SME financial aid opportunities: The role of Bank investment evaluations from a real option lens
- A qualitative study on how banks evaluate investment opportunities based on a real option approach

Authors
Marigona Resteljica
Johanna Hagberg

Supervisor
Timurs Umans
Yuliya Ponomareva

Examiner
Sven-Olof Collin
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A broad interest of economy and the different investment evaluation tools as well as perspectives brought us into writing this master thesis together. It concludes one year of studies at the University of Kristianstad, banking and finance master program. A well-developed program providing a deeper knowledge of economy and the essentiality of it.

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Marigona Resteljica

Johanna Hagberg
This study aims to explore how banks evaluate investment decisions towards SMEs, through a real option approach. After analyzing 9 interviews with business advisors from four different banks, illustrations show that banks indeed use a real option way of thinking, without being aware of it as well as put more weight in certain factors namely the repayment ability. Moreover the relationship factor shows an interesting relevance during investment evaluation towards SMEs, as better relationships lead to lower demands on factors of evaluation. In brief, the study contributes to the theory of real options as well as of practical essentiality to banks and SMEs.

1. Introduction

To compare or evaluate investments alternatives, methods like net present value (NPV), discounted cash flow (DCF), the payback method and internal rate of return (IRR) have long been used (Miller & Park, 2002; Arya, Fellingham & Glover, 1998). The most widely used method in practice is the DCF model (Penman, 2001; Copeland, Koller & Murrin, 2010; Bowman & Moskowitz, 2001). However, these valuation models have been shown to be of little practical importance when it comes to investment decisions due to the irreversibility of the investment decisions which is risky in the face of uncertainty and information asymmetry (Arnold & Moizer, 1984; Pike, Meerjanssen, & Chadwick, 1993; Vergoossen, 1993) and in many instances the DCF approach does not capture the realistic valuation of an investment (Chance & Peterson, 2002). The NPV model, that has a “now or never” approach, states that an investment with a positive NPV should be undertaken straightaway, or the opportunity will...
be lost, which is not the case in reality since investments are capable of being delayed (Dixit & Pindyck, 2001). When estimating the expected future free cash flow, discounted at an appropriate rate, the cash flows are estimated to reflect future expectations i.e. firm, industry and macroeconomics specifics (Koller, Goedhart & Wessels, 2010). However, the potential flexibility is not fully included in the calculation, which means that the project may be misvalued (Bowman & Moskowitz, 2001). Criticism has also been leveled at the model as it only takes into account the expected cash flows that an investment entails and does not account for other potential opportunities as an investment can generate. For instance, if you are considering investing in a technology company with exclusive rights (e.g. patents) and are using the DCF approach to do the valuation you would have to try and estimate the future cash flows that may result when any products using these patents are brought to market (Chance & Peteron, 2002). Missing from the evaluation when using this method is the ability to capture the flexibility that the company has, the flexibility of being able to delay the products from releasing on the market, to expand or contract production once the products are brought to the market, or to abandon production, and this flexibility is valuable (Chance & Peteron, 2002).

Assuming a now or never approach means that once the decision to undergo the investment is taken, there are no opportunity for the investor to react to new information or, change the course (Grayburn, 2012). Based on the assumption of perfectly certain cash flows, the DCF model does not capture the real world situation i.e. a world characterized by uncertainty (Miller & Park, 2002). The DCF-model works best when the investment has a positive cash flow at the time of the valuation. The cash flows needs to be estimated with a certain degree of certainty as well as a reasonable risk factor in order to reach a realistic discount rate (Damodaran, 1996). The further away one get from these "ideal" conditions, the more difficult and potentially more misleading the valuation with the DCF-model will be. If so, the DCF-model is according to Damodaran (1996) not able to reflect the “real” value of the investment since the model does not take in to account the options as a result of the initial investment.

Copeland et al. (2010) explains how the DCF-model have the tendency of being rigid as it only takes in to account the expected cash flows that are being discounted back to the NPV using a constant discount rate. A constant discount rate since the risk is considered to be invariant during the lifetime of the investment with this method. According to Copeland et al, (2010) this is to assume a position in which no account is taken of variables (e.g. reduced uncertainty), which affects a business/project in the future. These variables can be very
important to identify in order to achieve a more "reality-based" valuation. Hence, the DCF approach does not capture the realistic valuation of an investment, in other words the flexibility i.e. following different options (Change & Peterson, 2002).

An uprising approach to evaluate investments as an alternative to previous investment evaluation alternatives, which also captures the value of a future flexibility, is the real option perspective (Busby & Pitts, 1997). Real options is not a new concept, however the use of the real option perspective in the decision making process when undertaking investments is a relatively new approach from a management research perspective (Adner & Levinthal, 2004). Despite of being relatively new, a real option approach in explaining investment decisions has been useful in many fields (Choi & Smith, 2002). However, what is considered to be more on the revolutionary side is that it is now possible to quantify and thereby put value on available investment opportunities, which in turn would lead to a greater decision basis and investment decisions according to Amran and Kulatilaka (1999).

There is increasing evidence showing that investors are more aware of real options and taking these into consideration when making investment decisions (Busby & Pitts, 1997). Even when no formal techniques for option pricing are available, the value of real options is being accounted for by relatively accurate “rules of thumb” (McDonald, 2000). Factors repeatedly used in research of investment evaluations are namely; managerial optimism/overconfidence (Hackbarth, 2009), collateral, maturity and size (Jiménez, Salas & Saurina, 2006), liquidity and repayment ability (Piotr & Dorota, 2013), as well as interest rate and default risk (Choi & Smith, 2002).

The abovementioned factors are continuously proven to be essential as aspects of investment valuation by banks regarding small and medium enterprises (SMEs) for several matters, the most important one being; reduction of information asymmetry in order to make proper decisions (Bink & Ennew, 1996; Mason & Stark, 2004). However, due to the fact that the majority of previous studies use a quantitative approach it has limited researchers in concentrating at one specific factor, or a determined set of factors, since they have to specify the factors before they study them due to the choice of method (Adner & Levinthal, 2004; Folta, Johnson & O’Brien, 2006; O’Brien & Folta, 2009; Li & Chi, 2013). Furthermore, in some cases, investors are not even aware of using real options, even though their investment decisions

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4 Businesses that maintain revenues or a number of employees below a certain standard depending on country (Tillväxtverket, 2014).
are in line with such approaches (Busby & Pitts, 1997; Brach, 2003; Collan & Långström, 2002; Fichman, Keil, & Tiwans, 2005; Kogut & Kulatilaka; 2004). Thus, evidence show that the perception of real options varies between the decision makers (Busby & Pitts, 1997; Adner & Levinthal 2004).

Previous studies found managers to take actions, and/or give rationales consistent with real option thinking, even though real options were not included in their formal way of evaluating projects (Fichman et al., 2005). In other words, even though real option valuation methods are rarely used, managers may still be engaging in the real option way of thinking (Kogut & Kulatilaka, 2004). Previous studies have in common that they do not emphasize, or completely avoid the label “real options” and “the real options way of thinking” when investigating the use of real options, instead they refer to flexibility (Collan & Långström, 2002; Busby & Pitts, 1997) i.e. what can be considered to be a real option approach is how investors are taking flexibility into account when planning and valuing investments. Judging from these findings, although made on other industries than banks, there can be argued, that business advisors may as well use a real option approach without being aware of it.

Sweden has been characterized as a bank oriented country with a credit-based financial system. As Swedish banks are the main financial source for enterprises, financial support to SMEs have been broadly discussed (Rasila, 2004; Hamberg, 2004; Månsson & Landström, 2006; Bougheas, Mizen & Yalcin, 2006; Uchida, 2011). SMEs are characterized by higher uncertainty than larger enterprises as they face a higher volatility in their investment returns due to being more constrained in their decision-making. Constrained as a result of information asymmetry problems in the financial market, leading to a lack of available time to analyze investments compared to larger firms (Cobham, 2000). In other words, uncertainty is a feature that SMEs contain due to the lack of information transparency, thus, makes them more applicable for a real option-thinking model than larger firms as it offers higher flexibility in decision-making. Thereof, real options are a good tool. One might think that irreversible investment creates certainty, due to the fact that firms are stuck and have to make the best out of it, however, not all have the funding’s when they reach a dead end as a result of a bad irreversible investment and end up failing brutally instead of moving forward. Thus, a feature of real options is opportunity cost, meaning the cost of an opportunity that must be forgone in order to pursue a certain action. Real options thereby allows investors facing uncertainty to evaluate which opportunity is the best as they have amongst others options to await more information.
Moreover, loan applications to SMEs are perceived as an investment from banks to SMEs and handled through regulations of the financial supervisory authority which according to law demands assessments before approvals. Banks are given the opportunity to form internal guidelines and policies, meaning that interpretations of these may differ (Chen & Kao, 2011; Badulescu & Nicolae, 2011; Hanedar, Broccardo & Bazzana, 2014). Given the fact that SMEs are an important driver of the economy in Sweden, are characterized by a high uncertainty and that banks are given the freedom of own interpretation in the decision making process, it is interesting to form this study from a bank perspective through a real option lens.

Previous studies have shown the most important determinants during credit rating, namely, accounting information: reporting material, balance sheets, income statements, cash flow budget, cash flow analysis and information on the owner, i.e. financial and non-financial (Holthausen & Watts, 2001; Sloan, 2001; Kling et al., 2003; Caouchette, 2008; Castro & Santos, 2010) According to Andersson (2001), the financial information has long been the most important for a credit rater, and ratios have long been used to determine how creditworthy a business is. According to Kimutai and Ambrose (2010) credit rating behavior by banks may be influenced by several factors namely, the borrowers characteristics (wealth, experience, credit history), firm characteristics (business experience, risk profile, earnings), loan characteristics (amount demanded, loan maturity, collateral offered, interest rate). Normally the bank’s credit rationing behavior can be categorized into three stages, 1) screening stage, the advisor personal meeting with the borrower to determine the eligibility for credit (creditworthiness), 2) evaluation stage, the advisor analyzes the viability of proposed investment, the credit history, the proposed collateral, management of the firm and probability of repayment, 3) the quantity-rationing stage, the advisor determines the optimal size of the loan taking the probability evaluation into consideration, meaning the repayment ability, collateral offered, risk of granting the loan (Lapar & Graham, 1988). Thus, some borrowers are not always granted the same amount of loan applied, instead it varies depending on analysis results. Hoff and Stilgitz (1990) argue that the default risk is therefore taken into consideration as firms that have a higher uncertainty of the repayment of the loan are riskier to banks due to the fact that they may not fulfill its obligations to the bank. The degree of risk is influenced by the credit history of the borrower, the expected returns of the project as well as by business experience of the firm (Hoff

\[\text{Due to this fact presented, loan decisions will during this study have the same meaning as investment decisions.}\]


& Stiglitz, 1990). Therefore, in cases of default collateral serves as the last resort for recovery, meaning that it can be sold to recover the balance or part of the loan (Gosh et al., 1999).

However, determinants behind loan acceptance are not only about the borrower and the loan. The advisors evaluating are simply human, educated to evaluate and expected to make decisions based upon the abovementioned factors. Advisors evaluating these factors are given the freedom of own interpretation, thus, depending on routine, rules and law they have the ability to either take risks, not take risks or utilize the flexibility they are given to find other solutions in loan granting, as real options offer. We argue therefore that real options may offer flexibility to banks in a way where advisors have the possibility to make evaluations based upon several options rather than only following common routine and regulations handed. Thus, by studying all factors in the same study it gives an opportunity to compare which factors are of higher importance and which are of less as well as real options can serve as a way to organize the factors of evaluation by lining up the most and the less important ones, as well as expand the number of factors depending on investment.

Thus, we aim to illustrate different ways of how real options emerge, and if being used in banks, how are these decisions evaluated. Zeng and Zhang (2011) argue that applying a real option approach to the risk assessment of bank loans has an important practical importance, as it gives a new dimension to the decision-making, as we argued above. After introducing the option valuation methods, previous investment decisions, which needed intuitive decision-making, could now be illustrated with a quantitative description instead. It has also facilitated corporate management decisions as they can be guided by applying a scientific calculation and estimation (Zeng & Zhang, 2011). Hence, we want to illustrate what factors are of matter during evaluation as well as possibly expand the number of factors.

Only studying one or a few factors, as previous studies have done, may not provide a representative overview of what really affects the investment decisions as a whole and which factors are of greater importance. Earlier studies have performed studies of one or two specific factors and have not compared these to other existing factors of loan granting process, thus, we believe that this study may serve as a reminder of what factors really play a greater role through the process and we intend to do that by gathering all previous common factors and then show which one compared to another comes out on top. Thus, an extensive search of the literature has put forward studies that explain the evaluation processes of the banks as well as each study pitch point important factors of evaluation (Kling et al., 2003; Ulvenblad & Ulvenblad, 2012).
However, very few have yielded results showing that banks use real option thinking as well as gathered all factors of evaluation in the same study to illustrate their true meaning. As real options theory is a relatively new approach, as well as SMEs are featured by high uncertainty, a real option thinking model is more applicable and of interest to study. In order to achieve this, while providing a more elaborate picture and broader description of the decision making process, we will explore how environmental factors, loan specific factors, as well as lender and customer specific characteristics influence the implementation of real options in the investment decision-making made by banks in SMEs. In line with the purpose of the study, our research question seeks to answer how different factors influence the evaluation of investment decisions made by banks towards SMEs, illustrated through a real option approach. Thus, there is a gap in research that has not yet been explored which we intend to fill by contributing to the theoretical approach of real options as well as providing deeper understanding of investments evaluations of banks (Choi & Smith, 2002).

2. Literature review

2.1 Nature of contracts

Coase (1937, 1988) firstly introduced the transaction cost theory arguing that there exist several of transaction costs to using the market namely: the cost of obtaining a good or service via the market is not only the price of the good but also to be considered when making decisions. Thus, transaction cost economics commends that the own-or-rent decision be casted in a general contractual schema (Williamson, 1985). Contracts are often incomplete because of the bounded rationality of actors (Simon, 1997; Saussier, 2000).

Woodward (1988) explains that bank assets consist primarily of loans “produced” by the owning bank and points out the fact that borrowers know more about themselves than the banks know about them. There is an existing possibility that the SME possess more information than the bank due to the fact that they are steered by a business leader, CEO, which retain knowledge about the potential of the business, financial stand, future incomes and risks (Burns, 2004). However, it can also be the other way around where an advisor in a bank retains better information about the market risks, threats and possibilities supplied due to previous experience and knowledge (Storey, 1994). Therefore, there is a high uncertainty in contracts between banks and SMEs. A borrower may plan to default a loan and the lender may not know this. It would therefore mean that the bank engaged in the contract would be the loser as the SME is granted a loan which it cannot repay. Thus, formal lenders, in our case business advisors, have to
contend with the critical information constraints. Information problems can be considered as one of the major source of transaction cost.

It is costly for banks to gain information in order to provide valid and stable decisions (Woodward, 1988). Furthermore, through a bank and SME perspective, borrowing assessment is characterized by information asymmetry, by the bank or the SME possessing different amounts of information, which is related to the loan application and the company with its environment (Bink & Ennew, 1996; Mason & Stark, 2004). Coase (1937, 1988) explains that information costs are one of the transaction costs that firms should avoid in order to arise. This is an indication of why SMEs have a lower chance of financial funding’s and investments from banks, due to the fact that they do not provide formal documents in the same extent as larger firms do (Berger & Udell, 1995; Burns, 2004). SMEs do not have the same legal requirements of transparency as larger enterprises, which means that banks’ decisions are based on the informal information that the contractor bears in his or her head rather than what the bank for a fact has access to. Thus, informal information provides a higher uncertainty and a greater risk, thereof, which also determines the level of caution of the bank when evaluating (Storey, 1994; Burns, 2004). In situations where one party is less informed than the other, the more informed party might use this advantage to exploit the less informed party, which may lead to problems of opportunism i.e. asymmetric information can create opportunistic behaviors whereby the more informed party benefits at the expense of the less informed one (Perloff, 2011; Fredriksson, 2014).

Adverse selection and moral hazard are two main types of opportunistic behavior, where adverse selection can be described as opportunism in the sense that an informed person can benefit from contracting with a less informed person, as they may not be aware of certain unobserved characteristic of the informed person (Perloff, 2011). Placed in the lender-borrower context, adverse selection would arise due to SMEs being better informed of their own state (e.g. economic conditions, risks etc.) than the bank. Moral hazard on the other hand occurs when the more informed party takes advantage of the less informed by unobserved actions (Perloff, 2011). Borrowers may for instance be engaging in potentially risky activities, undesirable from the lenders’ perspective as it might reduce the borrowers’ ability to repay, because they know that they are protected against the risk and that someone else will pay for their mistakes. Such opportunistic behaviors like adverse selection and moral hazard, do not only harm the parties involved, but may also lead to market failures, destroying desirable properties of competitive markets (Perloff, 2011).
SME’s information advantages about their business operations hamper the bank’s risk assessment of the company. Hence, the banks cannot exclude that SMEs will act on own welfare and interest, thus taking precautions such as using different evaluation models and factors. In order to avoid information asymmetry banks engage in SMEs and develop relationships as well as try to increase information before granting loans. A way for banks to ensure that borrowers act in the interest of the bank is by engaging both parties in a contractual relationship in which the interest rate and the payment terms are determined, this reduces the borrower’s ability to abuse the loan as well as the banks trust (Storey, 1994). Thus, it is a disciplining mechanism, which prevents the borrower from acting opportunistically as they will lose ability to seek for capital in future investment projects if abuse of the contract occurs.

In summary, transaction cost theory explains the presence of information asymmetry and incomplete contracts (Simon, 1997; Williamson, 1991; Saussier, 2000) as well as in what way people may act in presence of such. Therefore, in a world of changes Williamson (1981) argues that one of the dimensions for describing transactions is uncertainty, due to the fact that it increases contractual incompleteness and the need for renegotiation, similar to real option theory. In this case real options is a way to manage uncertainty associated with incomplete contracts. Therefore enabling the use of real options in banks when evaluating loans for SMEs could be essential and relevant.

2.2 Real options

Real option investments are according to Adner and Levinthal (2004), “characterized by sequential, irreversible investments made under conditions of uncertainty”, where a real option approach allows for postponing the investment until more information has been revealed and the conditions are less uncertain. The term real in real options aims to describe when the underlying asset of the option is of a physical or intellectual nature and not a financial instrument, which is the case when it comes to financial options i.e. options that are traded on a stock market (Amra & Kulatikala, 1999). Park & Herath (2000) explains how the real option approach is trying to express how one would benefit from keeping their options open. For instance, an investor might face the possibility of financing a project that can either generate large profits or large losses. According to more traditional valuation methods like DCF, the results of the valuation might indicate that the project is not worth investing in, especially in the case of not yet established companies, which has no direct history of revenues and costs. To establish a valuation range one can make assumptions about market growth rates, market share, gross margins and other variables creating different scenarios. These assumptions can on
the other hand not be accurately approximated for an early-stage company, which makes the results questionable (MaRS Discovery District, 2013). If one instead uses an investment valuation analysis where the real optional perspective is considered the results might instead indicate that there is value in investing as the potential might be positive (Damodaran, 2001). Below a few of the more common options will be presented and explained.

2.2.1 Different types of options

2.2.1.1 Option to defer

This is an option that treats the time aspect, meaning that investment decisions may be postponed. If the investment possibility contains this type of option, it is possible to wait and see how the various uncertainties unfold before the decision/s must be made. When taking on an investment from a real option perspective the decision maker can after the initial investment apply this “wait-and-see” strategy, and await information whether or not it is appropriate to abandon the investment or to cultivate the initial investment (Adner & Levinthal, 2004). Using a real option approach can thereby mitigate the previously mentioned information asymmetry, as the investor can delay the investment decision in order to gather additional information and learn more about the quality of the firm, for instance by observing the cash flows generated by assets in place (Strebulaev, Zhu & Zryumov, 2012). This type of option can also be very valuable when investors or analysts wants to study price trends on a particular input or output, or when investors for instance wants to follow certain developments in a specific area of research in order to decide when it is suitable to make the final investment decision. Due to the above mentioned this type of option is to consider as an American call option in terms if the potential value of the investment (Trigeorgis, 1995).

Trigeorgis (1995) explains how it is possible to identify a value in the option to delay or postpone an investment decision since one can wait and see how the future is developing. Reasons for deferring investments decisions could be that the investor/decision maker wants to see how the project is developing and unfolds over time. Hence, if unfavorable changes occur, the decision makers can avoid/prevent bad decisions from taking place by waiting or postpone the investment. Another reason that makes this option valuable may be if the decision maker wants to wait for new technology to be developed in order to facilitate the development process of the project (Damodaran, 2001). It can, according to Damodaran (2001) also be valuable to have an option to defer/postpone an investment if the project for instance has a negative NPV (that is based on currently estimated cash flows), as a result f the residing value of the option.
Meaning that even if an investment has a negative NPV, which thus leads to the conclusion that the project should not be exercised today, changing conditions in the future might make the investment profitable (Chance & Peterson, 2002).

2.2.1.2 Option to stage
The option to stage is a possibility meaning that one can divide the investment procedure in stages or steps. Hence the investment does not need to be implemented in the initial stage, instead there is an option to abandon the investment if conditions would turn unfavorable with time. Each investment is then to consider as an option of its own, all presenting an opportunity for the values that future investments will generate. These options then represent the cost required in order to get higher up in the “investment ladder”, see figure 1. The option to stage should therefore be seen as a "compound option" that is an option on an option (Trigeorgis, 1995). By dividing the investment in stages one will not risk all the money at once while there is the possibility of gaining new information which means that the uncertainty and the risk decreases (Copeland & Antikarov, 2001).

2.2.1.3 Option to expand
This is an option that according to Hull (1993) means that the investment option possesses the ability to increase the scale of operations if the market conditions prove favorable in the future, in other words the ability to scale-up the production in order to capitalize on future growth opportunities. Since this type of expansion is possible to implement at almost any time, this option is to consider as an American call option, hence the strike price of the option becomes the cost of creating the additional capacity discounted to the exercise date (Damodaran, 2001). Thus the exercise price is often very dependent on the initial investment (Trigeorgis, 1995). Unlike the typical options that achieve their value from underlying securities, expansion options obtain their value from the flexibility it provides e.g. the holder of an expansion option can after the implementation of the initial stage of a capital project decide whether to move forward with the project or not (Damodaran, 2001).

2.2.1.4 Option to abandon
This option gives the investor the possibility to abandon unprofitable investments/projects and thus protect the investors’ financial interest in the event that a project or investment fails to generate the intended benefit, which can be compared to an American put option due to not having any specific exercise date (Trigeorgis, 1995). This option also implies that the holder
not necessarily need to carry the current operational fixed costs of the firm, and can instead abandon the residual value of the business, if there are any. Which means that the exercise price becomes the liquidation value or selling price minus any closure costs. This type of insurance is very valuable if future conditions are unfavorable or if the conditions have changed or deteriorated strongly compared to the initial expectations (Chance & Peterson, 2002).

To conclude, the consequences of the abovementioned reasoning’s may lead to projects and investments not being implemented if the value of the real options is not being considered. The real option approach can thus explain and quantify the potential of the possibilities and strategic alternatives available within a company or project (Trigeoris, 1996). To overlook these options may lead to underestimated projects and investments since the “whole picture” is not being considered in the decision making process (Buckley, 1998). In other words, the real option approach thus reward flexibility. If one can maintain the flexibility to both scale up an investment in the event of good scenarios, and scale down or abandon the same investment in the event of unfavorable scenarios, a firm may be able to turn a bad investment into a good one (Damodaran, 2001). To predict the future is difficult and almost impossible. It is more so a rule than an exception that forecasts may be revised or adjusted over time. Following this, Park & Herath (2000) argues that this is why the real option approach is a "better” valuation tool than the more traditional valuation techniques. Hence, when using a real option approach the value of the decision-makers options to act, based on new information, is being taken into account. Due to this, the value of the real options might constitute a large part of a potential investment's total value (Lander & Pinches, 1998).

As one can tell there are a lot of different options useful and valuable in different ways when calculating investment decisions. One should however be aware of the fact that real options do not offer anything “extra” in addition to the initial investment but rather a way to calculate its value (Luehrman, 1998). The main reason that the flexibility is so incredibly valuable is the uncertainty surrounding the future and thus the strategic investment decisions. Hence, in order to be able to measure and calculate the value of the flexibility i.e. the value of the option, a range of value creating factors have been identified. Thus real options can be found in various strategic investment decisions, they however need to be identified and/or specified before any evaluations can be performed (Amran & Kulatilaka, 1999). These factors and their impact on the option value will be presented below.
2.2.2 How to value an option—What is it that determines the value of an investment opportunity.

In essence, the value of real options stems from the fact that when investing in risky assets, we can learn from observing what happens in the real world and adapting our behavior to increase our potential upside from the investment and to decrease the possible downside (Damodaran, 2001). The valuation of an investment opportunity normally focuses on a series of future cash flows that are expected from this opportunity. Thus, the typical process of evaluating an investment opportunity involves estimating these future cash flows and discounting them to the present at a rate that reflects the risk of the project. When that is done one is to compare the discounted value with the required investment outlay. If the present value of the future cash flows is exceeding the investment outlay the investment is expected to create value and is thus desirable, otherwise the company will not make the investment (Damodaran, 2001).

Capturing the flexibility options that a project offers is one of the challenges when evaluating an investment opportunity. As previously mentioned real option valuations offers a method of incorporating managerial flexibility options into the investment decision highlighting the contributions that these options provide to the investment's strategic value. In other words, real options are a way of valuing flexibility in investment strategies. When doing an evaluation of a real option the valuation begins with identifying what type of option it is you are dealing with (see section 2.2.1.). When that is done, value-influencing variables must then be quantified. The variables/factors that are needed is:

- The strike price of the option, which consists of the investment costs that the project in question requires.
- The maturity of the option e.g. the time until the investment decision.
- The present value of the underlying asset
- The volatility of the underlying asset
- The risk-free rate
- Lost cash flows

When these factors have been quantified the actual option valuation can then be made. The option value that is being calculated is then added to the NPV of the cash flows, which in turn have been calculated using a traditional cash flow method. Together these values constitute the
project/investments Expanded Net Present Value (ENPV), a value that takes into account both the value from the traditional cash flow method as well as the option component of the investment opportunity.

Hence, this approach is better to use when it comes to capture the value of the flexibility as well as not neglect the value gathered from the classic cash-flow method. Thus, this method values the traditional method as an important component when it comes to describing the value of a project (Trigeorgis, 1995). The basic idea of real option valuations is to consider that the value of an investment extends beyond its value as measured by traditional DCFs or NPV (Luehrman, 1998). In other words, the value of a project is supplemented by the value of its options.

The “bottom line” of real options in capital investment is once again managerial flexibility, hence every investment project presents some degree of flexibility in decision-making. Thus, the first challenge is to recognize the options inherent in the investment decisions. The second challenge is to value these options and incorporate them into the valuation process. But how does an analyst or investor take into account the values of these options?

One approach is to use either sensitivity analysis or simulation analysis to analyze the available opportunities. Although these methods allow one to get an insight in the possible outcomes of a decision, they do however not provide any guidance regarding which course of action take. Another possibility is to use decision tree analysis, a method which are correlating different probabilities with each of the possible outcomes for an event. Furthermore, the method is mapping out the possible outcomes and the value of the investment opportunities associated with the different outcomes (Chance & Peterson, 2002).

Although sensitivity analysis, simulation analysis, and decision tree analysis partially intercepts the inherent flexibility of different options, the option-pricing framework provides an approach to analysis that is richer and more comprehensive. Determining an option’s value is a task that requires the use of theoretical models. Under certain assumptions, the valuation of an option is obtained by a formula developed by Black and Scholes (1973) and Merton (1973). (Chance & Peterson, 2002).

When managers estimate what it costs to invest in a given project and what its benefits will be in the future, they are coping with uncertainty. The uncertainty arise from different sources depending on the type of investment that is being considered as well as the circumstances and
the industry in which it is operating, uncertainty in terms of economic factors, market conditions, taxes, interest rates and other sources. These sources of uncertainty influence future cash flows. Thus, managers need to assess the uncertainty associated with a project’s cash flows in order to select value-adding projects.

Several studies have investigated how the uncertainty factor influences the decision-making when undertaking investments applying the real option perspective (Folta, Johnson & O’brien, 2006). According to Ziedonis (2007), the value of a real option investment lies in the uncertainty, the uncertainty of future payoffs as a result of a full-scale investment. According to O’Brien and Folta (2009), the uncertainty of the investment and its future payoffs may cause one to accept a lower level of performance, due to believing in improved conditions in the future.

The real options approach is the only one that highlights that there might be an upside potential in terms of the risk factor, hence uncertainty sometimes is a source of additional value, especially for those who are poised to take advantage of it (Damodaran, 2001). However, in the literature the term uncertainty and risk are according to Hung and So (2010) commonly used interchangeably, which may give deceptive results as Nishimura and Ozaki (2007) show that uncertainty and risk are two factors that influence the value of the investments opportunity, but in different ways. Similarly, Alessandri, Ford, Lander, Lieggo and Tyler (2004) emphasized how uncertainty, as well as risk, are important for the decision-making process that is, as two different factors. Hung and So (2010) found these factors to raise a more subjective evaluation amongst decision makers.

Furthermore, Choi and Smith (2002) found the real option approach to be useful when trying to explain investment decisions made under uncertainty, where the main implication was that delaying an investment may be the optimal way to decide whether a investment should be carried out or not, due to the option value to wait. According to Carruth, Dickerson and Henley (2000) there is value in delaying, or using a “wait-and-se” approach to investment decisions, as one can await new information that may be crucial for the investment, information that might affect the desirability or the project (Trigeorgis, 2002). Thus, then make better investment decisions maximizing returns. A number of previous studies (Brennan & Schwartz, 1985a; Paddock, Siegel & Smith, 1988; Ingersoll & Ross, 1992) have also found the option to delay an investment to be highly valuable when an irreversible investment is expected to face a great deal of uncertainty (Busby & Pitts, 1997). If investors can await new information and resolve
uncertainties before deciding to pursue with the irreversible investment, potentially large losses can be avoided by foregoing the investment altogether when the outcome is unfavorable. Hence, the more uncertainty there is about an investment’s expected future cash flow, the more valuable is the option to postpone the investment (Bulan, 2005; Brealey & Myers, 1996). The uncertainty regarding the investment opportunities and its returns can then be seen as the uncertainty that increases the value of an option as previously mentioned. Furthermore,

“The real-option theory suggests that the level of investment risky assets (e.g., loan portfolio) will be lower (higher) due to the “value to wait” for loan decisions with greater (less) uncertainty, given the same expected return on loans” (Choi & Smith, 2002 pp. 26).

Trigeorgis (2002) describes how more managerial flexibility in investments decisions is needed due to the increasingly uncertainty and dynamic market that is being formed. More flexibility i.e. being able to react to new information as it arrives (Busby & Pitts, 1997) is essential in order to successfully take advantage of future favorable investment opportunities, and to effectively respond to changes or competitive moves in the market as it is not inconceivable that new opportunities becomes possible or apparent until a later stage (Trigeorgis, 2002). However, it is not always beneficial to delay the investment in order to await new information, as the competitors on the market might get ahead of you by investing right away, and get a first mover advantage (Trigeorgis, 2002).

The more uncertainty there is within a project, the more valuable the option becomes, hence, the uncertainty do not tell the investor whether the future conditions are going to be favorable or unfavorable, only that there is an uncertainty (Busby & Pitts, 1997; Trigeorgis 2002; Culp, 2006). Using a real option perspective on investments under high uncertainty, controls for unnecessary losses due to the managerial flexibility given by this approach (Busby & Pitts, 1997; Trigeorgis 2002). The managerial flexibility of being able to adapt investment decisions, takes advantage of the opportunities in highly uncertain and volatile markets, which means that the investors are more likely to gain value since they can take advantage of the upside potential i.e. being able to keep the possibility to gain on the investment in the event of success, and limit the downside losses i.e. close down projects that are failing (Busby & Pitts, 1997; Trigeorgis, 2002). In other words, using the real option approach under investment uncertainty provides the investor with additional information regarding the value of variables like risk and improved market conditions (Busby & Pitts, 1997), which the decision to abandon or exercise an investment then is based on (Trigeorgis, 2002).
In other words, all these forms of flexibility give the decision maker the option to hedge their risks and to change the investment (Busby & Pitts, 1997). Advocators thus argue that the theory/approach can help with explaining as well as put a value on a business that not yet have a finished product and where the value of the company for the most part is composed of a patent or similar (Kellogg, Charnes & Demirer, 1998).

Even though the real option perspective is found to be frequently used and generally significant in determining how decision makers consider an investment (Busby & Pitts, 1997), it has also been found that on an individual level, the decision makers have varied perceptions regarding how to label real options (i.e. in which terms; flexibility, opportunities, risks, risk mitigation, options etc.) even though the perception of the concept is the same (Bubsy & Pitts, 1997). In other words, there are few decision makers who seem to be aware of the real option research, even though their intuitions many times agree with the qualitative prescriptions of such work. Thus, the view that flexibility and options are to be seen as beneficial qualities has been challenged (Busby & Pitts, 1997). The real option approach is not always seen as an advantageous method to use, as it can reduce the organizational commitment to a project. In some cases it is necessary to make a decision and stick with it, as it otherwise may lead to unnecessary risks in terms of wasted resources, due to never fulfilling a project all the way. Real options do also tend to be unavailable as a result of legislation, regulation or commercial commitments (Busby & Pitts, 1997).

Contrary to flexibility being beneficial in the decision making process, Das and Elango (1995) underlines three disadvantages with added flexibility: 1) more flexible processes usually is more costly than less flexible ones, 2) investors may feel threatened by a more flexible decision making process, as they need to be more versatile than in a regular and routinized environment and, 3) adopting a substantial strategic flexibility might lead to a lack of organizational focus. From a theoretical point of view the use of options is an attractive approach, in practice the methodology may however lead to difficulties in terms of investors making inaccurate conclusions and overly ambitious assumptions (Bowman & Moskowitz, 2001).

To summarize, using a real option approach allows the investor to hedge against certain risks as well as take advantage of changing market conditions. By taking on a “wait-and see” perspective, delaying the investment until more information has been revealed and the conditions are less uncertain on the market the investor can decide whether or not to invest in a
specific project. The option to delay an investment can then be seen as an optimal way to decide whether an investment should be carried out or not, as the new information might affect the desirability or the project. If investors can wait for the resolution of uncertainty before deciding to continue with the investment, they can avoid potentially large losses by not pursuing with the investment if the outcomes turn out to be unfavorable, which leads to better investment decisions and maximized returns. If the marked conditions change for the better the investor can scale up the investment and thus gain more profits, and the other way around if the conditions changes for the worst the investor can scale down or even abandon the investment. Given the flexibility that the real option approach allows, investors can successfully take advantage of future favorable investment opportunities and effectively respond to changes or competitive moves in the market, which might give the investor the opportunity to hedge against risk. The downside of using this perspective is on the other hand that while you are waiting for new information, competitors might get ahead of you by investing right away, getting a first mover advantage.

2.3 Factors of investment evaluation

Different from other analyzing tools of investment, a real option gives the right but not the obligation to undertake a certain business initiative, amongst other, the option to defer, the option to abandon, the option to expand, the option to stage, the option to contract, a capital investment project (Trigeorgis, 1993). Contrary to usual conventional financial options, real options are not typically traded as securities and do not usually involve decisions on an underlying asset that is traded as financial security (Zeng & Zhang, 2011). Instead, management can directly influence the value of the option’s underlying; whereas this is not a consideration as regards the underlying security of a financial option. As the real options give the right to buy or sell a share in a project, meaning that there is a project with a future value that is indicated in the price of the option today (Guthrie, 2009). Due to uncertainty you can buy a right to engage in the project in the future, however, in our case there is no project. Banks decisions would be about creating the project or not, to make the investment or not.

To assume or use a real option approach in the decision-making process may provide a systematic tool to conceptualize and quantify factors contributing to the value of real options, values that in turn shapes the investment decisions (Dixit & Pindyck, 1994). What is distinctive about the use of real options as a strategic and analytical tool is that the real options logic offers the prospect of assigning actual values to stage-setting investments (Adner & Levinthal, 2004). Meaning that the intention of a real option approach is to exploit the flexibility inherent in
sequential investments, which according to Adner and Levinthal (2004) stems from the possibility of abandoning investment initiatives. As a first stage (Figure 1), the investor must consider whether or not to invest in the option at all. Thus, if banks decide not to engage or create the project in stage 2 the possibility is distinguished because there is no project. Thereof, if they choose not to invest, then there is nothing else to consider. If they however choose to make an investment in the first stage, the investor can then gather more information in the meantime deciding whether or not the next stage should be to continue with the investment or if they should abandon it, depending on how the value of the option changes in response to external events (Adner & Levinthal, 2004).

Moreover, if banks decide not to invest in stage 1, there will be an opportunity cost evaluated. Thus, they analyze if it is profitable to invest (grant a loan) in SMEs and if they find out that although the ideas of the SME are promising and can deliver value in the future, the risk of default is too high they can decide not to invest. Thereby, in real options there is always a value loss of not investing today since in real life it is not about buying an option. Instead, in real life if banks make an investment they do not buy an option, but invest in a firm that need the money to invest in a machine or other resources needed. This machine creates opportunities for the future, stage 2. Thus, it has value not only as an option but also value at present time. The opportunity cost would show alternatives in buying the specific machine or not, if decision is made not to buy the machine the loss would be the future value gained due to the opportunities that the new machine offer, and the profit of not investing would be the price of the machine today.

By dividing the investment in stages one does not risk all money at once as well as there are a possibility to gain new information, information which means that the uncertainty and the risk decreases (Copeland & Antikarov, 2001). Hence, the real option approach values the flexibility. If the possibility to invest is not a “now or never” decision, the investment can instead be seen as an option. An investor who cannot identify the value of the underlying asset do not issue the option (investing) if s(he) is not certain that the project is “in the money”. If s(he) is not certain s(he) is waiting to invest in order to possibly obtain more information and thus reduce the economic uncertainty. Additionally to financial options, the investor can exercise the option gradually hence the investment can be made in stages. Thereby one can reduce the technological uncertainty and further ensure that the investment opportunity is “in the money”. Ultimately the value of the investment might become larger due increasing flexibility, as the investor thus can take advantage of the fluctuations and thereby the economic uncertainties that follows. In
line with the abovementioned Amran & Kulatilaka (1999) mean that investors can avoid the worst declines, while better utilizing the gains, see figure 1.

![Stages of investment model](image)

Understanding the factors that are of relevance during investment decision-making is important in order to understand why decisions are made. It is not only beneficial in terms of the actual value of the investment, is it also a way of gaining more knowledge and skills, which may be useful for future investment processes. Even if the bank does not continue financing the operations of a firm, they have still gained valuable experiences. While gathering and analyzing information related to one decision, investors can apply this information to new situations, identifying other potential growth opportunities (Janney & Dess, 2004).

Most studies vary between which factors are important for the decision making process in investment. Factors like managerial optimism and overconfidence (Hackbarth, 2009), market conditions (Duan, Han & Yang, 2009), collateral, maturity and size (Jiménez et al., 2006), liquidity and repayment ability (Piotr & Dorota, 2013), as well as interest rate and default risk (Choi & Smith, 2002) are recurrent in the literature, although not simultaneously. These factors have been divided into four categories namely: 1) environmental factors 2) customer specific factors, 3) lender specific factors and 4) Loan specific factors. Moreover, relationship is another factor, outside our model of categories that is frequently discussed in the investment decision-making process. Studies show that SMEs with longer relationships to banks are offered lower rates and are less likely to pledge collateral (Petersen & Rajan, 1994; Berger & Udell, 1995). Whether these factors are considered to influence an advisers investment
decisions regarding SMEs, we base upon the following arguments.

2.3.1 Environmental factors

Banks operate in a unique environment in which there are relatively high and positive correlations between investment costs (liabilities) and output (loans) price, due to the fact that they both are strongly dependent on the interest rates\(^6\) (Choi & Smith, 2002). The overall risk banks are facing depends mostly on the variability of assets and liabilities, as well as the correlation between them. If assuming the general perception that banks "borrow short and lend long", it would imply that sharp increases in the interest rate may induce a significant number of banking failures (Flannery, 1981). Due to the fact that both assets and liabilities are affected by fluctuations in the interest rate, a great deal of uncertainty in advisors investment decisions (i.e. loan decisions) is due to these fluctuations (Choi & Smith, 2002). Inflation will also affect the interest rate levels, the higher the inflation rate, the more likely it is that the interest rate also increases. This occurs because lenders will demand higher interest rates as compensation for the decrease in purchasing power of the money they will be repaid in the future (Haekal, 2013). Interest rate can also be seen as compensation for the risk the bank is faced with when lending money to businesses not knowing if the borrower is going to repay the loan or not (Haekal, 2013). In other word the interest rate should reflect the risk the bank is taking when lending out money. Thus, this should be a factor of importance during an evaluation of an advisors investment decisions.

According to Duan et al., (2009) the macro environment in which SMEs live at present has a relative economic surplus, thus, market condition is of importance. Moreover, due to the heavy competition of larger enterprises as well as state-owned enterprises, it increases the difficulties for SMEs to occupy any position, thus increases the difficulties of investment opportunities from banks.

2.3.2 Customer specific factors

Associated with interest rate is default risk, which refers to the situation where a firm is no longer capable of repaying their debts (Crosbie & Bohn, 2003). In almost every loan decision, the lender (investor) is exposed to some degree of default risk. In order to mitigate this risk, lenders often charge interest rates corresponding to the borrowers level of default risk i.e. the higher the risk of default is, the higher interest rates is required from the bank. Bank loans may

\(^6\)Interest rate in this study is referred to “the amount charged, expressed as a percentage of principal, by a borrower for the use of assets. Interest rates are typically noted on an annual basis, known as the annual percentage rate (APR).” (Investopedia, 2014).
be subject to a high degree of irreversibility (e.g., substantial loss in default), which might make the option to wait with investment decisions valuable (Choi & Smith, 2002).

Along the lines with interest rate and default risk, collateral is a commonly used term in loan contracts that is assumed to have a negative association to borrowers’ risk (Jiménez et al., 2005). Asking for collateral allows the bank to shift the risk of the loan from the bank to the borrower (Bergström & Lennander 1997; Anderson, 1999) whereby the amount of collateral increases with the interest rate and decreases with the size of the loan (Boot, Thakor & Udell, 1991; Jiménez et al., 2006). SMEs are generally confronted with higher interest rates, due to lacking access of collateral (OECD, 1998). Collaterals have a value as they can reduce losses in the event of default, whereby credit without collateral is deemed harder (Sveriges Riksbank, 2001). However, Gorman, Rosa and Faseruk (2005) put into light that not all businesses have the amount of assets referring to knowledge-based businesses versus capital-intensive businesses. Thus, depending on firms-specific, collateral may not be as useful as one could believe (Gorman et al., 2005). Moreover, another problem with collateral could be that at the time when they are needed, the value of these on the market might be low and therefore banks risk of not getting anything (Binks & Ennew, 1996). Contrary to this, Blazy and Weill (2013) as well as Badulescu and Petria (2011) claim that collateral is essential, and indeed reduces loan loss in the event of default. Due to the fact that collaterals offer some security to the lender, secured loans usually have a lower interest rate than unsecured ones (Investopedia, 2014). Results provided by Hanedar et al., (2014) show that presence of collateral is determined mostly by the firm-risk and loan variables. Thus:

“A firm granted a loan with higher duration and cost, with lower liquidity, with overdue utilities payments and in a crime-ridden area has a greater probability of being required to pledge collateral” (Hanedar et al., 2014. pp. 119).

Hence the use of collateral increases the possibility for SMEs to be granted a bank loan, and thus is of relevance to the advisors’ investment decision on the matter.

Even though collateral is an important factor in the decision making process of loan granting, the most important factor to be considered are the borrowers’ repayment ability i.e. liquidity (Tadanobu, Yoshiaki & Wako, 2011; Sveriges Riksbank, 2001). According to Bankrörelselagen, credit may only be granted if the borrower on good grounds is expected to

7 Bankrörelselagen (1987:617) 2 kap 13 § 1 st.
fulfill the loan commitment. If borrowers have weak repayment abilities (e.g. a high likelihood of loss) the risk of not being able to repay the loan is high (Zech & Pederson, 2003), which according to the law is reason enough for not granting loan requests. The premise of all loans is to retrieve the capital that has been lent.

2.3.3 Lender specific factors

In psychology, human tendency to be overconfident has been broadly acknowledged, thus, is commonly known in terms of managerial hubris, as well as it has become a central feature in economics and behavioral finance recently (Rabin & Schrag 1999; Barber & Odean, 2001; Friesen & Weller, 2006; Gervais, Heaton, & Odean, 2011; Lambert, Bessière & N’Goala, 2012). Even though the literature on overconfidence and its impact on financial decision-making have been widely investigated, from the perspective of several financial agents, few studies have focused their attention on bankers (Lambert et al., 2012). However, on the few occasions when this factor has been studied from a banks perspective, the empirical evidence indicates that overconfidence have a direct impact on the investment decisions (Lambert et al., 2012). It has been shown that there is a positive correlation between the amount invested in assets, and the degree of overconfidence that the lender has (Odean, 1998; Glaser & Weber, 2007; Lambert et al., 2012).

Optimism is many times used in conjunction with overconfidence and refers to investors believing that favorable events are more likely to occur than they actually are (Hackbarth, 2009), overvaluing the future performance of a firm (Lin, Hu & Chen, 2005). Thus, this is a factor that may be of relevance to an investor's decision making i.e. if an investor has a strong belief in a project, the own belief and optimism might influence their investment decision, given that they have some sort of managerial flexibility. When investors are too optimistic about a projects quantifiable value, they may undervalue real options, leading to a systematic bounded rationality bias in real options valuation (Tiwana, Wang, Keil & Ahluwalia, 2007).

2.3.4 Loan specific factors

The two basic characteristics of loans, maturity and size, are presented in this section. The maturity of a loan can be seen as the life of the loan, and more specifically the date at which the final repayment of a loan is due (OECD, 2013). When this date passes, there is no longer an option to invest, i.e. the determination of the maturity date plays an important role in real option valuation (Pereira & Armada, 2003). Thus, most business advisors demand a higher return (i.e. interest rate) on loans lent for longer periods of time due to the risks of future
uncertainties, one being the firms’ future repayment ability. As for size, Stanton (2002) argues that banks may improve their profitability by developing relationship lending for loans of larger size. Relationship lending has generally been an area of strength for banks, and especially in their loans to SMEs. Thus, knowing the nature of eventual size effects may enable the bank to restructure the distribution of loans in a manner that more efficiently utilizes the advisors time (Stanton, 2002).

Lastly we have the factor relationship, a factor that falls outside the abovementioned categories, but will be included in this study since it is a factor that may influence all of the previously mentioned factors. Many have investigated the borrower-lender relationship and come to the conclusion that SMEs with longer banking relationships are offered lower rates and are less likely to pledge collateral (Petersen & Rajan, 1994; Berger & Udell, 1995). Moreover, authors claim that a better relationship would contribute to a heavier knowledge from the bank about the SME in question and its activities as well as the entrepreneur’s knowledge. Thus, provide a more frequent and transparent information flow amongst them (Berger & Udell, 1995; Blink & Ennew, 1996). Thus:

“Small firms are generally more dependent on banks and are more likely to have the type of asymmetric information problems that a good relationship may resolve” (Berger & Udell, 1995, pp. 378).

Other results have shown that banks under competition emphasize relationships heavier, which indicates that the relationship factor serves as a mean to retain borrowers (Uchida, 2011). Moreover, through a cost matter, relationship plays an important role in reducing costs regarding collection of information, hence, information can easier be provided mutually by the bank and the borrower, in our case SMEs (Ferrary, 2003). The uncertainty decreases when a bank has had a longer relationship to the borrower and developed trust, however, building up a stable relationship requires time as well as patience which means that the time perspective is out of matter (Ferrary, 2003). Relationships are often built by time but also by continuous good services offered by the bank. According to Hawke and Hefferman (2006) quality of services offered and the availability of these are essential in building a stable long-term relationship.

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8 Relationship is seen as a factor that may influence the whole evaluation process, hence, we interpreted that previous studies results show that banks with longer relationships to customers have the tendency to overlook certain factors, or at least have decreased demands on certain factors. Better relationship may affect the amount of information handed by SMEs to banks, which then may affect the factors, which in turn may influence the decision-making. Thus, relationship should not be put into a certain category, instead stand alone as a factor with probabilities of affecting all the factors.
Although SMEs generate smaller amounts of outcome in comparison to larger enterprises they are attractive to banks due to the economic interest on long-term matter (Binks & Ennew, 1996).

To summarize, the use of real options in deciding on future investments opportunities has provided new insights, which according to Trigeorgis (2002) has revolutionized the modern corporate resource allocation. It has been shown that real options emphasize the importance of waiting and flexibility, suggesting that one should either “wait and see” e.g. whether additional information is made available that can be taken into consideration in the decision making. Thus, makes the investment less uncertain, or one should stage the decision so the investment can be revised sequentially, where one can decide either to proceed to the next stage or to abandon the investment (Adner & Levinthal, 2004).

Figure 2. The factors of evaluation by Banks towards SMEs model.
3. Method

3.1 Selecting Participants and Collecting Data

Qualitative research methods uses naturalistic approaches that seek to understand phenomena in context-specific settings, such as "real world setting [where] the researcher does not attempt to manipulate the phenomenon of interest" (Patton, 2002, p. 39). As the focus of this study is to examine whether banks use a real option approach when evaluating investment opportunities in small and medium sized enterprises, we have chosen to do a qualitative study in order to personally get in touch with the people who are making these decisions, namely the business advisors, in order to get a good understanding of how they reason in these types of investment decisions and whether the previously mentioned factors come into play in the decision making process.

According to Yin (1993) the qualitative exploratory research is a study with expository classification. Thus an explorative illustrative study is performed by in-depth interviews as our paper aim to illustrate an evaluation process of investment decisions by banks in SMEs. Moreover, it allows us to investigate the process on a deeper level in comparison to a quantitative study with a survey (Coviello & Jones, 2004), and increase the possibility to gain a more elaborated picture and broader description of the process and also the factors that are of relevance to advisors of the banks, during investment decisions.

Another reason why this study takes on an explorative aim is due to the fact that there is limited knowledge about if and how banks are using the real option approach in their decision-making. The majority of the previous studies we have come across that investigates investment decision-making processes, though in other fields, have only assumed one or a few of the specific factors (interest rate, market conditions, default risk, collateral, repayment ability, overconfidence/optimism, maturity & size), through a quantitative study. Thus, few have tried to give a deeper understanding of the evaluation of investments in banks i.e. by combining several factors, as well as doing it through a real options lens. Due to the fact that banks operate strictly according to regulations and laws, thus, subject to stricter regulations, as well as they are obligated to respect customer and bank privacy, answers provided through a qualitative method can be analyzed in a more suitable way. Thus, developed answers with continuing questions are needed in order to ensure that enough data is collected which would not be possible through a survey. As real option approach is relatively new, we do not aim to generalize. Instead we want to show through a qualitative study the advisors thoughts during
evaluation as well as capture all types of indications of real option thinking. Although a survey could capture real option thinking, the amount of factors in our study would need a great amount of questions as well as a quantitative study does not allow to follow up questions which would mean that any misinterpretation of a question cannot be questioned again. Through a qualitative method, it allows us to ask follow-up questions as well as explain the meaning of the questions asked as people tend to misunderstand and to carry in other directions without answering the question. Moreover, we were very aware of the privacy of banks, meaning that a survey would guarantee anonymity however, fishing for answers might be possible but harder to do than through a qualitative although there is a high privacy policy. As this study is relatively innovative we want to make a start-pitch with results that in the future can be studied through a quantitative method in order to generalize. We start with the small and deep and give possibility for others to continue with the big and general picture.

To obtain the data, nine factors were selected based on the previous studies of Hackbarth (2009), Jiménez et al. (2006), Piotr and Dorota (2013), Choi and Smith (2002), Petersen and Rajan (1994), as well as Berger and Udell (1995) and three investment scenarios were structured to explore both what factors the business advisors consider important in the decision-making process, as well as to see if their way of making investment decisions is resembling to a real option way of reasoning.

The interviews were conducted on nine different people (eight business advisors and one customer service manager) from four different banks, where everyone in one-way or another work with investment decisions towards SMEs. In other words, the respondents did not specifically have to be business advisor, the requirements were that they work with investment decisions towards SMEs, in order to answer our questions. The aim of choosing respondents from different banks was to increase the reliance of the data and to ensure that the results we got not only depends on how they work and reason at one particular bank, which is also the reason of why interviews were conducted on more than one person from the same bank. In one case we performed interviews with business advisors from the same bank but in two different cities, trying to eliminate that our result only depends on how certain business advisors or banks reason regarding which factors are decisive during investment evaluation, and the real option approach. Thus, we gained the opportunity to illustrate if there were any similar or different patterns in their ways of reasoning in the decision-making process. Therefore, in line with Yin (1993), we argue that although this method does not allow for any statistical generalization, it consents an analytical one.
To select the respondents included in this study we first decided upon which banks to contact, we selected banks in the southwest and northeast of Skåne\(^9\) due to geographical convenience. An aim was a mixture regarding the size of the banks i.e. both larger and smaller ones, again to avoid that the results solely depend on the boundaries made. Once decided what banks and in which cities, we called or personally contacted the banks asking if anyone were interested to participate in our study, with the requirement that they either were business advisors and/or that they were working with loan decisions towards SMEs. In other words, it was a conscious choice which banks were contacted, the respondents were on the other hand elected by the contact persons of the bank, thus, nothing we could influence.

Our sample selection consists of both male and female advisors with varied experience in the field. Having a diverse range of experience is of interest in this particular study since interviewees with higher experience may have a routinized way of working and may have developed own stages of essentiality in their respective evaluation processes, whilst those with lower experience might not be so institutionalized into profession and may use slightly different approaches. Moreover, experience and positions of the interviewees gave us more developed and increased reliance of the answers, due to the propagated knowledge that many of them had gained through the years. The interviews were conducted during a three-week period in 2014, took place at each of the advisors offices and lasted between 40-60 minutes. In order to ensure that our respective personalities did not affect the analysis of the answers, both conducted the interviews together whilst we separately took notes, which were then compared.

21 questions were initially drafted, including questions about the business advisors experience, their ways of evaluating credit appliances, their space of own decision-making and their management of risk evaluations and flexibility in order to try and capture the real option thinking. Follow-up questions were developed if needed during the time of the interviews, and the interviewees’ responses were recorded, transcribed word-for-word and summarized. In all, the transcriptions amounted to 58 pages of single-spaced text. The construction of the interview guide is as follows; firstly, we gathered data regarding the respondents experience as well as their position in the bank. Secondly, we aimed to capture each bank’s process of investment evaluations toward SMEs, by asking the advisors to freely describe this process as a whole. Thirdly, different investment scenarios were presented to the advisors, with the hope that their answers would give us an indication of whether a real option perspective was considered in the

\(^9\) Skåne, the southernmost province of Sweden.
decision making or not, and lastly we tried to capture what factors are of importance during an investment evaluation\textsuperscript{10}.

In the first more general situation presented to the advisors, they were asked to describe the lending process over the years to a specific SME customer they have a long relationship with, as we wanted to see which factors they put focus on when freely describing an investment evaluation process as well as whether the adviser consider a real option reasoning in their investment decisions. The second scenario involves how they act if a new SME-customer came to the bank presenting a business idea that (s)he (the customer) thinks is really good and asks for a relatively small loan now, whilst (s)he wants a promise of a larger future loan. Our aim here is to capture if the advisors way of making this type of investment decisions indicates that they use a real option approach, as this question observes how they evaluate future investment opportunities and if they consider reevaluating the investment decisions over time. During the last scenario, they were asked to consider how they would act if they personally think an SME has a potential business idea, but at the same time they feel that it is too risky to make a large investment at once. With the aim to explore how the advisors reason when it comes to the uncertainty aspect.

Our interview questions did not consist of the term real option, except in the final question, due to the notions of Fichman et al. (2005), Kogut and Kulatilaka (2004), Collan and Långström (2002) and Busby and Pitts (1997) that investors might use, and sometimes are using a real option approach without being aware of the actual concept. An additional reason of why we chose to omit the term real option was due to the fact that we wanted the respondents to answer the questions without knowing exactly what we were after, or which context we had chosen to adopt. Further information about Swedish laws, regulations of business advisors and policies were collected through governmental online sites.

Finally, we interpreted the findings in terms of the data collected in the field research. However, as Yin (1989) claims, there are no exact criteria of how one should interpret these types of findings, thus, it leaves room for a researcher to create own criteria. Below, the two figures are presented to give a vibrant picture of the respondents as well as show their respective fictive names (due to guaranteed anonymity), which they will be referred to during the result section.

\textsuperscript{10} See appendix 2
3.2 Analyzing data

Our aim when analyzing the data was, as previously mentioned, to explore which factors have the greatest impact on the investment decision-making by banks, and to see whether or not financial business advisors are using a real option perspective, or something resembling to a real option approach when making decisions.

The analysis was carried out by sectioning of all the factors and questions connected to each factor, looking at them one at a time, analyzing what or which factors that were considered to be important when deciding to grant a loan, and whether or not it could be considered to be a case of real option evaluation. After the factors were analyzed, comparisons were made to see

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11 Amanda Smith will be referred as a business advisor in the study as she is the only one that works with SMEs without the business advisor title. To facilitate the flow of the results we refer to her as well when we make statements regarding “all business advisors”.

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Figure 3. Summarized interviewees number, position and experience

<table>
<thead>
<tr>
<th>Bank</th>
<th>Position</th>
<th>Amount</th>
<th>Experience/years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank 1</td>
<td>Business manager advisor</td>
<td>4,7</td>
<td>2</td>
</tr>
<tr>
<td>Bank 2</td>
<td>Business advisor</td>
<td>3</td>
<td>14,15,6</td>
</tr>
<tr>
<td></td>
<td>Customer services manager</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Bank 3</td>
<td>Business advisor</td>
<td>2</td>
<td>½, 2</td>
</tr>
<tr>
<td>Bank 4</td>
<td>Business advisor</td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>

Total interviewees/mean year experience: 9 8

Figure 4. Summarized pseudonyms of the interviewees and education.
if it was possible to discern any patterns. Three comparisons were made, one where all respondents were compared with each other in order to see how many of the respondents use a real option perspective and what or which factors that are considered to be the most important in the decision making process. The next comparison regarded if there was a possibility to distinguish if the factors and the usage of real options was dependent on which bank we were examining. Moreover, a third comparison was done to see whether there were any differences in the use of factors and real option approaches between the respondents in the same bank.

After analyzing and comparing the factors and usage of real options, no new categories appear thus, we categorized the factors into four different categories, 1) environmental factors: market condition, interest rate, 2) customer specific factors: default risk, collateral, repayment ability, 3) lender specific factors: optimism/overconfidence, interest rate and 4) loan specific factors: maturity and size. In two of the categories interest rate was placed in order to provide two sides of what can influence the rate, at one side by the market and its condition and at the other side by the bank and their interest in gaining or protecting themselves against risks. We believe that we found the most suitable way of presenting each factor by placing them in different categories in order to facilitate the understanding throughout the study. To further clarify our study we asked each respondent if they thought that loan granting to SMEs was an investment, which all confirmed. Thus, we want to be very vibrant by arguing that business advisors’ decisions whether to grant a loan or not can also be seen as whether to invest in an SME or not. This was in fact proven during the interviews where many of the respondents referred to the loan granting as “the investment”, “to invest” or “investments”.

3.3 Credibility

In order to get as reliable and useful results as possible we made sure to create a high degree of validity and reliability in the study. To ensure reliability and validity in a qualitative research, trustworthiness is crucial (Golafshani, 2003), as well as having a model and research design that successfully can capture the explanation of what is being studied (Bryman & Bell, 2011). In order to make sure that the respondents answered our questions truthfully as well as felt increased comfort and security during interviews, total anonymity has been applied both in terms of the banks’ and the respondents’ names and locations.

As previously mentioned we used a qualitative research method as the ability to get a good overall picture increases with interviews, hence, they are more profound, and the chance of capturing details is greater. As an interviewer you also have more control, in the sense that you
can ask follow-up questions, which has a positive impact on the validity (Denscombe, 2011). Thus, throughout the interviews, the respondents were given the opportunity to further illustrate what they meant by their statements, which gave us a better chance of elaboration. In some cases, statements regarding SMEs were made by us with the aim to get a confirmation or a non-confirmation, which facilitates our discussions in the study. However, it is also important to keep in mind that when conducting interviews, the so-called “interviewer effect”\textsuperscript{12} may occur, which also can have an influence on how the respondents choose to reflect the reality, and thus the validity and reliability of the results.

To increase the validity further, we chose not to disclose the interview questions in advance, as we wanted spontaneous responses from the respondents, even though, we might have gotten more deliberated answers if the respondents had been given the chance to prepare themselves. On the other hand, prepared answers can lead to doctored responses, thus, reflecting a picture of the reality that is not true. One must also be aware that as soon as someone translates the reality into words (as in interviews), a reduction and selection is being made around what is being presented, which on the other hand can have a negative impact on the validity.

"The reality that we can talk about is never reality itself" (Werner K. Heisenberg).

Moreover, as the results were presented we put focus on being very fair when interpreting the answers as well as with high ambition to uphold the truth, by trying to be as accurate as possible with the presentation of the answers. Similarly throughout our discussion and analysis communicative validity was achieved by focusing to maintain fair interpretations of the answers by holding back our own pre-understandings of the topic as well as making sure that the results and discussions were based on the answers of the respondents. This through continuously reading and checking the transcripts. Moreover, all statements were treated equally by bringing up both sides of their stories. Furthermore, an independent researcher with an education in economy was given the opportunity to interpret the answers by reading the transcripts (without revealing any anonymous facts about the respondents) of the interviews and we found that the parts brought up as essential by us, was around 90 per cent the same as the parts brought up by

\textsuperscript{12}“Interviewer effect, the possible distortion of the answers at an interview that depends on the interviewer’s person, such as that the interviewer has a certain attitude or show what he thinks on any subject.” (Nationalencyldopedin, 2014).
the independent researcher. Thus, we believe that we have held an impartial and rational way of analyzing the interview answers.

4. Results

4.1 Introduction to empirical evidence

Although banks in Sweden stand to follow many laws, regulations and policies, the law leaves room for own interpretations, meaning that in a close accordance to the law, banks are given the opportunity to form their own routines as well as policies and regulations. As they are given this type of freedom to interpretations, illustration of more than one bank became of interest to us. Thus, the respondents from the four different banks were asked to present their way of working as well as their interpretations and considerations. The disposition of the analysis is as follows, we first present a general view of what our respondents consider during an investment evaluation of an SME and the factors they think are crucial for the decision making. This is followed by a section were we analyze whether or not the respondents way of reasoning in their investment decisions is in line with a real option perspective. Lastly an analysis of the results regarding the different factors divided in their categories of this particular order, customer specific factors, environmental factors, loan and lender specific factors and ended by the relationship factor, is presented. In all sections we will discuss the interpretation of a real option perspective. Our aim with this study is to explore which out of the most commonly used factors in evaluation processes of investments that are of highest importance for banks. Furthermore, we will also determine whether banks use a real option approach in their decision-making and analyze their processes according to the real option theory. As our results have provided a diffuse way of interpreting whether real options are used we have chosen not to draw a line, instead we analyze from two different perspectives and named them real option thinking and real option doing. 1) Real option thinking, refers to if they think according to what the real option theory suggests and whether the advisors handle their possibilities to invest according to the theory whilst, 2) real option doing, refers to if they calculate the risk and the cost of present and future value according to the suggestions of real options. Thus, this perspective is actually putting a price to the option and to evaluate alternatives and calculate in accordance to real option approach. Based on these two perspectives we have been able to provide a different way of analyzing results of a study and leaving it for other studies to further expand on it. Moreover, as we cannot make a definite stand if real options are used due to the fact that we argue that investors have to use both perspectives to be claimed as users of real option approach we cannot analyze the common factors through
a real option lens, however, we manage to provide a clear view of which factors are of highest impact during the evaluation process of loan granting and in what way real option thinking make some of them less important than others.

4.2 Overall results

According to all respondents, it is of importance to meet the customer/s before the process of a loan evaluation begins. The aim of a personal meeting is according to the majority of the respondents to clarify the customer’s reason and goal, and to ensure that their financial condition is in order before granting a loan. All of the advisors mention that calculations in one way or another are essential during the evaluation, such as calculations of risks, and possibilities. The recurring factors described by the advisors’ as important to look closely at when making loan decisions regarding SMEs were; repayment ability, collateral, cash flow analysis, annual reports, budgets, financial statements, the aim of the credit, the history of the company as well as forward looking forecasts to see if the business is sustainable both now and in the future (has a sustainable growth opportunity), as well as the customers own effort and commitment to the project. Smith provides a summarized picture of why these factors are of importance when granting a loan:

“We are making all loan decisions based on the repayment ability. The customers need to be able to show some results, they must concretely demonstrate their forecast of future turnovers and their results, as that shows if they are able to repay the loan they are about to take”

4.3 Investment valuations

Since there are no exact definitions of what real options really are or what actions that defines a real option approach, as well as it being a term that not many are aware of, we choose to present the ways that business advisors evaluate investments (i.e. loan granting) in order to attempt to discern whether the advisers use a real option reasoning during investment decision-making (i.e. loan) decisions regarding SMEs, this based on previous definitions of a real option approach in this study.

The respondents were given the possibility to describe the evaluation process of investments to a specific SME-customer. All respondents show that information gathering is of importance,

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13 Investment evaluation, or investment decision will as we continue refer to the loan evaluations of advisers towards SMEs, hence, to prevent confusion we use only the expression investment decisions, investment evaluations or investment decision-making.
such information gathering may be both historic and through time for future need. Thus, they describe that although a loan already is granted, yearly updates are done in order to keep updated if the situation of the SMEs have changed either within the company or externally that might affect the desirability of the investment. According to Smith, Harris, Spector and Lane future analyses such as how the market of the specific company will turn out as well as controlling cash flows is done as they wish to know the stability of the company before they make additional investments or decisions whether to continue to invest in a company or not. Such information gathering is amongst all, the behavior of the company, changes in boards, tax payments and debts (Smith). Based on the information gathered by business advisors the advisors then reevaluates the initial investment and decides either to continue to invest or to abandon the investment depending on the desirability of the investment:

“We need to reevaluate our decision all the time, new things happen all the time, which changes the conditions on the market” (Cooper)

“You have the right to change your credit decisions on very short notice. You can really abandon an investment (i.e. loan decision) within two weeks, if the desirability of the investment changes due to external factors. If we suspect that it is not going well anymore, we have the right to abandon the credit “ (Bright)

“If the companies are not performing or behaving well, then we make new decisions and gather additional information more often […] but even if they are well behaved we still update the decisions at least yearly.” (Harris)

“If we make a decision it maybe lasts for 1 or 1,5 year, but since it appears new changes all the time, we need to make the decision process an ongoing process to adapt our investment decisions to the changes that take place.” (Bright)

These suspicions that the respondents are talking about comes through additional information gathered by the advisors. Thus, as the traditional methods like NPV does not leave any room for such flexibility i.e. options to reevaluate the investment decisions based on additional information (Grayburn, 2012), one automatically argue that the advisors use what previously was described as a real optional way of thinking. However, to further assure this we analyze the results and these show that all respondents fail to actually price the future. Thus, the advisors do not do any calculations in accordance to the real option approach, a result that indicate that the advisors do not use a real option approach when evaluation their investment options. These mixed results thus indicate that the advisors do not use the real option approach as a whole concept, hence they prepare for the future and use the flexibility to change their course if needed based on new information but they make more decisions based on historic numbers rather than
calculation based on the future. In summary this indicates that, due to the fact that our respondents base their reevaluations on what is coming, they do not price the future. They use traditional analysis to evaluate key ratios and do not grant a second loan without checking the progress of the company at a certain time. This means that although they use a “wait and see”-strategy to their investment decisions towards SMEs, they fail to price the future and instead are prepared to abandon a second loan if the future shows results to their detriment. However, we argue that the flexibility of being able to react to new information as it arrives and to effectively respond to changes in the market, reevaluating the investment decisions as the respondents do, would not be possible if it was a “now or never” approach (NPV) or DCF method that was used by the advisors, due to the irreversibility of these methods (Grayburn, 2012; Arnold & Moizer, 1984; Pike, Meerjanssen, & Chadwick, 1993; Vergoossen, 1993). Thus, our results indicate that the business advisors have a real option way of thinking, meaning that they have elementary of real option approach, due to their possibilities to withdraw and make changes during investment. Hence, we argue that the ratios calculated are not the only ones that play an efficient role in the investment evaluation process of banks. Moreover, according to all the respondents it is difficult to ensure what is going to happen in the future, whereupon they never give any promises about future loans to their customers:

“If a firm wants an initial loan now and knows that they need additional loans in the future this is nothing the advisors can evaluate or consider until that day arrives.” (Smith)

We argue that if the respondents had used a real option approach they would be able to either decline future loans or give promises, as they would have calculated a price of the future, incorporating the flexibility. However, the results show that future loans are never promised which may indicate that that they have not calculated on what might happen in the future, hence they do not analyze the future in line with a real option approach. Harris and Smith both explain that they make decisions in stages. Thus, decisions regarding the first loan are made, and when time comes around for a second loan they then decide whether they want to continue to invest or not depending on the desirability of the investment at that point. In other words, they do not calculate the value on future events, they only act depending on what happens in the future when it happens. Hence, they do not put a value on future events. Smith continues:
“The second time you have more “flesh on your bones”, the company has been running for a while and then you know a little bit more, you have more information about the project that you can add to you decisions”

According to Adner and Levinthal (2004), a real option approach is applied in the decision-making if the investor after the initial investment uses a “wait-and-see”-strategy, awaiting whether or not to continue to invest based on future information that may indicate different risks and opportunities, or if the investor chooses to stage the decision so the investment can be revised sequentially, where one can decide either to proceed to the next stage or to abandon the investment. Harris, Smith and Cooper argue that they do not want to make any decisions about future loans until they have more information about future cash flows, turnovers and profits. These are factors that show indications of whether it is risky to continue to invest or whether there are potential gains to be made, thus information that is not available until later in time. Thereby, one way of gaining more information is to make the loan decisions in stages, as our respondents do (Harris; Smith).

However, although these ways of thinking are in line with a real option approach, the approach gives space to analyze and price the future, which again the respondents do not indicate that they do. We can however establish that the majority of the respondents have certain amount of real option thinking without engaging in the approach fully. If a real option way of thinking was not applied, this information would not have been able to be considered in the decision making process, as the more traditional investment valuation methods do not leave any room for revising investment decisions based on additional information (Park & Herath, 2000). Thus, their ways of reasoning regarding future investment opportunities follows a real option way of thinking as they react to new information as it arrives and respond to changes when they occur.

However not all respondents agree upon the future analyzing. Contrary to Harris, Smith and Cooper, Bright states that his bank does not make any forward-looking decisions based on future occurrences, “we are looking at the present situation”. Thus, we illustrate that this bank or at least Bright, uses an approach that is more towards a “now or never” thinking, rather than a real optional. If the present state of the investment is not favorable, Bright’s answer implies that he will not consider realizing the investment, not even in the future, as his way of reasoning indicate that he bases his decisions solely on the current situations. Grayburn (2012) strengthens our arguments by claiming that this is what one does when taking on a “now or never approach,
i.e. once the decisions are made, there are no opportunities for the investor to react to new information or change the course. Furthermore, Harris argue that it also is important to form an opinion about the company’s business idea already from the start, because if they feel doubtful about it, they might not even get involved in the first investment. Correspondingly, Spector stresses, “if I do not believe in the business idea, they do not get the initial loan either”.

In addition to belief in the business idea Harris, Smith and Cooper argue that they want to see achievements from the company in order to continue to invest in the company in the future. Yet, if they believe in the business idea and go through with the investments, promises are still never made about future loans and the loan process is redone when it is time for the new loan request (Harris, Smith). Moreover, Cooper states:

“If a company shows me a forecast of how much they might have in turn-over in three years time, how much profit they believe to have and how their cash flows might look, and asks if they can borrow this amount of money based on that. My answer would be: Yes the probability is quite high, but we have to wait and see until that day comes”

Cooper continues:

“[…] to make the first investment and then not follow through with the second one is what the companies are trying to avoid, they want an assurance but I can never ensure what is going to happen in the future. I have to look at the situation as of today, and of future cash flows. But if their forecasts and budgets not follow what was predicted, then I cannot stand by any promise.”

When the advisors were asked how they would act if they feel that there is a potentially great investment to make but a high degree of uncertainty regarding the risk, the general response from the majority of the respondents was that they would demand a higher deposit from the owners and find out how much the owners believe in their own business idea. Thus, customers should be willing to invest their own money if they really do believe in their own business. Smith stresses: “the higher the risk is within a project, the higher amounts of deposit is required”, which Spector and Baker also emphasizes. Furthermore, Wood explains that it is not uncommon that customers present great ideas and budgets, but when it comes to the question if they are willing to vouch for their own business the answer is often no. She continues:
“Why should we stand all the risk, when the customers are not prepared to take any risk of their own? It is very important that they show us that they have the will, that they believe in this, and are willing to invest themselves.”

Another proposition by the majority of the respondents, as a way of spreading the risk is namely through Almi and BKN, (state enterprises that offers venture capital and guarantees). This due to the fact the majority of the respondents point out that they are not private equity firms or venture capitalists, and thus cannot take very large risks (Bright, Baker & Lane). Bright declares the following:

“We are not a private equity firm, our business concept is to lend money at a low interest rate. If you then lend money at a 5% interest, you cannot afford to lose any money on it really. If you on the other hand lend at a 15% rate, then you have the margins to lose some money once in a while. There are others who do that, but it is not what we do. We can only lend money when it is fairly safe.”

Another suggestion to solve the situation with promising but risky investments was given by Cooper and Spector. Both argue that one can divide the investment and make decisions in stages or different steps, starting with a small part of the investment and then agree upon what conditions must be met in order for the business advisor to continue to invest. Hence, it is consistent with the real option theory, and the option to stage the investment previously described by Adner and Levinthal (2004). Cooper and Spector both describe the option to stage an investment as a valuable option, as it gives them the opportunity to continue with the project or abandon it at any given stage. Furthermore, Spector argues that staging the investment gives the opportunity to see whether or not a company can deliver, and if they can and he feels comfortable, then he will be ready to move on with the next investment decision. Cooper continues by stating that if she really believes in the idea, she is ready to take the risk, to the extent she is allowed, if there is a cash flow and repayment ability covering the risk. In other words, they are both prepared to continue to invest as long as there are favorable conditions, which is consistent with the structure of real options (Adner & Levinthal, 2004).

However, regarding the risk of a project, Cooper carefully explains that:

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14 Almi Invest is a private equity firm with the role to be complementary to the market and invest where the risk is high and the availability of capital is in short supply. Almi Invest invests in companies with scalable business ideas and opportunities for long-term growth (Almi, 2014).

15 “Statens bostadsrättnämnd” (BKN) renamed “Boverket” in 2012, is responsible for the central administration of state aids and grants. http://www.boverket.se/Om-Boverket/
“I am not allowed to take risks on a business that does not exist yet, i.e. they have a business idea that is not running yet. But sometimes I have to do that, otherwise I might lose a potentially great customer […] but strictly viewed, I am not allowed to invest in any risky projects at all.”

Thus, we argue that Cooper considers the uncertainty prospect of the investment, in relation to the profit that could possibly occur, which is in line with a real option thinking (Adner & Levinthal, 2004). The need of turning down projects because of too high risk is in vengeance with the uncertainty of losing a significant customer in the future. This gives an explanation that is of a deeper understanding than just ”now or never” approach. The business advisor might feel that there is room for a sequential investment, giving the SME just enough funds to develop her/his/their business idea, in order to gain additional information and wait and see if the outcome is favorable or unfavorable, and then decide whether it is worth continuing to invest or not. It is an indication that banks exploit investment opportunities i.e. trying to distinguish between losses and gains (Busby & Pitts, 1997; Trigeorgis, 2002).

Yet when we analyze if they calculate the stages according to real option approach we detect that they again fail to do so, as their calculations are only based on the gathered information of when it is time for the additional investment. Thus, the advisors do not price what would happen if they wait until new information arrives or if they abandon it. Instead they think of a more “that day, that pain”. Thus, the advisors base their decisions on the information gathered and do not calculate for future gains in the same way that the real option approach suggests. Moreover, the advisors show a high potential of using real option approach as they already have the flexibility and the thinking of real options. Additionally, banks have this specific opportunity as they are given the freedom of own interpretation of the laws and regulations in a way which helps them abandon or take certain risks in order to maintain a customer. However, based on the given results we cannot claim that business advisors in banks use real option approach during investment evaluation of SMEs.

In accordance to the notions of previous studies (Busby & Pitts, 1997; Brach, 2003; Collan & Långström, 2002; Fichman et al., 2005; Kogut & Kulatilaka; 2004), that many are unaware real option approach although they use it, our respondents show great unawareness of the real option approach as well as they have never heard of real options. However, different from others, we also argue that they do not use it. We assumed that banks would be unaware as they in the beginning showed a lot of similarities to real option approach but did not show knowledge of its existence. However, at a closer look they were missing the calculating part of the real
option approach which allows investors to know whether an investment is rewarding or not. This therefore drew us to the conclusion that they do not use the approach, instead only the thinking which makes them very able to implement the real option approach to their evaluation methods as they have all the possibilities to do so.

4.4 Comparison between respondents and banks

Our results illustrate that all the respondents use characteristics of the real option approach in their evaluation process of investments to SMEs, some more than others. In other words, some of the respondents seem to use a real option way of thinking in all their decisions, other just in some cases. However none of the respondents seems to be using the real option way of operating i.e. implement actual calculations of the value as an option holds. Thereof, we illustrate that all the respondents involved use a real option approach in their decision-making when it comes to their behavior and way of thinking. They did however not use the real option approach in terms of the actual calculation of the option value i.e. no proper calculation of the actual value that the option adds to the decision was addressed by any of the respondents, hence our results are mixed.

An analysis performed regarding whether there are any differences between the banks and their use of real options show no differences between the banks. Hence, since all respondents used the real option approach in a similar manner no obvious differences can be found between the banks. However, the one bank that seems to use a real option approach less often than the others is bank number 4. Yet, it is difficult to draw any conclusions about this since Baker alone represented this bank. Furthermore, when a final comparison is done, i.e. whether it is possible to discern any differences between the respondents in the same bank, only one bank stands out namely bank 1. Spector and Bright both use real options in their decision-making processes, however Spector uses it to a greater extent than Bright does i.e. Spector uses a real option way of thinking in more of his decisions than Bright who seems to use what is more consistent to a now or never approach in some situations.

4.5 Factors of evaluation

As the respondents indicated that a real option approach was not used during evaluations, an analysis of the factors cannot be provided through a real option lens. However, we manage to show results through comparing all factors as we aimed and to show that it is indeed important to compare factors in order to determine if a factor is of relevance and important to business advisors, in our case, in banks during investment evaluation process.
Among the factors of importance during investment decision-making, one factor stood out, repayment ability, a factor mentioned by all of the respondents as the most important factor before granting a loan to SMEs. Previous studies argue that repayment ability of the borrower is the most important factor to consider in investment evaluations by the bank (Tadanobu et al., 2011; Sveriges Riksbank, 2001), in accordance, our respondent Spector stresses:

“IT is absolutely the most important, we have to understand the organization […]. If we do not believe in it, I will never grant a loan based only upon collateral. You can offer any collateral I would not grant a loan only based upon that. It would be wrong against the bank, create more workload and be wrong against the customer […] Collateral is always subordinated the repayment ability”.

Similarly, Cooper and Baker claim that the repayment ability is the decisive factor and that collateral without repayment ability would not be possible in their world, “it is more a second way out” (Cooper). If a loan is granted based on the fact that the customer offers collateral, without having repayment ability, it creates problems for the bank if it turns out that the customer could not repay the loan, as the bank first need to realize the collateral before getting any money which is time-consuming (Bright, Cooper). Cooper also explains that it is against the banks business concept to lend money without ensuring that there is an ability to repay:

“Can you not see that there is an ability to repay the loan, the whole concept of our business falls apart, we live on investing money and then get them back”

In line with this, Zech and Pederson (2003) have shown that if SMEs have weak repayment abilities (e.g. a high likelihood of default) the risk of not being able to repay the loan is high, thus, is reason enough to not grant loans to SMEs according to law. Moreover, Evans argues that the cash flow of SMEs is the heart of the credit granting, through which you notice if the SME has repayment ability, which is in line with Tadanobu et al. (2011) who present liquidity as a measuring factor of repayment ability.

Although repayment ability is considered to be of higher relevance during investment decision-making towards SMEs, all of the respondents stress the importance of collateral, as it can be a way of hedging against risks. When the respondents were asked how they would hedge against risks, the majority claims that with higher risk, more collateral should be pledged. Lane explains:
“In those cases where we demand collaterals whereby the owner has to vouch for his/her business, the survival rate has shown to be much higher for these companies, due to the fact that the personal finance is something close to heart, meaning that you are prepared to fight more in order to save your company”

This is in accordance with the statements of Sveriges Riksbank (2001), that collaterals can reduce losses in the event of default, due to the fact that investments without collateral assurances are estimated to fall harder. In agreement with Gorman et al. (2005) who claim that collateral may not always be as useful, Wood and Spector explains that collateral for instance is not always required when it regards investments of a smaller size, or in cases when a company has extremely low amount of loans or is in need of a loan for a shorter period of time (Cooper).

Moreover, one of the biggest problems of using collateral is connected to the maturity of the loan i.e. the timeframe, meaning that when the collateral needs to be realized, the value might not be as high as expected compared to the market, thereof the risk of not getting anything may be higher than assumed (Binks & Ennew, 1996). Bright explains that it is one of the risks banks are facing when pledging collateral, but it has much to do with what type of collateral you are acquiring:

“If you for instance would take inventory as collateral for a loan, the risk is much higher because the day when the company might default, there might not be anything left in stock. That is why we always acquire a nominal collateral and puts the repayment ability before collateral.”

Thus, although previous studies on collateral requirement in banks stresses that it is of high importance our results show that in might not be so in many cases. We argue that in compare to repayment ability as well as the factor relationship our results indicate that requirement of collateral and the importance of it is now very high, in some cases even not pledged.

Additionally, Harris, Spector and Cooper explain how they, if there is a high degree of risk within a credit decision, want to see the owner/s of the company to take on a larger share of the risk themselves to show that they believe in, and are willing to invest in their own business:

“I am not interested in doing business with a customer who is not willing to take some risk themselves, I am not the only one who is supposed to take on the risk, if that is the case then I am out” (Cooper).
“If the owners are not willing to do that, then I am not prepared to contribute with my part either. If the owners on the other hand are willing to put in more equity to cover the risk, then I am more positive about it” (Spector).

This indicates a beginning of building relationships with the SMEs meaning that although they believe in the customer’s business idea they need to be convinced that the customer itself believes in it to.

4.5.2 Environmental factors

Default risk, market condition and liquidity are three factors mentioned having a link to each other by the respondents. Spector argues that a SME with high liquidity runs a better opportunity to get acceptance from the bank, even though its idea have higher default risks. Studies performed show that market condition is essential due to enlarged competition by larger companies, which in turn decreases the opportunities for SMEs to occupy any market (Duan et al., 2009). Spector continues similarly by explaining that one factor, amongst others, that allow banks to accept higher risks is the market condition of the SME, meaning that if the SME is niched, has developed reliable customers, have pricing power or possesses a patent, higher risks can be taken by the bank. However, Baker continues that during years of recession SMEs have had a very tough time to recover, as well as banks withdraw possibilities of financial aid.

The majority of the respondents feel that the business cycle in one way or another has an impact on their decision-making. The higher the uncertainty there is in the market, the more important it is for the bank to do more thorough analysis and demand higher deposits from the customers (Harris). Bright continues by stating that in a recession banks are more careful with the credit requirements, but in a boom banks are handing out money and the prices are falling. He further states that:

“It is like the stock market, there is a pessimism that perhaps is exaggerated when it is going bad, and an optimism that is exaggerated when it is going well. When it is going well you want to lend out money and get as much return as possible, but when it is going bad you are more careful as you do not want any credit losses”

Moreover, in order to compensate for the higher risk during unfavorable market conditions Bright states that a higher interest rate is required from the customer, due to the fact that it gives the bank an opportunity to protect themselves against default losses by gaining interest.
Likewise, Haekal (2013) point out that a way of compensating the decrease in purchasing power of the money repaid in the future, banks ask for higher interest rates. Furthermore, Bright as well as Wood mention the option to decrease the risk by putting a demand on higher own effort, hence, more money in percentage invested by the customer than the normal amount of 10-15 per cent, thus lower rate. This increases the SMEs ability to repay their loan, and for the bank to be assured that they can and thereby decrease the bank’s risk. Thus, banks are not forced to take out a larger interest rate to compensate the risk. However, according to credit law in Sweden, 20 per cent is predicted reasonable amount as own effort, thus, the results show that there is flexibility in the decisions.

4.5.3 Loan specific and lender specific factors

Previous research has shown that the maturity as well as the size of the loan, affects the decisions that are being made by banks in terms of the conditions of the loan. Pereira and Armada (2003) and Stanton (2002) explains how most lenders demand higher interest rates and collaterals, depending on the size of the loan as well as the life of the loan (maturity) as it causes a higher risk for the bank due to future uncertainties. Similarly, Spector argues that these are factors of influence regarding investment decision-making and stresses:

“The larger the loan is, and the longer maturity it has, the more risk it concludes, and that is why we demand higher interest rates as well as increased collaterals for such loans”

Furthermore, it is also argued that banks might improve profitability by developing a good relationship with those firms that issue loans of larger size (Stanton, 2002). Correspondingly, Baker believes that it is necessarily. He continues by saying that they do not always demand collateral for all their loans, it has much to do with the counterparty. He further explains that he is currently deciding upon a loan request regarding a large amount of money with a maturity of three years, where he cannot work with collaterals. “Some companies, one cannot ask collateral from, then you are out” (Baker). Baker continues by saying that these are SMEs that the bank has clear opinions about and like, SMEs that have such good prerequisites, that they can go to which bank they want and get a loan there instead. It is thereby important to have a good relationship with these customers because they would otherwise go to someone else, and then the bank loses a major customer, thus, profit.

16 Konsumentkreditlag 2010:1846.
Bright on the other hand describes how one can decrease the default loss by forming special contracts with those SMEs that are asking for larger amount of loans, but are more uncertain. Contracts that might restrain the firms form paying dividends if the conditions get worse e.g. if the solidity falls under a certain percentage. Using such contracts in combination with continuous follow-ups, information gathering and risk analyzes made in time, is a way to protect the bank against uncertainties.

Although the abovementioned risks exist, business advisors sometimes tend to overlook them due to characteristics like optimism, a quality that makes favorable events sound more likely to occur then they actually are. Thus, leading to an investor that is more overconfident in his/her investment decisions (Lambert et al., 2012). Previous studies have found a positive correlation between the amount that is being invested and the degree of overconfidence the lender has (Odean, 1998; Glaser & Weber, 2007; Lambert et al., 2012). In other words when an investor is optimistic and have a strong own belief, this could affect his/her decision making given that they have some sort of managerial flexibility. Thus, when questions are asked regarding if the business advisors own belief in a SME-project can be a determining or influential factor for granting a loan, the majority of the respondents answers yes. Thus, a majority of the respondents claim that their own belief in an idea provided by an SME can influence the evaluation of the decision-making as well as the final decisions.

However, Lane, Harris and Smith points out that even though own belief could be a crucial factor, decisions are never made alone but always made in groups of at least two. Thus, even though the business advisor is very positive to the idea presented by an SME, (s)he must have at least one more colleague who agrees, otherwise the decision will not go through, as they always give the customer decisions made in consensus.

Still, the respondents embrace the fact that their belief and interests are of matter during investment decision-making, thus, when the question asked whether their own belief could determine or influence the rejection of a loan, although other factors suggest that the company should be able to get a loan, the majority answers yes once again. Some of the respondents, however, point out that if they say no as a result of belief “then it is usually because we do not believe in the person behind the company, or do not have any confidence in that person” (Harris).

As for space regarding decisions, Cooper shares similar opinions as previous respondents, however, she adds:
“We do not have any space for own decisions, we do not take any decisions alone which I think is great due to the fact that it should not only be my feeling that decides. But it is also a form of quality review that someone from outside ensures that you are not manipulated or get stuck in one track, because if your mind is set on that something is good, then it is easy to forget to look forward”

Thus, it is evident that such space to own decision-making may lead to overconfident decisions, meaning that financial advisors may overvalue a firm due to their optimistic view on them (Lu et al., 2005). Hence, due to the fact that decisions are made in consensus according to our respondents, we believe that the risk of acting optimistically in banks is decreased, i.e. there is a higher risk that one alone may act on own welfare thus, optimistically, rather than two together. Moreover, although several authors forwards that banks interpretation may differ due to the opportunity given to form internal guidelines and polices (Chen & Kao, 2011; Badulescu & Nicolae, 2011), our results show unanimity in the interpretation of decision-making in consensus.

Conversely to the majority, Baker explains that he thinks the amount of responsibility and level of authority of decision-making mostly depends on what kind of manager one has, he continues:

“I think that today the space has curtailed a lot and that the climate in the bank is a bit tougher. That is how I perceive it. I have become a bit more restrictive to making decisions, that is why I would like to become a manager instead […] but you will always have someone who is head over you that has opinions. It does not matter how high you will get, there is always someone who is going to question the decision you make […]”

Moreover, it is essential to mention that although the level of optimism is decreased, there still exists a chance of it occurring. In many cases optimism occurs in cases of asymmetric information (Perloff, 2011). Thus, Cooper explains that information and historic of the SMEs are of importance to make proper decisions. However, giving the fact that SMEs are not forced to provide information in the same extent as larger enterprises (Berger & Udell, 1995), it is costly (Coase, 1988) and provides a greater risk (Storey, 1994).

According to all respondents, a way of reducing such risks and costs, is through developed relationships with SMEs. Cooper argues that there is a difference between an already existing customer within the bank, which is well known, and a new one. Cooper continues by claiming that after an experience of ten years, gut instinct is used a lot, yet, having a developed relationship to an SME leads to less time spent on seeking information, in comparison to a new
customer. Similarly, Spector argues that due to the fact that the bank has a relationship to an already existing customer, they have more information to base their decisions on.

However, when asked if relationship as a factor matters during evaluation of investments, Cooper doubtfully answers no, due to the fact that there are other more important factors, however, states that it is not all black or all white, meaning that sometimes it can and sometimes not. Cooper continues by saying that although there is an existing relationship with the SMEs, the proportions of the investment asked is of essentiality to take in hand before final decision-making. Moreover, Spector states that the more history there is about an SME for banks to obtain, the more the risk decreases. Thus, banks run a greater risk in investments in SMEs in compare to bigger companies, due to decreased information availability (Burns, 2004).

According to several studies, longer banking relationships lead to lower rates to SMEs and decreased demand on collateral (Petersen & Rajan, 1994; Berger & Udell, 1995). We present mixed results on this matter. Contrary previous studies, Spector claims that due to a closer relationship to the customer, a greater sense of security exists in the decision-making, however, demands towards the SMEs are never lower. Correspondingly, Wood and Evans argue that although a relationship exists with a customer, the process works in the same way as if it was a new customer, with the exception of not demanding a business plan again.

Divergently, to other respondents Baker points out that a long relationship with an SME is very important and can indeed influence the decision-making. He gives an example, describing how one of his customers, a small company, had troubles during a relatively long period of time. Thereby, a meeting was demanded with the particular customer, which turned out to be a flawless person knowing everything about his company, all key ratios and exactly what was affecting the company’s performance. However, Baker continues, “if this customer were to be presented to the banks credit department he would not stand a chance”. Thus, it indicates that sometimes, developed relationships and confidence can save a very good customer, which in other cases would not be considered. Thus, in line with Uchida (2011), Baker continuously points out that the relationship factor serves as a mean to retain borrowers by claiming that it is important to fight through together. Thereof, we argue that a reason to retain the good SME customers is mainly because it is a way of gaining profits as well as retaining profits.

As for better rates, as well as lower demands on collateral, Lane argues that SME customers with longer relationship to the bank, or an advisor have a better chance of negotiation which is similar to previous findings (Petersen & Rajan, 1994; Berger & Udell, 1995). This due to the
fact that the bank or the advisor knows the customer and trust exists, and thereof estimates that there is a lower risk, thus, lower collateral and interest rate demanded. Similarly, Harris as well as Smith argue that a customer with a relationship of over twenty years with the bank has developed trust, thereof such demands are sometimes overlooked. Harris continues:

“It is the relationship that is the fun in this, and to see how far a company can develop and maybe to help them through difficulties.”

In accordance, Bright reveals that due to a long-term or a close relationship to the SME, where some customers are more popular than others it can influence the chance of getting investment. Thus, if a close relationship with respect exists, they generally run a better chance of getting an investment by banks than those without any relationship. Similar to Petersen and Rajan (1994) as well as Blink and Ennew (1996), Bright states that the relationship indeed affects the demand on collateral, where SME customers with increased trustworthiness have lower demands on collateral as well as the percentage of own effort. Bright says:

“At the same time, the ones that has done well and have shown both through recession and boom that they can manage, of course they should be rewarded.”

4.6 Comparison between respondents and banks

Although we detect both similarities to the answers provided regarding the usage of the different factors during evaluation processes, as well as dissimilarities amongst the different banks in the previous section, the interesting part is by far the differences amongst advisors in the same bank. We aim to present the existing differences as well as similarities between banks with some discussions integrated regarding comparisons between financial business advisors from the same bank.

A comparison between banks show that all agree upon the importance of repayment ability, thus, the rules as well as policies regarding repayment ability is interpreted in the same way across banks. Thus, we argue that repayment ability in compare with all other included factors stands out the most as well as relationship is the factor that cannot influence repayment ability which, this particular factor can on other factors involved during the evaluation process. However, there is dissimilar views regarding collateral, where as a whole all banks agree that pledge on collateral is not necessary in smaller loans and can be overlooked, however between
business advisors from the same bank, namely, bank 2 different opinions exist. Two of their four advisors claim that collateral is not as essential in smaller loans, whilst, the two other do not agree upon that and stress the essentiality of collateral in all cases. Thereby, through an illustration of the experiences of each advisor we hoped it would serve as a way of explaining why certain dissimilarities as well as similarities occur. We assumed that advisors that have a shorter experience would work less routinized and follow every factor as crucial. However, our illustration show that although differences exist between advisors from the same bank, the ones that do not work as routinized but instead follow the regulations point by point regarding collateral are those with higher experience in this particular question.

Moreover, although all advisors point out that they are not private equity investors, they give the indication that they are willing to take a certain amount of risk, to keep a good customer. Different from the other banks, bank 4 which only has one respondent shows that regulations and policies that his bank has formed stand strictly against taking large risks and is therefore respected, even though it means losing a good customer. Again, the experience information does not serve as an explanation.

The largest differences are detected in answers regarding the relationship factor. All respondents agree upon that better information is provided during evaluation of investment decision-making with a closer relationship to SMEs. Different from the other banks, bank 1 and bank 3 stresses the fact that there are no lower demands due to improved or well-developed relationship between the bank, the advisor and the SME. The other two banks indicate that demands can be overlooked due to the relationship factor. The advisors of bank 2 and 4, point out that there are differences between a new customer and an already existing one. Furthermore, they specifically argue that a better relationship serves good during negotiation of the interest rates. Bank 4 continues by claiming that a closer relationship can influence everything. However, in a closer illustration we detect that the advisors of bank 1 do not agree upon this fact. Bright openly claim that the demands can be overlooked due to the relationship factor. Contrary, his colleague Spector strictly states that the demands remain uninfluenced. In an aim to explain these contrary answers, experience again fails to do so. Thus, it does not allow us to draw a conclusion that bank 1 either overlook demands, or strictly take these into consideration regardless of the relationship factor.

In summary, several authors forwards that banks interpretation may differ due to the opportunity given to form internal guidelines and polices (Chen & Kao, 2011; Badulescu &
Nicolae, 2011), our results as a whole agree upon that. Although, the interpretations of banks are very similar, our results show that not only can there be differences between banks but as well as between advisors in the same bank. Thus, it explains that guidelines, laws, regulations and policies are never point-by-point followed, regardless of how strictly they are presented, this, due to the space for own interpretation.

4.7 Summary of empirical findings and analysis

![Figure 5. The factors of investment evaluation by banks towards SMEs final model](image)

The model in figure 5 summarizes the key findings of the study. It depicts factors that shapes and are of essentiality during evaluation of investment, as influencing factors. Previous studies have shown one or several factors of importance during investment evaluation namely: optimism/overconfidence (Hackbarth, 2009), market condition (Duan et al., 2009), collateral, maturity and size (Jiménez et al., 2006), liquidity and repayment ability (Piotr & Dorota, 2013), as well as interest rate and default risk (Choi & Smith, 2002). However, our results illustrate that the factor of more weight is repayment ability, which is consistent with the thoughts of Tadanobu et al. (2011).

Our findings show that although repayment ability is stated as the heart of the evaluation and the key to whether a loan is granted or not, the relationship between the SMEs and the banks plays a crucial role. Different from previous studies, we found that the relationship factor increases or decreases the other factor’s importance i.e. if there is a better relationship
(relationship +) between an SME and a bank, the repayment ability is the only must, and the rest can be overlooked. Thus, in a scenario where there is no well-developed relationship (relationship -), all factors are of an importance and are taken into consideration by the business advisors. We illustrate that this occur due to the fact that in a long relationship, or a well-developed one, trust is gained. This type of trust follows business advisors throughout the whole evaluation and in periods of recession, they protect SMEs and fight through it together. Thus, as previous studies claim, a way of remaining customers, as well as enforcing the relationship with them is by developing one in the beginning and remaining it for the future (Petersen & Rajan, 1994; Berger & Udell, 1995; Uchida, 2011), which we explain as a way for banks to gain profit as well as remain profit.

Furthermore, we have found that the relationship factor indeed serves to bring certain pros to an investment evaluation. Coase (1988) introduced the transaction cost theory and argued that information costs are such costs to be avoided in order for firms to arise. Moreover, informal information from SMEs provides a greater risk, which also determines the level of caution of the bank when evaluating (Storey, 1994; Burns, 2004). Thus, our findings show that an improved relationship work as a resolving factors of these costly problem in three linked perspectives, 1) an improved relationship leads to developed honesty and thereof more access to information from one another, 2) the access to information leads to less resources spent on gathering such, and thereof less costly for the bank and 3) gathered honest information without high costs, leads to less risk of optimism and incomplete contracts because of the bounded rationality of actors as Simon (1997) and Saussier (2000) agrees upon.

Moreover, as for the use of real options, our findings indicate that banks do not use real option calculations, they however do have a potential real option way of thinking when considering investment decisions regarding SMEs. Moreover, when the respondents were asked if they knew what a real option approach was, all of them answered no. In other words our findings are in line with previously performed studies who found that it is common that investors use real options in their investment decisions without being familiar with the concept (Busby & Pitts, 1997; Brach, 2003; Collan & Långström, 2002; Fichman et al., 2005; Kogut & Kulatilaka; 2004). However, in our case they have the whole potential of engaging in real option approaches but we argue that due to the unfamiliarity with the concept it has led to a lack of knowledge and thus getting stuck in traditional calculation methods instead of engaging in more innovative ones like real optional, which we believe is more suitable for the decision making made by banks.
Evidence shows that when taking on an investment from a real option perspective, the decision maker applies a “wait and see” strategy, delaying the investment decisions, as they want to obtain additional information before the next decision is made (Adner & Levinthal, Trigerogis, 2002). This because it is an optimal way to decide whether to abandon or cultivate with the initial investment, as the new information might affect the desirability or the project. (Adner & Levinthal, 2004; Choi & Smith, 2002; Carruth et al., 2000; Trigeorgis, 2002). Our findings indicate that this is the same process used by the respondents in this study, as all respondents emphasize the importance of constantly gathering new information and make investment decisions in different steps or stages, as the future is uncertain and one never knows what might happen. However, analyzing the future by putting value on possible future events, or in other words pricing the future (as another part of the real options approach) is not being implemented by the business advisors in this study. The real option approach suggests a way of analyzing this way of thinking which then our respondents lack to do as they do not price their future and thereof only “wait and see” without really engaging in an option. This suggests that all the advisers are in need of, and uses the flexibility that comes with a real option approach, namely the option to revise and reevaluate the investment decisions once they have been made as they have the freedom to withdraw if they see unfavorable results. Still results show that they do not calculate according to the real option approach in order to make these kinds of decisions and thereof we cannot claim that they use a full on real option approach in their investment evaluation and decision-making.

5. Conclusion

The aim of this study was to explore if banks use a real option approach in their decision-making regarding investments opportunities in SMEs, as well as what factors were taken into consideration. We wanted to extend the existing research on the use of real options in decision-making by studying it based on more factors than previously have been done during the same study, and apply it to a less explored field. This as we wish to provide a greater understanding of what is of relevance during the investment decision as a whole rather than just focusing on one fragment of the decision process, as well as the reasoning behind the decision-making.

In this study we initially pointed out the issue of using traditional investment evaluation methods like NPV and DCF, as they are argued not to provide the investor with the flexibility needed for gaining the true expected value of the investment in the face of uncertainty (Bowman & Moskowitz, 2001). When all interviews were concluded it appeared that this was a flexibility
that our respondents also depended on in their decision-making, although it was a concept they were not aware of, or thought they included in their decisions. Which is in line with what previous research have concluded as well (Fichman et al. (2005), Kogut and Kulatilaka (2004), Collan and Långström (2002) and Busby and Pitts (1997). We did however, as previously stated, get mixed results i.e. the respondents seems to be using a real option approach in the sense that they are thinking, arguing and considering all in a way that is consistent with a real option approach. They do however not make any actual calculations of the “real” value of these options. In other words, the financial advisors in this study are using the real option approach as a behavioral method more so than a method of calculations.

Moreover, illustration of results indicate that all respondents value all factors of the model, however, put more weight into repayment ability. As for relationship, results show that it is a factor of relevance for several matters, 1) a well-developed relationship decreases information asymmetry, 2) a well-developed relationship decreases the level of optimism, 3) a well-developed relationship have the tendency to decrease the other demands during an investment evaluation by banks and 4) a well-developed relationship serves to retain an SME which in turn serves as a way to remain or gain profit for banks. Thus, the relationship factor has a crucial role during investment evaluation by banks towards SMEs.

The most central implication emerged from the findings of this study, that is of practical importance, is that there is a difference between real option approach and real option thinking, as we cannot state that business advisors in banks use real option approach, even though they have many similarities to the approach in a strategic way, namely through behavior and thinking, we instead chose to analyze from two perspectives. Our results therefore indicate that business advisors in banks do not calculate nor use the real option approach fully, instead they have engaged in the thinking, that is, within the space of decision-making that the business advisors have, which has a great similarity to what the real option approach suggests. Moreover, another contribution to practice is that by exploring the different factors a criteria is developed where SMEs can take advantage of what banks really put weight into and thereof be better informed of what to take into consideration when asking for investments from banks. This in turn contributes to a gained welfare for the country as SMEs represent a majority of the total amount of enterprises in Sweden with approximately 99 per cent (European commission, 2003). Thereof an increased chance of new workplaces. Moreover, our study yields some implications for policymakers, as we illustrate that although regulations as well as policies are formed in banks, interpretations of it differs which results in different demands depending on which bank.
Thus, policymakers either need to be more strict and distinct or the space for own interpretation may continue to lead to variations. However, we argue that the space that business advisors have, serves for good due to the fact that it allows to prevent information asymmetry by developing relations to SMEs which would not have been possible with strict regulations.

The overall conclusion of this study is that the theory of real options is best suited as a strategic evaluation tool. Through theory it is possible to establish values using real options that does not emerge when using traditional cash flow valuation methods. However, taking it so far as to try and quantify this value is very difficult and most likely very misleading. We therefore consider the biggest benefit to be achieved when investors or decision makers is aware of the fact that real options exist, and thereby get more accurate and improved investment decisions. This without entirely relying on some calculated numbers. Moreover, as we cannot state that real option approach is used, this study serves as way of showing that although advisors might have the thinking, lack of knowledge about the new innovative approaches may not be fully used as their existence is not recognized. Thus, we aim and hope to show, especially banks and other branches which might have similarities but do not have the knowledge about the different approaches that there are other ways of evaluating and that with knowledge comes recognition and new opportunities.

Our study also implies that all factors raised as important for decision-making in other studies, though on their own, were all influential in the decision-making made by business advisors, but to varying degrees. Thus, our study contributes to theory due to the fact that we have expanded the numbers of factors that are taken into account whether or not to invest in a SME, and established factors of real options, which provides a more elaborated picture of the decision making process made by banks, as well as it gives a new dimension to decision-making for the banks. According to previous studies, there is a widespread view of what real options really are as well as there are mixed opinions on the essentiality of real options (Busby & Pitts, 1997; Brach, 2003; Collan & Långström, 2002; Fichman et al., 2005; Kogut & Kulatilaka; 2004). We contribute to a more comprehensive theoretical understanding of the concept of real options. By outlining the real option thinking that is used by banks as well as providing examples of when and how it is used, we make a step towards illustrating what real options really are in the context of business advisors, and stress the importance of it during conditions of high uncertainty. It is our hope that the findings and the approach adopted in this study, will prove useful as an interpretive understanding of, and method for, identifying and describing what constitutes a real option approach. In conclusion we want to emphasize that we do believe
that a real optional method or approach is of practical use in certain decision or valuation situations. We do however think that the greatest value lies in the strategic aspects of the approach rather than trying to put values on options in absolute numbers.

The findings of this study raise questions for further study. In particular the investment evaluation depending on in what stages of the lifecycle the SMEs are currently in. Thus, it would be an interesting illustration of how banks evaluate investment decision depending on the SMEs stage in the lifecycle. Moreover, the crisis of 2008 changed a lot thus, it might be interesting to investigate how banks have changed their ways of evaluation since then as well as if they have developed the use of real option perspective as a result of the crisis. Finally, as our study is explorative and lays only the beginning of something that can be developed further, it would be fruitful to investigate this topic through a quantitative study as it allows generalizing results.

The limitations of the results in this study lie in the fact that the empirical data is collected from a relatively small sample selection, in one specific geographic area. Thus, it does not allow us to generalize across all banks in Sweden. Regarding generalizability, our study is performed by a qualitative method meaning that it does not permit generalization, thus, although our results contribute and serves a meaning, there is no assurance that it is in fact the same across the country, due to the smaller sample that the qualitative method concludes.
6. References


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Appendix 1. Swedish Law

According to Swedish law, banks specific aim is to, amongst other, own and manage property, provide data services, financial advice and financial aid to customers\(^\text{17}\). Today data services have developed due to the fact that banks fight for market shares and to rice the amount of customers. There are no clear barriers that would influence the offers that banks may come to offer customers in this area. However, barriers regarding credit evaluations exists and has clear restrictions in the law\(^\text{18}\). A credit evaluation and check should in accordance to law be organized in a way that the decision-maker has enough decision support material to present and follow up. Thus, risks are argued to be analyzed and evaluated in a way that banks can come to a conclusion weather credit should be approved or not taking the customers situation into consideration. More specific regulations in law are those regarding own effort in credits, where around 20 per cent of the price is predicted to a reasonable amount to hand to the bank in order to get a credit approved (Konsumentkreditlag 2010:1846). However, there is a gap leaving banks to decide whether they should take out more or less in own effort from customers. Moreover, even if a credit already has been approved once, a new credit for the same person, or company should be reconsidered the same way as if it was the first appliance for credit (Konsumentkreditlag 2010:1846).

\(^{17}\) Svensk författningssamling 2004:297, Lag (2004:297) om bank och finansieringsrörelse  
\(^{18}\) Svensk författningssamling 2010:1846, Konsumentkreditlag (2010:1846)
Appendix 2. Interview guide

Initial questions

- For how long have you been a business advisor?
- What are your tasks at the bank?

Creditworthiness to small & medium sized enterprises

1. Describe the credit valuation process for a new SME customer to the bank (We want to see if the factors we examine is brought up during a generally described credit process to SMEs).

2. Is the credit valuation process the same for an already existing SME customer? If not, how does it differ? How long is the average relationship with an SME customer? (Here we see if the relationship has an effect on the decision, i.e. if the loan process differs depending on whether it is a new or old customer, moreover the last question provides us to see if the advisor sees the investment as a one-time transaction or as a pattern of investment decisions)

3. Think of a small or medium sized enterprise that you have/or had a long relationship with. Describe the loan process over the years with this customer. When decisions were made and what they were based on? How many loans would you say that the company applied for during this period (until today) and how many loans were granted? If some loans were not granted, on what grounds were these decisions made. Were new credit evaluation made during this period? Does SME-customers use other services provided by the bank? If yes, what kind of services? (Here we see whether the adviser uses a "real option perspective" in the credit granting process).

4. How would you act in the following situation: A new SME-customer comes into the bank and think/s he/she/they has/have a really good business idea and want/wants to take a relatively small loan to start up his/her/their project. And then the customer asks for promises of larger loans in the future, how do you act? What do you take into account? What aspects do you consider in the decision-making? (Here we also check for the "real options perspective", i.e. if you "reevaluate" the investment, how to value a future investment opportunity).

5. Now, assume the same scenario, but this time with a business customer you have had a long relationship with, which wants to expand their investment. Do your approach differ then? If yes, why? (Relationship lending).

6. How often do these situations appear, could you recall one? Two? How did it go? How did you make decisions in the first stage (based on what) how do you make a decision in the later stage (based on what). (Relationship lending)

7. Does the factors that are being taken into account differ depending on the company being evaluated (industry-specific), or is it always the same set of factors? If the factors differ, why? What is it that determines what factors should be taken into account? (In order to prevent bias and to eventually provide future research topics)

8. Suppose you have a small or medium-sized company in front of you that you personally think has a potential business idea, at the same time you feel that making a large
investment at once is risky. Does this happen? What do you do? How do you hedge against risks? (We are interested to see how the advisors are handling the uncertainty factor).

9. Do you always require collateral for all your loans? If not, what is it that determines whether your customers (SMEs) need to have collateral or not?

10. How important is the company’s repayment ability when taking a credit decision?

11. How do you evaluate SMEs ability to repay a loan?

12. How does the relationship between you and a business customer (small or medium-sized enterprise) affect the lending decisions?

13. To what degree can you make own decisions in the loan granting process? What decisions are you not allowed taking yourself? (Managerial flexibility/discretion)

14. How is the lending process for small and medium enterprises being affected by external factors, such as the economic cycle? Are there other external factors beyond the economic situation in the market that are affecting the process? (Uncertainty)

15. Does lending to small and medium sized enterprises involve more or less risk than other enterprises? (Showing the risk issue and capturing transparency issue)

16. Apart from tradition check list method of creditworthiness what other factors are being used in the evaluation of SMEs? (Checking for the factors again)

17. Could your own belief in a company’s business idea, be a determining/influential factor for granting a loan? Have you been in a situation like this before? (Optimism/Overconfidence factor).

18. Can a loan be rejected just because you do not believe in the company's idea? I.e. although other factors imply that the company could / should get a loan? (This question is related to the question above, optimism/pessimism).

19. When a company (SME) is granted credit, how often do you reevaluate the decision then? (This question focuses on the real option perspective i.e. the option to reevaluate an investment with time).

20. What problems can arise in the credit process for small and medium sized enterprises? (Uncertainty).

21. Lastly, do you know what a real option perspective is?