addition, financial ratios are more like the symptoms of the company's distress, and therefore these ratios may not be very good in predicting the company's future standing. Sometimes companies also try to hide their actual financial condition by using a so-called creative accounting, which means that accounts are published as optimistic as possible. This, in turn, makes it even more difficult to outside observer to notice possible signs of failure. (Argenti 1976, 45)

When making a credit risk assessment the decision-maker has to consider many kinds of factors, and credit literature presents different mnemonic rules related to credit evaluation. Examples of these rules are CAMPARI and PARSERS. CAMPARI refers to Character, Ability, Means, Purpose, Amount, Repayment, and Insurance, whereas PARSERS stands for Purpose, Amount, Repayment, Security, Remuneration, and Services. (Andersson 2001, 10-11) These mentioned mnemonic rules, in turn, are closely related to what are termed as the C's of credit, which, in theory, are essential elements in assessing potential borrower's creditworthiness. The number of C's of credit varies depending on context. In some context four C's are discussed, whereas in other context there is a discussion of five or six C's. Generally, the C's of credit, mentioned in order of importance, are collateral, capacity, capital, conditions, and character. The sixth C, which is rather infrequent, would be competition. (Altman & Saunders 1998, 1722; Andersson 2001, 10; Business Dictionary)

Collateral is used to assess a borrower's valuable assets for pledging, whereas the second C, capacity, is related to a company's cash flow, especially to an ability to generate adequate cash flow to cover debt service. In addition, capacity includes the structure of the borrower's existing debt (secured or unsecured) and the existence of unused lines of credit. The third C, capital, is an indication of a borrower's stable and adequate capital base. Generally, this information on the credit report is the one most closely reviewed by the credit analysts. The fourth commonly mentioned factor, conditions, refers to economic and other conditions conducive to the borrower's plans. The fifth C, character, refers to a reputation, and this element is also used to indicate the borrower's willingness to repay. Character consists of, among other things, company size and location, willingness to share information about itself, number of years in business, and number of employees. Collateral, capacity, capital, and character are factors which a company is able to control, whereas conditions cannot be controlled by an individual company. (Business Dictionary; Dun & Bradstreet)

The above-mentioned rules support the idea that in credit decisions not only financial, but also non-financial factors are important. It should be noted that the above-mentioned rules are generally used in personal or small business credit decisions and usually only in theory. (Altman & Saunders 1998, 1722; Andersson 2001, 10; Business Dictionary) However, from the perspective of this thesis it would be interesting to see, whether credit professionals take into account these theoretical rules, and how clearly the use of these rules can be seen in the final credit decision made. Furthermore, since these rules are very theoretical in nature, it might be that novices, who tend to make their decisions based more on theoretical knowledge than knowledge obtained from practise, will use these rules more frequently than credit professionals.

3.4 Credit rating

3.4.1 Rating categories

Credit ratings are an important part of credit decisions. Generally, credit rating is a good source of information especially in lending to large corporations since typically, rating is more generally obtained from large corporations compared to small companies. Ratings are used in order to assess the borrowing company's ability to fulfill its obligations. (see e.g. Fight 2001) From the bank's point of view, companies' obligations refer to the repayment of principal and interests, but company's obligations may also include obligations for other parties, as well. The information used in credit ratings depends, among other things, on the purpose of rating and the user of this rating information. If, for example, the user of rating information is a commercial bank, the main concern would probably lie in a company's ability to meet its specific obligations to the bank in question. Sometimes, especially if the user of rating information is a supplier, obligations may refer to, beside debt services, for example, personnel's salaries, accounts payables, and other operating liabilities. (Arlander 2001)

The nature of credit rating may be either solicited or unsolicited. The difference between these two approaches is mainly that if the rating is solicited, the rater may use information which is not publicly available since the rater is able to obtain additional information from the company it is going to rate. In unsolicited rating, in turn, the rater has to lean mainly on publicly available information which it is able to obtain by itself. (Fight 2001, 102)

Many banks prepare their own ratings concerning their customers, but sometimes it might be beneficial to use also specific rating agencies to obtain an outside opinion con-

cerning the potential borrower (Cohen et al. 1966, 231). There are a few rating companies which operate worldwide, such as Moody's Investors Service and Standard and Poor's, which are, according to The Bond Market Association, the most commonly used rating companies (Rate the raters – Investors' poll). In addition, there are several smaller rating companies, which operate only nationwide, such as Suomen Asiakastieto Oy in Finland. The rating methods and rating categories within these, and other rating companies, varies, at least to some extent, though there are some generally used factors in rating. Table 2 presents two generally used categorizations, namely ratings by Standard and Poor's and Moody's Investors Service. It should be noted, that although S&P's and Moody's ratings are highly comparable, and they both are also extensively used in valuing debts, there are also other categories which are not necessarily directly comparable to each other.

Table 2 Examples of credit rating categories (Moody's rating definitions; S&P's rating definitions)

MOODY'S		STANDARD & POOR'S	
Aaa	highest quality, minimal credit risk	AAA	highest rating, extremely strong financial position
Aa	high quality, very low credit risk	AA	very strong financial position
A	upper-medium grade, low credit risk	A	strong financial position
Baa	medium grade, moderate credit risk	BBB	possibly weakened but still sufficient capacity to meet obligations
Ba	speculative elements, substantial credit risk	BB	possibly inadequate capacity to meet financial commitments
B	speculative, high credit risk	B	more vulnerable to non-payment than "BB" rated
Caa	poor standing, very high credit risk	CCC	vulnerable to non-payment
Ca	highly speculative, likely in, or very near, default	CC	highly vulnerable to non-payment
C	lowest rating, usually in default	D	default already happened
Note: The ratings from "Aa" to "Ca" by Moody's may be modified by the addition of a 1, 2 or 3 to show relative standing within the category, and the ratings from "AA" to "CC" by Standard & Poor's may be modified by the addition of a plus or a minus sign to show relative standing within the category.			

As can be seen from table 2, rating companies use generally different kinds of symbols to describe their opinion on the creditworthiness of a company in question. Ratings BBB / Baa or above are generally termed as "investment grade", which refers to a good credit worthiness. On the contrary, ratings below BBB / Baa are termed as "high yield",

which, in turn, refers to a high risk level. (Moody's rating definitions; S&P's rating definitions)

It is important to understand that ratings are only opinions of rating companies, and thus, they should only be used as a guideline, not as a definite truth about the credit quality of a company. These opinions are based on different kinds of factors, some of which are presented in figure 6. The rating model presented in figure 6 is only an example of a rating model, and it should be noted that the methods and models, as well as the categories, may differ from each other considerably depending on the rating company.

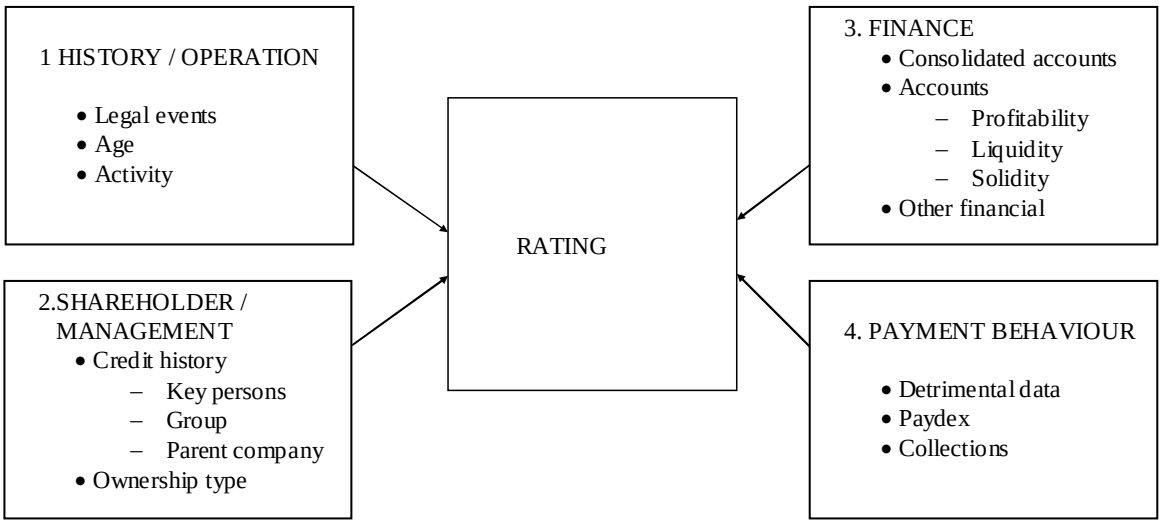

Figure 6 Rating factors (D&B rating categories)

As can be seen from figure 6, the final rating is based on information about the company's background, financial situation, operations, and paying habits. When putting these factors together, the decision-maker will get a general idea of a company's credit-worthiness and the ability to meet its obligations. Thus, the factors presented in figure 6 are useful also in credit decisions, since the ultimate purpose of the credit decision-maker is, among other things, to try to be assured of the repayment in the future, and this in turn, is closely related to the borrower's credit quality. Next these main factors are discussed in more detailed.

3.4.2 Rating factors

3.4.2.1 History and operation

Company's operational background is one important factor in a credit decision, and for example, the branch of industry can tell much of the risk level in a certain business. The credit rating of the borrower should take into account the field of industry where the company operates, and the rating should reflect the general risk level within that particular industry. (Fight 2001, 139) Thus, via the credit rating, the industry effect is taken into account also in credit decisions.

Activity, which is also seen in figure 6 as one of the factors affecting corporate credit rating, refers, among other things, to a company's overall behaviour in business operations, and thus, for example, the market position of the particular company will tell a lot about the company's possibilities to, for example, influence on the market prices within a specific industry. In addition, the company's market position is closely related to the company's future cash flow and profitability, which, in turn, are highly important factors in assessing the company's default risk. (Broomé et al. 1982, 52; Fight 2001, 139)

The credit decision-maker should take into consideration the possibility that the company applying credit may not even exist, and therefore the company's activity and legal events are important. For instance, the trade register data confirms that a company really exist juridically. (D&B rating categories) However, the possibility that a completely imaginary company would apply credit is rather minimal within lending to large corporations.

A company's age, in turn, can tell a lot about the risks related to the company in question since, for example, the probability of failure is higher within younger firms than within more mature firms. According to a study made by Suomen Asiakastieto Oy, the most critical year for a company is the third operating year, when the probability of a failure is approximately 10 per cent, whereas the probability that a company which has operated 40 years fails is only approximately 1.5 per cent. (Suomen Asiakastieto Oy) In addition, if the company has operated many years in business, the bank has a better ability to obtain information about this company. On the contrary, if a newly established company is applying credit, the bank has little, if any, knowledge about the company.

3.4.2.2 Shareholder and management

The management of the borrowing company can tell a lot about the borrower's overall credit quality. When making credit decision, a decision-maker will probably be interested in the company's management's overall performance, as well as the management's ability and capacity to run the business. (Broomé et al. 1982, 50). Argenti (1976) has suggested that the most important reason why companies fail is their management. If a company has a management that does not have sufficient management skills, this reflects directly upon accountancy information making it deficient. Furthermore, usually companies with poor management are also unable to respond the changes happened in the external environment. (Argenti 1976, 123) Other consequences of poor management might be, for example, insufficient planning for the future and inadequate budgets or product analyses (Cohen et al. 1966, 231).

According to Argenti (1976), unskilled managers will make at least one of the following three mistakes, namely overtrade, allow the company's gearing to rise into too high a level, or launch a large project, which is beyond the company's resources, and turns out to be unsuccessful. Overtrading refers, for example, to a situation, where the company attempts to expand, and increases its turnover at the expense of the profit margin. Because of declining profit, the company's interest coverage will rise, which in turn, will eventually lead into a situation where the banks will not grant any additional credit for the company. The second mistake, allowing the company's gearing to rise into too high a level, is due to the fact that, generally, debt is a cheaper type of capital than equity, which, in turn, indicates that the companies fund as much of their business as possible with debt rather than equity. However, there is still a limit beyond which the risks of high gearing exceed the advantages obtained from gearing, and an unskilled management would probably ignore this limit. The mistake of launching a large project refers simply to a situation where the company underestimates the costs and the time of the project, or overestimates the revenues obtained from the project. (Argenti 1976, 132-136)

In addition to the possibility of a bankruptcy, there are also many less serious types of defaults, such as payment defaults and liquidity crises, and the probability of these defaults is, just like the probability of a bankruptcy, also partly dependent on the company's key persons and their behaviour, including their personal payment default entries. According to Pulkkinen (2004), if none of the people in charge of the company have personal payment default entries, the probability that the company gets its own payment default entry is approximately 3 per cent, whereas, if three or more people in charge have personal payment default entries, the probability of the company getting its own payment default entry is almost 49 per cent. (Pulkkinen 2004, 7)

When assessing the likelihood that a company will become unable, or unwilling, to meet its obligations, the decision-maker may take into account possible personal defaults of the company's management and owners. The credit history of the company's key people is, indeed, a significant factor in assessing the company's credit quality. In addition, the company's key persons' possible previous connections to failed companies are also connected to the company's probability to have payment defaults. Even if only one key person has been previously involved in business operations which have filed for bankruptcy the probability of the company to have payment defaults is nearly five times greater when compared to a case where none of the key persons have previous connections to failed companies. (Pulkkinen 2004, 12)

3.4.2.3 Finance

If the credit request is finally approved, the borrower needs to repay the principal and pay the interests according to the credit agreement. The company's ability to repay the loan capital, including interests, is directly connected to the company's ability to generate cash flow (Bruns 2004, 15), which, in turn, is related to the company's overall profitability. Therefore, the company's profitability, in both the short and the long run, is in an essential role when assessing the credit risks. (see e.g. Broomé 1982, 56; Pitkämäki 1984) The borrower's profitability is also closely related to the bank's own profitability, and generally a bank cannot prosper better than its customers (Kärävä 1984, 72).

According to a basic financial-theoretical logic in business operations, a company's insufficient profitability is the starting point for the process conducive to payment defaults. A company's financial solidity will weaken as a consequence of the company's weak profitability due to the possible losses and increased amount of current liabilities. Weak profitability and financial solidity, consequently, will result into decreased liquidity, which, on the other hand, will finally result into the situation where a company is not able to meet its obligations. Thus, the main pieces of information used to describe the risk of payment default entry are related to profitability, solidity and liquidity (Suvas 2007, 8), which are already discussed in the thesis, and thus, in this connection, these financial elements are not discussed further. Table 3 shows the relations between a company's business risk profile, financial risk profile, and rating category.

Table 3 Business risk, financial risk, and credit rating (S&P Global credit survey 2007)

Business risk profile	Financial risk profile	Financial risk profile	Financial risk profile	Financial risk profile	Financial risk profile
	Minimal	Modest	Intermediate	Aggressive	Highly leveraged
Excellent	AAA	AA	A	BBB	BB
Strong	AA	A	A-	BBB-	BB-
Satisfactory	A	BBB+	BBB	BB+	B+
Weak	BBB	BBB-	BB+	BB-	B
Vulnerable	BB	B+	B+	B	B-

As can be seen from table 3, the company's financial performance is closely related to the company's credit rating, and thus, also financial ratios, some of which were discussed earlier in the thesis, affect the company's credit rating. The purpose of financial ratios, as well as credit ratings, is, in general, to compare a borrower's performance over time as well as to compare different borrowers. However, the interpretation of these ratios and their values is highly dependent on the context, such as the borrower's industry, the investment cycle, the business cycle, or interest rates. Consequently, credit analysts and credit decision makers have certain benchmarks to distinguish between different credit qualities. Below in table 4, is a set of financial ratios by rating categories according to a study conducted by Moody's Investors Service in December 2007. The study involved global non-financial non-utility corporations across industries. Table 4 represents the median values for ratios, which are based on the most recent fiscal year-end data. (Moody's Investors Services)

Table 4 Financial metrics by credit categories (Moody's Investors Services)

	Aaa-Aa	A	Baa	Ba	B	Caa-C
Interest Coverage	16.0	8.6	5.4	3.7	1.9	0.7
Asset Coverage	3.7	2.4	2.3	2.0	1.3	1.0
Leverage	31.6%	41.7%	44.8%	49.8%	68.7%	92.2%
Cash Flow-to-Debt	52.4%	32.6%	25.8%	21.6%	12.1%	6.4%
Return on Assets	11.6%	7,5%	5,3%	4,4%	1,7%	-2,1%
Profit	11,8%	9,0%	6,7%	5,0%	2,0%	-2,6%
Liquidity	7,8%	4,7%	4,0%	4,3%	3,9%	3,3%
Revenue Stability	7,2	7,3	6,1	5,2	6,1	7,3

Table 4 shows some connections between financial metrics[15] and credit ratings, and as can be seen from the table, some financial metrics are more clearly related to the company's credit rating than others. It should be noted, however, that the dispersion of the ratios for all borrowers in the same rating category is wide, and the overlap between categories is considerable. [16] Interestingly, for example, revenue stability seems to be rather stable within each of the credit categories. In addition, for example leverage, which is generally considered to be a distinctive factor within financially healthy and unhealthy firms, is almost at the same level within categories of A, Baa, and Ba.

3.4.2.4 Payment behaviour

In theory, a company's risk level could be assessed solely by using statistical information on whether or not the company has existing payment defaults. In general, companies going bankrupt have at least one or two payment default entries (Suvas 2007, 20), and therefore studies concerning the prediction of a company's bankruptcy or payment defaults are rather useful also when assessing a company's general credit quality. In addition, the company's previous paying habits may also indicate rather well the company's future paying habits (Wilson, Summers & Hope 2000).

A good approach to assessing a company's payment behaviour is to scrutinize the Paydex, which is an international index developed by Dun & Bradstreet. The Paydex refers to a company's average payment delays. The index and the average payment delays related to this particular index are represented in table 5. (D&B Paydex)

Table 5 Average payment delay and the Paydex-index (D&B Paydex)

Paydex index	90	80	70	60	50	40	30
Average payment delay (days)	-10 days	0 days	10 days	20 days	30 days	40 days	50 days

A company which pays on the due date has Paydex of 80. When calculating the average payment delay of a company the company's own Paydex is deducted from the

[15] To see a detailed list of financial metrics on which table 5 is based, see appendix 3.

[16] The Head of Debt Advisory within a Nordic bank with important operations in Finland is acknowledged for useful comments and the suggestion to take into account certain issues concerning credit ratings and financial ratios.

Paydex index (80), for example, if a company has Paydex of 65, the average payment delay is 15 days (80 – 65 = 15). (D&B Paydex)

The time that it usually takes before a company pays its accounts payables is a good implication of possible problems in the company's liquidity. Usually, suppliers offer both short and long payment times, and, in general, the longer the payment time, the more expensive it will be for the company. Therefore, if the company is able to take advantage of cheaper, and shorter, payment times, it would also imply that the company may be regarded as creditworthy, or at least that the company's liquidity is at an appropriate level to assure the timely repayment of the loan and the interests. (see e.g. Kallunki & Kytönen 2002, 88-90)

3.5 Summary for the analyses of corporate credit quality

This section summarizes the most important issues discussed in the third chapter of the thesis. In the third chapter, different kinds of elements of the corporate credit quality have been discussed. First, the principles of company analysis were discussed, as well as financial statement analysis and basic issues concerning financial ratios. After that the main concern has been focused on the assessment of credit risk. In the end of the third chapter, credit ratings were discussed.

The main idea of a company analysis in credit decision-making process is to form an overall picture of the potential borrower and its conditions. A company analysis includes also a financial statement analysis and a ratio analysis, and when assessing the borrowing company's financial statement, it should be noted that no ratios can be interpreted alone, but instead the interpretation will need to take into account of other financial ratios as well, or other relevant factors concerning the company in question. In assessing the borrowing company's financials the most important concern would be the company's profitability, leverage, and liquidity. These are also factors which are closely related to the company's risk of payment default entries.

Within credit approvals there are many kinds of risks involved. A typical risk would be simply a risk of credit losses, i.e. a credit risk. However, the credit risk may materialize due to the variety of other risks, such as a country risk, a sovereign risk, or an interest rate risk. Risks related to a potential borrower would be seen via credit rating information, and credit rating is closely related to the borrowing company's financial risk profile. However, even though, for example leverage is generally considered to be a distinctive factor between a healthy and an unhealthy company, there seems to be no clear variations between some of the credit rating categories and financial ratios, which may be seen from table 4 (page 53).

Within credit risk assessment there are different kinds of mnemonic rules, such as C’s of credit, which are generally used only in theory. However, since novices generally lack practical experience on credit approvals, they are likely to make their decision according to theoretical knowledge, which in turn, might indicate that the theoretical rules, such as the C’s of credit, may be taken into account more frequently by novices than experienced credit professionals. However, it is likely that the use of these theoretical rules cannot be seen clearly by an outside observer. Instead, novices probably use different kinds of mnemonic rules rather implicitly.

4 DECISION-MAKING IN CORPORATE LENDING

The purpose of this chapter is firstly to present the empirical setting of the thesis, and secondly to present the results of the empirical study made among a sample of credit professionals within one Nordic bank with important operations in Finland, and a sample of business students within a particular university in Finland.

4.1 Data analysis

4.1.1 Study participants

The population consisted of two separate groups, namely credit professionals who are involved in credit applications of large and medium sized companies within one Nordic bank with important operations in Finland, and a sample of business students at the Lappeenranta University of Technology. Thus, the sampling method was purposive in nature, which ensured that the respondents were serving the purpose of the thesis. The participation was voluntary for both groups.

Within the first group the questionnaire, including a hypothetical summary of a credit proposal, was sent to a population of 88 professionals representing the following functions[17] that are involved in credit decisions within large and medium sized companies, acting either as contributors to the writing of credit applications, or being involved in the approval of the applications:

- Relationship managers (primary writers of credit applications, i.e. credit memoranda/executive summary of a credit proposal)
- Credit analysts (contributors to credit memoranda)
- Capital markets, including leveraged finance, fixed income and loan syndication professionals (contributors to credit memoranda)
- Credit managers (credit approvers i.e. consumers of credit memoranda)

Exact information about the distribution between experts and intermediate experienced professionals among the credit professionals who received the questionnaire was not available. The questionnaires were sent to the participants by senior professionals in the area, and they received one reminder after approximately ten days from the same person. The respondents were provided the option of sending the questionnaire directly

[17] The list of functions represented includes all those functions that are involved in credit decisions within large and medium sized companies.

to the researcher by regular mail or by e-mail, or to leave it with a departmental representative (secretary) who collected them and sent them to the researcher by mail.

Of the group of business students the questionnaire was sent to 35 students, who participated in a particular specialisation course of finance and corporate funding at the Lappeenranta University of Technology. The questionnaires were sent to the participants before a lecture by the lecturer of the course via e-mail, and the respondents were asked to return the questionnaire to the lecturer after the lecture. Thus, the participants had enough time to make their recommendations and to write down their opinions. The procedure implemented among the business students was chosen in order to assure that the respondents will have enough time to assess the situation described in the credit application. The students were also sent a reminder by the lecturer, and in reminder the students were asked either to send the questionnaire directly to the researcher or the lecturer via e-mail.

The total number of questionnaires sent was 123. Responses were received from 33 credit professionals and 21 business students, but however, 5 business students had not marked any information items as critical, and therefore, these five responses had to be excluded from further analysis. Thus, usable responses were received from 33 credit professionals and 16 business students, and the total number of usable responses received was 49. Table 6 illustrates the attained return rates separately by both groups. Table 7, in turn, represents the number of questionnaires sent and received by different departments within the bank.

Table 6 Questionnaires sent and received

	Questionnaires sent	(Usable) Questionnaires received	Response rate %
Credit professionals	88	33	37.5
Business students	35	16	45.7
Total	123	49	39.8

Table 7 Questionnaires sent and received by departments

Department	Questionnaires sent	Questionnaires received	Response rate %
Acquisition Finance	9	4	44.4
Capital markets	3	3	100.0
Credit research	19	11	57.9
Large Corporate Segment	30	3	10.0
Regional Corporate Segment	22	10	45.5
Syndicated Loans	5	2	40.0
TOTAL	88	33	37.5

All business students were classified as novices since it is reasonable to assume that they lacked practical experience in the field of credit proposals and approvals and decision-making. The credit professionals were classified into two groups according to their level of experience. These groups were termed as *experts* and *intermediate experienced professionals*. The classification among the professionals was made according to respondents' current job description and the title while taking into consideration also the work experience in years (especially the work experience in current position). Among the respondents were altogether 20 experts and 13 intermediate experienced professionals. In addition, professionals were also grouped into those who participated in writing credit requests, and those who were in the role of approving credit requests. The number of respondents who participated in writing credit requests was 30, and the number of those who were in the role of approving requests was 3 respondents. More detailed information about the respondents is found in appendix 4.

4.1.2 The questionnaire and the description of the credit application

The participants were sent a questionnaire (see appendix 1), which consisted of two parts. The first part consisted of questions about the respondent's background, such as gender, age and education. The purpose of these questions was only to get information with which the statistical analysis of the respondents would be possible. The second part of the questionnaire consisted of questions concerning the credit applied. By asking the respondents to mark the information they considered relevant, it was hoped to get an answer for what type of information credit professionals consider relevant. In addition, the respondents were asked to mark whether they agreed or disagreed with the proposal. In case the respondent supported the proposal, the respondent was asked to mark whether his or her support was unqualified, or if he or she supported the request with some reservations, or with significant reservations.

The types of questions varied from open questions to list questions and category questions. In some of the questions, the respondents were given a few possible alternatives, for example, in question three, which concerned the educational background. These alternatives were selected according to the advance knowledge of the distribution of the typical qualification among credit professionals. The questionnaire was partly modified before it was sent to business students since otherwise students might have found it inconvenient to respond since there would have been questions which were not completely suitable for business students (e.g. the department where the respondent is currently working).

Together with the questionnaire the participants were sent a hypothetical summary of a credit proposal. The executive summary of a credit proposal was drafted by three

experienced credit professionals, who have a combined work experience of over 60 years, and who know the specific bank's credit culture very well. By involving experienced professionals in the designing and piloting of the questionnaire, the aim was also to create an executive summary that would represent a good, but not an ideal or perfect, credit proposal. The intention of this was to provoke readers to provide sufficient commentary. The objective in the design of the questionnaire was not to make it clear-cut, but to give room for approving and declining answers, both of which could be considered appropriate for a professional.

The initial drafting of the executive summary was done by one person who also had originated the study idea. He has 25 years of corporate credit experience from three different, large, internationally active banks. The initial draft of the executive summary thus reflected his experience from different institutions. The initial draft was first reviewed and extensively commented by another credit professional from the bank particularly as to the internal consistency of the hypothetical case as well as to ensure that the case would be presented in a manner that the conclusion was not self-evident even to experienced credit professional. After this, the draft was tested with three credit professionals with each over six years of relevant experience, and particularly one of them, a person with nearly 28 years of credit analysis and management experience, provided extensive feedback and useful comments to write the summary in the desired manner. Therefore, the summary can, despite its imaginary nature, be considered very realistic. Ad hoc feedback from respondents also confirmed that they viewed the executive summary as a realistic representation of cases they are used to work on.

The reason to use only an executive summary, instead of creating a full credit memorandum which often can be over 20 pages long was twofold. Very importantly, many credit decisions are made to a very large extent on the basis of the executive summary which should capture all salient points relevant for the decision. Particularly the most senior credit officers need to review a very large number of credit over any given time, and typically they form a very strong opinion what decision to make on the basis of the executive summary. This view was confirmed by the bank's representatives during a session where some of the bank's credit officers were given a presentation about the findings of the study. Furthermore, it was assumed that a request for the respondents to read a full credit memo would reduce the response rate. The executive summary of a credit proposal is not published upon the request of the bank where the survey was conducted. Therefore, in this section the main points represented in that summary are discussed briefly.

The executive summary consisted of the most important facts related to the company applying credit. The issue in this hypothetical situation of a credit application in short was that a public company operating in Finland and one other European country was planning to expand its operations by establishing a new subsidiary in "country B". For

this purpose the company would need additional finance. The credit requested would be a 7-year term loan of 30 million euros.

The parent company, i.e. the public company operating in Finland, is a producer of equipment for maintaining public spaces both in summer and winter. The business is rather seasonal, which, in turn, affects, for example, the fluctuation of the company's working capital. The management of the new subsidiary would consist of local persons, who have had experience in business operations in Europe. The borrower of the applied term loan would be the established subsidiary, and the loan would be unconditionally guaranteed by the parent company. The credit risk, as well as the company risk and the industry risk, were expressed in logically consistent qualitative expressions. Besides the above-mentioned basic information concerning the applicant, the most important financial figures, such as turnover, capital structure, and EBITDA interest coverage, were also presented in the executive summary.

To summarize, when considering the risk level related to the company requesting credit in this hypothetical situation, there is a good outlook for the company and its operations. However, the executive summary listed a number of risk factors that the reader had to weigh. The company is, however, presented as a customer of the bank in question, though the company has operations also with two other banks. However, as has been discussed in chapter 2, it is only natural that the company has relationships with multiple banks. The size of the requested loan is rather small, but there are, however, many uncertain factors, related to, for example, the country where the new subsidiary is intended to start its operation.

4.1.3 Variables

Since respondents represent two different kinds of groups, namely credit professionals and business students, the analysis is also made partly separately. By analyzing the credit professionals separately from the business students, it is possible to obtain information about possible differences between experts and less experienced credit professionals.

The executive summary's content was broken down into separate information items, and altogether 73 information items were identified. (see appendix 5). These pieces of information were assigned further into groups of *qualitative information*, *financial information*, and *information concerning the credit requested*. In addition, in order to obtain more specific information about the use of financial information, financial information was further assigned into categories of *balance sheet information*, *income statement information*, and *financial ratio information*. Naturally, it would have been possible to use also other kinds of financial information categories, such as cash flow

information, but since also Andersson (2004) assigned financial information into categories of income statement, balance sheet, and financial ratio information, the same financial information categories were used also in this thesis in order to make the comparison of the results more convenient. Table 8 represents information items used as variables in this thesis and the total number of these information items on the executive summary of a credit proposal.

Table 8 Information items on the executive summary

Variable		Definition	Number of information items
Number of information items identified		Information items marked as critical on the executive summary	73 (100%)
Qualitative information		Identified information items on the executive summary which are not financial, and which are not directly related to the credit requested	29 (39.7%)
Financial information		Identified financial statement information on the executive summary	32 (43.8%)
	Balance sheet information	Financial information, which is found on the company's balance sheet	19
	Income statement information	Financial information which is found on the company's income statement	5
	Financial ratio information	Financial ratios calculated from the company's financial statement	8
Information concerning the credit requested		Identified information items on the executive summary which concern investment plan, terms of the credit requested etc.	12 (16.5%)

Qualitative information refers to pieces of information on the executive summary which do not indicate the company's financial position, and which are not directly related to the credit requested (e.g. investment plan, terms of credit etc.). Therefore, qualitative information includes also those pieces of information which are in numeric form, but which are not found on the company's financial statement[18], i.e. numeric information, which is not classified as financial information. Financial information refers to information, which may be found on the company's financial statements, either directly or via calculating different ratios. It should be noted that financial statement information may include both numeric and non-numeric information. Finally, information concerning the credit requested refers to information items which are directly related to the credit request in question, for example the investment plan and the terms

[18] Naturally, for example, the number of employees is information which may be found on the notes to the accounts, but in this connection, this kind of information is thought not to be included in financial statements

of the credit requested. Although in some cases a particular information item may be regarded as, for example, both financial and qualitative information, in this connection each information item may belong only to one particular information category.

4.1.4 Interpretation of the results

In order to form an overall picture of the respondents' decision-making behaviour, cross tabulations are used. Possible differences between novices, intermediate experienced professionals, and experts are tested by using a one way ANOVA (Analysis of Variance) model. In case that the ANOVA model shows significant difference between the levels of experience, Tukey's honest significance post-hoc test will be used in order to make further conclusions about the possible differences between novices, intermediate experienced professionals, and experts. In some occasions possible differences are tested with the T-test.

The conclusions about the differences between novices, intermediate experienced professionals, and experts are made based on the generally used levels of significance. A significance level of 0.001 refers to a very significant difference among variables, the level of 0.01 refers to a significant difference, and the level of 0.05 refers to a moderately significant difference between groups.

The respondents will also be analysed by using a cluster analysis. The cluster analysis will be made based on the respondents' total amount of information items identified and the use of different type of information, i.e. qualitative, financial, and information concerning the credit requested. In regard to this analysis the aim is to determine whether there are some clear differences in the manner how respondents within different levels of experience use information, and if, for example, some novices use information similarly with experienced professionals.

4.1.5 Validity

The data was collected via questionnaires, which usually are a reasonable and a convenient method to use when there are rather large numbers of possible respondents. However, there is a risk that the respondents mark their answers according to their feelings about what might be considered as ideal or proper credit decision-making behaviour. On the other hand, though, in this questionnaire the respondents were not given, for example, any lists of possible pieces of information, which might have been considered important, and therefore, the respondents were not guided towards any

particular answers. In addition, since the questions were presented in the same form to all the respondents, there was no risk that the researcher or interviewer would have guided the respondents towards a particular answer by using, for example, different tones of voice or choices of words. Furthermore, in credit decisions the decision-makers' opinions are highly important, and credit approvals may be considered rather subjective, which, in turn, would support the use of a questionnaire.

The questionnaire was conducted solely within one bank. Therefore, it might be possible that the results at least partly reflect this bank's specific procedures and credit culture, and thus, the answers might not be completely generalizable. In addition, the majority of the respondents from the bank were involved in writing of the credit requests, which may be reflected in the responses. In case that there would have been more respondents who were involved in the approval of the credit requests, it would have been possible to obtain more information on what actually is expected from a good executive summary, and if there were some differences in regard to the expectations of the credit summary's content between writers of the credit applications and those who are involved in the approvals of the applications.

Since the hypothetical credit proposal was drafted by experienced credit professionals, it is very likely that the proposal represented a highly reliable and meaningful design. Furthermore, all comments and suggestions received from credit professionals were taken into consideration, and questions on the questionnaire were partly designed according to these comments.

4.2 Expected results of the study

The research problem at hand has not been a common subject in previous research within credit approvals and decision-making. However, based on the theory presented earlier in the thesis, and previous studies when appropriate, some hypotheses can be made concerning the research questions. To recall the research questions presented in the introductory chapter of the thesis, the main concern of this thesis has been to find answers to the following questions:

- Is there a significant difference between how a professional and a novice make their decisions?
- What type of information is considered most important by credit professionals in corporate credit granting?
- How, for example, the credit professionals' and novices' education and work experience are reflected in the manner of how information is treated?
- Is the Information-Use-Hypothesis valid in the context of credit granting?

Based on the previous literature concerning credit decision-making, some expected findings from the study may be concluded, and these expected findings are represented below.

- Financial information related to the potential borrower will be of the essence in making the credit decision. (see e.g. Stanga & Benjamin 1978; Shanteau 1992; Andersson 2004; Berry & Robertson 2006)
- Both historical financial information and financial forecast will be important. According to the study made by Stanga & Benjamin (1978), historical information was even more important then forecasts. (see e.g. Stanga & Benjamin 1978; Berry & Robertson 2006)
- Credit applicant's background (management, credit history, previous payment default entries etc.) is of the essence when making judgements about the borrower's credit quality.
- The amount of information used by professionals is greater than the amount of information used by novices, i.e. students. Furthermore, according to the Information-Use-Hypothesis, the amount of information used by experts is greater than the amount of information used by intermediate professionals. (Andersson 2004)
- It would be reasonable to assume that since credit professionals are used to handling credit requests, they may use less time compared to novices. On the other hand, however, it may be that novices do not consider the issue very important or significant for themselves, and therefore, it might be that the novices will not want to spend much time on this subject. According to Andersson's (2004) study, professionals use more time on decision compared to novices.

The study made by Andersson (2004) and the study made within this thesis have to some extent a similar approach but there are, however, some clear differences, which should be taken into consideration when comparing the results of these studies. Firstly, the research environment was different within these studies, and in this study the participants were not able to ask for additional information. This corresponds to many real-life situations where credit committees have a limited amount of time per case, and are used to dealing with information constraints. Secondly, Andersson used an experiment research, and the study was made by using a computer software. In this thesis, in turn, a survey research was used. Thirdly, the professionals within this thesis were classified according to their role in the organization, and the years of work experience were used only as a guideline to make the classification between experts and intermediate experienced professionals. In addition, Andersson's study was made about credit decisions on small firms, whereas this thesis deals with lending to large corporations.

4.3 Empirical results

4.3.1 Amount of information used in lending decisions

Information on the credit summary was divided into separate pieces of information, and the total number of information items on the credit summary was 73 (see appendix 5). Thus, the theoretical maximum number of information items identified would have been 73.

The number of information items identified did not differ significantly between the credit professionals' total work experience. However, the number of information used differed significantly between the respondents' work experience in current position ($F= 2.884$, $p = 0.05$). In cases where the respondent has worked in current position for a rather long time, the particular respondent is classified as an expert, which in turn, indicates that the longer the work experience in current position is, the greater also the expertise probably is. Therefore, since there was a significant difference between the respondents' work experience in current position in regard to the number of information used, this indicates that the greater the expertise, the greater also the number of information items identified. (see appendix 6). Thus, it seems that within credit professionals the number of information items used in decision-making does not correlate with the total work experience, but professionals who have worked for a long time in their current position, may probably use more information than those who have less experience in their current position. Therefore, it seems that in regard to the definition of an expert, the important factor is specific working experience, not working age, i.e. the total working experience.

Among the novices, only four respondents reported that they had work experience in the field of financial services. The length of the work experience obtained from the field of financial services varied between four months and one year. The number of information items identified by novices did not differ significantly between those respondents who had work experience and those who did not have work experience in the field of financial services. (see appendix 6) Figure 7 represents the number of information items identified by the respondents.

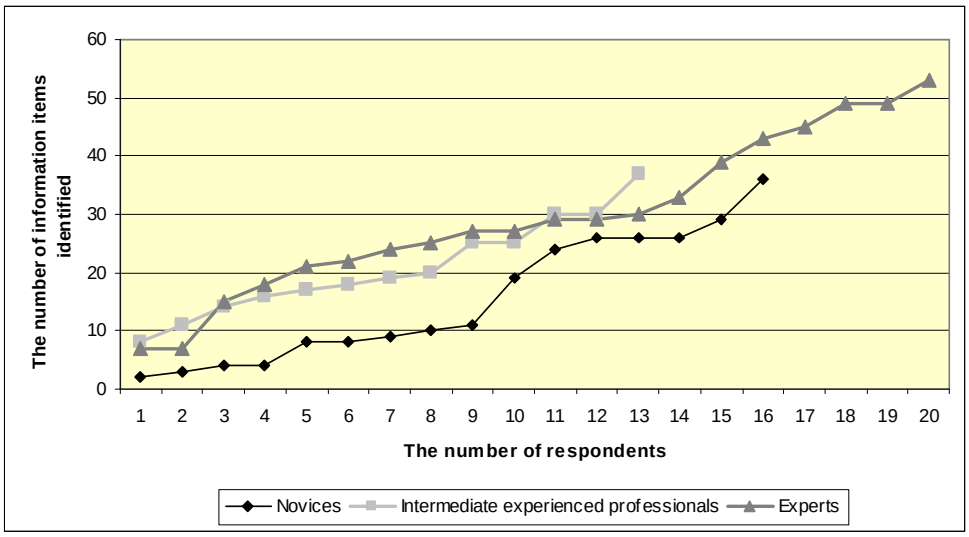

Figure 7 The number of information items identified by the respondents

As can be seen from figure 7, the number of information items identified by students, i.e. novices, is smaller than the number of information items identified by professionals. However, figure 7 also shows that the number of information items identified does not vary significantly between experts and intermediate experienced professionals. Thus, it seems that the difference in the number of information items used is more significant between novices and experts, whereas the difference between experts and less experienced professionals is not as significant. The T-test showed that the novices differed statistically significantly ($p = 0.005$) from the credit professionals altogether (see appendix 6).

As can be seen from figure 7, novices used less information compared to professionals. Seven novices, which amounts to 43.8% of all novices who responded, used less than 9 pieces of information, whereas the five respondents that used the most information were all experts. In addition, all novices used less than 40 pieces of information, but however, so did all the intermediate experienced professionals as well.

On average all respondents identified 22.6 information items. The number of information items identified by experts was 29.6 on average, whereas intermediate experienced professionals identified on average 20.8 pieces of information. Altogether credit professionals identified on average 26.1 information items. Novices, in turn, identified 15.3 information items on average. The number of information items identified by the respondents was significantly different between the levels of experience ($F=7.142$, $p < 0.01$) However, the difference in regard to the amount of information used between novices and intermediate experienced professionals was not significant, whereas experts

differed significantly from novices, but not from intermediate experienced professionals in regard to the number of information items used. (see appendix 6)

The credit professionals were also divided into groups of writers of the credit applications and readers of the application, i.e. those who are involved in the approval of the applications. The group of writers identified on average 25.3 pieces of information, whereas the group of readers identified on average 34.0 pieces of information. The difference between these groups in the amount of information used was tested with the T-test, which shows that there is no statistically significant difference between these two groups. It should be noted, however, that in the group of readers there were only three respondents, and therefore, the analyses were not completely meaningful, and in case there would have been more respondents in the group of readers, the differences might have been more significant. (see appendix 7)

In this thesis, the credit professionals were classified into the groups of experts and intermediate experienced professionals according to their job description, and work experience in years was only a guideline used if there were some uncertainties in regard to the particular respondent's level of expertise. If the classifications had been made according to the respondents' total work experience[19] (experience > 10 years would have referred to experts, and experience < 10 years would have referred to intermediate experienced professionals), the results would not have been different. In case the classification had been made differently, experts would have differed statistically significantly ($p = 0.008$) from novices, but the difference between experts and intermediate experienced professionals, as well as between intermediate experienced professionals and novices, would not have been statistically significant.

4.3.2 The type of information used in lending decisions

4.3.2.1 Qualitative information

The executive summary contained altogether 29 pieces of qualitative information (see appendix 5). On average, the respondents identified 8.7 pieces of qualitative information, which amounts to 30.0% of all qualitative information available. Experts identified on average 12.4 (42.8%) pieces of qualitative information, intermediate experi-

[19] Here, total work experience in years was used because there were only three respondents who had worked in their current position more than 10 years, and therefore, it was more reasonable to make the classification according to total work experience.

enced professionals identified on average 7.4 (25.5%) pieces of qualitative information, and novices identified 5.2 (17.9%) pieces of qualitative information on average. (see appendix 8) Figure 8 shows the number of qualitative information items identified by the respondents.

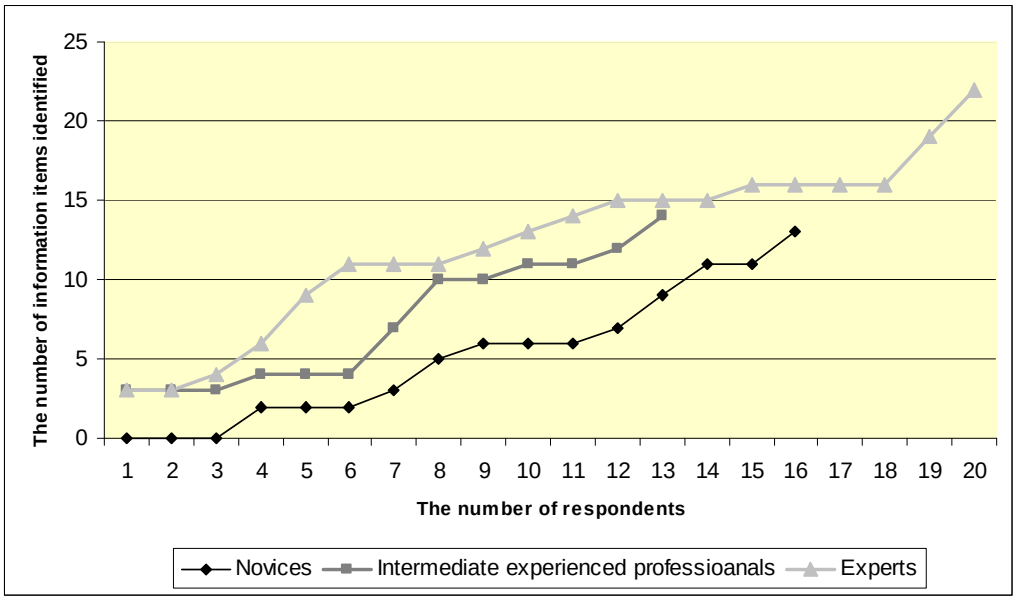

Figure 8 The number of qualitative information items identified

From figure 8 it can be seen that the experts identified more qualitative information items than novices and intermediate experienced professionals. All the novices identified less than half of the qualitative information available, and three novices did not identify qualitative information at all. All credit professionals, in turn, identified at least three pieces of qualitative information, and one expert identified more than 75% of the qualitative information available. Thus, it seems that there is a clear difference in the use of qualitative information between the levels of experience, and the ANOVA model shows that the difference in the use of qualitative information between different levels of experience is also statistically very significant ($p < 0.001$). However, Tukey's post-hoc test reveals that there is no statistically significant difference between novices and intermediate experienced professionals. Experts, in turn, seem to differ significantly from both novices ($p < 0.001$) and intermediate experienced professionals ($p = 0.011$). (see appendix 8) The larger amount of qualitative information identified by experts compared to less experienced professionals and novices may, for example, imply that the experts are better or more confident at processing information which needs subjective assessment.

When a respondent's use of qualitative information is proportioned to the total amount of information identified by the particular respondent, the relative importance of qualitative information may be seen. Altogether 23 respondents (46.9%) reported that

30-50% of the information they used was qualitative information. However, the ANOVA model shows that there is no statistically significant difference in the relative use of qualitative information between different levels of experience. (see appendix 8) The respondents' relative use of qualitative information is presented also in figure 9.

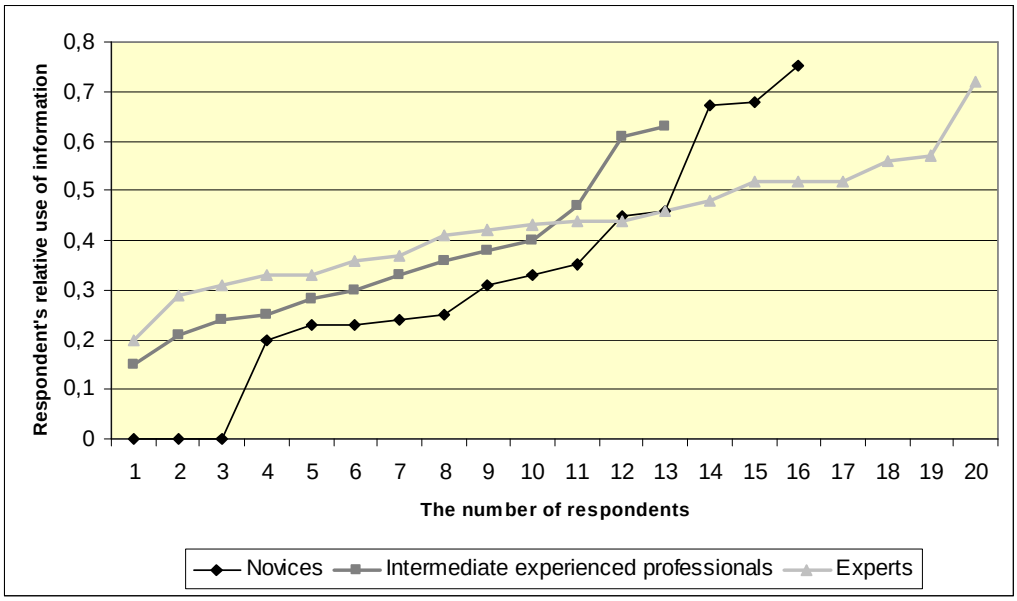

Figure 9 The respondents' relative use of qualitative information

As can be seen from figure 9, all credit professionals used qualitative information, whereas three novices did not use qualitative information at all. However, there were also three novices who made the decision based on information which contained more than 60% of qualitative information. The majority of the experts, in turn, made their decision based on information which contained less than 60% of qualitative information. Figure 9 also supports the assumption made earlier that more experienced professionals give more weight to qualitative information than less experienced professionals and novices, and that experts would be better or more confident at processing qualitative information.

In regard to the use of qualitative information, there seems to be no significant difference between those who are involved in the writing of the credit applications and those who are involved in the approval of the applications. On average the group of writers identified 9.9 pieces of qualitative information, and the group of readers identified on average 15.0 pieces of qualitative information. There was no statistically significant difference between these groups in the use of qualitative information. (see appendix 7)

The most frequently identified pieces of qualitative information among the credit professionals were information concerning the cyclicality of the business and rating information. Altogether 26 (78.8%) credit professionals marked the information con-

cerning cyclicality as critical, and 22 (66.7%) credit professionals marked the rating information as critical. Among the novices, the most frequently identified piece of qualitative information was the information concerning cyclicality of the business, and altogether 9 (56.3%) novices marked the information concerning cyclicality as critical. Rating, in turn, was marked as critical information by only 5 (31.3%) novices.

The respondents were also asked to write down the three most important information items related to the decision in question. Credit professionals mentioned very frequently pieces of qualitative information as one of the most important information items, whereas business students seemed to give less weight to qualitative information. The credit professionals mentioned altogether 36 times a piece of qualitative information as one of the three most important information items, and business students, in turn, mentioned this type of information as important only 13 times. (see appendix 9) Interestingly, rating information, for example, was marked as critical only by 5 novices, but as many as 22 credit professionals marked rating as critical information. However, when asking the three most important information items, rating information was mentioned altogether three times by the novices, but only once by the credit professionals. Therefore, it seems that credit professionals consider ratings very important in a credit approval process, but, however, professionals seem to be also rather critical in evaluating the rating and information contained to it.

4.3.2.2 Financial information

The executive summary contained altogether 32 pieces on financial information (see appendix 5). Financial information is generally very important in assessing potential borrower's creditworthiness, and the importance of financial information can also be seen from the list of the three most important information items. However, it seems that business students consider financial information more important than credit professionals since among the answers concerning the three important information items the credit professionals mentioned altogether 28 times a piece of financial information as one of the three most important information items, whereas the business students mentioned this type of information as important altogether 36 times. (see appendix 9)

The respondents identified on average 9.6 pieces of financial information, which amounts to 30.1% of all financial information available on the executive summary. Experts identified on average 11.5 (35.8%) pieces of financial information, intermediate experienced professionals identified on average 8.8 (27.4%) pieces of financial information, and novices identified on average 8.1 (25.2%) pieces of financial information. The use of financial information is represented also in figure 10.

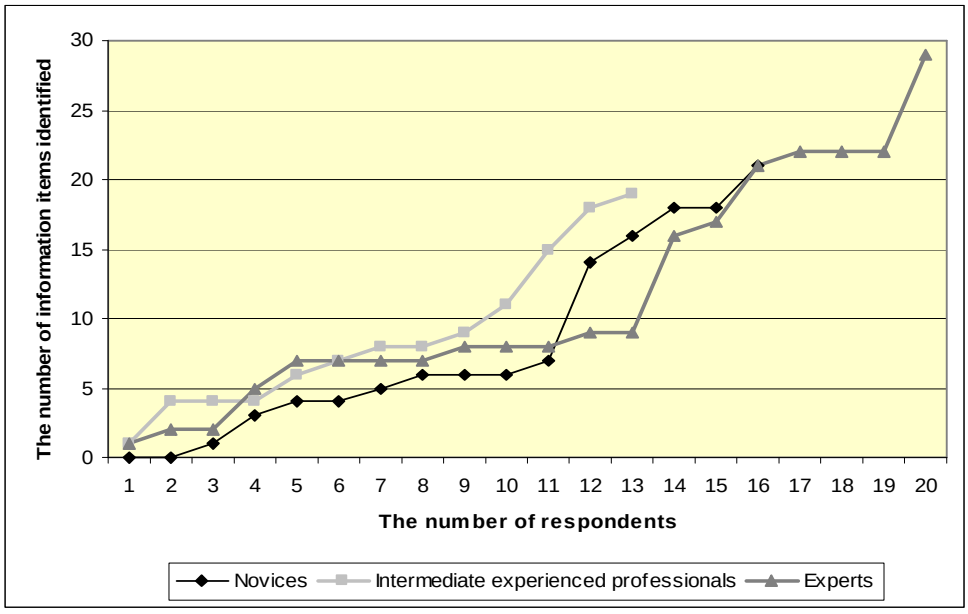

Figure 10 The number of financial information items identified

As can be seen from figure 10, there seems to be no differences in the number of financial information items identified between the levels of experience, and also the ANOVA model shows that the use of financial information did not differ significantly among different levels of experience. (see appendix 10) However, the importance of financial information in credit decisions is still obvious, and in fact, since there was no significant difference between the levels of experience in the use of financial information, it only supports the presumption of financial information being generally an important source of information in lending decisions regardless of the decision-maker's level of experience.

In regard to the use of financial information, there seems to be no significant difference between those who are involved in the writing of the credit applications and those who are involved in the approval of the applications. On average, the group of writers identified 10.1 pieces of financial information, and the group of readers identified on average 13.3 pieces of financial information. There was no statistically significant difference between these groups in the use of financial information. (see appendix 7)

When examining the respondents' relative use of financial information, i.e. the amount of financial information identified proportioned to the total amount of information identified by a particular respondent, it may be seen that the novices paid more attention to financial information than the credit professionals. The majority of the credit professionals reported that they made their decision based on information which contained less than 50% of financial information, whereas the majority of the novices reported that more than 50% of their information usage was financial information. In

addition, one novice made the decision based solely on financial information. However, there was no statistically significant difference in relative use of financial information between the levels of experience. (see appendix 10) The respondents' relative use of financial information may be seen also from figure 11.

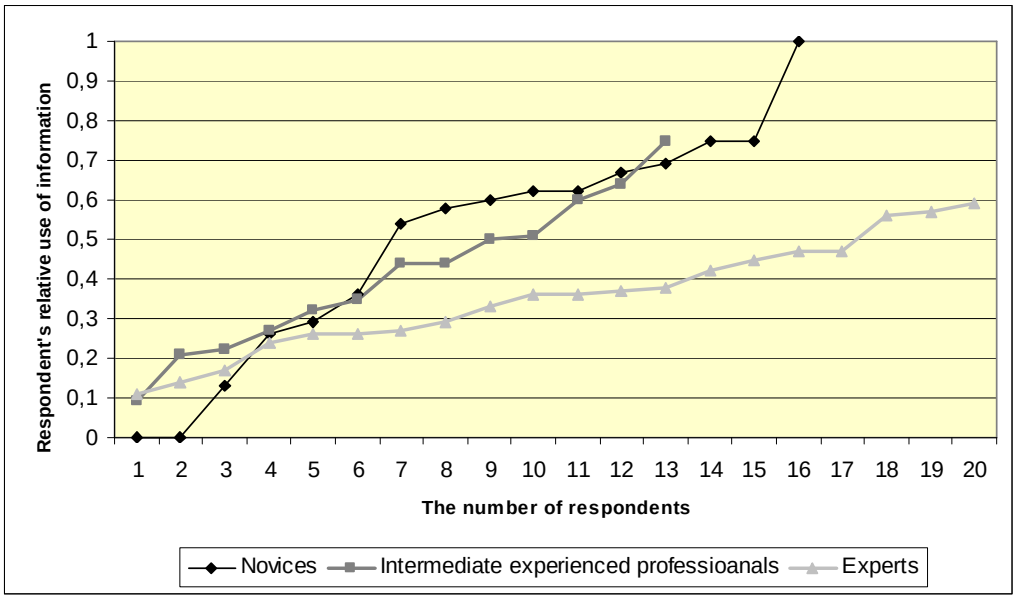

Figure 11 The respondents' relative use of financial information

As can be seen from figure 11, all credit professionals used financial information in their decision-making, and only two novices did not identify financial information at all. The impression obtained from figure 11 supports the assumption that novices give more weight to financial information than credit professionals. This observation is probably due to the fact that financial information is generally a so-called natural source of information when making credit decisions, and therefore, also novices, who are not used to deal with credit requests, are likely to find this kind of information as a good basis for credit decisions. In addition, it may be that business students are likely to find financial information easier to understand, whereas, for example, qualitative information, which may need extensive subjective assessment, may be rather difficult to assess by novices. Therefore, the findings might suggest that in training new credit professionals, the ability and confidence to use and assess qualitative information together with financial information should be strengthen.

Since beforehand it was assumed that financial information would be highly important for the credit decision, the use of financial information was analysed further by dividing the financial information items on the executive summary into groups of balance sheet information, income statement information, and financial ratio information. The executive summary contained altogether 19 pieces of balance sheet information, 5 pieces of income statement information, and 8 pieces of financial ratio infor-

mation. (see appendix 5) Table 9 shows the average use of information within these financial information categories.

Table 9 The respondents' average usage of different types of financial information

Level of experience	Balance sheet information	Income statement information	Financial ratio information
Novice	3.31	1.75	3.00
Intermediate experienced professional	3.85	1.85	3.08
Expert	6.20	2.05	3.20
Total	4.63	1.90	3.10

As can be seen from table 9, experts identified on average more of all types of financial information compared to novices and less experienced professionals. However, the ANOVA model shows that there is no statistically significant difference in the use of balance sheet information, income statement information, or financial ratio information between the levels of experience. (see appendix 10)

In order to find out what kind of financial information is considered the most important by the respondents, the number of information items identified within balance sheet, income statement, and financial ratio information was proportioned to the total amount of financial information identified by a particular respondent. When doing this, it can be seen that most of the financial information used was balance sheet information, whereas income statement information was the least frequently used type of financial information. The differences in the use of different types of financial information were not statistically significant between the levels of experience. (see appendix 10)

The most frequently identified pieces of financial information among the credit professionals were debt to EBITDA ratio and the consolidated turnover. Altogether 22 (75.9%) credit professionals marked debt to EBITDA ratio as critical information, and 21 (72.4%) professionals considered the consolidated turnover as critical information. Among the business students, equity ratio was the most frequently identified piece of financial information, and altogether 8 (50.0%) students marked equity ratio as critical. In addition, the consolidated turnover, active investments in R&D, equity to total assets, EBITDA interest coverage, and ROCE were as well rather frequently marked as critical information by the business students, and each of these pieces of financial information were identified by altogether 7 (43.8%) students.

One of the presumptions was that both historical financial information and financial forecasts would be important in regard to the decision. However, the executive summary of a credit proposal contained mainly historical information about the

borrowing company and its operations, and especially financial information on the executive summary was historical in nature. Thus, the respondents' use of information was, in a way, limited to historical information. However, the reservations reported by the respondents show that in regard to the financial information, the credit professionals were frequently asking more financial forecast information than historical financial information. The business students, in turn, seemed to report more reservations concerning historical financial information. (see appendix 11) Therefore, it seems that the credit professionals were rather satisfied with the historical financial information available, but more financial forecasts would have been appreciated by the credit professionals. The business students, in turn, seem to prefer more historical financial information than forecasts, which might imply that business students may find it more convenient to rationalize their decisions with historical information.

4.3.2.3 Information concerning the credit requested

The executive summary contained altogether 12 pieces of information concerning the credit requested (see appendix 5). On average, the respondents identified 4.2 pieces of information concerning the credit requested, which amounts to 35.3% of all available information concerning the lending decision. Experts identified on average 5.8 (48.3%) pieces of this kind of information, intermediate experienced professionals identified on average 4.5 (37.8%) pieces, and novices identified on average 2.1 (17.2%) pieces of information concerning the credit requested. The use of information concerning the credit requested is represented also in figure 12.

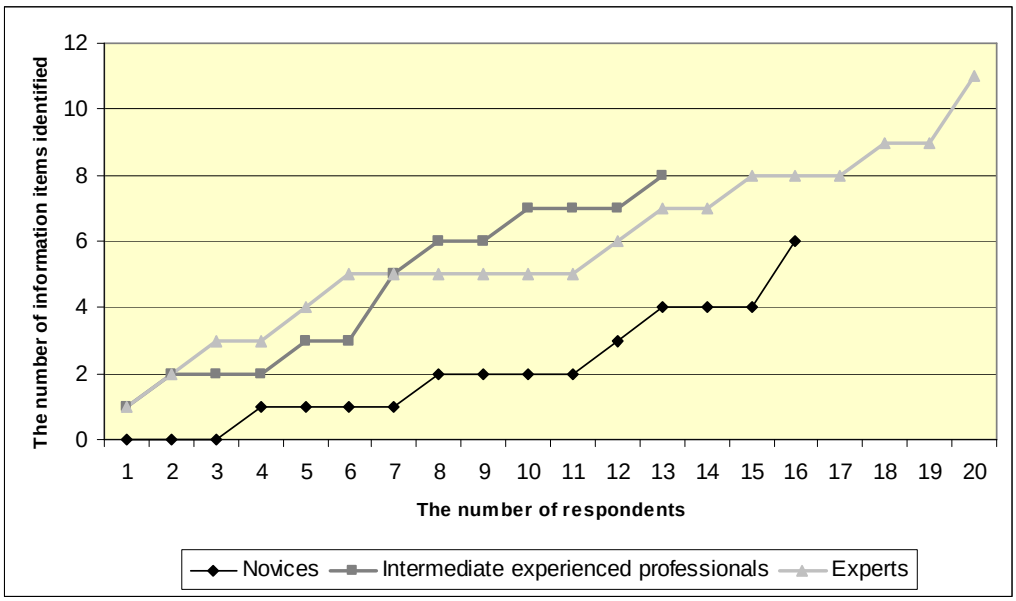

Figure 12 The use of information concerning the credit requested

As can be seen from figure 12, the novices seemed to use less information concerning the credit requested than the credit professionals. The ANOVA model (see appendix 12) shows that the difference in regard to the number of identified information items concerning the credit requested differs very significantly ($p < 0.001$) between different levels of experience. Tukey's post-hoc test shows that the novices differed significantly from experts ($p < 0.001$) and intermediate experienced professionals ($p = 0.016$) in regard to the number of identified information items concerning the lending decision. The difference between experts and intermediate experienced professionals in regard to the number of identified information items concerning the credit requested was not significant. In figure 13 is represented the respondents' relative use of information concerning the credit requested.

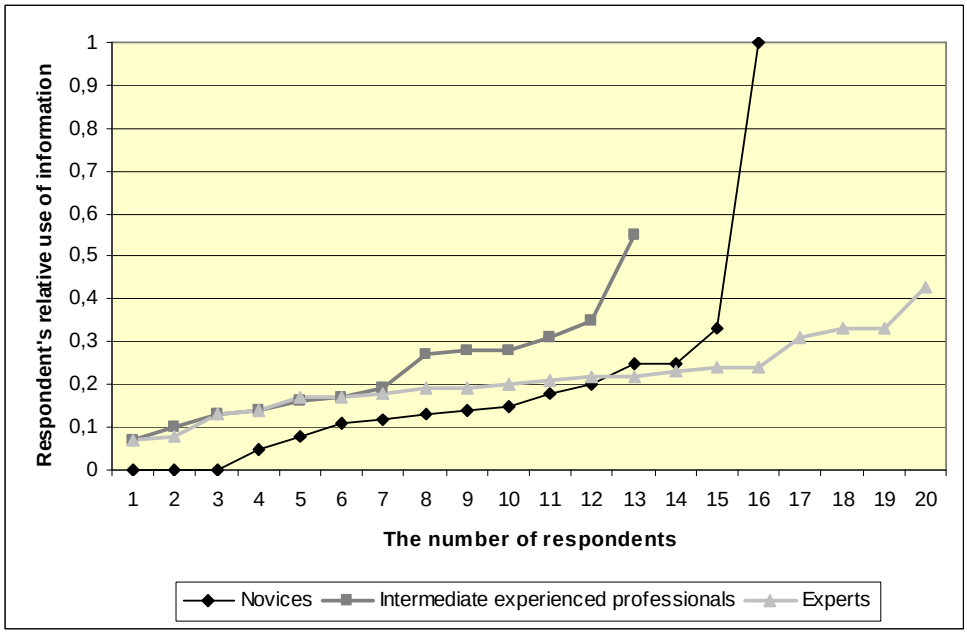

Figure 13 The respondents' relative use of information concerning the credit requested

As can be seen from figure 13, most of the respondents make their decision based on information which contained less than 40% of information concerning the credit requested. There were altogether three novices who did not use this kind of information at all, but, however, there was one novice as well who made the decision based on solely information concerning the credit requested. However, there was no statistically significant difference in the relative use of information concerning the credit requested between different levels of experience. (see appendix 12)

In regard to the use of information concerning the credit requested, there seems to be no significant difference between those who are involved in the writing of the credit applications and those who are involved in the approval of the applications. The group

of writers identified on average 5.3 pieces of information concerning the lending decision, and the group of readers identified on average 5.8 pieces of information concerning the lending decision. There was no statistically significant difference between these groups in the use of this kind of information. (see appendix 7)

The pieces of information concerning the credit requested seemed to be especially important for credit professionals, and among the credit professionals, the most frequently identified piece of information was the information concerning the guarantee of the requested loan. Altogether 30 credit professionals (90.9%) marked the parent company's guarantee as critical information. In addition, other pieces of information concerning the credit requested were also rather frequently identified by the credit professionals, and, for example, the information about the covenant level was marked as critical information by altogether 22 professionals (75.9%). Among the business students, in turn, the pieces of information concerning the credit requested were not as frequently identified, and the most frequently identified piece of information concerning the credit requested was the reasons for why decided to invest in "country B", which was marked as critical information by 7 students (43.8%).

When examining the answers concerning the three most important information items, the information concerning the credit requested was the most frequently mentioned information category by the credit professionals. Business students, in turn, seemed to pay less attention to this kind of information. Pieces of information concerning the credit requested were mentioned altogether 38 times by credit professionals, and only 14 times by business students. Especially the information concerning the guarantee of the credit requested seems to be important for the credit professionals in this particular case, and altogether 11 credit professionals mentioned the parent company guarantee as one of the most important information items. (see appendix 9)

4.3.2.4 Cluster analysis based on the information identified

A cluster analysis (see appendix 13) shows that there is a tendency that respondents from different levels of experience will behave rather differently, whereas respondents within the same level of experience tend to behave rather similarly. There were, however, some novices who were grouped together with experienced professionals. Since there were some differences between the classification of the respondents made by cluster analysis and the classification made based on the respondent's level of experience, it would imply that a decision-maker who lacks practical experience in regard to the credit granting may still behave like an expert. Therefore, as was noted also in the introductory chapter of the thesis, expertise is not necessarily equal to experience (measured in years).

The cluster analysis clearly shows that novices are grouped as one cluster, whereas also experts form their own cluster (or clusters, depending on how many clusters are distinguished). In addition, it is possible to distinguish also a cluster, where the majority of the cluster members are intermediate experienced professionals, but, however, that particular cluster includes also several experts and novices. Thus, the cluster analysis would seem to support the findings reported earlier, and the differences seem to be most obvious between experts and novices.

Interestingly, there were two novices (cases 45 and 42; see appendix 13) who were grouped into the same cluster with experts. By analysing further the responses of these novices, it may be seen that both of these novices used all types of information available, and furthermore, both of these novices identified more qualitative information items than novices on average. Thus, it seems that the more diversified use of information, i.e. the use of several different types of information items, and the greater amount of qualitative information will be distinctive factors between novices and professionals. Those novices who are able to assess large amounts of qualitative information in a meaningful manner, and who are able to take into consideration several pieces of information from different information categories, seem to be close to experts in regard to the credit decision-making behaviour.

4.3.3 Reservations concerning the credit decision

The respondents were asked to mark whether they agreed or disagreed with the proposal, and in case the respondent supported the proposal, the respondent was asked to mark whether his or her support was unqualified, or if he or she supported the request with some reservations, or with significant reservations. Among the credit professionals there was a rather clear consensus in regard to the decision made, and all credit professionals would have supported the credit request in hand. Novices, in turn, were also rather unanimous, but there were, however, 3 novices who would not have supported the credit requested. Although all credit professionals would have supported the credit requested, they were not equally confident about the decision made, which was concluded from the reservations reported. In case the respondent's support was unqualified, the respondent may be considered to be rather confident about the decision, whereas in case the respondent supported with some reservations or with significant reservations, the respondent may be considered to be rather unconfident about the decision made. Figure 14 represents the respondents' confidence in regard to the decision.

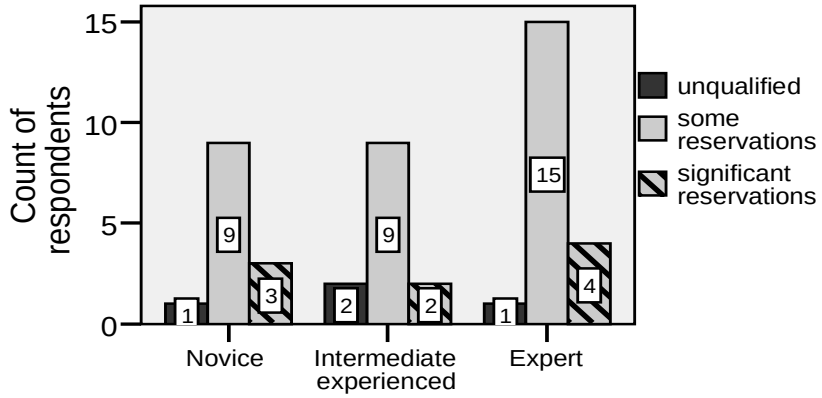

Figure 14 Confidence in regard to the decision made

As can be seen from figure 14, only one expert, 2 intermediate experienced professionals, and one business student reported that the decision they made was unqualified. Fifteen experts supported the credit request with some reservations, and 4 experts would have supported the credit request with significant reservations. Nine intermediate experienced professionals supported the request with some reservations, and 2 intermediate experienced professionals supported the request with significant reservations. Among the novices[20], in turn, 9 students supported the request with some reservations, and 3 students supported with significant reservations. On the whole, more than 90% of the respondents would have supported the credit request in hand, but on the other hand, more than 70% of the respondents had some reservations concerning the credit requested, and almost 20% of the respondents had significant reservations.

Many respondents reported reservations concerning some kind of missing information. The respondents reported that especially the information concerning the investment in question and financial information were inadequate. Seasonality and cyclicality as risk factors of the business in question were especially the subjects of concern, and several respondents, especially credit professionals, would have liked to see some more detailed information about seasonality, such as percentages of summer and winter equipment sales, and how the borrower is prepared for bad weather conditions. In addition, some of the respondents would have liked to see more information on the borrowing company's management, and, for example, the management's competence was one subject of concern. Therefore, the borrowing company's background information seems to be important in credit decisions, although this assumption was not

[20] Three business students had not marked whether they had some reservations or not, and these responses are excluded from this figure

completely supported with the markings made concerning information considered as critical. (see appendix 11)

According to the reservations reported, the business students seemed to be concerned mainly about the borrowing company's business and the investment plan, whereas the credit professionals reported also reservations which concerned, for example, the relationship with the borrower and the bank's competitive position. Thus, it seems that credit professionals are able to assess the decision in question from a wider perspective than novices. It should be noted, however, that in real life situation, credit professionals are also assumed to take into consideration several aspects related to the decision in question. In addition, since the credit professionals are used to handling credit requests, it would be very likely that the credit professionals were more able to consider the credit application as if it would have been a real credit request from one of the bank's customers.

4.3.4 Other observations in regard to the decision-making behaviour

The average time that it took from the respondents to make their decision was 20.30 minutes. Within experts the average time was 19.40 minutes, within intermediate experienced professionals the average time was 20.19 minutes, and within novices 21.50 minutes. As a whole, the time reported varied between five and 60 minutes. Figure 15 represents the distribution of time between the respondents.

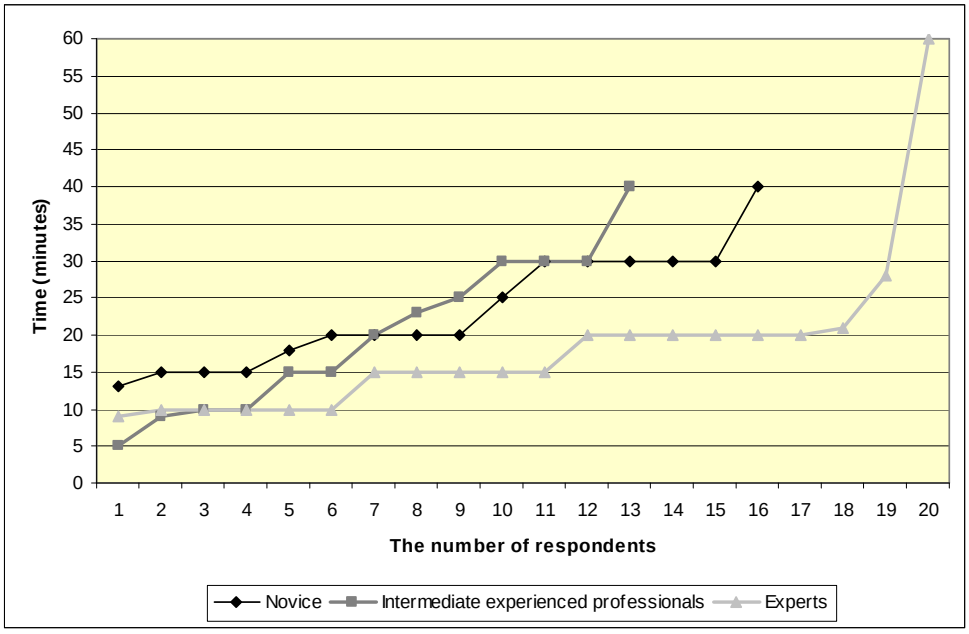

Figure 15 Time used to make the credit decision

As can be seen from figure 15, most of the experts used less than 25 minutes in decision-making, whereas the majority of the intermediate experienced professionals and the novices used 15-30 minutes to make the final decision. The ANOVA model shows that there is no statistically significant difference between the levels of experience in regard to the time used to make the decision. (see appendix 14)

It seems that the credit professional's degree of education does not affect the amount of information used. However, the graduating year and the total number of information identified seemed to be significantly related, and the year of graduation seemed to affect especially the number of qualitative and balance sheet information used. It should be noted, however, that the graduating year is closely related to the level of experience, and thus, the actual factor which affects the use of information in this case is probably the level of experience not the graduating year. (see appendix 15)

The majority of the credit professionals reported that they had one degree from a University (or a similar institution). There were altogether 6 credit professionals who reported that they had two degrees. The number of degrees was not related to the level of experience. There were no significant differences between credit professionals who had one degree and professionals who had two degrees in regard to the number of information items used. Thus, it seems that, in case the decision-maker has completed a University degree, the decision-making behaviour within credit decisions does not differ with the credit professional's educational background.

4.4 Conclusions

4.4.1 The amount of information used

Previous studies related to decision-making among experts and novices have shown to some extent rather inconsistent results about the validity of the Information-Use-Hypothesis. In this thesis, therefore, one object was to examine whether or not this hypothesis is valid in the context of credit granting. An assumption was that experts and intermediate experienced professionals would use more information compared to novices, and among professionals the amount of information used would reflect the decision-maker's degree of expertise. This assumption was consistent with both the results of the study made by Andersson (2004) and the Information-Use-Hypothesis, but contrary, for example, to findings of Shanteau (1992), whose study, however, did not concern credit decisions.

The results of this thesis showed that the difference between novices and intermediate experienced professionals in regard to the total number of information items identified was not significant, which is consistent with the results from Andersson's (2004) study. Experts, in turn, differed significantly from the novices, which also supports the findings of Andersson's (2004) study. However, according to the results of this thesis, the difference between the experts and the intermediate experienced professionals was not significant, which is divergent to the results from Andersson's (2004) study. Therefore, the validity of the Information-Use-Hypothesis in the context of credit granting remains uncertain since the results of this thesis implied that the decision-maker's degree of expertise cannot completely explain the number of information used by experienced credit professionals, but, however, the hypothesis seems to be valid when comparing novices and experts, as well as when comparing credit professionals altogether and novices.

When compared to novices, experienced credit professionals tend to acquire more information within all other information categories except the financial information category. Especially within qualitative information experts used more information compared to novices and less experienced professionals. Qualitative information may in some cases be of the essence since it is not always appropriate to compare, for example, the potential borrower's financial ratios only to the normative values. Instead, financial ratios, as well as other information, should be assessed together with other information available, and thus the impression of the potential borrower's creditworthiness may be different when comparing solely financial information.

4.4.2 Type of information used

In regard to the ability to assess qualitative information, which often needs plenty of subjective assessment, more experienced decision-makers seem to perform better than decision-makers with little experience. In addition, it seems that financial information is frequently used type of information in credit decisions regardless of the decision-maker's level of experience, but along with practical experience the relative importance of financial information is reduced and more weight is given to qualitative information. Therefore, although one of the presumptions was that financial information will be highly important, it seems that also qualitative information is considered to be highly relevant, especially together with financial information.

The results of this thesis showed also that in regard to the financial information, credit professionals seemed to consider both historical information and forecasts important, whereas novices seemed to pay more frequently attention to historical information. Thus, the results of this thesis supported the findings of Stanga and Benjamin

(1978), who reported that historical financial information was considered more important than forecasts, but the importance of financial forecasts was also rather significant.

In regard to the use of information concerning the credit requested, novices differed significantly from credit professionals. Between experts and intermediate experienced professionals the difference in regard to the use of information concerning the credit requested was not significant. The reason why business students did not pay as much attention to information concerning the credit requested compared to experienced professionals, may be, for example, that students assumed that the original terms of the credit are set in an appropriate manner, which in turn, made them rely more on other types of information, such as financial information. Furthermore, it is not obvious how aware the novices are of the typical process of credit granting, and therefore, it may be that students assumed that, for example, the original terms cannot be changed, and that the terms are assumed to be optimal in that particular case. Therefore, it may be that novices do not impugn the decisions made earlier, in this case, decisions made concerning the terms of the credit. Credit professionals, in turn, seemed to be prepared to also modify the terms of credit when needed, and many credit professionals reported reservations concerning, for example, the covenant level.

In Andersson's (2004) study, the information was divided into groups of qualitative, balance sheet, income statement, and financial ratio information. Andersson's (2004) results showed that the differences in the use of qualitative information were not significant. Within this thesis, it seems that novices and intermediate experienced professionals tend to use qualitative information rather similarly, whereas experts seem to be clearly different from both of these groups in regard to the use of qualitative information. Therefore, the finding that experts were different from novices and less experienced professionals in regard to the use of qualitative information is divergent to the results of Andersson's (2004) study.

The results of this thesis showed that there were no significant differences between the levels of experience in regard to the use of financial information, either as a whole or when divided into groups of balance sheet, income statement, and financial ratio information. Andersson's (2004) study, in turn, showed that novices differed from senior loan officers in regard to the use of all types of financial information, and between the novices and junior loan officers the difference was significant in regard to the use of balance sheet information. In addition, according to the study of Andersson (2004), the use of financial ratio information was different between junior and senior loan officers. Thus, the results of this thesis and the results of Andersson's (2004) study seem to be different also in regard to the use of financial information.

The reason for the inconsistent results of this thesis and Andersson's (2004) study in regard to the use of information by novices and experienced professionals may be due to a variety of reasons. The main reason is probably that the research environment was

different within these studies, and in Andersson's (2004) study the participants were able to ask for additional information. In addition, Andersson's (2004) study was made about credit decisions on small firms, whereas this thesis dealt with lending to large corporations, and it is very likely that credit professionals behave differently when the credit decision concerns large corporation. Since many of the credit professionals within this thesis reported reservations which concerned some kind of missing information, it may imply that in case the respondents within this thesis were given a possibility to acquire additional information, the results would have been consistent with the results of Andersson's (2004) study.

All credit professionals utilized each type of information, whereas among the novices there were three respondents who did not use qualitative information, two novices did not use financial information, and three novices did not use information concerning the credit requested. However, there was also one novice who made the decision based on solely financial information, and one novice made the decision based on solely information concerning the credit requested. Thus, it would seem that credit professionals make their decisions based on more diversified information than novices, i.e. professionals seem to use information which consists of several different types of information.

The cluster analysis showed that the respondents from different levels of experience tend to behave rather differently, whereas respondents within the same level of experience tend to behave rather similarly. There were, however, some novices who used information similarly with experienced professionals. Therefore, as was noted in the introductory chapter, experience (in years) does not necessarily equal to expertise, and the results of this thesis also support this notion. The distinctive factors between the majority of the novices and those novices who were grouped into the same cluster with experts seem to be that the differently grouped novices used all types of information, and they also identified more qualitative information items than novices on average. This, in turn, indicates that the ability to assess financial indicators together with qualitative information is important for the credit decision. Therefore, to improve the training of novices, as well as junior credit professionals, it might be appropriate to strengthen the ability to assess financial information together with qualitative information.

4.4.3 Other concluding remarks

Credit professionals seemed to be rather unanimous in regard to the decision made, and all the professionals would have supported the credit requested, but most of them supported it with some reservations. Among the novices, there were altogether three respondents who disagreed with the proposal. Reservations reported by the respondents were mainly concerned with either the investment plan or financial information. Many

of the respondents would have liked to see more information on seasonality and its effects, and also financial forecasts would have been appreciated.

The time it took to make the decision, did not differ significantly between the levels of experience. This finding was divergent to the findings of Andersson's (2004) study since according to Andersson, novices differed from professionals, and senior officers differed from junior officers in regard to the time that it took to make the decision. The inconsistent results of this thesis and Andersson's (2004) study are probably due to the fact that the research environment was different within these studies, and in Andersson's study the research was made by using a computer software[21]. In addition, the results of this thesis and the results of Andersson's (2004) study differed also in regard to the final decision made. The results of Andersson's study showed that all professionals were not unanimous in regard to the decision made, and that there were no significant differences between the levels of experience in the level of confidence in regard to the decision made. Within this thesis, in turn, all credit professionals supported the credit request in question, which might indicate that professionals would be more unanimous than novices in regard to the decisions made.

As a whole, it would seem that the executive summary contained information which was frequently considered to be relevant for the credit decision in question. However, all information items identified by the respondents were not equally important, which could be seen by examining the list of answers concerning the three most important information items. In addition, more information about the borrowing company's management, financial forecasts, and detailed information on investment plan would have been appreciated. Forecast information seemed to be especially important for the credit professionals, who reported frequently reservations concerning missing forecast information.

According to the results of this thesis, it seems that intermediate experienced professionals process information rather similarly than novices, which is probably due to the fact that less experienced professionals assess potential borrower's creditworthiness much on the basis of theoretical knowledge since they lack practical work experience from the field of credit granting. This, in turn, supports the idea that in training of new credit professionals the emphasis should be in supporting the understanding of the importance of qualitative information. However, the ability to assess qualitative information is closely related to practical experience, and therefore, it is hardly possible for inexperienced decision-maker to process qualitative information completely similar with highly experienced professionals. In addition, forming an overall picture of the

[21] The use of a computer software may affect the decision-making process significantly since all participants are not necessarily used to working with computers, which in turn reflects the time that it will take to make the decision.

credit applicant and its business is also important, and the credit applications should be prepared in a way that the general view of the application could be easily perceived.

The results of this thesis were discussed with experienced credit professionals from the bank where the study was conducted. From the basis of this discussion, it could be said that the results and conclusions made could be endorsed also by these credit professionals.

5 SUMMARY

The purpose of this thesis was to examine the decision-making behaviour in corporate lending decisions. The decision-making behaviour in corporate lending decisions has not been a common subject in previous research, and most of the previous research related to lending operations has been concerned with, for example, lending to small and medium sized companies, or trade credits. Therefore, there is little information on decision-making behaviour in lending to large corporations.

In this thesis one of the main emphases was on the comparison of novices' (business students) and experienced credit professionals' decision-making behaviour. The aim of this thesis was to find out if there are significant differences in decision-making behaviour within novices and experienced professionals. Especially the use of information was under examination. In addition, the aim of this thesis was to shed light on what kind of information is considered most important by credit professionals. The results may be used, for example, to improve the training of new credit professionals, and thus the whole credit decision-making process may be improved.

The theoretical framework, together with the results of the previous studies when appropriate, was used to make some presumptions concerning the research questions. The theoretical framework in this thesis was represented in chapters two and three, and the aim was to give the reader an overall picture of the corporate lending process in banks' operations. In addition to the lending process and the indicators of corporate credit quality, also typical characteristics and strategies of the decision-makers' were included in the theoretical framework.

The issues discussed in the second chapter of the thesis concerned mainly the theoretical background of lending operations, and theories like moral hazard and adverse selection were presented. Moral hazard and adverse selection are problems, which are closely related to lending operations, and which exist due to the information asymmetries. Information asymmetry, in turn, exists due to the fact that the information has not been distributed uniformly between the bank and the borrower. Adverse selection refers to a situation where, for example, credit-worthy borrowers are adversely selected due to the high loan costs charged by banks, whereas moral hazard means that the borrower will behave purposely in a way which might reduce the bank's possibilities for repayment. It should be noted, that it is rarely possible to clearly distinguish the way in which a particular decision-maker takes into account problems such as moral hazard and adverse selection. Instead, the credit decision-makers' decisions concerning the actual credit request, i.e. decisions concerning, for example, the terms of the loan or a rejection of the credit request, are rather implicitly related to the problems such moral hazard and adverse selection. Together with the above-mentioned theoretical problems related to lending operations, there are also psychological problems related to lending operations,

and it might be reasonable to assume that often the decision-makers themselves do not become aware of these psychological problems.

The third chapter was concerned with different kinds of indicators of corporate credit quality, and issues like company analysis, financial statement analysis and basic issues concerning financial ratios were discussed. In addition, assessment of credit risk and credit ratings were also subjects of concern in the third chapter of the thesis.

The main idea of a company analysis is to form an overall picture of the potential borrower and its conditions. A financial statement analysis and a ratio analysis are parts of the company analysis, and when assessing the borrowing company's financial statements, it should be noted that no ratios can be interpreted alone, but instead the interpretation will need to take into account other financial ratios, as well as other relevant factors concerning the company in question.

In assessing the borrowing company's financials, the most important concern would be the company's profitability, leverage, and liquidity, and these are also factors which seem to be distinctive factors between a financially healthy and a financially unhealthy company. However, even though, for example, leverage is generally considered to be a distinctive factor between a healthy and an unhealthy company, there seemed to be no clear variations between some of the credit rating categories and financial ratios. Therefore, in order to make proper conclusions about the borrowing company's credit quality, a decision-maker has to take into consideration many different kinds of aspects.

The research was conducted by using a descriptive survey as a research method, and the survey was carried out by using a questionnaire. In this thesis, the aim was to examine the participants in a highly naturalistic situation, and with the questionnaire and a hypothetical executive summary of a credit proposal, which was sent to the participants together with the questionnaire, the credit decision-making situation under examination was close to a naturalistic situation in the credit professionals' everyday job. Since the hypothetical executive summary of a credit proposal was written by and tested with experienced credit professionals, it is very reasonable to assume that the credit request in question represented a very realistic credit approval situation.

The survey was conducted among two samples. The first sample was conducted among corporate credit professionals at one Nordic bank with important operations in Finland, and the second sample was conducted among business students at the Lappeenranta University of Technology. Within the group of the credit professionals, the questionnaires were sent to 88 professionals who are involved in credit decisions within large and medium sized companies, either as contributors to the writing of credit applications, or involved in the approval of the applications. Within the group of the business students, the questionnaires were sent to 35 students who participated in a particular specialisation course of finance and corporate funding at the Lappeenranta University of Technology. Usable responses were received from 33 professionals and

16 business students. The respondents were classified first into two main groups, namely novices and professionals, and the professionals were classified further according to their experience and level of expertise into groups of experts and intermediate experienced professionals. The terms used in the thesis were *novices*, *intermediate experienced professionals*, and *experts.*

The information on the credit summary was divided into separate pieces of information, and the total number of information items on the credit summary was 73. These pieces of information were divided further into groups of *qualitative* information, *financial information*, and *information concerning the credit requested.* Furthermore, financial information was further divided into categories of *balance sheet information*, *income statement information*, and *financial ratio information*. By analysing the use of the information items within these information categories the goal was to find out what type of information was considered most important by credit professionals, and if the business students preferred different types of information than the professionals. The data was analysed mainly by using a one way ANOVA (Analysis of Variance) model.

There seems to be a rather clear difference between the levels of experience in regard to the decision-making behaviour. Experts seem to use more information than novices, whereas novices' use of information is rather limited. However, among financial information there seems to be no significant difference between the levels of experience, which is probably due to the fact that financial information is generally the most closely related to the potential borrower's creditworthiness and the ability to meet its obligations. In addition, especially the use of qualitative information seemed to be different between the experts and less experienced professionals and novices. This, in turn, indicates that novices tend to be more satisfied with the impression they get when analyzing solely financial information, and that also less experienced professionals tend to assess credit applications much from the basis of theoretical knowledge, which however, is only natural due to the lack of practical experience. As a whole, all the respondents seemed to consider financial information as relevant, but a long with practical experience, the relative importance of financial information is decreased and the importance of qualitative information is increased.

The cluster analysis supported the impression that the respondents from different levels of experience will use information differently, and also that the difference is greater between novices and experts compared to the difference between experts and less experienced professionals. There were, however, some novices who were grouped together with experienced professionals. The distinctive factors between the majority of the novices and those novices who were grouped into the same cluster with professionals seem to be that the differently grouped novices used all types of information, and they also identified more qualitative information items than novices on average.

This, in turn, indicates that the ability to assess financial indicators together with qualitative information is important in credit decision-making.

Since there was little information on decision-making behaviour in corporate lending, it would be feasible to conduct follow-up research concerning this subject. It might be interesting to examine, for example, is there some differences in credit decision-making behaviour between different countries. In addition, one possible approach to follow-up research might be to collect data from several different banks, and to examine possible differences in different banks' credit culture. Furthermore, since the majority of the respondents from the bank in this thesis were involved in the writing of the credit applications, it might be interesting to examine solely the opinions of those who are involved in the approval of the credit request. Thus, it would be possible to compare the opinions of those who write the applications and those who read these applications. This, in turn, might give insight into what is actually expected from a good credit application.

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APPENDIX 1 QUESTIONNAIRE

YOUR BACKGROUND

1) Gender

☐ Female ☐ Male

2) Age _____ years

3) Education

☐ Bachelor of Business Administration (BBA)

☐ Bachelor of Science in Economics and Business Administration (B. Sc.)

☐ Master of Science in Economics and Business Administration (M.Sc.)

☐ Other, which _____

4) Year of completing your formal education (degree mentioned above, e.g. 1988)

_____

5) Your current job description and title:

_____

6) Work experience

- in current position _____ years
- as a whole _____ years (since completing formal education, including only work experience related to financial services)

- in following functions
  - Credit research (internal) _____ years
  - Credit management _____years
  - Relationship management (banking)_____ years
  - Capital markets _____ years
  - Credit research (sell side) _____ years
  - Other (please specify) _____years

THE CREDIT PROPOSAL

7) On which pieces of information in the enclosed executive summary was your decision mainly based?

(Please mark on the credit proposal with a marker pen or by underlining)

8) Did you support the proposal or disagree with it?

☐ support (recommend) ☐ disagree (not approved)

9) If you support the proposal, is your support

☐ Unqualified,
☐ With some reservations,
☐ With significant reservations?

If you supported reservations, please list them (e.g. missing information, facts that you are uncomfortable with)

10) If you disagreed with the proposal, what was (were) in your view the deal breaker(s)?

11) What were the three most important pieces of information for your decision?

1. _____
2. _____
3. _____

12) Finally, please mark the time that it took you to make the decision about the credit.

_____ minutes

APPENDIX 2 GENERALLY USED RATIOS AND THEIR FORMULAS

Ratio	Formula	Category
Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Liquidity
Equity ratio / Solvency ratio	$\left(\frac{\text{Shareholders' equity}}{\text{Balance sheet total – advance payments}}\right) * 100$	Leverage / Capital structure
Net gearing	$\frac{\text{Interest bearing debt – cash and equivalents}}{\text{Shareholders' equity}}$	Leverage / Capital structure
Return on equity (ROE)	$\frac{\text{Net income}}{\text{Shareholder's equity}}$	Profitability
Return on capital employed (ROCE)	$\frac{\text{Earnings before interest and taxes (EBIT)}}{\text{Total assets – Current liabilities (= capital employed)}}$	Profitability
Quick ratio	$\frac{\text{Current assets – Inventories}}{\text{Current liabilities}}$	Liquidity
Profit margin	(Net income / Net sales revenue) * 100	Profitability
Net working capital per turnover	(Net working capital / Turnover) * 100	Liquidity
Relative indebtedness / Debt to sales ratio	$\left(\frac{\text{Debt – advance payments}}{\text{Turnover}}\right) * 100$	Leverage / Capital structure
Turnover time of accounts payable	$\left(\frac{\text{Accounts payables + Internal accounts payables}}{\text{Turnover}}\right) * 365$	Liquidity / Efficiency
Turnover time of account receivable	$\left(\frac{\text{Accounts receivables + Internal accounts receivables}}{\text{Turnover}}\right) * 365$	Liquidity / Efficiency
Debt-to-equity ratio	$\frac{\text{Total liabilities}}{\text{Shareholders' equity}}$	Leverage / Capital structure
Interest coverage	$\frac{\text{EBIT}}{\text{Interest expense}}$	Liquidity

(Kallunki & Kytönen 2002, Niskanen & Niskanen 2003; Committee for corporate analysis 2005)

APPENDIX 3 FINANCIAL METRICS ON TABLE 5

Interest Coverage:
– (EBIT - Interest Capitalized + (1/3)*Rental Expense) / (Interest Expense + (1/3)*Rental Expense +
Preferred Dividends/0.65)

Asset Coverage:
– (Total Assets - Goodwill - Intangibles) / Total Debt

Leverage:
– (Total Debt + 8*Rental Expense) / (Total Debt + 8*Rental Expense + Deferred Taxes + Minority
Interest + Total Equity)

Cash Flow/Debt:
– (Net After-Tax Income Before X-Items + Depreciations - Dividends) / (Total Debt + 8*Rental Expense)

Return on Assets:
– Net After-Tax Income Before X-Items / 2 Year Average Assets

Profit:
– Net After-Tax Income Before X-Items / Net Sales

Liquidity:
– Cash & Market Securities / Total Assets

Revenue Stability:
– 5 Year Average Net Sales / 5 Year Standard Deviation Net Sales

(Moody's Investors Service)

APPENDIX 4 RESPONDENTS' BACKGROUND INFORMATION

Gender

			expertise			Total
			Expert	Intermediate experienced	Novice	
gender	male	Count	18	10	10	38
		% within gender	47,4%	26,3%	26,3%	100,0%
		% within expertise	90,0%	76,9%	62,5%	77,6%
	female	Count	2	3	6	11
		% within gender	18,2%	27,3%	54,5%	100,0%
		% within expertise	10,0%	23,1%	37,5%	20,4%
Total		Count	20	13	16	49
		% within gender	40,8%	26,5%	32,7%	100,0%
		% within expertise	100,0%	100,0%	100,0%	100,0%

Age

			expertise			Total
			Expert	Intermediate experienced	Novice	
Age	20-24	Count	0	0	9	9
		% within Age	,0%	,0%	100,0%	100,0%
		% within expertise	,0%	,0%	56,3%	18,4%
	25-29	Count	0	7	4	11
		% within Age	,0%	63,6%	36,4%	100,0%
		% within expertise	,0%	53,8%	25,0%	22,4%
	30-34	Count	4	3	3	10
		% within Age	40,0%	30,0%	30,0%	100,0%
		% within expertise	20,0%	23,1%	18,8%	20,4%
	35-39	Count	2	2	0	4
		% within Age	50,0%	50,0%	,0%	100,0%
		% within expertise	10,0%	15,4%	,0%	7,4%
	40-44	Count	2	0	0	2
		% within Age	100,0%	,0%	,0%	100,0%
		% within expertise	10,0%	,0%	,0%	3,7%
	45-49	Count	5	0	0	5
		% within Age	100,0%	,0%	,0%	100,0%
		% within expertise	25,0%	,0%	,0%	9,3%
	50-54	Count	3	0	0	3
		% within Age	100,0%	,0%	,0%	100,0%
		% within expertise	15,0%	,0%	,0%	5,6%
	55-59	Count	3	0	0	3
		% within Age	100,0%	,0%	,0%	100,0%
		% within expertise	15,0%	,0%	,0%	5,6%
	60-	Count	1	1	0	2
		% within Age	50,0%	50,0%	,0%	100,0%
		% within expertise	5,0%	7,7%	,0%	3,7%
Total		Count	20	13	16	49
		% within Age	40,8%	26,5%	32,7%	100,0%
		% within expertise	100,0%	100,0%	100,0%	100,0%

Education

			expertise		Total
			Expert	Intermed	
Education	BBA	Count	0	1	1
		% within Education	,0%	100,0%	100,0%
		% within expertise	,0%	7,7%	3,0%
	B.Sc	Count	3	0	3
		% within Education	100,0%	,0%	100,0%
		% within expertise	15,0%	,0%	9,1%
	M.Sc	Count	13	11	24
		% within Education	54,2%	45,8%	100,0%
		% within expertise	65,0%	84,6%	72,7%
	other	Count	4	1	5
		% within Education	80,0%	20,0%	100,0%
		% within expertise	20,0%	7,7%	15,2%
Total		Count	20	13	33
		% within Education	60,6%	39,4%	100,0%
		% within expertise	100,0%	100,0%	100,0%

Graduation Year

			expertise		Total
			Expert	Intermed	
Graduation Year	1970 -1974	Count	2	1	3
		% within Graduation Year	66,7%	33,3%	100,0%
		% within expertise	10,0%	7,7%	9,1%
	1975 -1979	Count	4	0	4
		% within Graduation Year	100,0%	,0%	100,0%
		% within expertise	20,0%	,0%	12,1%
	1980 -1984	Count	3	0	3
		% within Graduation Year	100,0%	,0%	100,0%
		% within expertise	15,0%	,0%	9,1%
	1985 -1989	Count	3	0	3
		% within Graduation Year	100,0%	,0%	100,0%
		% within expertise	15,0%	,0%	9,1%
	1990 -1994	Count	2	0	2
		% within Graduation Year	100,0%	,0%	100,0%
		% within expertise	10,0%	,0%	6,1%
	1995 -1999	Count	2	2	4
		% within Graduation Year	50,0%	50,0%	100,0%
		% within expertise	10,0%	15,4%	12,1%
	2000 -2004	Count	4	5	9
		% within Graduation Year	44,4%	55,6%	100,0%
		% within expertise	20,0%	38,5%	27,3%
	2005-	Count	0	5	5
		% within Graduation Year	,0%	100,0%	100,0%
		% within expertise	,0%	38,5%	15,2%
Total		Count	20	13	33
		% within Graduation Year	60,6%	39,4%	100,0%
		% within expertise	100,0%	100,0%	100,0%

experience in current position

			expertise		Total
			Expert	Intermed	
experience in current position (years)	less than 5	Count	13	11	24
		% within experience in current position	54,2%	45,8%	100,0%
		% within expertise	65,0%	84,6%	72,7%
	5-9	Count	3	2	5
		% within experience in current position	60,0%	40,0%	100,0%
		% within expertise	15,0%	15,4%	15,2%
	10-14	Count	2	0	2
		% within experience in current position	100,0%	,0%	100,0%
		% within expertise	10,0%	,0%	6,1%
	15-19	Count	2	0	2
		% within experience in current position	100,0%	,0%	100,0%
		% within expertise	10,0%	,0%	6,1%
Total		Count	20	13	33
		% within experience in current position	60,6%	39,4%	100,0%
		% within expertise	100,0%	100,0%	100,0%

experience as a whole

			expertise		Total
			Expert	Intermed	
experience as a whole (years)	less than 5	Count	0	7	7
		% within experience as a whole	,0%	100,0%	100,0%
		% within expertise	,0%	53,8%	21,2%
	5-9	Count	5	3	8
		% within experience as a whole	62,5%	37,5%	100,0%
		% within expertise	25,0%	23,1%	24,2%
	10-14	Count	2	2	4
		% within experience as a whole	50,0%	50,0%	100,0%
		% within expertise	10,0%	15,4%	12,1%
	15-19	Count	3	0	3
		% within experience as a whole	100,0%	,0%	100,0%
		% within expertise	15,0%	,0%	9,1%
	20-24	Count	5	0	5
		% within experience as a whole	100,0%	,0%	100,0%
		% within expertise	25,0%	,0%	15,2%
	25-29	Count	2	0	2
		% within experience as a whole	100,0%	,0%	100,0%
		% within expertise	10,0%	,0%	6,1%
	30-	Count	3	1	4
		% within experience as a whole	75,0%	25,0%	100,0%
		% within expertise	15,0%	7,7%	12,1%
Total		Count	20	13	33
		% within experience as a whole	60,6%	39,4%	100,0%
		% within expertise	100,0%	100,0%	100,0%

APPENDIX 5 THE NUMBER OF INFORMATION ITEMS

Qualitative information

1. global niche producer
2. producer of professional equipment
3. equipment for both summer and winter
4. customer base
5. facilities in Finland and in "country A"
6. shares are quoted on the stock exchange
7. Number of employees 2 700
8. 52% of the employees in Finland
9. rating performed according to implicit support rating instruction
10. rating proposed to be maintained at BB+
11. calculated credit rating BBB-
12. cyclical business
13. global dispersion of the turnover
14. risk well moderated
15. competitors
16. only Pan-European player
17. increase barriers-of-entry
18. succeeded positioning products as premium brand
19. business is seasonal
20. two sales peak a year
21. risk of carrying unsold inventory
22. dealers hold consignment inventory
23. industry risk medium
24. company risk medium
25. weather conditions and its effects
26. good working capital management
27. good outlook for the current year
28. credit risk medium
29. 2007 figures unaudited but according to the company's management there are no material changes

Financial information

Balance sheet

1. market capitalisation € 302 million
2. market capitalisation decreased from € 370 million
3. committed credit facility € 15 million
4. settlement limit € 30 million
5. increased leverage
6. working capital fluctuates considerably
7. prudent financial structure
8. decreased debt usage
9. unused credit facilities from our bank and two other banks
10. average usage of credit facilities < 20%
11. financial stability
12. relatively high level of net working capital

13. low volume of tangible assets
14. financial risk medium
15. Total assets: € 538.4 millions in 2006, € 522.5 millions in 2007
16. Net working capital: € 321.5 millions in 2006, € 300.2 millions in 2007
17. Interest bearing debt: € 160.5 millions in 2006, € 152.6 millions in 2007
18. Equity: € 160.4 millions in 2006, € 175.6 millions in 2007
19. Capital expenditures (capex): € 16.0 millions in 2006, € 15.5 millions in 2007

Income statement

1. consolidated annual turnover € 578 million
2. invests actively on R&D
3. low cash flow fluctuation
4. EBIT (Earnings Before Interest and Taxes): € 33.4 millions (in 2006); € 39.1 millions (in 2007)
5. Net income before taxes: € 25.4 millions in 2006, € 31.4 millions in 2007

Financial ratio

1. equity to total assets 25-38%
2. EBITDA (Earnings Before Interests, Tax, Depreciation and Amortization) interest cover 4,5-7,5 times
3. EBITDA interest cover declined 2006
4. in 2007 EBITDA interest cover improved to 6,9 times
5. ROCE (Return On Capital Employed): 10.4% in 2006; 11.9% in 2007
6. Debt / EBITDA: 3.4x in 2006; 2.9x in 2007
7. Operating cash flow / net debt: 20.4% in 2006; 24.0 in 2007
8. Equity ratio: 29.8% in 2006; 33.6% in 2007

<u>Information concerning the credit requested</u>

1. currently planning new factory in country B
2. size of the investment € 30 million
3. investment period 20 month
4. 7-year term loan
5. size of the requested term loan € 30 million
6. borrower under the new term loan is a fully-owned subsidiary
7. reasons for why decided to invest in country B
8. investment is very manageable
9. succeeded in hiring local experienced management
10. credit will be unconditionally guaranteed by the parent company
11. covenant
12. pricing of the loan

APPENDIX 6 LEVEL OF EXPERIENCE AND THE NUMBER OF INFORMATION ITEMS IDENTIFIED

Descriptive statistics: credit professionals

	Mean	Std. Deviation	N
work experience total	13,88	10,463	33
work experience in current task	4,11	4,231	33
number of information items used	26,12	12,275	33

Correlations: credit professionals – work experience

		work experience total	work experience in current task	number of information items used
work experience total	Pearson Correlation	1	,569(**)	,189
	Sig. (2-tailed)		,001	,293
	N	33	33	33
work experience in current task	Pearson Correlation	,569(**)	1	,226
	Sig. (2-tailed)	,001		,206
	N	33	33	33
number of information items used	Pearson Correlation	,189	,226	1
	Sig. (2-tailed)	,293	,206	
	N	33	33	33

** Correlation is significant at the 0.01 level (2-tailed).

ANOVA: The number of information items used – credit professionals' total work experience

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3444,015	24	143,501	,833	,660
Within Groups	1377,500	8	172,188		
Total	4821,515	32			

ANOVA: The number of information items used – credit professionals' work experience in current position

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3692,098	17	217,182	2,884	,022
Within Groups	1129,417	15	75,294		
Total	4821,515	32			

Descriptives: The number of information items used – the level of experience

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
novice	16	15,31	11,032	2,758	2	36
intermediate experienced professional	13	20,77	8,278	2,296	8	37
expert	20	29,60	13,347	2,985	7	53
Total	49	22,59	12,834	1,833	2	53

Test of Homogeneity of Variances

Number of information items used

Levene Statistic	df1	df2	Sig.
1,614	2	46	,210

ANOVA: Number of information items used – The level of experience (all respondents)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1873,292	2	936,646	7,142	,002
Within Groups	6032,545	46	131,142		
Total	7905,837	48			

Multiple Comparisons

Dependent Variable: Number of information items used
Tukey HSD

(I) level of experience	(J) level of experience	Mean Difference (I-J)	Std. Error	Sig.
novice	intermediate experienced professional	-5,457	4,276	,416
	expert	-14,288(*)	3,841	,002
intermediate experienced professional	novice	5,457	4,276	,416
	expert	-8,831	4,080	,088
expert	novice	14,288(*)	3,841	,002
	intermediate experienced professional	8,831	4,080	,088

* The mean difference is significant at the .05 level.

Independent Samples Test (credit professionals vs. novices)

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Number of information items used	Equal variances assumed	,017	,896	-2,984	47	,005	-10,809	3,623
	Equal variances not assumed			-3,098	32,863	,004	-10,809	3,489

The number of information items identified by novices according to whether or not the respondent had work experience

			number of information items identified						Total
			< 9	10-14	15-19	20-24	25-29	35-39	
Working experience	No	Count	5	2	1	0	3	1	12
		% within Working experience	41,7%	16,7%	8,3%	,0%	25,0%	8,3%	100,0%
	Yes	Count	2	0	0	1	1	0	4
		% within Working experience	50,0%	,0%	,0%	25,0%	25,0%	,0%	100,0%
Total		Count	7	2	1	1	4	1	16
		% within Working experience	43,8%	12,5%	6,3%	6,3%	25,0%	6,3%	100,0%

Correlations

		Years of possible working experience	Number of information items identified
Years of possible working experience	Pearson Correlation	1	,073
	Sig. (2-tailed)		,789
	N	16	16
Number of information items marked as critical	Pearson Correlation	,073	1
	Sig. (2-tailed)	,789	
	N	16	16

APPENDIX 7 THE USE OF INFORMATION BY WRITERS VS. READERS OF THE CREDIT APPLICATIONS

Group Statistics

	writer / reader	N	Mean	Std. Deviation	Std. Error Mean
Number of information items used	writer	30	25,33	12,449	2,273
	reader	3	34,00	7,810	4,509
Number of identified qualitative information	writer	30	9,93	5,271	,962
	reader	3	15,00	4,000	2,309
Number of identified financial information	writer	30	10,10	7,388	1,349
	reader	3	13,33	5,508	3,180
Number of identified information concerning the credit requested	writer	30	5,27	2,545	,465
	reader	3	5,67	3,215	1,856

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Number of information items used	Equal variances assumed	,628	,434	-1,173	31	,250	-8,667	7,390
	Equal variances not assumed			-1,716	3,131	,181	-8,667	5,050
Number of identified qualitative information	Equal variances assumed	1,111	,300	-1,609	31	,118	-5,067	3,148
	Equal variances not assumed			-2,025	2,749	,144	-5,067	2,502
Number of identified financial information	Equal variances assumed	,415	,524	-,733	31	,469	-3,233	4,409
	Equal variances not assumed			-,936	2,778	,423	-3,233	3,454
Number of identified information concerning the credit requested	Equal variances assumed	,213	,648	-,255	31	,801	-,400	1,571
	Equal variances not assumed			-,209	2,258	,852	-,400	1,913

APPENDIX 8 QUALITATIVE INFORMATION

Descriptives

Number of identified qualitative information

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
novice	16	5,19	4,199	1,050	2,95	7,42	0	13
intermediate experienced professional	13	7,38	4,053	1,124	4,94	9,83	3	14
expert	20	12,35	5,214	1,166	9,91	14,79	3	22
Total	49	8,69	5,523	,789	7,11	10,28	0	22

Test of Homogeneity of Variances

Number of identified qualitative information

Levene Statistic	df1	df2	Sig.
,361	2	46	,699

ANOVA

Number of identified qualitative information

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	486,344	2	243,172	11,437	,000
Within Groups	978,064	46	21,262		
Total	1464,408	48			

Multiple Comparisons

Dependent Variable: Number of identified qualitative information
Tukey HSD

(I) level of experience	(J) level of experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Upper Bound	Lower Bound
novice	intermediate experienced professional	-2,197	1,722	,416	-6,37	1,97
	expert	-7,163(*)	1,547	,000	-10,91	-3,42
intermediate experienced professional	novice	2,197	1,722	,416	-1,97	6,37
	expert	-4,965(*)	1,643	,011	-8,94	-,99
expert	novice	7,163(*)	1,547	,000	3,42	10,91
	intermediate experienced professional	4,965(*)	1,643	,011	,99	8,94

* The mean difference is significant at the .05 level.

RELATIVE USE OF QUALITATIVE INFORMATION

		relative usage of qualitative information					Total
		Not used	< 30%	30-50%	50-60%	60-90%	Not used
expert	Count	0	2	12	5	1	20
	% within level of experience	,0%	10,0%	60,0%	25,0%	5,0%	100,0%
	% within relative use of qualitative information	,0%	16,7%	52,2%	100,0%	16,7%	40,8%
intermediate experienced professional	Count	0	5	6	0	2	13
	% within level of experience	,0%	38,5%	46,2%	,0%	15,4%	100,0%
	% within relative use of qualitative information	,0%	41,7%	26,1%	,0%	33,3%	26,5%
novice	Count	3	5	5	0	3	16
	% within level of experience	18,8%	31,3%	31,3%	,0%	18,8%	100,0%
	% within relative use of qualitative information	100,0%	41,7%	21,7%	,0%	50,0%	32,7%
Total	Count	3	12	23	5	6	49
	% within level of experience	6,1%	24,5%	46,9%	10,2%	12,2%	100,0%
	% within relative use of qualitative information	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Descriptives

Respondent's relative use of qualitative information

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
novice	16	,3220	,23446	,05862	,1970	,4469	,00	,75
intermediate experienced professional	13	,3545	,14539	,04032	,2666	,4423	,15	,63
expert	20	,4324	,11887	,02658	,3768	,4881	,20	,72
Total	49	,3757	,17459	,02494	,3255	,4258	,00	,75

Test of Homogeneity of Variances

Respondent's relative use of qulitative information

Levene Statistic	df1	df2	Sig.
3,408	2	46	,042

ANOVA

Respondent's relative use of qulitative information

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,116	2	,058	1,988	,149
Within Groups	1,347	46	,029		
Total	1,463	48			

APPENDIX 9 THREE MOST IMPORTANT INFORMATION ITEMS

Three most important information items mentioned by credit professionals[22]

Information concerning the credit requested (investment plans, terms of the loan etc.) (38)

quarantee (11)
covenant (3)
Size of the investment (feasible) (2)
terms of new term loan (2)
moderate investment cost, not significant increase in leverage
The borrower is our bank's customer
investment details
reason behind the planned investment / business idea makes sense (4)
performance ok, reasoning for the investment good
reasonable to invest in "Country B"
management ability
investment in low cost production
hiring local management, is that good alone
"Country B" => no confidence
no structural subordination
Finnish borrower
estimated risk level
credit risk medium
Credit risk summary & conclusion
value enhancing transaction for the bank
solid credit profile

Qualitative information / Company's background (36)

Different kinds of customers (private and municipalities)/customer base stable/solid (3)
(parent) company background information (2)
solid and diversified market position (2)
established market position (2)
well-positioned pan-European operator (2)
Products for both summer & winter (2)
A position as a premium brand supplier (2)
industry and company risks medium
business risk medium, industry risk medium, diversification
cyclical/seasonal business
no too cyclical industry
cyclicality, but low customer risk
moderate amount in the big scheme of things and a good operating track record
customer base stable
the customer base and competitors
growing market
global player
niche activities
industry description
listed company => some reliability in financial administration
Access to capital markets, listed company, refinancing risk mitigated

[22] Some of the credit professionals had mentioned more than three important information items, and these all items are included in this list. Therefore, the total number of important information items among the answers of credit professionals exceeds 99 (3 * 33 = 99). Among the answers of business students, all answers received from 21 students are included, and thus also those responses which were excluded from the analyses made earlier are included in this list.

size of the company (listed and turnover)
company description
rating
business and its characteristics
Big company, public with good equity value
the good track record of the company
wealthy long term growth prospects

Financial information (28)
financials (4)
Debt/EBITDA level (3)
steady cash flow /estimated cash flow sufficient (2)
cash flow + other financials rather good / satisfactory (2)
Key financials and ratios, good trend /improving financial figures of the company (2)
ratio analysis (high leverage)
rather solid financial position
stable profitability, acceptable leverage
The (parent) company has prudent financial structure
analysis of the working capital
financials and forecasts
Financial structure (EQ-ratio, leverage)
net working capital
adequate solvency and acceptable leverage ratios
EBIT/EBITDA % level
numbers (especially growth, profitability and Debt/EBITDA)
financials + liquidity of the company
Table with figures
existing debt/cash flow
Cash flow (EBITDA) and debt service (IBD/EBITDA)

Three most important information items mentioned by business students

Financial information (36)
financial structure (4)
Company invests actively in R&D (3)
Equity ratio (3)
ROCE 11,9 % (2)
EBIT (2)
the key financial indicators (2)
the capital structure 2006 and 2007 (2)
prudent financial structure (2)
financial standing
ties working capital
stable turnover / EBIT
stable income
good EBIT
high level of net working capital
EBITDA interest coverage
financial structure and flexibility of the structure
EBITDA
low cash flow fluctuation
operating cash flow to net debt is only 24 %
incomes, EBIT
ability to make money
unused credit facilities
good working capital management
net working capital to sales is already about 50 %

Information concerning the credit requested (investment plans, terms of the loan etc.) (14)

low labor cost in "Country B" / fast growing markets (3)
A possibility to use option
covenant
the loan guaranteed by the parent company
the new limits
amount of debt and paying it
size of debt
local, experienced management in "Country B"
how company will exploit the debt
new market environment
saturated markets
country risk

Qualitative information / Company's background (13)

credit rating BB+ (3)
The seasonality of the business (2)
firm's cyclical business
global dispersion
produce equipment for summer and winter sports
sector is very risky => winters are very warm..
Cyclicality -> for example the volatility of the turnover
premium brand
competitors are national, so the company is big player at the global
the company's future

APPENDIX 10 FINANCIAL INFORMATION

Descriptives
Number of identified financial information

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
novice	16	8,06	6,952	1,738	4,36	11,77	0	21
intermediate experienced professional	13	8,77	5,585	1,549	5,39	12,14	1	19
expert	20	11,45	8,082	1,807	7,67	15,23	1	29
Total	49	9,63	7,152	1,022	7,58	11,69	0	29

Test of Homogeneity of Variances
Number of identified financial information

Levene Statistic	df1	df2	Sig.
1,959	2	46	,153

ANOVA
Number of identified financial information

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	115,193	2	57,596	1,132	,331
Within Groups	2340,195	46	50,874		
Total	2455,388	48			

RELATIVE USE OF FINANCIAL INFORMATION

		relative usage of financial information						Total
		not used	< 30%	30-50%	50-60%	60-90%	> 90%	
Expert	Count	0	8	9	3	0	0	20
	% within expertise	,0%	40,0%	45,0%	15,0%	,0%	,0%	100,0 %
	% within relative use of financial information	,0%	53,3%	64,3%	42,9%	,0%	,0%	37,0%
Intermediate experienced	Count	0	4	4	2	3	0	13
	% within expertise	,0%	30,8%	30,8%	15,4%	23,1%	,0%	100,0 %
	% within relative use of financial information	,0%	26,7%	28,6%	28,6%	30,0%	,0%	24,1%
Novice	Count	2	3	1	2	7	1	16
	% within expertise	12,5%	18,8%	6,3%	12,5%	43,8%	6,3%	100,0 %
	% within relative use of financial information	100,0%	20,0%	7,1%	28,6%	70,0%	100,0 %	38,9%
Total	Count	2	15	14	7	10	1	49
	% within expertise	4,1%	30,6%	28,6%	14,3%	20,4%	2,0%	100,0 %
	% within relative use of financial information	100,0%	100,0%	100,0%	100,0%	100,0%	100,0 %	100,0 %

Descriptives

Respondent's relative use of financial information

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
novice	16	,4913	,28793	,07198	,3378	,6447	,00	1,00
intermediate experienced professional	13	,4113	,19043	,05281	,2962	,5264	,09	,75
expert	20	,3537	,13844	,03096	,2889	,4185	,11	,59
Total	49	,4139	,21463	,03066	,3523	,4756	,00	1,00

Test of Homogeneity of Variances

Respondent's relative use of financial information

Levene Statistic	df1	df2	Sig.
5,774	2	46	,006

ANOVA

Respondent's relative use of financial information

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,168	2	,084	1,894	,162
Within Groups	2,043	46	,044		
Total	2,211	48			

BALANCE SHEET INFORMATION, INCOME STATEMENT INFORMATION, FINANCIAL RATIO INFORMATIO

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Number of income statement information items used	,276	2	46	,760
Number of balance sheet information items used	3,544	2	46	,037
Number of ratio information items used	2,628	2	46	,083

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Number of balance sheet information items used	Between Groups	85,058	2	42,529	2,526	,091
	Within Groups	774,330	46	16,833		
	Total	859,388	48			
Number of income statement information items used	Between Groups	,847	2	,424	,175	,840
	Within Groups	111,642	46	2,427		
	Total	112,490	48			
Number of ratio information items used	Between Groups	,367	2	,183	,035	,965
	Within Groups	238,123	46	5,177		
	Total	238,490	48			

RELATIVE USE OF BALANCE SHEET INFORMATION (PROPORTIONED TO THE TOTAL AMOUNT OF FINANCIL INFORMAITON USED)

		relative use of balance sheet information				Total
		Not used	< 30%	30-50%	50-60%	
Expert	Count	2	2	2	14	20
	% within expertise	10,0%	10,0%	10,0%	70,0%	100,0%
Intermediate experienced	Count	2	2	5	4	13
	% within expertise	15,4%	15,4%	38,5%	30,8%	100,0%
Novice	Count	3	2	7	4	16
	% within expertise	18,8%	12,5%	43,8%	25,0%	100,0%
Total	Count	7	6	14	22	49
	% within expertise	14,3%	12,2%	28,6%	44,9%	100,0%

RELATIVE USE OF INCOME STATEMENT INFORMATION (PROPORTIONED TO THE TOTAL AMOUNT OF FINANCIL INFORMAITON USED)

		relative use of income statement information				Total
		Not used	< 30%	30-50%	50-60%	
Expert	Count	3	13	3	1	20
	% within expertise	15,0%	65,0%	15,0%	5,0%	100,0%
Intermediate experienced	Count	3	7	2	1	13
	% within expertise	23,1%	53,8%	15,4%	7,7%	100,0%
Novice	Count	5	7	2	2	16
	% within expertise	31,3%	43,8%	12,5%	12,5%	100,0%
Total	Count	11	27	7	4	49
	% within expertise	22,4%	55,1%	14,3%	8,2%	100,0%

RELATIVE USE OF FINANCIAL RATIO INFORMATION (PROPORTIONED TO THE TOTAL AMOUNT OF FINANCIL INFORMAITON USED)

		relative use of financial ratio information				Total
		Not used	< 30%	30-50%	50-60%	
Expert	Count	4	6	5	5	20
	% within expertise	20,0%	30,0%	25,0%	25,0%	100,0%
Intermediate experienced	Count	0	3	5	5	13
	% within expertise	,0%	23,1%	38,5%	38,5%	100,0%
Novice	Count	3	2	8	3	16
	% within expertise	18,8%	12,5%	50,0%	18,8%	100,0%
Total	Count	7	11	18	13	49
	% within expertise	14,3%	22,4%	36,7%	26,5%	100,0%

ANOVA (relative use of balance sheet, income statement, and financial ratio information)

		Sum of Squares	df	Mean Square	F	Sig.
Relative use of balance sheet information	Between Groups	,232	2	,116	2,762	,074
	Within Groups	1,934	46	,042		
	Total	2,166	48			
Relative use of income statement information	Between Groups	,008	2	,004	,086	,918
	Within Groups	2,203	46	,048		
	Total	2,211	48			
Relative use of financial ratio information	Between Groups	,142	2	,071	1,805	,176
	Within Groups	1,813	46	,039		
	Total	1,955	48			

APPENDIX 11 RESERVATIONS BY THE RESPONDENTS

Reservations by credit professionals (all respondents supported the request)[23]

Relationship with the borrowing company / bank's competitive position

- Interest bearing debt amounts to 152 M€, if the 15 M€ facility from our bank is largely undrawn, it must be different with the others (?)
- Will other banks be in this deal / would want to syndicate part of the exposure to other bank(s)
- Debt must be financed by all 3 banks; 3*10 M€ = 30 m€
- Ability to buy receivables from good counterpart
- Competitive position of the bank in bidding / Competitors (other banks); refinancing risk, refinancing possibilities
- Other business opportunities; cash management, trade finance, foreign exchange. If we are the only bank that business should be done with us, ancillary business could be even a pre-condition for granting the loan

Investment plan / Company specific issues

- would like to see more detailed investment plan / Total cost of the investment, more detailed about the investment
- I would like to see some info concerning the local case there in "Country B" (how they are going to use the money, value of the whole project, estimations concerning the project cash flow, a little more about the market of the new factory)
- Quality of local management / assessment of management competencies / Background of local management / More information on new company and its management
- How qualified labour do they need, and can they be found in "Country B"?
- Better description of competitive situation would have been appreciated; are local operators preferred for municipalities
- More information on commercial and political environment in the operating regions
- More information on the equipment markets
- Competitors' names / Little more information on competitors and customers (few names & numbers)
- break-up of customer base in percentages / Ratio of municipalities/private clients
- Geographical spread / Company's sales by regions, diversification of sales by customers / Turnover split between countries and customers is missing. / Geographical distribution of sales, profitability etc
- Suppliers and raw material price risk
- Typical contracts and tender processes / Contractual position and order back log
- Location of new plant / risks of establishing in "Country B" / "Country B" country risk / Political risk in "Country B" / Country risk
- would prefer additional information on split between summer and winter revenues / Break-down of sales to winter/summer activities /more details of seasonality and working capital fluctuation / Ratio of summer & winter equipment / Need to see more facts about the seasonality /Seasonality, dependency on weather conditions / would like to see some

[23] Reservations are organized according to the subject of matter and reported as respondents have written them. Reservations reported by different respondents have been separated with a slash (/).

solutions to mitigate the risk of seasonality / Business seasonal and especially cyclical, dependent on snow conditions / How exposed the company is to bad winter effects

- Cyclicality of business ahead of economical slow turn / Cyclicality / Cyclicality of the business / Cyclicality in weakening economic situation
- Growth focused on less developed E-European markets
- Key success factors and the company's competitive position in respect of them as the only pan-European supplier

Terms of credit

- Terms of the new financing
- Covenant level suggested / Gearing and debt to EBITDA covenant beneficial / Covenant structure should also consider balance sheet, i.e. gearing / Another covenant: equity ratio or debt/EBITDA covenant / Net debt/EBITDA covenant / financial covenant structure proposal, EBITDA based interest coverage as proposed, debt to EBITDA below 5,0 in 2008 and thereafter below 4,0, equity ratio % >28% / The level of covenant
- the plant should be used as collateral as well / are there any other collaterals than quarantine by the parent company? / Group guarantee and equity net worth are good
- the group cash flow is sufficient to carry all existing and proposed debt even if the investment turns bad, the risk for the investment turning bad is still moderate
- hedging for interest rate required
- Quite small amount / The level of proposed term-loan is quite low compared to overall business and profitability
- 7 year
- Average maturity of proposed loan (amortization, bullet), possible grace period
- Pricing and long maturity
- in today's market environment, the proposal looks somewhat weak. I am not comfortable with the following: 7 year tenor with bullet repayment, only one financial covenant looks thin for a highly leveraged company and given the long tenor - a tighter covenant package would be required and perhaps an element of amortisation to justify the long tenor, the premium brand positioning is making me somewhat nervous given the bulk of the clients are municipalities and local authorities - do they really like to pay for a premium product when there are local substitutes, EUR 30 m represents 10% of market capitalisation which is quite high, support is based on the pre-assumption that this is a core client to our bank which we know extremely well. We have access to senior management and we are receiving quarterly financial updates, forecasts and budgets, pricing must reflect the risk involved.
- Specification of existing financial structure (lenders, collaterals, terms, etc.)
- profit/benefits & risks of the investment
- The net worth of the new subsidiary
- Material regarding the new factory investment, cash flow projections etc
- Sale and lease back opportunity of the new factory
- Too much production in Finland

Financials

- Analysis working capital management should have been more detailed; limited visibility of order book requires analysis working capital / Working capital management - more precise with actual monthly figures -> ability to adjust / How is working capital management addressed, how will new factory affect it?
- would like to see some suggestions how to lower the amount of working capital (factoring, securitisation etc)
- Net working capital is large relative to turnover and cash flow, is that risk manageable - Could we get amortizations for the loan?

- Repayment ability (old and new loans) -> adjustments to cash flow
- I would like to see cash flow projections for the period of 2008-2015 / more detailed cash flow analysis / missing cash flow budgets, projections of investment, wallet analysis, division of main customers and contracts
- Key profitability and cash flow drivers (revenue growth, cost control, procurement…) and outlook, expected profit impact of the investment in question / Future revenue growth drivers and outlook on short & long term / Outlook or estimate of company's performance for the coming years (7 year loan in question) / comments on future growth and profitability
- Relatively high leverage for cyclical company
- pro-forma projections including new factory / What is the forecast for financial performance after the investment and new loan / forecast 2008–2009 with new debt
- Estimates are needed for at least 2008, presumably also 2009 / forecast for coming years / Forecasts missing (e.g. price, costs) / forecast missing, cash flow missing, CAAD missing / financial forecasts including all investment in cash flow should be included in order to see the effect of the new investment on financials (sure I could do this by myself, but it should be in the memo on the first place / Forecasts-> working capital increase due to the investment? / Forecast concerning the new factory, estimate of costs (by only a couple of words), estimates concerning the whole business for the next two years / forecasts after the investment / More figures needed and forecasts / Rating of forecast figures missing
- company's opinions - the possible equity issues and comment whether the company has an access to the capital market
- Amount of dividends / Dividends in the future
- extraordinary items affecting cash flow
- Breakdown of cost
- company's products value added
- The future market capitalisation
- Company invest in R&D only to increase barriers to entry->strange / The amount of R&D
- Salary inflation, namely in operation countries
- condition of manufacturing facilities-> capex needs / capex-levels, amount of equity in investments
- Historical financial data to see the cycles and cash flow patterns / Missing historical data + management projections post investment / would need to see the financial statement analysis to have a picture of the five latest accounting periods
- Tax cash leakage ->tax effect to cash flow
- Debt to EBITDA quite high (35x) after investment with a lag to cash flow
- I do not consider the financial structure prudent, financial risk is medium, but not even close to low
- Risk of unsold inventory / unsold inventory / Consignment inventory / The amount of inventories, possible non-marketable parties, circulation period etc

Reservations by business students

Students who supported the request

<u>Financials</u>

- financial parameters don't look very competitive
- debt to equity ratio < 120%
- uncomfortable with declining market capitalisation
- turnover depends highly on public sector buyers & weather conditions
- fluctuating working capital

- low volume of tangible assets
- only two years information about financials
- figures are unaudited
- growth rate of turnover the last few years
- risk of carrying unsold inventories / unsold inventory
- equity ratio > 30% (covenant) / equity ratio > 30% / equity ratio is not very strong
- size of net working capital is relatively high
- more information about order trends, costs and capital structure, also future cash flow

Investment plan / Company specific issues

- rating can be BB
- What kind of market position does the firm have in Europe?
- need for extra information about the new subsidiary and new markets
- cyclical industry / cyclicality
- competitors well-positioned
- investment calculations such as NPV or similar missing
- influences on turnover and net income
- political view must be taken in for this case, lot of money for this business comes from political decisions and political money
- require personal meeting

Terms of credit

- Covenant -> cyclical business, if some years the profit swings badly, it will affect equity ratio
- An option to phase the investment into separate periods, even though it is question of debt financing
- On my opinion, the risks are adjusted a little too low, the proposal is minimising the company risk and can cause a serious credit risk for our bank if there isn't scenarios for the downside development of the firm (subsidiary) however, covenant are well settled
- The loan should be senior in regard to possible later debt

Students who disagreed with the request

- no information is there still production in two other factories after the investment
- no information about the products the company will produce / would like to know more about the products of the company
- not satisfied with the info concerning the management, names and cv missing / would like to know more about the management of the company (managements history)
- will there be any winter in the future / poor snow conditions ->climate change
- net working capital to sales is already almost 50%, if the company invest then it will be even higher
- interest bearing debt is already almost 100%
- operating cash flow to net debt is 24%, if the company invest, the cash flow will be even negative
- Turnover to assets is only about 1, it should be higher > 1,3 at least. the asset is already too heavy compared to sales
- location of the new subsidiary / political risk

APPENDIX 12 INFORMATION CONCERNING THE CREDIT REQUESTED

Descriptives

Number of identified information items concerning the credit requested

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
novice	16	2,06	1,731	,433	1,14	2,98	0	6
intermediate experienced professional	13	4,54	2,436	,676	3,07	6,01	1	8
expert	20	5,80	2,567	,574	4,60	7,00	1	11
Total	49	4,24	2,765	,395	3,45	5,04	0	11

Test of Homogeneity of Variances

Number of identified information items concerning the credit requested

Levene Statistic	df1	df2	Sig.
2,434	2	46	,099

ANOVA

Number of identified information items concerning the credit requested

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	125,693	2	62,846	11,977	,000
Within Groups	241,368	46	5,247		
Total	367,061	48			

Multiple Comparisons

Dependent Variable: Number of identified information items concerning the credit requested

Tukey HSD

(I) level of experience	(J) level of experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Upper Bound	Lower Bound
novice	intermediate experienced professional	-2,476(*)	,855	,016	-4,55	-,40
	expert	-3,738(*)	,768	,000	-5,60	-1,88
intermediate experienced professional	novice	2,476(*)	,855	,016	,40	4,55
	expert	-1,262	,816	,279	-3,24	,71
expert	novice	3,738(*)	,768	,000	1,88	5,60
	intermediate experienced professional	1,262	,816	,279	-,71	3,24

* The mean difference is significant at the .05 level.

RELATIVE USE OF INFORMATION CONCERNING THE CREDIT REQUESTED

		relative use of information concerning the credit requested					Total
		not used	< 30%	30-50%	50-60%	> 90%	
Expert	Count	0	16	4	0	0	20
	% within expertise	,0%	80,0%	20,0%	,0%	,0%	100,0%
	% within relative use of information concerning the credit requested	,0%	43,2%	57,1%	,0%	,0%	37,0%
Intermediate experienced	Count	0	10	2	1	0	13
	% within expertise	,0%	76,9%	15,4%	7,7%	,0%	100,0%
	% within relative use of information concerning the credit requested	,0%	27,0%	28,6%	100,0%	,0%	24,1%
Novice	Count	3	11	1	0	1	16
	% within expertise	18,5%	68,8%	6,3%	,0%	6,3%	100,0%
	% within relative use of information concerning the credit requested	100,0%	29,7%	14,3%	,0%	100,0 %	38,9%
Total	Count	3	37	7	1	1	49
	% within expertise	6,1%	75,5%	14,3%	2,0%	2,0%	100,0%
	% within relative use of information concerning the credit requested	100,0%	100,0 %	100,0%	100,0%	100,0 %	100,0%

Descriptives

Respondent's relative use of information concerning the credit request

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
novice	16	,1867	,23718	,05930	,0604	,3131	,00	1,00
intermediate experienced professional	13	,2297	,12937	,03588	,1515	,3079	,07	,55
expert	20	,2138	,08727	,01951	,1730	,2547	,07	,43
Total	49	,2092	,15833	,02262	,1637	,2547	,00	1,00

Test of Homogeneity of Variances

Respondent's relative use of information concerning the credit request

Levene Statistic	df1	df2	Sig.
1,655	2	46	,202

ANOVA

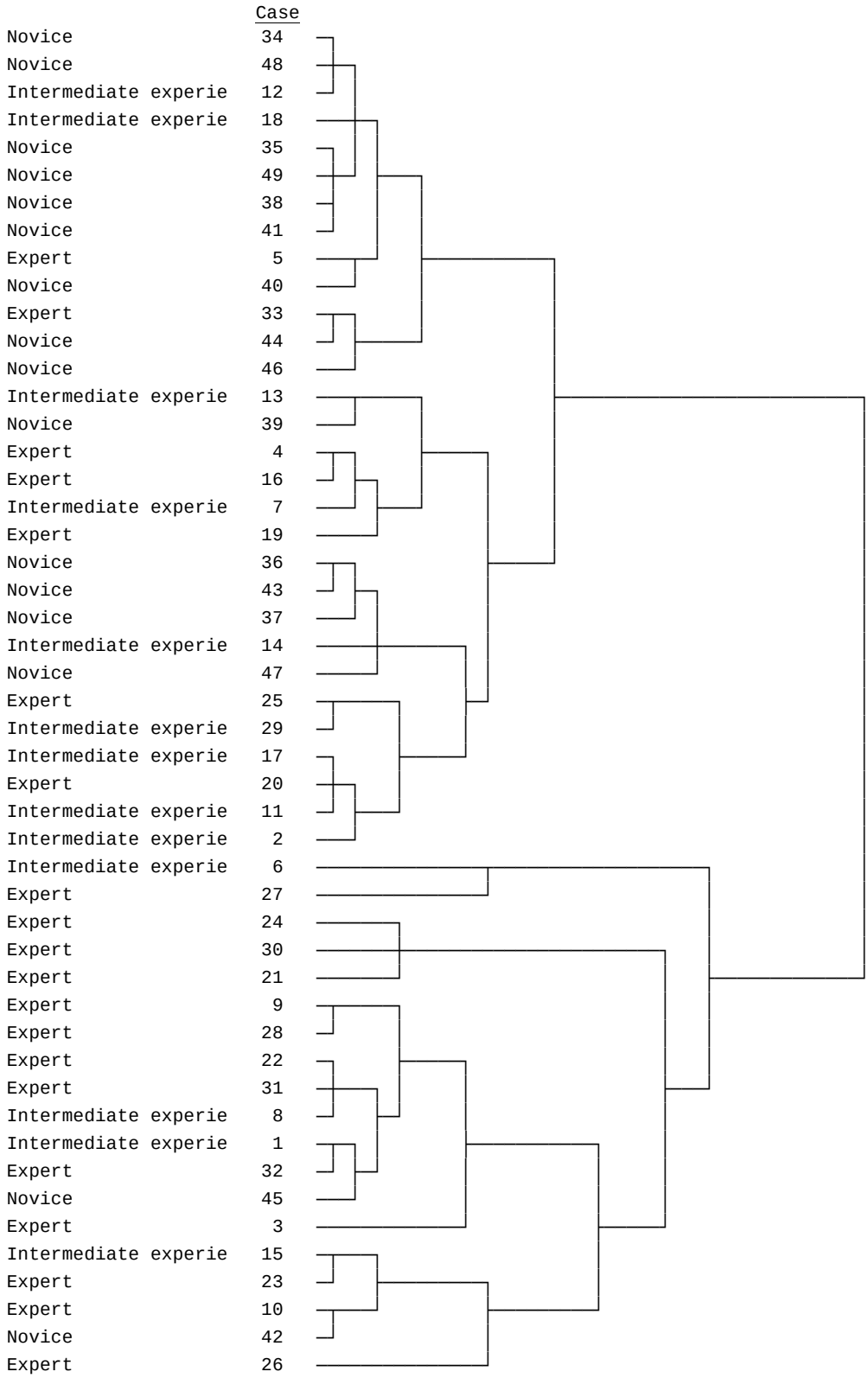
Respondent's relative use of information concerning the credit request

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,014	2	,007	,270	,765
Within Groups	1,189	46	,026		
Total	1,203	48			

APPENDIX 13 CLUSTER ANALYSIS

H I E R A R C H I C A L C L U S T E R A N A L Y S I S

Dendrogram using Average Linkage (Between Groups)



Cluster Membership

Case	6 Clusters	5 Clusters	4 Clusters	3 Clusters	2 Clusters
1:Intermediate experie	1	1	1	1	1
2:Intermediate experie	2	2	2	2	2
3:Expert	1	1	1	1	1
4:Expert	2	2	2	2	2
5:Expert	3	2	2	2	2
6:Intermediate experie	4	3	3	3	1
7:Intermediate experie	2	2	2	2	2
8:Intermediate experie	1	1	1	1	1
9:Expert	1	1	1	1	1
10:Expert	5	4	1	1	1
11:Intermediate experie	2	2	2	2	2
12:Intermediate experie	3	2	2	2	2
13:Intermediate experie	2	2	2	2	2
14:Intermediate experie	2	2	2	2	2
15:Intermediate experie	5	4	1	1	1
16:Expert	2	2	2	2	2
17:Intermediate experie	2	2	2	2	2
18:Intermediate experie	3	2	2	2	2
19:Expert	2	2	2	2	2
20:Expert	2	2	2	2	2
21:Expert	6	5	4	1	1
22:Expert	1	1	1	1	1
23:Expert	5	4	1	1	1
24:Expert	6	5	4	1	1
25:Expert	2	2	2	2	2
26:Expert	5	4	1	1	1
27:Expert	4	3	3	3	1
28:Expert	1	1	1	1	1
29:Intermediate experie	2	2	2	2	2
30:Expert	6	5	4	1	1
31:Expert	1	1	1	1	1
32:Expert	1	1	1	1	1
33:Expert	3	2	2	2	2
34:Novice	3	2	2	2	2
35:Novice	3	2	2	2	2
36:Novice	2	2	2	2	2
37:Novice	2	2	2	2	2
38:Novice	3	2	2	2	2
39:Novice	2	2	2	2	2
40:Novice	3	2	2	2	2
41:Novice	3	2	2	2	2
42:Novice	5	4	1	1	1
43:Novice	2	2	2	2	2
44:Novice	3	2	2	2	2
45:Novice	1	1	1	1	1
46:Novice	3	2	2	2	2
47:Novice	2	2	2	2	2
48:Novice	3	2	2	2	2
49:Novice	3	2	2	2	2

Descriptives: clusters 1-6

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Number of identified qualitative information	1	9	13,22	2,108	,703	11,60	14,84	10	16
	2	17	7,65	3,707	,899	5,74	9,55	3	15
	3	13	2,54	1,854	,514	1,42	3,66	0	6
	4	2	13,50	3,536	2,500	-18,27	45,27	11	16
	5	5	12,00	2,345	1,049	9,09	14,91	10	16
	6	3	19,00	3,000	1,732	11,55	26,45	16	22
	Total	49	8,69	5,523	,789	7,11	10,28	0	22
Number of identified financial information	1	9	6,89	2,205	,735	5,19	8,58	2	9
	2	17	9,24	5,178	1,256	6,57	11,90	1	18
	3	13	3,54	2,727	,756	1,89	5,19	0	9
	4	2	20,50	2,121	1,500	1,44	39,56	19	22
	5	5	21,40	4,722	2,112	15,54	27,26	17	29
	6	3	19,67	3,215	1,856	11,68	27,65	16	22
	Total	49	9,63	7,152	1,022	7,58	11,69	0	29
Number of identified information concerning the credit requested	1	9	6,56	1,810	,603	5,16	7,95	3	9
	2	17	4,29	1,759	,427	3,39	5,20	1	7
	3	13	1,23	,927	,257	,67	1,79	0	3
	4	2	9,00	2,828	2,000	-16,41	34,41	7	11
	5	5	3,40	1,342	,600	1,73	5,07	2	5
	6	3	8,33	,577	,333	6,90	9,77	8	9
	Total	49	4,24	2,765	,395	3,45	5,04	0	11

APPENDIX 14 TIME SPENT TO MAKE THE DECISION

Time – Level of experience
Descriptives

Time that it took to make the decision (minutes)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
novice	16	21,50	8,651	2,163	16,89	26,11	9	40
intermediate experienced professional	13	20,19	9,599	2,662	14,39	25,99	5	40
expert	20	19,40	11,537	2,580	14,00	24,80	9	60
Total	49	20,30	9,996	1,428	17,42	23,17	5	60

ANOVA
Time that it took to make the decision (minutes)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39,390	2	19,695	,190	,827
Within Groups	4757,069	46	103,415		
Total	4796,459	48			

Time – Gender
Group Statistics

	gender	N	Mean	Std. Deviation	Std. Error Mean
time that it took to make the decision (minutes)	male	38	18,34	8,162	1,324
	female	11	27,05	12,982	3,914

T TEST

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
time that it took to make the decision (minutes)	Equal variances assumed	2,028	,161	-2,705	47	,009	-8,703	3,217
	Equal variances not assumed			-2,106	12,376	,056	-8,703	4,132

Correlations

		gender	time that it took to make the decision (minutes)
gender	Pearson Correlation	1	,367(**)
	Sig. (2-tailed)		,009
	N	49	49
time that it took to make the decision (minutes)	Pearson Correlation	,367(**)	1
	Sig. (2-tailed)	,009	
	N	49	49

** Correlation is significant at the 0.01 level (2-tailed).

APPENDIX 15 CREDIT PROFESSIONALS' EDUCATION AND THE USE OF INFORMATION

ANOVA (credit professionals' education; educational degree)

		Sum of Squares	df	Mean Square	F	Sig.
Number of information items used	Between Groups	279,423	3	93,141	,595	,624
	Within Groups	4542,092	29	156,624		
	Total	4821,515	32			
Number of identified qualitative information	Between Groups	20,845	3	6,948	,227	,877
	Within Groups	887,033	29	30,587		
	Total	907,879	32			
Number of identified financial information	Between Groups	272,045	3	90,682	1,879	,155
	Within Groups	1399,833	29	48,270		
	Total	1671,879	32			
Number of identified information concerning the credit requested	Between Groups	20,603	3	6,868	1,057	,382
	Within Groups	188,367	29	6,495		
	Total	208,970	32			
Number of financial statement information items used	Between Groups	2,470	3	,823	,359	,783
	Within Groups	66,500	29	2,293		
	Total	68,970	32			
Number of balance sheet information items used	Between Groups	102,254	3	34,085	1,770	,175
	Within Groups	558,292	29	19,251		
	Total	660,545	32			
Number of ratio information items used	Between Groups	26,951	3	8,984	2,184	,111
	Within Groups	119,292	29	4,114		
	Total	146,242	32			

ANOVA (credit professionals graduating year)

		Sum of Squares	df	Mean Square	F	Sig.
Number of information items used	Between Groups	4325,015	21	205,953	4,563	,006
	Within Groups	496,500	11	45,136		
	Total	4821,515	32			
Number of identified qualitative information	Between Groups	831,712	21	39,605	5,720	,002
	Within Groups	76,167	11	6,924		
	Total	907,879	32			
Number of identified financial information	Between Groups	1343,129	21	63,959	2,140	,097
	Within Groups	328,750	11	29,886		
	Total	1671,879	32			
Number of identified information concerning the credit requested	Between Groups	168,053	21	8,003	2,151	,095
	Within Groups	40,917	11	3,720		
	Total	208,970	32			
Number of financial statement information items used	Between Groups	36,553	21	1,741	,591	,856
	Within Groups	32,417	11	2,947		
	Total	68,970	32			
Number of balance sheet information items used	Between Groups	581,629	21	27,697	3,861	,012
	Within Groups	78,917	11	7,174		
	Total	660,545	32			
Number of ratio information items used	Between Groups	114,659	21	5,460	1,902	,136
	Within Groups	31,583	11	2,871		
	Total	146,242	32			

ANOVA (number of degrees)

		Sum of Squares	df	Mean Square	F	Sig.
Number of information items used	Between Groups	354,682	1	354,682	2,462	,127
	Within Groups	4466,833	31	144,091		
	Total	4821,515	32			
Number of identified qualitative information	Between Groups	61,416	1	61,416	2,249	,144
	Within Groups	846,463	31	27,305		
	Total	907,879	32			
Number of identified financial information	Between Groups	120,916	1	120,916	2,417	,130
	Within Groups	1550,963	31	50,031		
	Total	1671,879	32			
Number of identified information concerning the credit requested	Between Groups	,007	1	,007	,001	,975
	Within Groups	208,963	31	6,741		
	Total	208,970	32			
Number of financial statement information items used	Between Groups	6,896	1	6,896	3,444	,073
	Within Groups	62,074	31	2,002		
	Total	68,970	32			
Number of balance sheet information items used	Between Groups	32,527	1	32,527	1,606	,215
	Within Groups	628,019	31	20,259		
	Total	660,545	32			
Number of ratio information items used	Between Groups	7,113	1	7,113	1,585	,217
	Within Groups	139,130	31	4,488		
	Total	146,242	32			

Number of degrees – level of experience

		Number of educational degrees		Total
		1	2	1
intermediate experienced professional	Count	11	2	13
	% within level of experience	84,6%	15,4%	100,0%
expert	Count	16	4	20
	% within level of experience	80,0%	20,0%	100,0%
Total	Count	27	6	33
	% within level of experience	81,8%	18,2%	100,0%