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**Off Balance Sheet Financing –
what value does it bring to the firm?**

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Abstract

Off balance sheet financing is one of the most popular topics in the business literature today. It is popular because it is seen as a means to improve returns and bring value to the shareholders. This paper identifies four key components that must be considered to make a proper value judgment. They are cost advantages, management options, risk transfer and transaction costs/asymmetric information. It then looks into how each of the different off balance sheet instruments can bring value from these four components.

The result was that off balance sheet financing does bring value to a firm. It will bring value because it can solve problems that other financing strategies cannot, problems such as access to capital, cost of capital, core competencies and alter the risk profile of the company. A Volvo business unit was used to do an empirical examination, on the accounts receivables and studied to see if factoring and securitisation bring value to Volvo. It was found that presently, only factoring with penalty interest being charged brought value. Otherwise, factoring and securitisation do not bring value because Volvo did not have the problems that they solve.

Key Words: Off Balance Sheet Financing, Asymmetric information, Securitisation and Factoring.

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1 INTRODUCTION

In this chapter, a background to the subject will be presented. Then, the problem will be described which will lead into the purpose. The limitations that had to be drawn are also described and thereafter, the methodology will be presented to describe the process of writing the thesis.

1.1 Background

One of the important questions facing any company is how to finance its facilities and operations. There is a lot of theory written on various aspects of the capital budgeting process. Many topics are covered from discounting cash flows to what is an ideal capital structure. Corporations take this information and try to map out financing strategies that coincide with their own corporate goals. Are they however, considering those strategies in the best possible way? Are they structuring the decision in such a way that the proper balance is being given to the appropriate area under consideration? In the quest for value, being able to see the problem in a better way than the competition will bring advantages.

Off balance sheet financing is one area that is hard to pin down and is currently a hot area of finance. As explained by Campobasso, 2000, among others, off balance sheet financing is a way of financing that removes assets and liabilities from the balance sheet. This type of financing changes the capital structure of the firm and will therefore alter the risk profile. What is it about moving assets or liabilities off the balance sheet that is so appealing? It will obviously have an impact on the key ratios, which the market uses to compare the performance of one company to another. Any change in the key ratios caused by the choice of an off balance sheet instrument will alter that comparison. In a reasonably well functioning market where information flows freely, Dhawan (1997) asks if, this type of change can be of value to the company? Does information flow freely?

Research starting with Akerlof (1971), suggests that in fact information does not flow freely at all and that there are large costs and complications associated with a poor flow of information. If it manages to solve these types of problems, off balance sheet financing becomes an even more interesting area of focus. However, in the literature on finance, there seems to be very little in the way of a comprehensive analysis of which financing method is more appropriate in a given set of circumstances. It also does not answer whether or not off balance sheet financing is valuable at all. This is the central issue that we intend to address. The question then becomes when is a certain method of financing more useful and how and why would a company use it.

We have chosen to work in partnership with Fortos Consulting, a Volvo Group company. They are concerned with precisely these types of problems and are looking to find the best solutions for their clients. In answering these questions, hopefully Volvo's competitive position can be improved.

1.2 Problem Discussion

As mentioned, off balance sheet financing (OBSF) involves the funding of assets in such a way that they do not appear on the balance sheet. It is an increasingly important area of consideration because firms are trying to increase the firm's value for the benefit of shareholders. Our question is then how does an off balance sheet instrument bring value to the firm over an on balance sheet one? All financing instruments have value in that they allow positive NPV projects to be funded. So for an OBSF to bring unique value, it must overcome some problem that other instruments cannot.

In reading on the subject of off balance sheet financing, (for example see Pappas, 1996) a number of points were continuously raised stated some of its benefits. The benefits over traditionally financing instruments were that they seemed to save money, allow projects to proceed and sometimes allow management to take advantage of other's skills. As any basic book on corporate finance (for example see Ross et al, 1999) will say that the financing decision has a number of questions. Those questions will cover all aspects of the decision from which projects to undertake to how should they be financed. It will discuss many different instruments from bonds to equity to leasing etc. Essentially, financing's purpose is to allow positive NPV projects to be funded and at the lowest cost. What are some of the challenges that might prevent the financing of a positive NPV project? The first two financing challenges are that the money cannot be raised (access to capital) or that it is simply too expensive (cost of capital).

Access to capital can be a very difficult issue to overcome for many firms. It can take many forms. Using the work of Hittle et al, (1992), firms with positive NPV projects may find themselves unable to raise capital for these projects because they are too small or perhaps considered a poor credit risk by the market. They may also find themselves facing situations where the market perception of them changes and they have difficulty raising short-term liquidity that they need. Conversely, their current financing strategies may mismatch payments and income, which will increase their liquidity risk, if revenues do not come in as planned. Therefore, firms denied capital can find themselves unable to grow or facing potential bankruptcy. The value of the company can be enhanced quite simply if OBSF can get around these difficulties and give management new alternatives on how to proceed. It can be inferred from Myers & Majluf (1984) that in many cases these difficulties are the result of difficulties in transmitting the necessary information about the firm and its prospects to the markets. If the markets are not able to credibly assess the situation at a reasonable cost then credit rationing will occur when it should not.

Cost of capital is the second important concern. The lower the cost of capital for a firm the greater the number of possible projects it can undertake and the more likely they are to be profitable and therefore value creating. OBSF is a source of value if it can do the same thing for less. Information communication problems are again a major factor in these circumstances. Using Myers & Majluf, (1984) again, if a firm is unable to communicate to the market a proper and credible sense of the risk, then investors will have to add more to their required rate of return than is otherwise necessary to compensate for the uncertainty. This additional cost is therefore, a direct drain on the returns of shareholders.

Tied to the questions of access and cost of capital are concerns about market imperfections. Imperfections such as inflation and taxation will all have an influence on the choice of financing instrument. As discussed by Ross et al (1999), inflation for example is a source of uncertainty to the investment decision and will not only affect the cash flow and cost calculation of the NPV decision but can also have an impact on the cost of financing as well. Taxation and its effects will be different in every country. Taxation is a distortion, which will cause companies to prefer certain types of financing over others. These types of market imperfections make it more difficult to determine which financing instrument to use in a given set of circumstances.

From Reekie and Crook (1995) it must also be asked, should the firm finance every positive NPV project it has? Assuming that it could get access to the capital and at a reasonable cost should it go ahead and proceed with the project. Or should it be sold off or done in partnership with others? A firm must define who they are and what their uniqueness is in the market place. They must define what their core competencies are and what areas are better left to others. According to Coase (1937), core competencies are defined as those things that they do better than any other. Many firms can find themselves undertaking tasks, for which they do not have the skill, resources or scale to take advantage of efficiently. Also in many cases they would be much better off if they could relieve themselves of the burden of undertaking them directly. Capital, time and effort that were tied up in those non-core tasks can be freed for other purposes that have a greater return. If OBSF can help the firm focus on its core competencies, in a way that other financing instruments cannot, then it can be of value. Information is clearly an issue here as well because no one firm can be an expert in all areas. Others have better knowledge, information and skills, which are available for use.

Milgrom and Roberts (1992) discuss Coase's arguments about contracting and the sharing of risks and rewards. As an extension of that argument, financing is all about creating contracts where the risks and benefits are shared differently amongst the parties. Each party is looking for different risks and rewards. Every financing technique will distribute those risks and rewards differently. Lenders are looking for stable and safe payments whereas equity holders are looking for larger payoffs but are willing to accept greater uncertainty. Again, information is important because real gains can be realised if there are differences in the information of the parties. These types of differences or asymmetries in their competitive position or knowledge can allow firms to come to mutually beneficial agreements. Taking Volvo as an example, we can assume that they have the best information regarding the quality and resale value of their trucks. Their customers will have poorer information by definition. This asymmetry of information makes leasing an attractive option for their customers because in exchange for a fixed price, Volvo agrees to make all necessary repairs and take back the truck at the end of the lease. The customer has reduced their uncertainty for a fixed price and Volvo receives additional revenues in exchange for assuming the risk. Also Volvo already has contacts and methods in place to sell its trucks and they can be used to sell the used ones. Presumably, selling the trucks faster and for a better price.

Volvo like every company must also decide how to finance its operations. They are concerned that they will be able to have access to the funds they require and at an acceptable cost. They have also in the past few years sold off a number of divisions to improve performance and narrow their business focus. Volvo like every other firm is looking to improve its competitive

position by increasing the value it brings to shareholders. For Volvo to be an attractive company for people to invest their money in they must address these issues or investors will go elsewhere.

In order to answer the question of whether or not an off balance sheet strategy is of value, we must first take a look at the types of off balance sheet financing instruments there are. The examination must include what is the downside in exchange for the benefits provided by each instrument. It is no use to overcome one problem with an OBSF strategy only to face another larger one. Cost is critical. It is no use eliminating or overcoming all the possible obstacles only to find that there is no way to make a profit because the required rate of return is so high. Additionally, financing decisions cannot be made in isolation. There are company/project specific factors such as its size, credit rating, type of business and what types of investments are being made to consider as well. The decision must also consider what options they might be giving up strategically. Are they limiting themselves too much or exposing themselves to additional problems down the road. Decision makers must not be too concerned with short-term results but must also take a long-term view at the same time. Every company's situation is unique and their financing decisions must reflect that uniqueness. Another problem in making conclusions is estimating the bias that market imperfections will cause in the decision evaluation process. If we do not take this into consideration, we will face the problem of being drawn to conclusions, which will not apply in all circumstances. Therefore, the company's uniqueness and market imperfections must be separated from the general discussion.

Information and the differences in information are a constant consideration. The differences are constantly creating challenges and providing opportunities for business. It is the challenge side of the issue that is constantly explored by current academic literature in finance but not the potential to exploit that challenge for gain. This is another problem in that financial decision makers are not really given any guidance on how to overcome a particular challenge caused by information differences.

The problem then comes full circle to our original question of how do OBSF bring value to the firm? In answering this main question, answers to the sub questions defined above must be answered. They were:

- Can it give firms access to the capital they need?
- Can it reduce the cost of funding?
- Can it allow firms to focus on their core competencies?
- Can it transfer unacceptable risks?
- How does access of information affect the above questions?

1.3 Purpose

The main purpose of this thesis is to answer the question of if and when off balance sheet financing will be of value.

In order to answer the main purpose, three sub purposes have been formulated:

- The first is to show how the problems of access and cost of capital, core competencies and risks are overcome by OBSF. If it can solve problems that other financing instrument cannot, then it can bring value to the firm.
- The second is to show how information differences are important in the real world and how it affects the above problems. Poor information brings with it additional uncertainty premiums. How asymmetric issues are involved in every financing decision will be highlighted. If OBSF can solve those differences then it will have an additional means of bringing value to the company.
- Lastly, it will be answered whether or not OBSF is of value to Volvo. The value of any OBSF instrument will be different from one company to the next. Therefore, a case study on a Volvo business unit using real numbers will be performed. It will analyse where the value is created and what circumstances are necessary for maximum value creation.

1.4 Limitations

The thesis has five significant limitations that should be taken into account when assessing the relevance of the results.

The first one is that market imperfections such as rules, regulations and taxation concerns have been ignored. Various jurisdictions will have different tax laws, which may distort the relative value of one financing instrument either positively or negatively. The same can be said for rules and regulations. As Volvo has operations in many nations dealing with all the possible variations of this issue, it simply became too great a task. Our results would have to be modified to take into account the taxation and regulatory concerns of the individual business unit considering each country it had operations in.

The second is that inflation is a constant problem for firms. It makes capital budgeting decisions more difficult because it adds a layer of uncertainty to the process. It also affects the interest rate and therefore, the decision to seek a fixed or floating rate financing instrument. Again, it is highly dependent on what market the business unit is in and its industry.

The third is that the data we have for the receivables' history is only thirty months. This means that the history will be strongly affected by the business cycle of that period. The period from May 1998 to August 2000 was characterised by a strong level of demand in the economy as a

whole and low inflation and interest rates. The case study results are therefore, not directly extendable to other economic climates.

The fourth is that not every possible OBSF instrument was listed. Five of the most commonly referred to were selected for examination in this thesis. This was done so that the instruments chosen were applicable to Volvo and could be evaluated with the information that was available from Volvo.

Finally, the numbers generated are somewhat unfair because Volvo has chosen to finance the cost of receivables using an annual rate of interest, not a monthly one, and as a result their costs seem a bit higher than they should. The instruments used lend themselves to 30 or ninety-day rates. A scenario using the monthly costing for Volvo has been included to overcome this.

1.5 Methodology

1.5.1 Requirements for Methodology

There were three major requirements of this thesis that the methodology must solve. Firstly, since we are dealing with off balance sheet financing we had to identify the various OBSF instruments. Once that was completed, we then had to determine how we would measure where value was being created. It had to be linked to solving access to capital, core competencies, risk transfer and cost of capital. Finally, it had to be linked directly to Volvo and show how they could benefit. Therefore, the research design has to meet these requirements. To help us in designing the study, we used the existing methods in the literature as guidelines for our own work.

Research Design

According to Patel and Davidson (1994) the research design is the framework for the research project. It specifies which type of information should be collected, the sources of information and the data collection procedure. The goal is to ensure that the information collected is consistent with the study's purpose and that the data collection procedures are accurate. The objective of the study determines the characteristics of the research design. They define three types of designs: the exploratory, descriptive and hypothesis testing approach.

The goal of exploratory research is to generate hypotheses and then to structure and define a problem. It is used when there is little or no knowledge of the problem area. The researcher often uses several techniques for gathering information and thereby explains the problem from many different angles.

The descriptive approach tries to discover answers to the questions, who, what, when, where, why and how. The descriptive approach is used when there already exists knowledge about the problem and it is fairly well structured in the theory.

The hypothesis testing approach assumes that the researcher has a broad knowledge of the problem and that there are no established theories. The purpose is to study a cause-and-effect connection.

The choice of research design

In this study, both the descriptive and exploratory approaches were used. The descriptive explained the basic functioning of each of the OBSF instruments. It explained what it is and how it can be used. From that explanation an exploratory approach was used to illustrate how they could bring value. The existing information was adapted and extended to focus on those areas that were of interest to this thesis.

Problems identified with the research design

The first problem was how to define value? Value is unfortunately a vague and diffuse issue that can be hard to assign a quantifiable value to. We have chosen to overcome this challenge by dividing up value into four sections that address important parts of value and had to be analysed individually before an overall value decision was made. They are cost/benefits, management options, financial risks and transaction costs/asymmetric information. They are all linked to the questions of cost of capital, access to capital, core competence and risk.

The second was how to measure the financial risks. Risk measurement will depend on the data provided and the instrument used. Some instruments will lend themselves more readily to the measurement of risk than others. In some cases this was not as important, if it could be shown that a particular risk was completely transferred. In the risk section certain measures of risk were discussed but they were not all applicable to our case. The case is about accounts receivables and finding a measure that adequately captured the risks was difficult. The OBSF instruments we used would not change the risk measures.

The third lay in the use of the key ratios. Accounting standards change often over time and if comparisons, from year to year were made, attention had to be paid to this fact. Additionally, accounting numbers do not always represent the market values of assets and liabilities, making comparisons between firms difficult. To get around these problems, we have applied our instrument to the only year for which we had full data. That way we were sure that we were not getting any change of rules bias in our results. This thesis is a before and after comparison of Volvo to itself, so the comparison between firms argument was eliminated.

1.5.2 Research Strategy

When carrying out research there are several different strategies to choose from. Depending on what has to be investigated, the researcher has to determine which strategy is best suited to the study. According to Yin (1994) there are five different strategies to choose from experiment, survey, archival analysis, history and case study. There are three conditions that decide which one to use:

Firstly, the researcher must identify the type of research question since different strategies are favoured by each of the questions who, what, where, why and how? Still, the strategies overlap and no strict boundaries can be drawn. The case study strategy is preferred when a how or why

question is being asked. Secondly, the case study is advantageous when the purpose of the research is to generalize in an analytical way. The strength of the case study lies in the ability to deal with several sources of evidence, such as documents, interviews and observations.

Choice of research strategy

Our strategy focused on listing some of the common OBSF instruments and trying to point out areas where they might bring value. The instruments had to be found in the first place and this was done through a literature study. The information that was found was then structured so that the value considerations were constant throughout each of the instruments described. A structured value discussion was necessary so that the information presented was clear and handled consistently throughout the thesis. This way the reader can feel confident that different standards of value were not being applied in different areas of the thesis. The structure or framework breaks down the value question into several components. They are cost advantage, management options, risk and transaction and asymmetric costs and will be discussed in chapter two. These sections each played a part in showing how OBSF can overcome problems.

The third goal was to determine if OBSF was of value for Volvo. A case study was chosen as a good method for illustrating and discovering the various benefits and costs of OBSF for Volvo. It allows for the use of real data specific to Volvo and the results would then be directly applicable to the company. We wanted to answer how an OBSF instrument can solve a problem encountered by a firm that a traditional financing strategy cannot. We intended to perform some of the OBSF techniques on a Volvo company and compare the outcome to the current situation. In this way we wanted to show both how the techniques can be applied and how this had an impact on the value of the firm. These results were then compared to the theory, so that a conclusion for Volvo could be made.

1.5.3 Case study design

A research design is seen as the logic that motivates the data collection (and the conclusions to be drawn) in order to answer the initial questions of a study. Yin (1994) defines four basic case designs, single-case, multiple-case, holistic and embedded design. A single-case is advantageous when the case represents a rare or unique event or when the case fills a revelatory purpose. The multiple-case is used when the same study contains more than one single case.

Another distinction is made between the holistic and the embedded design. The embedded is preferred when the same study involves more than one unit of analysis. These units can be selected through sampling or cluster techniques, or other criteria. If only one unit of analysis is examined, the holistic design is used.

1.5.4 Measuring the quality of the research design

According to Yin (1994), it is important that the thesis results are sufficiently free of bias or spurious conclusions. The readers must be satisfied that the goal and objectives of the study, do in fact represent useful and relevant information. They must be satisfied, as well, that the thesis has attempted to tackle the problem in the best possible way. According to him, two ways to measure the quality are to look at validity and reliability.

The two forms of validity are internal and external validity. Internal validity is a concern for only causal (or explanatory) case studies, in which the investigator is trying to determine whether event x led to event y. If the researcher incorrectly concludes that there is a causal relationship between x and y without knowing that some third factor z may actually have caused y, the research design has failed to deal with some threat to internal validity.

The external validity of research findings refers to their ability to be generalised across persons, settings and times. This has been a major problem in case studies. Critics state that a single case offers a poor basis for generalising. However, such critics are implicitly contrasting the situation to survey research, in which a “sample” readily generalises to a larger universe.

The purpose of reliability is to be sure that, if a later researcher followed exactly the same procedures, as described by an earlier researcher and conducted the same case study all over again, this later researcher would arrive at the same findings and conclusions. The goal of reliability is to minimise the errors and biases in a study.

Choice of case study design and the quality

A single case study was used because OBSF only had to be shown as a relevant consideration for companies. Its exact value in any particular case is not as important as showing how value should be considered. The only unit of analysis is essentially value and that meant that the holistic design was the most appropriate.

The case study was designed in two sections. The first was to use the framework to make predictions about the outcome for Volvo. The second was to use the data collected, to come up with numbers for analysis. The analysis used the theoretical framework to answer if it was of value for Volvo.

If the framework presented in the theory was to be of any use, it was important that it was able to come up with reasonable predictions for the outcome of the case. Therefore, the predictions were used as a means of linking the case back to the theory section more closely. They were also used in the third section to see how closely the results matched the theory.

Obviously, numbers had to be generated to answer, at least in part, the question of value. Corporations like Volvo have to be able to show the market wisdom of their actions. In order to do this, our data was used to cost the original situation of Volvo and then used to generate the outcome if one of the OBSF instruments had been used. Scenarios were then performed to show how changes in the business environment for Volvo might have an impact on the relative importance of the instruments. For example, the cost of capital was raised significantly in the standard case to illustrate a change in the market’s perception of Volvo’s business prospects. The outcome was analysed using the framework, expectations and calculated numbers. Here, all the points of interest were examined and reported on. All of the questions needed for the purpose, of determining the value of OBSF, were asked and answered.

The study is reliable because care was taken to get market estimates of the OBSF instruments costs. Real companies with the capacity to handle Volvo’s business were asked for their estimates of the costs. This makes the results a very close estimate of what would actually have

happened if they had chosen the strategies in 1999. Additionally, as we are using historical data, we are eliminating all of the projection and estimation biases.

A final point, the study is designed with the purpose of showing that OBSF can be of value to a firm. It is not to show how in every possible situation it might be of value. By showing that it is of value in one situation it can logically be assumed that it may be of value in others thus fulfilling its purpose. A single case is sufficient for this purpose and can help further researchers in dealing with this and related issues. In so doing our issue of external validity is solved.

1.5.5 Collection of data

Secondary data

To be able to write about the theory behind off balance sheet financing and provide a background for the rest of the thesis, a literature study has been conducted on the common off balance sheet instruments. The information for this study consisted of secondary data, i.e. books and articles. The purpose of this section was to document the theory and present it so that the reader got a good understanding of what OBSF means. The information has been found through firstly looking in the Economic library's database for articles with keywords concerning OBSF. From those articles other sources could be spotted through looking at their references. Other books have been found through talking to our professors and they have given suggestions of what might be of interest for our study. Sources of interest were then included if they could do the following; give a solid account of the instrument in question, bring up a point considered important to the study and if they were recent articles which could be assumed to have the latest information.

Primary data

Some primary data has also been collected, mostly for the case study. This data comes primarily from our tutor at Volvo, contacts at Handelsbanken, SEB and Öhmans but we have also gathered ideas and suggestions from our tutor and professors at Handelshögskolan. In order to make our case study as true as what Volvo might expect, if it were to use these instruments; it was necessary to talk to some of the major providers and get estimates of what Volvo might be charged for them. Volvo is highly specific and general estimates from general sources would in no way be able to reflect the true situation.

1.5.6 Relevance

The issue of relevance is, according to Lundahl & Skärvad, (1990), divided into two parts, practical and theoretical relevance. Practical relevance asks if the subject of the thesis is interesting for anyone not directly involved in its creation. The theoretical relevance of the study depends on whether it in any way presents new models or theories that can have applications outside the scope of the thesis.

The relevance of our thesis

The literature on OBSF presents the information in a scattered way. It does not systematically address whether or not the instruments are of any value as we have defined it. Through our own structuring of the value question this has been done and we feel that this thesis has both a practical and theoretical relevance. The theoretical relevance is based on our diverse number of sources that are sectioned to give a balanced assessment of value. The practical relevance comes from the gathering of market estimates and Volvo's own numbers that are as close as can be achieved. The topic is also receiving a great deal of attention in business publications. This means that a large section of the business community is interested in this topic. They are interested because they want to know if OBSF can be of value to them. Therefore, if it can be shown that Volvo can benefit, then many other companies can benefit as well.

1.5.7 Criticism of our sources

Since a wide variety of literature has been used we think that we have overcome some of the problems with bias. We have compared our sources with others to see if the picture corresponds to the one we first found.

2 INTRODUCTION TO THE THEORY

The theory section is designed to provide the setting for our debate about the financing instruments. It will contain arguments for how each of the financing instruments relates to our areas of focus, which are the cost/benefit, management options, risks and the transaction costs and asymmetries of information.

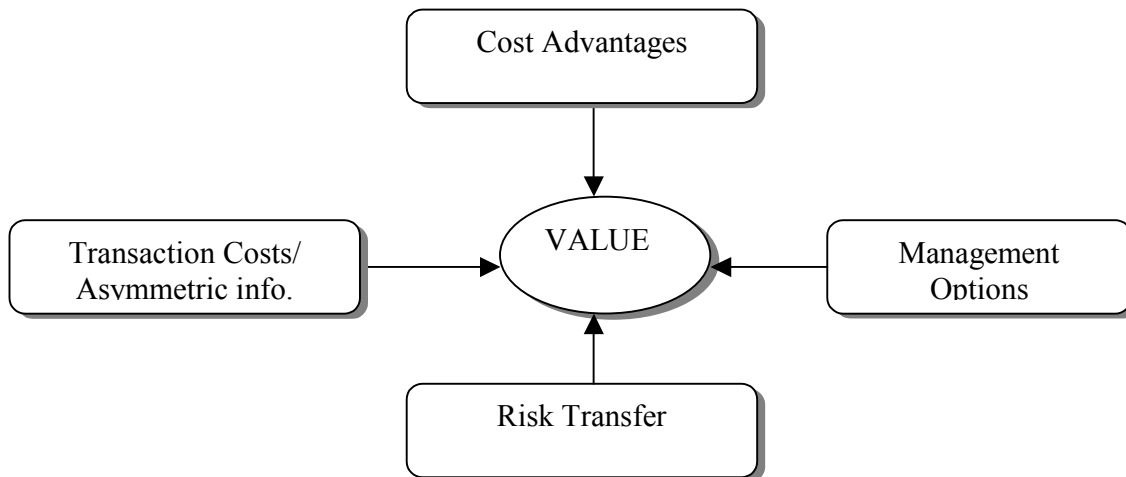
2.1 What is Value?

All the literature that discusses value, generally agrees on two things, see Milgrom and Roberts (1992) as well as Reekie and Crook (1995) for examples. One is that all firms want to add value to their operations. Secondly, that it is possible to find value in just about any action. This makes value an interesting issue to try to define. Many actions that add value are self evident such as being able to do the same thing at a reduced cost. Giving flexibility to a firm's future actions adds value. Freeing up managers' time to focus on core competencies adds value. Finally, allowing those parties with the best information to make decisions based on that information adds value. In short, just about everything will add some value. Unfortunately, with the exception of being able to do the same thing for a lower cost, some sort of cost benefit analysis must come into play. For many value additive benefits, it may be difficult to price the relative value to the relative cost. Judgments of the decision maker must come into play because numerical answers may never be achieved. What happens then (so often in the literature) is that value is boiled down to extremely general and vague descriptions that are unusable by anyone. One type of this tougher value question might be giving the firm flexibility in their actions. The enhanced ability to react is obviously valuable but is it worth the sums required to achieve it? Sometimes it is simply better to accept the status quo. For example, test marketing has an explicit cost. It does give the firm more information about whether or not to go ahead and this may save money in the future. However, some projects should simply never make it to that stage. Ultimately, for a product to be of value it must earn at least its WACC (either of the project itself or of the firm as a whole) otherwise value is not being created but destroyed.

In order to answer the value question a structure must be applied so that its treatment is consistent throughout the thesis. It must also be able to address the financing problems of access and cost of capital, core competencies and risks as well as highlight the asymmetric information issues. Many of the problems are interrelated and are difficult to define clearly. Using Milgrom and Roberts (1992) as a template, four areas of focus have been selected to cover all of them. These four areas capture the majority of the considerations that must go into the value structure found in the literature. All firms want to have the lowest cost of funding possible so a cost advantage focus was necessary and the most obvious. All firms also have to make strategic choices on what options they want to have available and that falls under the management options focus. Any choice will bring with it a number of contracting costs and consequences and that has been covered under transaction costs and asymmetric information. Finally, they will all have an effect on the risk profile of the firm. When evaluating each of the four sections it is implicitly assumed to have no impact on the other sections.

The four sections are summarised in the figure below:

Figure 1 Value components according to the authors



2.1.1 Costs Advantages

Any change that results in a saving over the previous situation is defined as a cost advantage. The following three categories of savings have been identified using Milgrom and Roberts (1992) as a source. They are risk sharing, trade and reduction of related costs.

The party best able to handle the risk should bear the risk. That sentence is one of the principal criteria that will be used to evaluate whether or not a particular strategy has any cost advantages. The idea itself is really quite simple and elegant and requires no great explanations. However, the ramifications are quite broad. In exchange for a fee the party who has the ability to handle the risk will do so and for less cost than the party paying the fee can do on its own. If this type of exchange is possible, then companies can really benefit from the choice of one instrument over another.

Trade has long been identified as a source of real cost advantages. As stated by Milgrom and Roberts (1992), “a fundamental observation about the economic world is that people can produce more if they co-operate, specializing in their productive activities and then transacting with one another to acquire the goods and services they desire.” Wealth can therefore be created through specialisation. Trade can also increase benefits by exchanging resources that each party has in relative abundance. This is also a very simple and straightforward idea. Firms are of course operating under these two assumptions and often because of regulatory, taxation or information reasons they can come together and benefit through sharing. Benefit is again defined in a Pareto sense, where one or more parties benefit without any being hurt. A simple example discussed in Ross et al, (1999), is that one of the primary reasons leasing exists is that companies can share their different taxation levels and benefit by reducing the amount of money they pay to the government.

Reduction in related costs deals with the saving/expense that might accrue elsewhere in the company. Such as less staffing costs, greater ability of management to focus on core issues etc. Obviously, the different instruments place different demands on the company and the company may experience greater savings or costs depending on the instrument.

2.1.2 Management Options

The lowest cost solution is not always the best solution. Companies may have a number of objectives that must be met simultaneously. They may want to have the option to change the situation they are now in or be able to change it later on. Management options can come from many sources, like focusing on issues central to the firm, overcoming financial obstacles to meeting business objectives and being able to control the amount of risk faced by the firm.

A company must have a vision of what it wants to achieve in the marketplace. Questions about financing, marketing etc, have no place unless there is a stated business objective. It does not want to be wasting time and resources handling issues, which are not core business issues. Many different functions are necessary for the successful implementation of a project. Unfortunately, firms are not always very capable in each of them therefore, if a financing solution can allow the firm to concentrate on those core areas, value can be created.

There may be all sorts of financial obstacles to the achievement of business objectives and financing can help overcome them. For example, a firm may wish to minimize its initial capital outlay, particularly when funds are relatively scarce at the start up phase. Smaller firms in particular, may benefit from this. Riahi-Belkaoui (1988) mentions, that leasing can help a firm reduce the upfront costs of acquiring assets limiting initial investment.

Finally, the firm may also define its objectives as minimising certain risks such as the risk of project failure, exposure to inflation rate risk etc. While it may be expensive to minimise these risks, the firm wants to be able to focus on other aspects of the business and wasting time and resources on these problems may be seen as value destroying as compared to the cost of simply transferring them.

Management has the option of changing the firm's key ratios through the use of an OBSF instrument. Key ratios are, as pointed out by Mougoue and Mukherjee, (1994), signals to the market. The key ratios are important for a number of reasons. For example, it is important when it comes to the firm's credit rating. According to Mills and Yamamura (1998) when credit rating institutions are doing credit an assessment of a company, they are using cash flow ratios in their decisions. They want to know if the firm can meet their credit obligations. Also, key ratios are frequently used in businesses today because quantifiable numbers are needed for making decisions. Key ratios are also important for comparison reasons. Changes in the key ratios will give information on what is happening in the company and whether or not it is beneficial. There are all sorts of key ratios that can be applied. The important key ratios are different from industry to industry. The effects on the key ratios by each of the OBSF instruments will be different as well. Therefore, the ratios used must be tailored to the specific situation.

Accounting numbers do not always capture the essence of the financial situation. Taxation and other rules that do not necessarily reflect the true economic situation have to be taken into account. Rules may also have changed over time and make comparisons between the years difficult. For example, referring to an article by Ottosson and Weissenrieder (1996) on Cash Value Added that discusses ROA and other measures on the relative productivity of assets. ROA seems like a fairly straightforward measure that should be uniform over time. Unfortunately, as a measure of the economic situation it is often not. If we were to compare two firms in a similar industry we might find the following. A firm that has had a long time to depreciate its assets as compared to a newly started up competitor will often look better. The competitor's accounting value of his assets will still be high even though they are just as economically efficient. A better system would be to amortise the investment cost over its economic life (data not included in this work) and compare to the amortised value of a competitor's assets. The end results are that caution should be applied in interpreting the key ratios.

2.1.3 Financial Risks

Each of the financing strategies is going to have an impact on the financial risks faced by the firm. Unfortunately, each of the instruments affects different areas of the firm and therefore, the impact on the risks is not always easy to discern. A difficult question was which risk measure to use in the theoretical section. No specific measure was able to adequately capture the true extent of the risk. The solution was then to describe what factors would influence the risk and how they would influence it. If the firm is concerned about any one of the risks, they can get a general sense of how it will be affected by the particular instrument. The four financial risks that will be examined are liquidity, credit, interest rate and capital risk. They are defined as follows using the basic ideas found in Ross et al (1999):

Liquidity risk

Liquidity risk is the risk that firm will be unable to meet its short-term commitments. It is basically, that the firm does not have enough cash on hand to pay out all the obligations owed to employees and other creditors. This is a real concern for most companies because cash inflows and outflows do not match perfectly. If outflows exceed inflows for too long the firm will face a liquidity crunch and have to look for financing to bridge the gap. The cost of that financing can be quite expensive. If for some reason, the firm is unable to raise the necessary funds it can go under even if its business is good overall. However, the cost of holding liquid reserves is expensive as they earn very little interest. Therefore, the company will want to have a minimum of reserves. Liquidity can be measured in a number of ways. The current ratio measures current assets over current liabilities. It is useful for measuring the instruments dealing with current assets that have been used in the case. Implicitly, any instrument that makes revenue come in on time or gives flexibility when payments have to be made will be seen as improving the liquidity risk situation.

Credit Risk

Credit risk is the risk that clients will be unable to pay for goods and services received. Obviously, any time a client defaults there is a loss to the firm. All firms will experience this type of situation to a certain extent. Frequent or large losses however, can potentially force a firm out of the business. Any time a firm is especially worried about the potential losses that can result from a business activity, they can choose an instrument to minimise credit risk. Traditional means of handling the risk can be quite expensive such as insurance or having a higher proportion of equity to absorb credit losses. It is also difficult to measure credit risk, as it will vary from firm to firm and industry to industry. A proper assessment of the credit risk requires a study of the clients of the business and the likelihood of default. It will also have to measure how much of the loss can be recovered and the severity of any one default. Other things being equal, a lower credit risk is always preferable to a high one and therefore credit risk will be assessed from a how much was transferred perspective. An instrument will be considered to improve credit risk if it transfers some of it away.

Interest Rate Risk

Interest rate risk is the risk that movements in the underlying interest rate will increase a firm's interest costs. Any increase in costs will reduce the returns. The more highly leveraged it is, the more likely the firm is to get into financial difficulty. Firms finance their activities through a mixture of fixed and floating commitments. The cost of those commitments will vary with changes in the interest rate environment. If the firm chooses a fixed rate product they will know with certainty their costs. If however interest rates go down for a long period they will be spending a lot more than a competitor who has floating commitments. The opposite is true if rates go up. A good way to measure the risk is to divide interest sensitive assets with interest sensitive liabilities. Anything that matches the liabilities and assets more closely will be considered to improve interest rate risk.

Capital risk

The capital risk determines the degree of losses that can be experienced by the firm before the creditors will start experiencing losses. It will have a direct impact on the cost of capital, faced by the firm, as investors with a lot of security do not have to charge as high a risk premium. If a firm were to increase its equity, it can reduce the capital risk to other creditors but equity is the most expensive form of financing because it has to absorb losses first. A measure of this is the equity over assets measure (solidity). Any instrument that reduces the likelihood or degree of losses will be considered to improve capital risk.

2.1.4 Transaction Costs/Asymmetric information

Every business transaction has very real costs associated with it. Using Coase's (1937) ideas, it can be said that the limits of the firm will be reached when the cost of doing something within the firm becomes more expensive than doing it outside. This is the result of coordination and control problems along with monitoring and motivation ones. In reality these costs are the more familiar contracting, information, production, agency, bargaining etc. The advantages of choosing one action must therefore be weighed against its costs. These costs can arise in one degree or another depending on the method of financing used. There are a number of issues tied

up in these costs. Such as what are the company's core competencies and what sort of alternative management options is the company foregoing as a result of a choice in a particular financing instrument? Freedom to act becomes more limited when there are others to consider according to Reekie and Crook (1995). The firm must take these types of cost and consequences into consideration before one instrument or another is chosen. Asymmetric information is a subset of transaction cost considerations. As it is a highlight of this thesis, the section below considers its major implications.

The discussion will begin with a very simple illustration given by Akerlof (1971) in his groundbreaking article on the market for lemons. Basically, it is a discussion of possible reasons why the value of a car depreciates so much once purchased. His premise is this that everyone knows that some new cars are good and some new cars are lemons (poorly made cars which will experience a lot of problems) and unfortunately neither the dealers nor the public know which is which. So when a person goes to buy a new car, he or she is taking a chance that the car will be a lemon. The owner of that car will find out through experience whether or not that car is a lemon. Well so what? The implication of this is, that the owner of a lemon will have a greater incentive to sell the car and purchase a new one than the owner of a good car. That means that there is a greater chance of buying a lemon in the second hand market than in the new. Buyers of used cars will be much less willing to pay as much for a second hand car because they will never have access to the same information as the seller. They will have to wonder whether or not the seller of the car needs changed or did he just want to get rid of a lemon? This difference, in information levels, means that the price will reflect some new average expected quality level of the used cars. Obviously, if people could differentiate between good cars and lemons easily, different price levels would emerge with better cars getting a better price than the lemons. This would benefit both the buyers of cars and the sellers of good cars with only the sellers of lemons losing out because they can no longer have people paying them a higher price than their car is worth. This difference in information between the buyers and the sellers or any two parties, is known as asymmetric information in the literature.

So what does this example mean to the decision makers in companies? Simply, there is a premium (as is already well known) placed on risk but even relatively safe investments will face a large risk premium if the market is unable to inform itself accurately about the risk. The direct implication is if through some sort of financing strategy, the firm can convey the necessary information or share the risk with someone who already has the information then the overall cost to the firm will be reduced.

Asymmetric information issues are typically, viewed as a negative because they lead to inefficient bargaining in the economy as a whole. In a situation where parties are each trying to maximise their own benefit at the expense of others, it becomes difficult to align the parties' motives, as discussed by Reekie and Crook (1995). It is difficult because no one has a complete set of information and therefore, cannot truly assess the situation and benefits from the deal should it go through. Not only from their own perspective but from their partner as well. Inefficient bargaining leads to higher prices overall and in many cases deals that should go through do not.

Everyone is trying to maximise their own benefit. One-person may gain at the expense of others. A company's management is looking to maximise their own shareholders value. This value maximising behaviour may not be in the best interests of the other creditors. Therefore, if

creditors to the firm expect this behaviour from management, they will demand more compensation. Johnson (1998) discusses, that they will demand more, if they have to absorb the cost of monitoring the firm and management, to ensure that they are not acting against creditor interests. Interestingly according to the literature by Fama (1985), bank loans can in this case actually reduce the overall cost of funding. They do this because other creditors know that banks will monitor the firm to protect their own investments and the other creditors can reduce their own monitoring costs as a result.

Inefficient outcomes can be illustrated by looking at why actions of the firm are often viewed as signals to the market. Accepting that the market cannot know the same information about a firm and its prospects as the managers, the firm's actions must be viewed as signals about the opinions and prospects of management. When financing is raised through equity for example, the market often views it according to Myers and Majluf (1984), as a sign that the firm is considered overvalued by the management and the value of the equity will drop. Why else would management choose to issue equity over some other financing instrument? Managers, knowing that the share price will drop will often not proceed with positive NPV projects because the value of the equity is too low and they would not be acting in the best interests of the existing shareholders. From the economies' point of view, it is inefficient if good projects are not going ahead because the market undervalues them. Projects not going ahead because the market undervalues them are an example of market failure discussed by Akerlof, (1971).

One final point is clear from Hittle et al (1992) in the literature. When firms raise capital there is a preference in the order for which the firm will finance projects. Larger and more studied firms already have information about them and their prospects out in the market place. Therefore, information costs associated with them are less than for smaller firms. In any case though, retained earnings have a strong preference with managers, as there are no asymmetric information costs. This source of funds does not need to be requested from the market place. Therefore management does not need to worry about how this will be viewed and what affects it will have on the stock price. Retained earnings are followed by debt and finally equity, which is the most expensive form of finance, from an information point of view. This is in contrast to Modigliani and Miller's proposition that capital structure does not affect the firm in a world without taxes. Hittle et al (1992) suggest that firms retain borrowing capacity so that they can take advantage of positive NPV projects when they come about.

What the literature does not attempt to say is how should a decision maker use this knowledge so that he can use asymmetric information to his advantage. There are three major implications and the first is that the least expensive form of financing in many cases will be the one that best manages to solve the information issue between the parties. In this sense the difference in information can be turned around from being a negative and turned into a positive aspect. Differences in information do not only concern the ability of one party to meet commitments, as is the main focus of the literature. Differences in terms of knowledge, skill and ability to deliver its products and services also exist. Through financing arrangements, the costs of learning how to perform an action, properly informing the market about it and implementing actions can be minimised while at the same time maximising value. Those who have better information are able to make better decisions because they can make a better assessment of the risk, the prospects and how to carry out the required actions. For an example, refer back to Volvo leasing its trucks in the problem discussion.

The second, as can be inferred by Myers and Majluf (1984), is that by choosing one form of financing over the other, different signals will be sent to the market. A firm wishing to change the market's perception of it can use an instrument that sends the right signal. This is particularly true of the off balance sheet strategies which can significantly alter the key ratios of a firm and therefore the market's perception. Essentially, what the firm is trying to do through altering of the key ratios is make sure that the market is aware that it is not a lemon. Some caution must be taken here, as accounting is not always able to adequately convey the information properly.

The third area is attempting to align the parties' motives. When motives are out of alignment, then one or more can begin to act in their own interests at the expense of the others. They will simply try to (either openly or not) transfer more of the benefits of the contract to themselves than they are officially entitled to. This post-contractual opportunistic behaviour, as it is known in the literature by Johnson, (1998), can cause good projects to die because the parties entering into the agreement cannot be sure of the others degree of good faith. For example bondholders, may be worried that management will increase the business risk of the firm because the costs of failure are born more so by the creditors, who cannot benefit from the rewards if the project succeeds. Bondholders often have restrictive covenants because of this. OBSF will aid this if it can solve this issue between parties. Otherwise, either management or creditors have to be hopelessly naïve for this not to be a concern.

In summary, value is a difficult concept to define. There are a lot of aspects, which cannot easily be translated into a number. Therefore, it was necessary to impose a structure on the concept of value to make it usable for the thesis. The four areas of cost advantage, management options, transaction costs/asymmetric information and risk transfer will be used, in the next chapter, to describe how the instruments will affect value.

3 FINANCING INSTRUMENTS

This section will give an overview of the five chosen instruments. The advantages as well as the disadvantages will be discussed from the value perspective described in the chapter before. Every section ends with bullet points that provide a summary for the readers.

3.1 The Chosen Instruments

There are more than the five instruments presented that can be considered to be off the balance sheet. The five chosen, were however the most commonly discussed in the literature that was studied over the course of this work. This implies that there is the greatest amount of interest in these five chosen. It was outside the scope of this thesis to do a complete survey of all the instruments. Others such as insurance and options are sources of funds but not really means of getting a project off the ground.

3.2 Factoring

Salinger, (1999), describes factoring as a method of selling off one's receivables. Naturally, there are a million and one variants of factoring but basically they fall into two key areas. One is selling with recourse for the factor and the other is without. Recourse factoring means that the factor can charge back to the company any debts, which were not collected. Non-recourse factoring means that as long as the company meets the agreed conditions (in terms of amount of credit granted to customers and customers who are approved by the factor) then it no longer has any concerns about the collection. The factor charges for this service and it is usually in the form of a percentage of the outstanding invoice. The charge includes an administration fee (which covers all the costs and includes the profit) and one for the payment of the monies before collection by the factor. In many jurisdictions factoring usually takes the non-recourse form as otherwise the factor is unprotected against the bankruptcy of the firm and simply become another creditor. In the non-recourse form the sale of receivables is regarded as a true sale so the factor is not prevented from collecting the debts, as they are now legally his. Credit times are generally the same as those, which are standard to the particular industry and are negotiated with the company hiring the factors services. In both recourse and non-recourse factoring the factor typically performs all the collection and bookkeeping duties. They are also responsible for the credit assessment and losses from debtor non-payment.

The services provided by the factor are the then following.

- Advance money for sold goods.
- Bookkeeping for receivables.
- Absorb non-payment costs.
- Provide credit assessments.

3.2.1 Cost Advantages

The cost of financing the receivables can be reduced. The factor by advancing the money on all, or part of the receivables turns an asset on paper into cash. This can also help a firm avoid late payment penalties to their own suppliers. This assumes that the factor's discount (face value minus his charge) is less than the old costs of funding the receivables. Factors have very different risk profiles to the bank. Factors, according to Forman and Gilbert (1976), often have extremely well developed knowledge of the market and can make good decisions regarding credit to customers. They unlike a bank, through ownership of the receivables and controlling how much credit is extended to whom, can isolate themselves from many of the risks of the business. Risks, that the bank in lending to the firm in general, has no control over. Therefore, they do not require the same degree of compensation for their services and this is a key reason for economic gain.

Non-recourse factoring can help a firm avoid the problems of a large and unexpected default by one of the debtors according to Salinger (1999). Normal defaults will be priced into the contract but otherwise the risk is transferred to the factor. For smaller firms where the default of a larger creditor would be serious, then the services of a factor are indispensable.

The factor will perform credit controls on the company's clients. If the firm does not have the capacity to do this internally, it will be most likely be less expensive than asking a third firm to do it. It is less expensive because the credit control service is bundled in with the others. Thus the factoring firm does not have to charge for the administration part again but only for the service itself. The factor often has better knowledge and is better at avoiding credit risks and losses in general improving the firm's prospects. This would be most true in new market situations and with new lines of business.

According to Tony Petterson at Fortos, factoring can speed up payments by customers. The customer does not have the option of asking the company for an interest free extension. Therefore, they will be more inclined to make the payment. Before they might have been able to get an interest free extension because the firm wants to maintain good relations with their clients. There is often a balancing act between customer relations and liquidity needs in many firms. By separating the firm from the billing process, they can avoid some of these problems.

The firm removes the accounts receivable, credit control functions from the firm. If the firm was not able to do this at a low cost to begin with, then the factoring solution will become an even more attractive option, as the savings of removing the receivable and credit control functions will outweigh the cost of factoring. Even if the firm was not having problems in this area it does reduce the administration issues of these departments.

Factoring has, as described, five main cost advantages:

- Reduces operating capital requirements.
- Absorbs credit risks.
- Reduces credit control costs.

- Speeding up the incoming payments.
- Eliminates accounts receivable and credit control costs.

3.2.2 Management Options

Management no longer has to focus on the management of the accounts receivable and credit control department. It is now free to spend that time and effort on areas of the business, which are central to its success.

Funding sources are diversified. If lines of credit or loans of other sources dry up, factoring can provide some of the needed liquidity. Factoring as mentioned is an advance for the receivables due, this means that for the factor the risk of non-payment is limited to the company paying the receivable. Therefore, problems with the firm factoring its receivables are not going to influence likelihood of payment to the factor.

Factoring gives the following management options:

- Out-sources accounting and credit control function.
- Diversified funding sources.

3.2.3 Financial Risks

Factoring will reduce the liquidity risk faced by a company. The factor by advancing some portion of the outstanding invoice upfront puts cash back in the firm. The firm does not have the same worries about being able to meet their commitments as the time lag between sales and income has been largely eliminated. The factor also expects payment but that is collected when the receivable is actually paid. Therefore, the arbitrary repayment of conventional debt is removed.

Credit risk is also eliminated in non-recourse factoring. The factor by controlling to whom and how much credit is being extended agrees to take on that risk. In recourse factoring the credit risk remains with the firm.

Interest rate risk will depend on how the receivables were handled prior to being factored. The interest rate risk would be reflected in how much a change in the interest rates would affect the price of factoring relative to the cost of the previous solution. There is the classic comparison between interest sensitive liabilities and assets. Firms with a large portion of their assets in one method or another can choose a fixed or floating factoring cost to keep this risk under control. Floating rate debt can more easily be matched by a factoring solution using a floating rate, as the costs will most likely offset one another.

Factoring will not directly affect the capital risk unless the factor's advances alter the capital structure. For example, if the advances are used to pay off debt then the amount of equity in the

firm should rise. Additionally, the insurance provided by the factor can be considered a form of hidden capital because it absorbs the credit losses as described in the article by Zolkos, (2000).

The following are the effects on the risks:

- Liquidity risk reduced.
- Credit risk eliminated (non-recourse).
- Interest risk depends on the situation.
- Capital risk not affected.

3.2.4 Transaction Costs/Asymmetric Information

If the firm can effectively utilise its internal resources then, what value is there in outsourcing the accounts receivables? The firm is losing much of its ability to meet the client's needs. The reason is that they have different business objectives. The factor, in order to protect itself will not always want to accommodate the company's wishes in terms of to whom and how much credit to extend and on what terms. This could well hurt the business. An additional concern is that the factor in many cases is the one doing all the billing and collections. The company considering the factoring solution would want to ensure that the billing and collections are going to be done in such a way as to benefit their business relationships not harm them. This is similar to the aligning of motives problem discussed by Reekie and Crook (1995).

In factoring there is a large asymmetric information issue. The factoring firm may have an advantage of better information about prospects and the credit worthiness of those prospects, particularly, in new markets or business lines for a company, according to Forman and Gilbert (1976). This presents a real potential gain for the client. They can reduce their exposure to the unknown elements and focus more on the business development. The additional loss protection provided by non-recourse can be taken for a favourable cost because the factor is in control of many of the risks it is exposing itself to. On the flip side, if the firm has good credit controlling facilities it may not make any sense to factor. The firm, especially in established markets, will already have better information about its clients and the risks they represent. If it has better information than the factor, then the costs of transferring that risk are likely to be high unless the firm cannot effectively use its credit control. The factor will want a higher risk premium than the firm would require internally.

Factoring has these transaction costs and information issues:

- Factoring may cause problems with customers relations.
- The factor may have better credit risk information.

3.3 Leasing

As defined in Riahi-Belkaoui, (1988), leasing is an agreement between two or more parties. The lessor agrees to own and pay for the asset and gets all the tax deductions for depreciation and interest. The lessee, agrees to use the asset in exchange for a fee determined by the lessor. The fee includes adequate compensation for capital invested, technological obsolescence, resale value risk and default by the lessee. Financial leases are long-term agreements and the lessee uses essentially all the asset's economic life. The asset is fully amortized over the length of the lease payments and there is no option to cancel. Financial leasing is very similar to debt because the lessor can go after the assets of the lessee in cases where the lessee defaults.

One other type of leasing is the sale and lease back option, according to Campobasso, (2000). An asset owned by the firm is sold to the leasing company in exchange for cash and is then leased back immediately to ensure it's continued use. That cash that was tied up in the asset can be used for other purposes.

Leasing has therefore the following basic characteristics:

- Separation of ownership and the use of the asset.
- An exchange of tax benefits and financing costs.

3.3.1 Cost Advantages

Leasing for the most part would not exist except for the distortion created by taxation. Ross, Westerfield and Jaffe, (1999) state that "leasing allows the transfer of tax benefits from those who need equipment but cannot take full advantage of the tax benefits associated with ownership to a party who can." What this means is that the lessor and lessee can share the lower financing cost and differences in taxation levels that individually they cannot. Through sharing they gain money that otherwise would go to the government in the form of taxation. The lessee ends up with a lower cost of funding than traditional debt.

The lessor can have advantage over the bank in terms of information. Debt financing is the most obvious alternative to lease financing. Banks usually lend to many different types of businesses. The leasing company may focus on only one type of business. Through that specialisation they can charge a lower risk premium because of their better information about the risks being undertaken. Lessors may also have a better capacity to undertake the resale of the assets. This will reduce their cost for purchase relative to the lessee because they can reduce resale costs and perhaps get a better price.

Riahi-Belkaoui (1988) says, that once an asset is owned outright, its value can be directly thought of as being born by the equity holders. Therefore, the firm can sell the asset and lease it back freeing up that equity capital for higher value projects. This could also be viewed as a strategic OBSF instrument, if the firm is in a liquidity crunch and needs to raise funds from alternative sources.

These are then the cost advantages of leasing:

- Gains of trade through taxation and financing differences.
- Gains through taking advantage of better information on the part of the lessor.
- In the case of a sale and lease back changing high cost equity capital to lower cost debt.

3.3.2 Management Options

Riahi-Belkaoui, (1988) said, leasing has a number of very real benefits that match the management options definition. Firstly, revenues can be matched to payments. The lease payments can be structured in such a way as to delay the initial amounts paid out or at least keep them small. The timing and amount of the payment can then reflect the anticipated revenue stream. This way the firm is not being asked to make payments for which it may not yet have the funds. In doing so they can avoid a liquidity crisis. The presumption in the previous statement is that it is easier to do it this way than with traditional debt.

Secondly, cash outlays for projects can be minimized through avoiding down payments. In this case the benefit is being really compared to an outright purchase. The entire sum of money does not need to be raised immediately. It then becomes the lessor's problem but the payments will reflect the lessor's costs.

Thirdly, leasing allows a firm to focus on their core business. The leasing firm can be hired to provide all the maintenance on the asset and allow the lessee to worry about their own issues and leave those which are merely a drain on their time and effort to the lesser (assuming of course that they have a greater amount of knowledge about the product/service).

Finally, avoiding restrictive covenants, which are often placed on traditional debt, can be a big advantage for leasing. The more freedom to act a firm has, the better they are able to react under competitive pressure. Any corporate officer wants the freedom to act in a manner that suits the needs of the business. This is a large plus over debt.

Leasing also has, according to Riahi-Belkaoui (1988), many benefits attributed to it that are somewhat questionable (pronounced ludicrous). The three most common misconceptions about leasing are that it helps avoid obsolescence, is fully deductible and key ratios will improve. In order to believe these benefits, one must first believe that the lessor knows less about the expected depreciation than the lessee and will not charge sufficiently for it. Two, that the depreciation and tax write offs from debt are not as large as the deduction from the lease. The advantage from leasing comes from the sharing of benefits between the parties not from the deductibility alone. Three that the return on capital and other inadequate accounting measures will improve. This type of improvement would only be a concern to corporate officers if the incentives in their employment contracts were poorly conceived and they would directly benefit

from this. Otherwise, it would have to be the extremely unsophisticated investor/analyst who takes this into consideration as a sign of real improvement.

The following are then the management options given by leasing:

- Match revenues and expenses.
- Minimize initial cash requirements.
- Focus on core competencies.
- Few restrictive covenants.

3.3.3 Financial Risks

Depending on the contract agreed, to liquidity risk can be limited by arranging the lease so that lease payments match expected cash inflows. The risk then becomes more of a business risk where the income generated by the asset has to match the payments required.

The lease is a payment and there is no change in the credit risk. A sale and lease back agreement would not go through if the purchasing party could not raise the funds.

The interest rate risk is difficult to assess. It will depend on the length of time and type of leasing agreement. The longer the agreed financing, the higher the interest rate risk because the interest rate has more time to change.

Capital risk would not change. On the assumption that the firm has an ideal capital structure, the lease agreement would have to displace some other debt in order to maintain that risk at the desirable level.

These are the risks that change in leasing:

- Liquidity and interest risk may be affected, depending on the situation.

3.3.4 Transaction Costs/Asymmetric information

The lessor is bearing the financing costs of the lease. They will have to recover them and leasing can be an expensive form of financing if entered into solely for the ability to match payments with revenues. Interest charges are still accruing whether or not they are being paid for immediately. If the lessee for some reason has better information about the asset than the lessor, then the ability of the lessor to charge a low risk premium is reduced. The lessee with better information can charge himself less (if he were to use retained earnings etc). There is also a loss of complete control over the asset. It can be difficult for the lesser to agree to make changes to the asset once the contract has been signed, such as upgrades etc. The lessee will have to pay or have to spend a lot of time renegotiating if for some reason his needs change. This is in fact a

part of the issue known as the “hold up problem” where one party can try to extract extra benefit from the other because the “held up” party loses too much if he does not agree. In cases where this is potentially a problem a loan is much more preferable if the cost of lost power to decide how to use the asset itself is too high.

Most of the asymmetric information benefits of leasing have already been touched on in the cost advantage section. Particularly, in direct leasing there can be a large asymmetric information situation. The lessor may be in a better position to deal with the risks because of the large volumes leased or sold gives them better information about the true costs. The lessor may also have access to an existing customer standard already for the used products. This will lead to a reduction in costs for disposal and perhaps getting a higher price. This would be especially true where the lessor could do some sort of restoration work and increase the value of the asset. Their core competencies would also give them the capacity to service and maintain the assets better than others. With these factors combined, leasing is a more attractive option than purchasing for many firms.

These are the transaction costs/ asymmetries of information for leasing:

- Can be expensive.
- Lessee loses complete control over the asset.
- Lessor has economies of scale and better information.

3.4 Special Project Finance

According to Finnerty (1996) the key aspects of special project finance are described below. It consists of setting up a project where both costs and revenues beyond the initial cost are born and received by the project exclusively. It in effect becomes its own entity separate from the sponsor (company or companies which originate it and can be considered as a type of outsourcing). The project then has the advantage of being entirely assessed on its own merits and being freed of the parent corporation’s credit situation. The sponsor usually involves other parties who can bring benefits to the project, benefits such as, a better credit rating, knowledge etc. It is important to note that failure of either the sponsors or the project itself does not affect the other. It gives investors, the choice to invest in the project itself even if they might not have invested in the sponsor. Conversely, investors in the sponsor do not have to reconsider their investment in the whole company because of the risks in the venture. Normally, a firm would use this type of set up to either limit its liability and or to get funding for a project which it cannot otherwise get at a reasonable price. The limited liability is conditional on the sponsors ensuring that the project comes to completion otherwise they will have to reimburse creditors for the full amount. Special project finance is also known as limited recourse financing.

Special project financing has the following key features:

- Limited liability of sponsors (must complete project).

- Separate entity from sponsors.
- Can get financing and at a low cost.
- Risk is transferred to other parties better able to deal with it.

3.4.1 Cost Advantages

The credit assessment is made of the venture itself as per Howcroft and Fadhley (1998). Therefore, the credit worthiness of the sponsor or his capacity to bear all the risks himself is removed from the equation and this can lower the financing charge. On the flip side, lenders may view the project as exceptionally risky and may want to charge a higher price in the absence of some other information. Commitments made in terms of the amount of output to be purchased and at what price can give lenders the types of assurances they are looking for. Risk can also be transferred to the party best able to deal with it. By bringing in other sponsors and sharing the risk no one company must bear all the costs of financing and failure.

Here are the cost advantages of special project financing:

- Credit costs can be lowered.
- Risk can be transferred to parties best able to deal with it.

3.4.2 Management Options

According to Howcroft and Fadhley (1998), a big plus of the special project financing is that a firm will not be brought down by the failure of the project because it is a separate entity. In especially large projects with large capital commitments it may simply be beyond the sponsors ability to deal with the risk and the project needs additional partners to reach completion. As it is separate it will not affect the firm's capital structure. Yet, the income from the project will still register on the company's balance sheet. Finnerty (1996) stresses that; the firm must have enough resources to see the endeavour to completion. Otherwise, its portion of the debt financing will have to be paid off, a risk it was trying to avoid in the first place.

The firm can focus on only those areas that are specific to its knowledge or competence. Many projects will require a number of different competencies, allowing the parties to bring their own strengths together. For example, an engineering firm might propose a cogeneration power facility (Wood 1994). Co-generation refers to using an existing facility's excess heat to generate power. The engineering firm does not want or need to own the asset. Therefore, it would need to find a firm that used a lot a fuel generating heat, where much of the heat is wasted and could be used for power generation. The engineering firm then enters into an agreement with a local electric utility to sell the power it generates for a fixed price. The end result being that the engineering firm gains revenue from designing and building the co-generating capacity. The utility has more capacity coming online for a relatively low price and the original generator of the heat sees revenues from the sale of what was before a waste product.

Milgrom and Roberts, (1992) discuss that, through this type of venture, firms will gain access to the other partners knowledge and information because they are working closely together. This can be both an advantage and a disadvantage. Firms with a high degree of specialisation in an area may be opening the door to increased competition and conversely making themselves much more competitive. There is a very good example in the NUMMI joint venture between Toyota and GM in Fremont California. GM learned how the Japanese production of cars worked. They also learned the Japanese style of employee relations. The Japanese established a presence in North America and gained knowledge about American Unions.

The management options to the firm then are:

- Limits liability of firm.
- Allows firm to focus on core competencies.
- Gain/gives access to others/own core competencies.

3.4.3 Financial Risks

Special project finance is designed to eliminate the entire business risk from the firm including the financial risks. The firm must only ensure that enough funds are available to complete the project otherwise they along with the other equity sponsors will have to pay back debt holders.

In short:

- Risks are eliminated.

3.4.4 Transaction Costs/Asymmetric Information

The transactions costs for this type of financing are potentially large. Firstly, there is a large legal expense in order to ensure that rights and obligations are clearly defined. There is likely to be a large lead-time required specifically in terms of finding suitable partners. The company is also limiting its potential gains from the project itself, as it has to be shared amongst many others. (This is minimised through high debt structures, Finnerty, 1996) Also according to Milgrom and Roberts (1992) the issue of allowing others access to the company's core competencies and how they are reached also has far reaching implications and should not be taken lightly. It should primarily be considered when the risks to the company posed by the project are great.

Special project financing really allows for the asymmetric information issue to be handled well. It allows the firm to isolate itself from unknown risks in new businesses or markets where the prospects might be unknown. It allows also for the inclusion of partners who have the know-how, resources and expertise necessary to bring the project to fruition (Howcroft and Fadhley

1998). Through this exchange the uncertainty and risk that it brings can be reduced to an acceptable level.

The following are the key features of transaction costs/ asymmetries of information for special project financing:

- Large legal costs.
- Benefits must be shared.
- Gains and gives access to partners, knowledge and capital.

3.5 Outsourcing

According to Antonucci (1998) outsourcing is the selling off one section including its personal and production equipment that the company handled itself to an outside firm. The company then contracts another to make the product or perform the service but to their own specifications. There are a number of advantages to outsourcing, but of course also some disadvantages. Outsourcing is considered a means of financing because this product or service has to be made internally otherwise.

It is however characterised by:

- A transfer of a product or service responsibility, to another firm.

3.5.1 Cost Advantages

If the firm through outsourcing can reduce the cost of the product or service then it has a clear cost advantage. If their counter party has much better expertise, then they should presumably be able to charge less. This will be very likely to be true if the firm outsourcing the product service could not take advantage of economies of scale and the new one can. This can be seen in a situation where there are continual upgrades required but the firm using the outsourced product only has to pay a fraction of that cost, if the outsourcing firm spreads it over many clients. The full cost would have to have been paid internally. An example of this situation is given in Antonucci's (1998) article on IT outsourcing.

The primary cost advantage outsourcing can provide is then:

- Cost savings.

3.5.2 Management Options

The management options of outsourcing have been found to be the following. At first, through the contract the company will know their costs in advance. This makes it easier to plan and gives them greater control over expenses. The end result is that management has a better idea about their cash needs. Additionally, the risks of that asset are transferred to the new owner.

They can also, as stated by Pappas (1996), first get money upfront for the sale of the assets in question from the outsourcing firm. Secondly, they no longer have to absorb all the costs up front. The firm will have a regular fee plus some sort of usage arrangement which means that payments can better reflect their revenues streams if set up properly.

There are four main management options from outsourcing:

- Better control over expenses over the short term.
- Pay in smaller sections, not everything from the beginning.
- Transfer of unwanted risk.
- Reduction in personnel.

3.5.3 Financial Risks

The liquidity risk will change depending on how the payments structure has changed. It will depend on how payments were made to the creditors when the product or service was produced internally as compared to how payments now have to be made to the supplier of that product or service.

The credit risk remains. The customers that use that product or service are still the same and it has not been transferred. There is no credit risk from products or services used internally.

The interest rate risk has been transferred to the new provider. This can be a real benefit if the firm was highly leveraged and they were finding the interest payments too excessive relative to the benefit.

The capital risk is now born by the new supplier. Existing suppliers now have their own risk spread out amongst one more party, diluting it. Finally, any cash gained from the sale becomes an asset, which can be used to pay creditors.

These are then the changes in the risks:

- The interest and capital risks are now the new supplier's risks.
- Liquidity risk may change depending on the situation.

3.5.4 Transaction Costs/ Asymmetric information

Outsourcing will have some negative costs associated with it. The outsourcing can according to Greaver (1999), have a strong negative impact on the remaining personnel and will likely send a poor signal about the company's commitment to their future. There might also be problems in the communication since the things are not done the same at the two companies.

Additionally, as stated in the article "Weighing the costs of outsourcing" (1996), there might be very different corporate cultures, which make it hard to co-operate. The firm is also losing the ability and flexibility it once had. The new firm has different goals and objectives, which do not necessarily align with the firm's own. Before, it could simply order changes and now it must negotiate them. This could seriously affect its ability meet changes in the market place quickly.

Antonucci (1998) further says that, the costs can also be higher than expected. The first depends on the nature of the contract and how it was written. It has happened that the outsourcing was in fact more expensive than doing the task internally. Also, the outsourcing firm has to control the situation to ensure that its needs are being met. If the costs of this control are higher than expected then the firm will not realise all the benefits hoped for. If the reasons for outsourcing were not so clear cut, then the firm may again find it not of benefit. Monczka and Morgan, (2000) state that "where only a few years ago most outsourcing decisions were driven by such tactical considerations as the need to add capacity, decisions these days are being driven more often by longer range goals of better capital utilization. Executive managers are examining organizational capabilities in their worldwide supply standards and what needs to be developed to compete effectively".

Outsourcing from an asymmetric information perspective can according to Milgrom and Roberts (1992), take advantages of others' strengths. Management of the various functions will now be in the hands of others. If they have better information or technical expertise then the quality and confidence in that product or service will be increased. The transfer can even give the contracted company the specific information about the originating firm if they absorb the old employees. Unfortunately, if company specific information is not easily transferable then it could be a problem. They will also not have to face the task of always keeping their information up to date. The firm being hired can take advantage of its specialization in the area to do the same for less. Monczka and Morgan state "instead of investing in new technology themselves, which is very costly, the company can take advantage of the knowledge already in the outsourcing company".

The following are the highlights here:

- Negative impact on personnel.
- Post contractual problems may arise.
- Potentially expensive.
- Improved service through a specialised provider.

3.6 Securitisation

Securitisation involves, according to Shaw, (1991) the packaging of designated pools of assets, for example, loans and receivables and the underwriting and sale of these packages to investors in the form of tradable securities. The underlying assets and their associated income streams are used as the backing or collateral for the security. The securities are therefore; separate from the company, which originated them, for example the bank that issued the mortgage etc. Securitisation is therefore defined as, the process through which illiquid assets can be transformed into a more liquid, manageable form. The process follows this general form. A group of similar assets are placed together in a pool. These assets are then placed in a trust to allow the payments to pass through the trust to investors without taxation. In order to get a good credit rating and reduce the risk premium on the open market, some sort of credit enhancement takes place. Typically, this is in the form of having a triple A rated insurer step in and guarantee the payments so that the credit risk of the securities is eliminated. The trust then issues securities divided up into different payout structures or “tranches” to the public who can then buy those “tranches” that meet their investment needs.

Shaw (1991) further states that, for the investor securitisation gives a broader range of investment opportunities. Firstly, asset-backed securities usually typically offer a yield premium over conventional debt instruments with comparable rating. Secondly, asset-backed securities also usually offer a greater level of protection from event risk and rating downgrade due to their multiple layers of credit enhancement. It provides investors with the opportunity to participate in a particular market without creating a large infrastructure to lend directly to individual borrowers. Securitisation provides lenders with an alternative to traditional on balance sheet lending. It allows lenders to free up cash and to expand the volume of their business without a corresponding increase in equity capital. This process generates according to Fishman and Kendall, (1998), off balance sheet income since the originator retains part of the net margin on the securitised assets in the form of servicing fees, which boost overall profitability and increases return on equity.

Securitisation has then the following three characteristics:

- Pools similar assets together.
- Removes credit risk through credit enhancement.
- Investors invest in the assets themselves not the company.

3.6.1 Cost Advantages

There are three major cost advantages of securitisation according to Fishman and Kendall (1998). Firstly, a large part of investors’ required rate of return is compensation for risk. The investor must additionally, do sufficient research to adequately assess the risk or else he will have to add to his risk premium. Securitisation overcomes both these problems. The credit rating itself allows a potential investor to immediately assess the potential risk reducing his information costs. A triple A rating will eliminate most of the uncertainty premium as well.

Secondly, a company, which does not have the highest credit rating, can improve it with the one it receives on the securitised assets. Securitisation, as described above, repackages their assets and sells them off in a format that achieves a higher rating. Through this improvement in the credit rating the firm will directly reduce its cost of capital and therefore, experience a true economic gain.

Lastly, for financial institutions, which have capital adequacy requirements securitisation presents perhaps the most benefits. The equity required to meet the required amounts is expensive. The OBSF nature of securitisation means that the financial institution will still receive revenue from the repacked and sold off assets but does not have to have the equity. This reduction in equity reduces their overall cost of capital and improves their returns. That capital that was tied up supporting those assets can now be used for new opportunities.

Therefore, these are the cost advantages of securitisation:

- Reduces asymmetric information costs.
- Can reduce credit cost.
- Avoid capital adequacy requirements.

3.6.2 Management Options

The market's perception of a firm is a very important consideration for how much capital can be raised. Fishman and Kendall (1998) explain that if the market's perception changes, a company can find itself in a position where they can no longer raise the funds they need from existing sources at a reasonable cost. Securitisation can get around these problems by opening up an additional route to capital. Illiquid assets can be securitised and new capital can be raised. While the market may not be positive to the firm, they may have no concern about the assets in the pool specifically, due to the credit enhancement.

This is the management option:

- Can get around credit rationing.

3.6.3 Financial Risks

The financial risks of securitisation depend on the type of asset to be securitised.

The liquidity risk for current assets will be reduced as the funds will be received upfront for any invoices. For fixed assets it is a little trickier. For a firm trying to sell off and then lease back its assets, it will get the upfront payment, which could reduce a short-term liquidity need. However, there will then be the lease payments that have to be made thereafter and that could increase liquidity concerns if the payment is larger than what was previously required, for example, if the

asset such as a building was owned outright. For financial firms it would depend on how the securitisation was structured and who would step in and make the necessary payments if the funds were late.

The credit risk is not applicable for fixed assets. For current assets such as receivables the credit enhancement has already eliminated the risk to the end purchasers. For the firm it depends on the method of credit enhancement.

Most securitisations are fixed rate and therefore there is no explicit interest rate risk, as payments are known with certainty. The relative cost will go up or down as mentioned in the overview when dealing with fixed rate payments.

Capital risk is not really an issue as for the investor there is no credit risk so the firms capital situation becomes irrelevant. However, other creditors can see the transformation of the illiquid asset to cash as reducing their risk.

These are the impacts of the risks:

- The liquidity risk goes down.
- The credit risk depends on the credit enhancement method.
- The interest rate risk depends on fixed or floating payments.
- The capital risk is irrelevant.

3.6.4 Transaction costs/ Asymmetries information

Since the cost of securitisation is considerable, as pointed out by Shaw (1991), the process requires large amounts of development work in advance of an issue and large up front expenses. There are many costs to consider, the legal, the credit enhancement costs, the credit rating costs, etc. Therefore, only very large investments are really suitable. For smaller ones, securitisation is generally appropriate only where the originator can recover its investment costs through a continuous program of issues over a long period. To break even, a number that Månsson (1995) mentioned in Swedish conditions is that the underlying assets should be 500 million SEK for the transaction to be worthwhile.

This instrument allows the firm to get around the asymmetries of information, as explained by Fishman and Kendall (1998), which are present in the market place. As described in the cost advantage section investors have to make judgements as to the suitability and risk of various investments. This has a cost because for most industries it takes a large amount of time and effort to properly assess these questions. Through the credit enhancement structure and rating structure the firm undertakes these tasks. The costs are paid out only once and the market then has a very clear idea about the instrument and the costs are eliminated. The individual investors can then eliminate the credit risk element and can focus on the other risks such as interest rate and liquidity risks. The set up costs for an issue are quite large and reflect the fact that gathering

this information and providing the enhancement are quite expensive. It is therefore most efficient to have the asymmetric information issue dealt with only once.

Here are the highlights of transaction costs/ asymmetries of information:

- Large set up costs.
- Eliminates credit risk for investors.
- Eliminates investors' information costs.

3.7 Summary of the financial instruments

It can be seen that each of the different financing instruments has different advantages. These advantages can lead to costs savings, new management options, risk transfer and solving information problems. What has been found is that each of these instruments will bring some degree of value. Every company has a different situation and is looking for different sources of value and therefore the choice of instrument will depend on that. However, there are also other considerations that have to be considered by the company before they make the choice of which instrument to use. Therefore, next chapter will discuss the suitability of each instrument, given other factors. These factors are current or fixed assets, the size of the company, the company's credit worthiness and lastly a discussion of whether all instruments always are off balance sheet will be held.

4 INSTRUMENTS SUITABILITY CONSIDERATIONS

This chapter is designed to give the readers an idea how the choice of instruments can be made easier by eliminating those instruments, which are unsuitable. This is a collection of the information discussed in chapter three and also an extension with four other factors that are important to consider.

4.1 Introduction to the suitability considerations

From the literature of the different financing instruments four important components that will be considered in order to determine how they affect the firm's decision which investment instruments to use, are identified. There are three company specific components, its size, credit worthiness and current/fixed assets and if it is always an OBS instrument.

4.1.1 Current/ Fixed assets

Here, current assets are defined as inventories, accounts receivables, short-term assets and fixed assets. Fixed assets are any assets with an expected lifetime of more than one year, including furniture, machinery and computer equipment etc. Some of the instruments are mostly suited for either current or fixed assets, which have to be considered when deciding upon an instrument. It is easy to understand that most often it is expensive and difficult to set up forms of financing.

Factoring is according to Salinger (1999) idyllically suited to current assets. It is a highly specific form of financing which is tailored to receivables.

Securitisation is, as mentioned in Fishman and Kendall (1998), a flexible instrument and can be used to raise funds for a variety of purposes. As mentioned before though, it is limited to large financing needs.

Greaver (1999) says that outsourcing is flexible and can be used for all sorts of different situations. It is merely up to the company how and when it should be used and on what type of asset.

Riahi-Belkaoui (1998) and Finnerty (1996) state that, leasing and special projects are only suitable for fixed assets. In the leasing case, leases are simply not provided for current assets, it is too expensive. In special project financing the current assets are no longer a concern of the company directly. They become the concern of the special project or the company who is now providing the outsourced service.

4.1.2 Size

A company must have the size to be able to take advantage of some of the instruments presented. Smaller companies cannot achieve the economies of scale necessary to make some of the instruments cost effective. In other cases they may be so sufficiently large that they can efficiently employ the necessary talent and knowledge within the company and do not need some of the benefits offered by some of the instruments. From a practical perspective determining if the firms size or economies of scale are appropriate to the instruments being considered, will save a lot of time.

Essentially, only large companies can take advantage of securitisation (see theory chapter). As stated above the setup costs are considerable and a large amount of financing would be required to average out the costs. It is therefore not that useful for short term or small commitments. Continuous (constantly renewing requirements) short term needs however, can be financed this way.

Special project financing, according to Finnerty (1996), is often associated with large companies as it is most often applied to large projects like oil pipelines. However, it is flexible enough to be used by smaller firms and can therefore be used by both large and small.

Leasing and outsourcing are applicable to any financing need, large or small, (Ross et al, 1999 and Aggarwal, 1993). They are easy to tailor to the needs of the situation. There exist lessors who can purchase and lease large assets like buildings. There are also rental agencies would handle short term or small size assets. Outsourcing can be applied conversely to larger products like eliminating a service previously done in house. All firms can consider these two alternatives.

As inferred from Forman and Gilbert (1976), factoring is typically suited to smaller firms. Smaller firms do not have the needs, knowledge or resources to do a task internally. Larger firms often have the knowledge, capacity to use the resources efficiently and absorb the risk themselves. However, they may have other goals, which they wish to achieve such as focusing on their core business or reducing risk exposure, which could still make it valuable.

4.1.3 Credit Worthiness

The price of financing is most directly linked to the credit worthiness of the firm. Some types of financing will be expensive for a company with low credit rating. Some instruments are designed to either solve this problem or do not have to take this into consideration at all. In most cases firms will try to seek the lowest cost of funding relative to their situation.

In leasing, as stated by Riahi-Belkaoui (1998), the lessor will charge based upon his ability to pay and his own costs of capital. If the lessor has a low cost of capital and can recoup a large part of the value of the asset, in the case of default, the risk premium does not need to be as high. If the asset is highly specific meaning the lessor cannot recoup his costs, as easily, then there will be no reduction.

Special project financing can, according to Aggarwal (1993), get around poor credit ratings by involving third parties to provide credit guarantees. It will also depend on the perceived risks of

the project itself and is divorced from the company's own credit rating. So it can therefore reduce credit costs when the firm's own credit worthiness is considered low.

In the article "weighing the costs of outsourcing" it is stated that, in the case of outsourcing, which can generate some upfront income, the cost should be low. It is only of concern where the contract requires the firm to make an investment that is highly specific and cannot be transferred to others easily. The cost will reflect the credit rating plus additional compensation for having to make a specific investment.

Securitisation and factoring are very similar in that the cost of financing is more dependent on outside factors than the firm's own perceived worthiness or rating. As said by Forman and Gilbert (1976), in factoring, because the factor is only concerned about the credit worthiness of the firm's clients and any default of the firm should not have a direct impact therefore, the credit costs should be low. Securitisation is entirely divorced from the question of credit rating according to Andersch (1997). The assets are separated from the company and are owned by those who invest in the securities themselves. This plus the credit enhancement given it an AAA rating make it a very inexpensive source altogether.

4.1.4 Off Balance Sheet

Not all the instruments are strictly off the balance sheet. Some may have situations where they are in fact on the balance sheet. Therefore, the situations where they are not OBS have been pointed out below.

In leasing, the form sales and leaseback is the only off balance sheet instruments, the others are not. As stated in Ross et al, (1999), while at one time leased assets did not have to be accounted for on the balance sheet, the rules have changed and leased assets must now appear on the balance sheet.

Factoring can, according to Forman and Gilbert (1976), be both on and off and it depends on whether or not it is a recourse or non-recourse form. In non-recourse the asset is still a part of the firms balance sheet. In non-recourse the receivable is completely sold off removing it from the balance sheet.

Securitisation, stated by Shaw (1991) and special projects, stated by Finnerty (1996) are OBS because the asset is sold off to another party or parties. Outsourcing and special projects are essentially tasks that are done outside the company, and therefore do not show up on the balance sheet.

Table 1 Overview of the OBSF instruments

Instruments	Off Sheet	Balance	Current/ Assets	Fixed	Required Credit Worthiness	Size of Firm
Factoring	Yes		Current		Unimportant	Any/Small
Leasing	Yes/ No		Fixed		High	Any
Special Projects	Yes		Fixed		Low	Any
Outsourcing	Yes		Both		Low	Any
Securitisation	Yes		Both		Low	Large

The table is designed to illustrate which instruments are most useful in different environments. It allows the firm to eliminate the techniques, which are unsuitable. They can then go back to the theory and examine the implications of each applicable instrument. From there they can make a choice of which to use.

4.2 Summary and the Choice of Instruments for Volvo

Not every instrument will be suitable for every situation. Therefore as we have seen in this chapter there are three company specific components that help decide which OBSF instrument is suitable. These components can help a company quickly narrow the choice, of which instrument to use, down to those, which will meet their own specific situation. They then can look at what value is brought and make their decision. In determining which instruments are suitable for Volvo we had to decide whether or not we are going to look at a current or fixed asset. As we have decided to look at accounts receivables, we are dealing with a current asset. Going to the table we can see that there are three possible instruments to use. Factoring, outsourcing and securitisation are all possible but factoring is the outsourcing solution for receivables and therefore outsourcing can be eliminated. As Volvo is a large company securitisation can be used, as there will be enough receivables to make it worthwhile. We already know that Volvo has a high credit rating which would tend to make securitisation seem less valuable from a purely cost of funds consideration. Factoring can be used by any size of firm.

5 THE CASE STUDY AND THE ANALYSIS

In this section we will review the situation for a business unit within the Volvo Group. It will hereby be referred to as X. A case study will be performed and the results for the solutions and each of the scenarios will be presented. The analysis will go from point to point as discussed in our theoretical framework. In other words, it will be analysed from a cost advantage, management options, risk transfer and transaction cost/asymmetric information point of view. The solutions will also be assessed in their ability to solve a particular problem, cost of capital, access to capital and core competencies as well as risk transfer.

5.1 Description of the Volvo Company

The company we are dealing with is one of the members of the Volvo Group. We are only looking at receivables of an end line good. Volvo has a credit rating of A2 on its short-term debt according to Standards and Poors, which is quite high and therefore its costs of borrowing are low. Volvo has an internal group insurance that covers 90% of any credit losses. Therefore, the credit risk faced by X is relatively small if it chooses to participate. In fact actual credit losses experienced by the firm were negligible over our sample period. In our study we therefore focused more on the liquidity risk faced by X in its business dealings.

5.1.1 The Data

We have received data from X for the last three years of their operations. We have information on the proportion of overdue items and how long they have been overdue. We also have the financing costs for each of the years. Finally, we were able to estimate the costs of the accounts receivable department and it was negligible.

As mentioned in the methodology, we have also contacted Handelsbanken, Enskilda Securities and Öhmans to attempt to get some real costs for a factoring and securitisation solution. These companies are large and active in the market and in the case of Handelsbanken have an established relationship with Volvo. We used real companies figures because estimating them would introduce another element to the analysis of why certain costs were chosen and not others. The estimation adds additional uncertainty to the results.

5.1.2 The Evaluation Process

In doing the evaluation we tried to determine if the instruments managed to solve the problems stated in the problem discussion. Did they manage to reduce the cost of capital, improve access to capital, allow the firm to focus on core competencies or transfer unwanted risks? There are undoubtedly tradeoffs and those will in the analysis, be balanced against one another. The evaluation will be performed using the format laid out in the theory section. As mentioned in the

theory section the key ratios must specific to the situation and industry. There are a number of key ratios, which are common to the Volvo group and are used internally to evaluate performance.

These are the common Volvo key ratios:

- Solidity measures the proportion of equity supporting the assets. Formula:

$$\frac{\text{Equity}}{\text{Assets}}$$

- ROE (Return on Equity) measures overall profitability. As long as the cost of the instrument is lower the ROE will rise. Formula:

$$\frac{\text{Net income}}{\text{Equity}}$$

- OC (Operating Capital) measures the capital that is actually engaged in the business as opposed to financial assets, which may generate a return. Formula:

$$\text{Total assets} - \text{non-interest bearing debt} - \text{interest bearing assets}$$

- ROC (Return on Operating Capital) measures the overall effectiveness. Obviously a lower cost solution will cause the net operating income to rise and the ROC will rise with it. Formula:

$$\frac{\text{Net operating income}}{\text{Operating capital}}$$

- Operating Capital Turnover. An asset utilisation measure, which can be compared to others in the industry in assessing performance relative to the peer group. Formula:

$$\frac{\text{Net sales}}{\text{Operating capital}}$$

5.2 Expectations

The theory gave some hints and expectations of how and when factoring and securitisation can be of value. With these thoughts in mind we try to link back to the theory and come up with some ideas of how a factoring and securitisation would affect Volvo.

5.2.1 Expectations for Factoring

The factoring solution, as stated in the theory, is essentially a specific case of outsourcing. The degree to which the factoring will be done is up to the company in question. Volvo from a number of perspectives is not an ideal candidate to find value in a factoring solution. It has the following characteristics. Firstly, the market has good information about the company and it has a high, established credit rating and therefore, a low cost of capital. They have enough volume to justify the accounting department. This means that there are not the same sorts of information disparities or costs in general associated with the running of the receivables department that there would be in a smaller firm. So initially, we would not expect factoring to bring value by reducing the cost of capital.

There are a number of other considerations, which may outweigh the above reasons. The first two, which come to mind, are that Volvo may not be able to make its customers pay on time, exposing it to some liquidity risk. The second is that there may be significant credit risk exposure that the firm would like to remove (all or in part). If the OBSF can transfer these risks then it can be of potential value. Additionally, Volvo may question whether or not it is really in its own best interest to handle the accounts receivables internally. Can it improve its performance by reducing the management issues surrounding the whole receivables department?

The last area where Volvo might be able to see some benefit is by diversifying its sources of funds. If the market decides that Volvo is a poor credit risk an over reliance on a source of funds could lead to problems. It has happened to other companies that the market has soured on their prospects and will not provide them any longer with the necessary funds.

5.2.2 Expectations for Securitisation

Volvo will also be able to remove its receivables from the balance sheet if it securitises. Volvo for the most part makes a reasonable candidate for securitisation based on the volume of the receivables in question. It can also presumably benefit from an A1 rating, which is higher than its own A2 for the receivables. The credit enhancement will bring a reduction in cost but it may be overshadowed by the set up costs. The spread between the A2 and A1 is not that much according to SEB the current market spread (November 8th 2000) is only five basis points on short-term commercial paper. Volvo would also need to keep the accounts receivables department in place to process the payments etc.

As with factoring, securitisation can help reduce any liquidity risk. By receiving monies now, the firm can be assured of meeting its own obligations in a timely manner. Also similarly to factoring, Volvo might be able to see some benefit by diversifying its sources of funds. An over reliance on one type will lead to problems, if the availability to or the cost of that source of funds changes significantly. As mentioned in factoring other companies have had their access to capital restricted. Credit enhancement will remove the risk that any large swings in the credit experience of X to the negative will have a serious impact on the company.

The ratios used in the case were chosen in conjunction with Volvo. They are common and well known throughout the Volvo Group making them suitable for this work. They therefore, have been left out of the discussion of each of the instruments and will only be applied in our case.

5.3 Volvo's Actual Situation in 1999

This is Volvo X's situation before any OBSF instruments have been applied. It has been calculated using the methods described in the appendix.

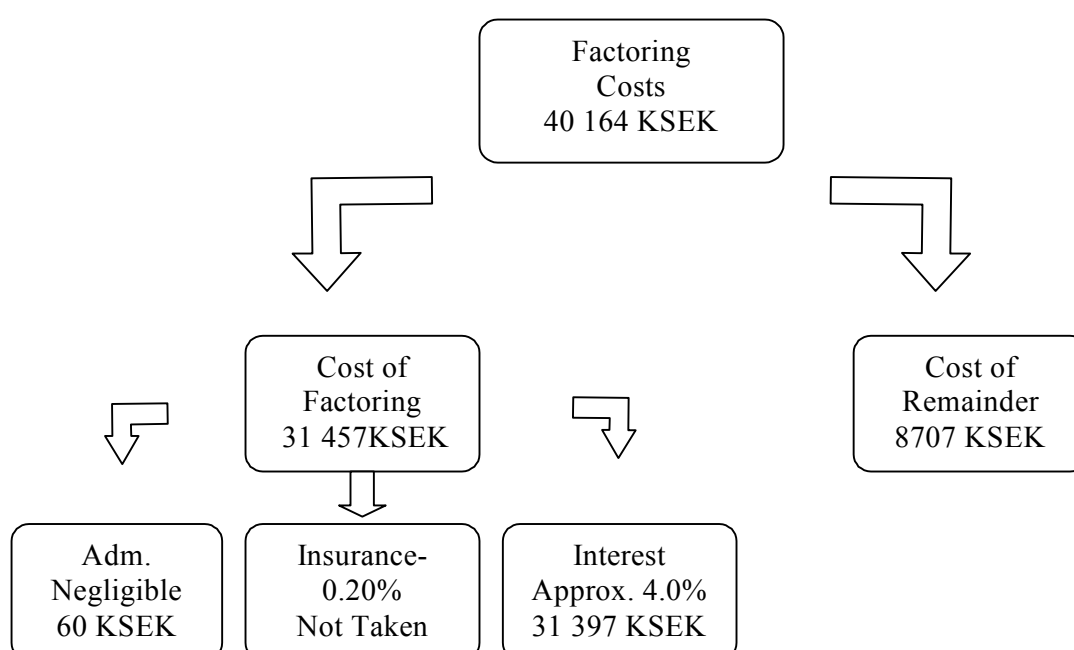
When the receivables were analysed the following profile was found.

- 18.50% of balance was overdue on average every month with a standard deviation of 7.30%.
- Overdue items were typically overdue for 63 days on average and had a standard deviation of approximately 21 days.
- This meant that overall Volvo could expect to receive their money 41.5 days after the invoice.
- Their cost of finance for the year was 4.55%. Giving rise to a cost of 43 536 KSEK.
- If a 30 day rate had been used it would be 31 114 KSEK instead.
- There exists a credit insurance programme covering 90% of losses for 0.10% of sales or 8925 KSEK.
- Penalty interest if charged is 10% above STIBOR.
- Volvo does not characteristically, charge interest for overdue items.
- Average balance of receivables in 1999 is 1 000 000 KSEK.

5.4 Factoring

In the standard case for the factoring solution, the following costs have been calculated. It supposes no changes in the amount of time it takes the receivables to be paid or that interest is being charged to overdue customers of X. The remainder in the figure below is the 20% of the receivables that is not factored and must be financed by Volvo and uses the 4.55% rate. The factor's charge is based on an administration fee plus interest charged for advanced amounts. For a more in depth look at how the costs were calculated see the appendices.

Figure 2 Total cost of factoring



The standard case assumptions were modified in the scenarios, to assume that the factoring solutions could either speed up payment times, charge interest to the client for late payment or both.

5.4.1 Cost Advantage Assessment

A lot of caution must be taken in assessing the results of the factoring standard case and whether or not it is less expensive than the actual situation. Hans Westman at SEB gave a cost of STIBOR plus 90 basis points for Volvo. STIBOR averaged about 3.10% and adding the factor's premium it came out to an average of about 4.00%. This was less than the 4.55% (set for one year) cost of funds provided by Volvo Finance for 1999. However, in looking at the numbers for

2000, Volvo's own cost has gone down to 4.40% whereas STIBOR has gone up to approximately 4.0%, which would result in a factoring cost of 4.90%. This means that factoring would be a more expensive solution in the standard case than what Volvo can do internally, for 2000.

The result depends, as mentioned in the limitation section, on what numbers are used and when they are taken. Most advantages of the factoring standard case are because the 80% that is factored uses STIBOR for 30 days rather than a one-year rate. It is unlikely without some other benefit that factoring will be less expensive for X. This is in line with our expectations. The Volvo Group is a large and well rated company with good access to the capital markets and a dedicated team in Volvo Finance is working on funding. Therefore, they can get the lowest cost solutions already. If however, the market perception of Volvo were to turn for the worse, the scales would tip much more favourably towards factoring. They would tip because the factor's credit risk is that the clients of X will not pay and that is independent of X's situation. The last statement presumes that factoring becomes non-recourse so that the factor does not simply become another creditor.

The Volvo Group's own internal insurance is less expensive than that provided by the banks. Therefore, it will be of little value for X to use this service. X also experienced essentially no credit losses over the three years and therefore the 8925 KSEK (the new sales times 0.01% insurance cost) required at first glance, seems excessively expensive. X is unique in that it has a lot of government clients in Europe who it can be assumed pose little credit risk, as well as, a few large corporate clients. If one of these large corporate clients were to default then X would face a large loss. Therefore, it should consider the insurance. The decision to actually use it or not would require an analysis of the financial history of its major clients' industries which is beyond the scope of this study.

Factoring becomes even more valuable if it can cause the rate of payment to be sped up. Currently, X experiences an average of 41.5 days until payment from the date of invoice (for calculations, see appendix, step one). X faces a situation where they at present do not press for payment when items are overdue and do not charge interest. This means that there is not the same incentive on the part of customers to make timely payments. They may also be calling up the sales people and asking for some extensions. This means that there is time being spent on internal lobbying which is causing delays in the payments. The payments when they are late are really late, 63 days on average (appendix, step one). This type of lobbying is not possible when there is another company doing the invoicing and collections on behalf of X. Factoring can have the effect of speeding up payments because the customers know that extensions are not possible. The sped up payments also reduce the amount of capital that is tied up in the receivables because the amounts owed overall will fall accordingly.

Two scenarios were run where it was assumed that the length of time it takes a payment to be completed was shortened. The first one assumed a five day reduction or from 41.5 days to 36.5 days. This amounts to a 43.5% reduction in the overdue time. The cost of the factoring solution drops to 36 313 KSEK or 90% of the standard factoring case (appendix step three). The second scenario was a seven-day reduction in the time it takes receivables to be paid. This is a 61% reduction in the time it takes receivables to be paid. The cost drops to 34 762 KSEK or 86% of the standard case.

The cost of a factoring solution will be much less if the factor charges penalty interest for the overdue items, which X presently does not. This is an option, which is available to X. Assuming that the charge for interest (10% above STIBOR), for overdue items is charged to the clients of X and not X itself the cost of them drops by 28 041 KSEK in our case. This is a huge saving. The cost as calculated goes from 40 165 KSEK to 12 124 KSEK or 30% of the original cost which was already a lower cost option than the current situation. It must be asked why X does not charge the interest but it would be essentially the same as why they experience late payments. Presently, clients are calling the sales people who are then using their own influence to eliminate the interest charges. This situation is further complicated for X because of the relatively few clients involved. Each represents an important fraction of the business of this unit. Interestingly and not surprisingly the costs differential of the sped up payments scenarios is almost reversed, once the cost of the overdue items is charged to the client. It reverses because Volvo was making money on the overdue items. Therefore, the fewer over items there were, the lower the amount earned off them. The five days scenario became 20 465 KSEK, a saving of 15 849 KSEK and the seven day scenario became 23 078 KSEK, a saving of 11 684 KSEK. One final note, the 12 124 KSEK would have in reality never have happened because payments would come in more quickly to avoid the penalty interest.

5.4.2 Management Options Assessment

The most important management option of factoring is that it can solve the problem of access to capital. If the market refuses for some reason, to give any additional funds to Volvo, either to meet current levels or growth in sales then factoring can get around the problem. In the non-recourse situation, the factor has only the clients of X situation to worry about and not X itself. Now, presumably X would have to pay the credit insurance of 0.2% vs. Volvo's of 0.1% but still the necessary funds can be raised and at a reasonable cost. This type of situation as mentioned in the theory section does happen as it did to Chrysler (Fishman and Kendall 1998). X can always choose to factor their receivables later, if such a situation arises.

The following table is a summary of what the factoring solution and scenarios would do to the key ratios of X. In calculating the effect on the key ratios the following assumption was made: the cash received from the factor was placed against short-term debt. This was done to change the capital structure and reduce the interest expense.

Table 2 Key ratios for the factoring solution

Key Ratios	Actual ratios for Volvo 1999	Factoring without adjustments	Factoring with five / seven day acceleration	Factoring with interest charged
Equity/Asset	23.43%	25.00%	25.00%	25.00%
ROE	7.83%	7.91%	8.04% / 8.10%	8.81%
Operating Capital (OC)	6082	5250	5238 / 5233	5250
Return on OC	9.60	11.12%	11.11%	11.12%
OC turnover	1.64	1.90	1.90	1.90
Current ratio	1.35	1.40%	1.40%	1.40%

The scenario ratios all show essentially the same change because of the way the factoring was handled. In the standard and interest bearing scenario the same amount of cash was applied to debt and taken away from the assets so the ratios remained the same. The only exception was ROE, which was better because of the additional profit generated by the penalty interest. With the sped up payments scenarios the same steps were taken. The relative difference in the amount placed against the debt was so little that only the operating capital and return on equity were affected enough to show any difference. What is clear from the key ratios is that the most significant impact a factor can have for X is to charge the clients interest on behalf of X.

The market can now see that the assets being used in the company are working harder than before and more importantly generating a higher rate of return. This type of change could result in an increase in the share price. Certainly, as a basis of comparison between companies, Volvo will now look more favourable than before.

5.4.3 Financial Risks Assessment

The credit risk as mentioned is not actually calculated in this thesis. The factor in our case will not absorb the risk in this scenario, Volvo has an internal solution, which costs 0.1% of sales and is lower than the 0.2% for factoring. This insurance removes 90% of the risk.

The interest rate risk is more a question of how X finances the receivables as compared to changes in the interest rate. A fixed rate solution obviously costs a little bit more than a floating one, initially (except in cases of inverted yields). The fixed rate eliminates the uncertainty about the cost but leaves open the question of whether or not it is a better option. In a period where

interest rates are expected to remain stable it is probably better to use a floating rate. Why pay more for a fixed rate under these circumstances? It is not much of a concern for X in the factoring situation but as we can see if X had chosen a 30 day floating rate, its own costs would have been 31 114 KSEK vs. 43 536 KSEK.

The liquidity of X is improved. The current ratio has gone up from 1.35 to 1.40 and Volvo through factoring no longer has to wait as long for the receivables income. The interest for the advanced money will be deducted when the payments actually come, so there is no need to meet those costs through cash in hand. Other debts will be paid for the same reason, that money has been received from the factor before payment has been made. The liquidity risk shifts to being more of a business risk at this point. Making sure that sales are adequate to meet upcoming commitments particularly, in the interest charged scenario.

The capital risk for X is reduced if the funds from the receivables are used to reduce current debt levels. The proportion of equity goes up as with our solidity measure. The insurance if it is taken can be seen as support to the capital strength for X because it absorbs credit losses.

5.4.4 Transaction Costs/Asymmetric Information

Strategically, factoring can do two things for X. The first is that as mentioned it can stop some of the internal lobbying that goes on. There are two departments with sometimes conflicting goals, the sales department, which wants to have the best possible relationship with the client. The other is receivables department that is trying to help ensure timely payment by clients, as well as, has the least amount of capital tied up in such payments. As mentioned earlier, the factor removes the possibility of lobbying the receivables department, which would in this example become more responsible for dealing with credit control issues and presumably, by specialising on that function alone, be able to further reduce the credit risk.

It became clear from the discussions with the banks that the credit control functions are not often transferred from companies like X to them. They therefore, at present, did not have the capacity to perform those functions as well as X. Additionally; it could be argued that the non-recourse nature of the situation, discussed here, weakens the incentive of performing that service adequately. It will be Volvo and not the banks (companies large enough to handle the amount of business needed by X) that will bear the costs of poor credit control if they use their internal insurance. If X wanted to do that function internally again, it would then have to start from scratch and suffer all the costs of relearning that skill. This could prove to be expensive as knowledge of even simple things will be gone. Considering the size of the department and its relatively insignificant costs, it is probably better to keep, at least, the credit control function internally.

The risk of being held up by the factor is relatively low. Another company can replace the factor relatively easily. The receivables work itself is not so specialised and can be performed by anyone and as long as the credit control function remains in the company they can switch easily. Finally, as this is a long-term type of relationship there is the potential of future business to keep the factor performing well.

Asymmetric information problems are dramatically reduced in this situation as well. The market cannot really separate the risk that X represents, from the risk of non-payment by suppliers. They cannot benefit from the fact that the risk of the receivables is lifted from the balance sheet, it is then only the risk that the clients of X will not pay, and not X's financial situation. Therefore, as they cannot separate the risk they must make a decision on the whole of the company. The factor can however, make that distinction and as long as in this case, they feel that X's credit control procedures are good, then they can be confident that the information about X has no impact on the risk of factoring the receivables.

5.5 Summary of the factoring solution

In summary, it can be seen that Volvo is not really able to benefit from the many of the advantages of factoring because it does not have the problems that factoring can overcome. This is in line with the theory that says that factoring tends to favour small companies, which are unable to efficiently use their resources and perhaps have liquidity troubles or cannot absorb credit losses. X can improve however, the key ratios and the liquidity through factoring and it does become valuable if the penalty interest is charged. There is however the unanswered question of what effect this might have on the unit's sales.

The following table shows the actual costs of factoring in the different scenarios.

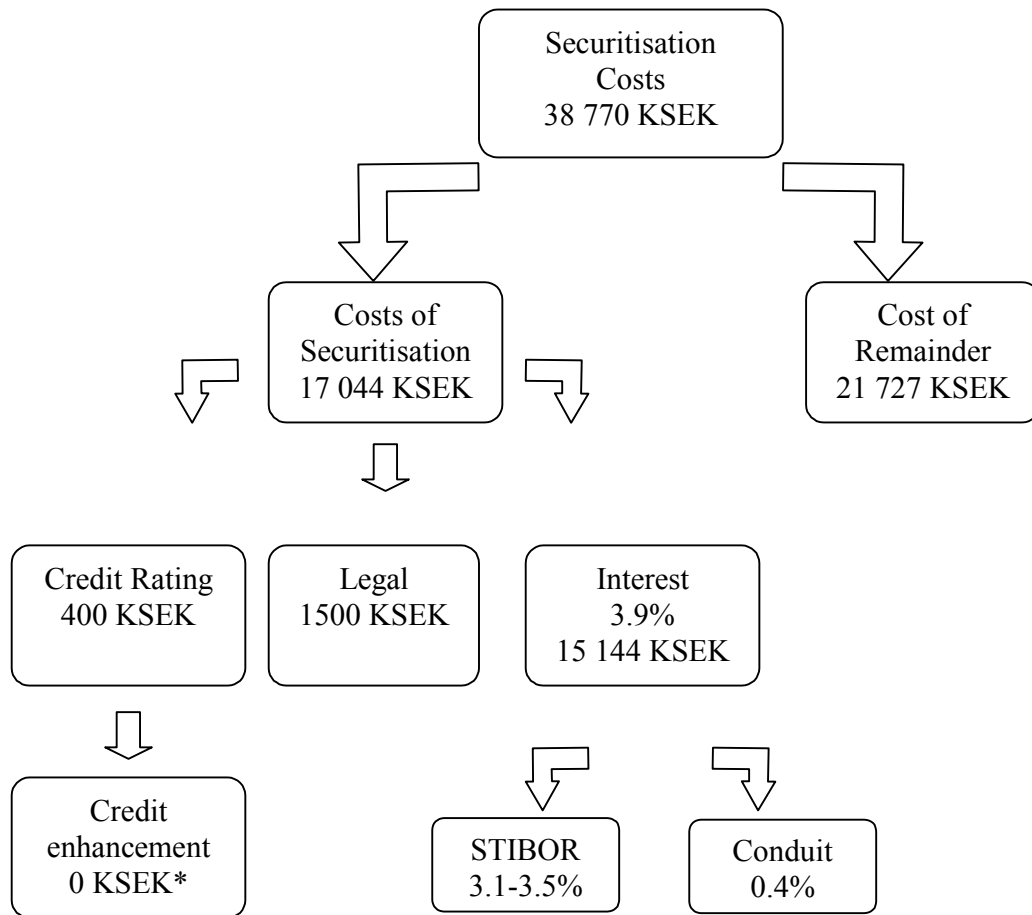
Table 3 Factoring scenarios summary

Scenarios	Total cost	Total cost with penalty interest
Actual situation w. yearly interest	43 536 KSEK	Volvo does not charge penalty
Factoring standard case	40 165 KSEK	12 124 KSEK
Speeding up payments 5 days	36 313 KSEK	20 465 KSEK
Speeding up payments 7 days	34 762 KSEK	23 078 KSEK

5.6 Securitisation

In the standard case for the securitisation solution, the following costs have been calculated. As shown below, the total cost of securitisation of the company's accounts receivables is 38 770 KSEK. The forty basis point cost of bringing the securitised product to market assumes the use of an existing conduit, rather than a new special purpose vehicle for each transaction. The legal and credit rating costs are amortised over one year. If the securitisation was carried out over a number of years, the legal costs would only have to be paid once but the credit would probably have to be redone over a number of years. 64.45% of the new sales were securitised every month. The remainder is the 35.55% that had to be financed by X and will represent more than 35.55% of the total receivables because all the overdue items are financed by X. (for the calculations see the appendix, step four.)

Figure 3 Total cost of securitisation



* The issue is over collateralised to provide the credit enhancement.

The standard case assumption was modified to assume the market suddenly demands a two percent premium on credit to Volvo.

5.6.1 Cost Benefit Assessment

The same caution must be taken with the securitisation analysis, as with the factoring situation. If the cost for securitisation is compared with the cost that X had for their accounts receivables before, then it has decreased. Before it was 43 536 KSEK- compared to 38 770 KSEK with the

securitisation solution (appendix, step four). The securitisation eliminates the information premium and credit risks to the investor and therefore gets the lowest cost of financing. As mentioned in factoring, the numbers for securitisation benefit from the 30-day STIBOR used on the securitised portion. On balance, it can be said that presently, given no additional information, it would not really be cost effective to securitise the receivables. The reasons are identical to the factoring situation. The Volvo Group, as mentioned is a large and well-rated company with good access to the capital markets. They can get the lowest cost solutions already. The five basis points represent the current spread between A-1 and A-2 commercial paper (SEB). This does not offset the forty basis points plus set up costs of securitisation. If however, the market perception of Volvo were to change negatively, securitisation would become a more viable option. It should be noted that the securitisation affects a smaller amount than the factoring. Other structures were available that could have raised more but were not as simple as the one chosen.

5.6.2 Management Options

In the strategic considerations for securitisation, two issues were defined. Securitisation can get around credit rationing and improve the key ratios. Right now, X does not face any credit rationing but they might face these sorts of problems. Market perception is a key consideration in the ability to raise capital. A change in that perception and a firm's access to capital can dry up immediately. Securitisation like factoring has the advantage of separating the risk of the firm from the risk of investing in the securitised asset. Therefore, the firm can still get the necessary liquidity and at a reasonable cost. This is clearly Volvo's greatest potential advantage from securitisation and can be called upon when necessary. However, there may be some significant lead times so X will have to keep that in mind and try not to find itself in a situation where they need cash immediately. Using our scenario where the market suddenly changes its opinion about X and demands an immediate increase of 2% (applied to the 4.55% rate used presently) to compensate for the additional risk, the cost of their present situation under those circumstances goes up to 62 673 KSEK from 43 536 KSEK. For securitisation, only the portion which was financed by X experienced the increase in the cost so the numbers only rose to 48 320 KSEK from 38 770 KSEK.

The following table is a summary of what the securitisation solution and scenario would do to the key ratios of X. In calculating the effect on the key ratios the following assumption was made, that the cash received from the securitisation was placed against short-term debt. This was done to change the capital structure and reduce the interest expense.

Table 4 Key ratios for the securitisation solution

Key Ratios	Actual ratios for Volvo 1999	Securitisation without adjustments	Actual ratios assuming a two percent premium	Securitisation with a two percent premium
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The case study and the analysis

	1999			
Equity/Asset	23.41%	24.48%	23.41%	24.48%
ROE	7.83%	7.96%	7.42%	7.74%
Operating Capital (OC)	6082	5250	6082	5250
Return on OC	9.60	10.62%	9.60	10.62%
OC turnover	1.64	1.81	1.64	1.81
Current ratio	1.35	1.38%	1.35	1.38%

The key ratios show essentially two things for Volvo. Not surprisingly, as the two instruments we are comparing are alternative solutions to handling the accounts receivables, they affect the same items on the balance sheet. The only difference between the two will be the extent of the change on the key ratios. Factoring using our assumptions has the stronger effect. As in factoring the only ratio that is different between the scenarios is the ROE, which was improved. The ROE was different between the two securitisations because although, the AAA securitised paper was at the same cost, the cost of financing the remainder rose the two percent. The market now can see that the assets being used in the company are working harder than before and more importantly generating a higher rate of return. This type of change could result in an increase in the share price. As with factoring, the new key ratios, as a basis of comparison between companies will make Volvo look more favourable than before.

5.6.3 Financial Risks

The credit risk as mentioned, is not calculated. The risk that clients will default would be determined by a method similar to that discussed in the theory section.

The interest rate risk is more a question of how X finances the receivables as compared to changes in the interest rate. A fixed rate solution obviously costs a little bit more than a floating one, when first set up (except in cases of inverted yields). In a period where interest rates are expected to remain stable it is probably better to use a floating rate. Why pay more for a fixed rate under these circumstances.

For the liquidity risk, doing a securitisation will free up money and in doing so reduce the short-term liquidity need. The freed up cash can be used for different purposes, either to reinvest or to pay off debt. Once again, since liquidity is not a major concern for X right now, this is not a major advantage to them. However, the liquidity of X is improved. The current ratio has gone

up from 1.35 to 1.38 and Volvo through securitisation no longer has to wait as long for the receivables income. The interest for the advanced money will be deducted when the payments actually come and there is no need to meet those costs through cash in hand.

The capital risk improved as shown through our solidity ratio. The cash from securitisation was used to eliminate more expensive short-term debt. This altered the capital structure and increased the equity proportion of the firm. Insurance as mentioned in factoring, can also be considered a form of capital support if it is chosen.

5.6.4 Transaction costs/Asymmetric information

The transactions costs are for X mostly in the set up. The credit enhancement can be achieved through over collateralising. Meaning that there are more receivables placed against the security than are actually sold. The excess is there to ensure timely payment so that X does not have to borrow money to make the payment 30 days later if the clients are late. It will also use a pay through structure so that any excess payments are returned to Volvo. The legal and credit rating fees are a one-time cost but are expensive enough (1500 and 400 KSEK respectively) to discourage occasional use of securitisation. The cost of setting it up can be most cheaply found through an existing provider of securitised assets rather than going directly to the market. The volumes simply are not large enough for that.

Asymmetric information problems for the market are solved by securitisation as it eliminates the credit risk uncertainty. As mentioned in the theory section, this is its greatest advantage. It eliminates all information gathering costs on the part of the investor by having X pay for them up front. They pay for those costs on behalf of the investor by getting the credit rating. So not only is the investor free of those costs but, also in the case of an AAA rated asset, the credit risk is essentially gone and therefore, X only needs to pay the risk free rate. Unfortunately, the change in the rating is minor and leads to only a five basis point discount. As Volvo itself has an A-2 rating on its short term debt, investors already have had their information costs paid for and the problem is insignificant under present circumstances.

5.7 Summary of the securitisation solution

In summary it is not apparent that at present Volvo or X will find much benefit from securitisation. Although Volvo is large enough to make use of securitisation, it does not have the problems that this type of financing is designed to overcome to make it valuable. Volvo presently does not have problems directly accessing the capital markets and getting low cost funding. Its A2 rating is only five basis points above STIBOR so the information premium that the market is placing on the company presently is not worth the cost of securitising. It did as in factoring change the key ratios and improved the liquidity of the business unit in question but that is not worth the cost.

The following table summarises the cost of securitisation and its scenario.

Table 5 Securitisation scenarios' summary

Scenarios	Total cost	Cost if 2 % risk premium added by the market
Actual situation w. yearly interest	43 536 KSEK	62 673 KSEK
Securitisation w. yearly interest (on remainder)	38 770 KSEK	48 320 KSEK

5.8 A 30 Day Interest Rate Comparison

The use of 30-day STIBOR rates in factoring and securitisation gave them the edge over Volvo's on use of a one-year rate in 1999 (see appendix I step five for details). This comparison takes a look at the standard case of factoring and securitisation as well as the penalty interest scenario. The penalty interest is shown because in the previous analysis it was the only scenario, which was clearly better than what actually happened. The results are summarised in the table below. The first obvious change is the dramatic reduction in Volvo's own cost of capital, it drops from 43 536 KSEK to 31 114 KSEK or 71.5% of the original. It also reduced the cost of the securitisation and factoring because the remainder's (portions that were financed by X) costs went down. They became 37 680 KSEK from 40 165 KSEK and 32 511 KSEK from 37 860 KSEK respectively. It is clear that factoring and securitisation were simply not going to be less expensive under this type of comparison because they are simply too expensive relative to Volvo's 5 basis point premium on STIBOR. Only by having the factor charge the interest did factoring become a better option and securitisation never did. Factoring's cost under this situation went from 12 124 KSEK down to 9 639 KSEK. It is still much lower than X's actual cost in this comparison of 31 114 KSEK.

5.9 Summary for the 30-day interest rate comparison.

It is apparent that the cases for securitisation are much worse when thirty day rates are used for both factoring and securitisation. Again, though factoring with penalty interest is clearly beneficial.

The following table shows the yearly versus an all 30-day cost.

Table 6 yearly cost vs. 30-day cost

Scenario	Annual interest at 4.55%	30-Day STIBOR plus 0.05%
Actual Situation	43 536 KSEK	31 114 KSEK
Factoring Standard Case	40 165 KSEK	37 680KSEK
Securitisation	37 860 KSEK	32 511 KSEK
Factoring with Interest Charged	12 124 KSEK	9 639 KSEK

6 CONCLUSIONS

In the conclusions, stating what pluses and minuses occurred with each instrument, a decision will be made regarding whether or not value has been created.

6.1 Did OBSF bring value to the firm?

In regards to the question, does off balance sheet financing create value, the answer is, on balance it does. It does so because it can solve problems that other financing instruments cannot.

The cost of capital can be lowered through off balance sheet financing. This means that many projects that might not have otherwise proceeded can now be carried out. It can be lowered by taking advantage of risk sharing, market imperfections, better information and gains through trade that are made available by the different instruments discussed in the thesis. In Volvo's business unit X, the results showed that in fact both securitisation and factoring could reduce the cost of capital. Although, the savings depending on how you looked at them, were not largest source of value except where penalty interest was charged.

Access to capital can definitely be gained through off balance sheet financing. The result is that firms can either proceed with projects they otherwise could not or they can solve more immediate problems with credit rationing. Access to capital can be gained by the bringing in of partners, separating the risk of firm from that capital and solving information discrepancies. Volvo presently has a great deal of capital which it can access as the market feels presently that they are a good credit risk, as seen in their A-2 rating from Standard and Poors. In factoring and the securitisation of receivables, the credit, or risk of, is separated from any problems Volvo might face. Therefore, access to this type of capital should always be available using these methods.

A firm can focus on its core businesses through the use of an off balance sheet financing solution. Those areas of business, which are necessary but not something the firm wishes to focus on, can be eliminated. Access to other parties' competence in an area can be gained by using some of the instruments presented. In Volvo's case, neither factoring nor securitisation could remove the credit control function from the company. Securitisation is not designed to solve this problem and there were no factoring companies willing to overtake it. Additionally, this knowledge is, in our opinion, something Volvo should keep internally. The accounts receivable functions could be outsourced, as they are not very knowledge intensive.

Risks that the firm does not wish to bear can be transferred away from the company. The risks that may be too large, too expensive or too difficult to assess and deal with internally can be removed from the company. They can be reduced or transferred by changing the situation that creates them, by finding better ways to deal with them and by finding someone else to bear them. Time and effort that were spent dealing with these issues are now free to be used in other areas. Additionally projects, which were considered too risky, can now proceed. In Volvo's case the only risk that was really reduced through the use of securitisation and factoring was the liquidity risk. Factoring if it speeds up payment will reduce the amount of capital required to finance the receivables and the advances made by the factor can ensure that commitments can

be met on time. Securitisation can only ensure that there is an improved cash flow and help in meeting commitments a little earlier.

Information was important in solving all the problems. It could reduce the risk premium charged by creditors reducing the cost of capital. It can solve problems of access to capital and it can allow firms to focus on their core competencies by having others with better information handle non-core activities. For Volvo, the information cost was not so large as they have a good credit rating, making it difficult for factoring and securitisation to be lower cost solutions.

Factoring for Volvo surprisingly was a better solution for Volvo because it was able to speed up payments and charge the interest that securitisation was not able to. Factoring succeeded because it reduced the influencing costs. Ultimately for X, only factoring where interest was charged made sense on a cost of capital basis alone. Using only the thirty-day rate of financing, only the factoring with interest being charged came in less expensive than the actual case using thirty-day financing. There is also a value in improving the liquidity and adding an additional source of capital but at the moment these are not problems that X faces. Although Volvo does not have a cost of capital problem directly, they can benefit from the use of factoring because it overcomes their present problem of not charging penalty interest.

6.2 Suggestions for further research

As we have seen, both factoring and securitisation can bring value to the firm. The value, however, is created differently in the two solutions. In factoring, it was found that speeding up the payments and charging penalty interest was of real value. This can more easily be achieved by using an external party to collect the invoices. In securitisation, the greatest advantage is that it eliminates the credit risk for the investor as well as their information costs. The credit risk of the securitised asset is no longer the credit risk of the firm. This is really an advantage if the market suddenly would turn on Volvo, and increase the uncertainty premium charged to them. It also meant that, for Volvo, securitisation offered a lower cost of capital and factoring the interest/faster payment benefits. What would be of interest for future researchers to investigate would be, if it were possible to combine these two sources of benefits. In doing so, the advantages of both instruments could be used and this could be even more valuable to a firm.

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APPENDIX I

The following is a more in depth description of how the numbers were calculated. A brief motivation for some of the choices made will also be presented. The accounts receivable data will not be discussed, as it is confidential. A modified summary will be presented instead. It will be clear from the description how the calculations were achieved.

Step One

There were 30 months of data describing each of the divisions within the business unit, with regards to the amount of receivables outstanding and the amount of that total which was overdue. A simple calculation, of how much the overdue represented in terms of the total was calculated in percentage terms. This was repeated every month. The average and a standard deviation were then calculated for the thirty months.

Total outstanding	Overdue	% of outstanding	Average overdue	Standard deviation
1 023 702	224 442	21.9%	18.5%	7.3%

To find the average length of time an overdue item was overdue the following procedure was performed. The overdue items were split into periods by X for example 1 to 20 days 21 to 40 etc. The mid point of the period was then selected as the number of days those receivables were overdue. Each overdue period was calculated as a percentage of the overall total. For example a 1-30 period would be 15 days overdue and might be 20% of the overdue items for that month. A weighted average was then taken using the percentage and the amount of days to see how overdue the items were on average for that month. Every month's average was then added up and an average was calculated for the entire thirty-month period.

Days overdue	1-10 days	11-30 days	31-60 days	61-90 days	>91 days	Total amount overdue
Amount overdue	23 115	40 659	65 147	27 031	46 746	202 698
% of total	11.4%	20.0%	32.1%	13.3%	23.1%	100%

Appendix

This procedure leads to an average of 80.94 days overdue for that month and if that process is repeated for the entire thirty months the average was 63 days with a standard deviation of 20,88 days.

This information was then combined to create an average number of days for the receipt of funds. The average percentage overdue was combined with the average number of days overdue to get an average number of days until receipt of funds.

30 days free credit	Average amount of overdue receivables	Average numbers of days overdue	Average numbers of days until payment
30 days	18.5%	63 days	41.5 days

Step Two

In order to evaluate the impact of the various instruments, the cost of the original scenario had to be calculated. The calculations are only for the year 1999. It was the only full year for which there was complete data to perform the calculations. The question for Volvo was how much value would they bring today and therefore, the most recent figures are the most relevant. It also avoided problems with changes in the accounting procedures from year to year and there was evidence of that in our sample. The changes in the key ratios could then be easily compared to the initial values.

The cost for Volvo was then taken using their own internal numbers for receivables and multiplying it by the cost of financing as given by Volvo Finance. Additionally, the cost was calculated using the thirty day STIBOR rates published at the beginning of each month, in Dagens Industri (adding .05% as a risk premium for Volvo on short term debt as given by SEB on November 8th, 2000. The thirty-day calculation was necessary because the factoring and securitised products lend themselves readily to a short-term rate and that affects the comparison. The intension was not to second guess Volvo's decision to finance using a one year rate but simply point out that the comparison changes quite radically using thirty day numbers.

Appendix

Outstanding receivables in December	in	Financing at 4,55% annually	Cost of that financing	Cost of that financing for one year
1 040 178		0.003792	3944	43 536
Outstanding receivables in December	in	Financing using 30 day STIBOR plus five basis points	Cost of that financing	Cost of that financing for one year
1 040 178		0.003100	3225	31 114

Step Three

The numbers for the factoring solution were then generated using the data. A number of assumptions were used in the factoring solution calculations. The first was that the maximum amount that would normally be factored is approximately eighty percent based on the discussions with SEB and Handelsbanken. The particular business unit in focus did not generate all that many invoices, so a fixed cost of 5000 SEK a month was decided upon to pay for computing and the invoice handling. The decision was made to make it a non-recourse factoring solution because the internal credit insurance was less expensive than the external. Additionally, neither of the two firms felt that taking over the credit control functions would be all that easy or effective so no cost savings or expenses were added there.

The banks in this case would not receive their income as a discount but instead as a percentage of the total amount factored that would be deducted when payments came in. That meant the calculations were fairly simple. 80% of the total would be assumed to have the factors rate and the remaining 20% would be at Volvo Finances 4.55% for 1999.

Receivables outstanding in December	80% of total which is factored	Cost of factoring plus 90 basis points	Cost of remaining 20% financed at 4,55%	Total cost of factoring for one year	Total cost of the remainder for one year	Total cost
1 040 178	832 142	3 174	789	31 457	8 707	40165

The speeding up of payments scenarios were accomplished using the following logic. According to Tony Petterson at Fortos, payments are often sped up in factoring situations by a number of days. The first assumption is that customers will pay on the thirtieth day and not sooner. Therefore, the speeding up would come from a large reduction in the time it takes overdue items to be paid. The costs were then recalculated using the same steps as in the above chart using the new outstanding amounts instead.

Appendix

Average number of days overdue	Reduction by five in number of days overdue	Reduced amount of over due in percentage terms
11.5 days	11.5 - 5 = 6,5 days	6.5 / 11,5 = 56.5%
New amount of overdue 56.5% of old total	Difference in overdue	New amount of outstanding (old-difference in overdue) for December
77 617	59 806	980 426

The interest charged scenarios were based upon the factor charging the client interest for overdue items (STIBOR plus 10%). The only calculations here were to take the overdue items and multiply them by the factor's charge and subtract that from the previous total. This was done in the case where there was no speeding up of payments and to those where there was.

Overdue amount	Penalty interest STIBOR plus 10%	Penalty interest revenue	Total amount for the year
137 423	0.01139	1 565	28 041

Step Four

In the securitisation example the calculations were a bit different. The amount that was securitised was the maximum that could be expected to be repaid on time using a 99% probability. The overdue percentage was assumed to be normally distributed and using the 99% probability the expectation was that no more than 35.55% would be overdue in any one month. That meant using an overcollateralization structure, to ensure timely payments and credit enhancement, only 64.55% could be securitised. The securitisation went through an existing conduit rather than trying to set up a new special purpose vehicle for each transaction. The volumes were not large enough to justify that. Our contact at Öhmans felt that the following costs were likely to be true. One and a half million for legal costs and four hundred thousand for credit enhancement, the existing conduit was going to add an additional forty basis points to STIBOR for bringing the product to market.

The calculations were then as follows. The overdue items were separated from the new amounts by simply subtracting them from the total. Then 64.45% of the new amount was securitised and the remaining amounts (both overdue and unsecuritised new amounts) were financed at Volvo's rate of 4.5%. The securitised amounts were financed using a discount formula with the fixed costs being added on at the end for a one-year cost.

Appendix

New Sales (outsanding minus overdue)	64.55% of new sales are securitised	Amount of discount at STIBOR plus 40 basis points for December	Cost of remainder at 4.55% (outsanding minus amount securitised	Total securitised cost	Total cost of the remainder
902 755	581 826	1 745	1 738	15 144	21 727
Legal costs			1 500		
Credit enhancement			400		
Total cost			38 770		

In the scenario for securitisation where Volvo's own costs go up by two percent, the only changes made were to the remainder. The securitised amounts are unaffected.

Step Five

The thirty-day scenarios used exactly the same steps for calculating the costs as in steps three and four. The difference was that the cost of the amount, which was not factored or securitised, was recalculated using 30 day STIBOR and a five basis point premium. These numbers were then compared to the 30-day cost for Volvo shown in the table in step two.

APPENDIX II

Key ratio appendix

The key ratios were calculated in the following manner. The first assumption was that the amount of funds received from the factoring or securitisation were used to pay off debt. That meant that the accounts receivables and the debt went down by the same amount. This method was chosen rather than re-investing or keeping the funds in some form of short-term security. We did not want to assume that there was some immediate reinvestment possibility and that the returns possible on a short-term security were equivalent to that which would be paid on the debt. Interest free debt was not repaid, as there were no interest savings from doing that. The operating capital was then recalculated using the formula in chapter five using the new balance sheet and so was the solidity.

Operating Capital

Total assets- non-interest bearing debt- interest bearing assets

Solidity

$\frac{\text{Equity}}{\text{Assets}}$

The ratios using the operating capital were calculated using the new operating capital amount and no other factors such as level of sales etc, were assumed to have changed.

The next step was to take the difference between the costs of the actual situation and the various alternatives and come up with either an additional cost or additional savings from the actual experience for Volvo in 1999. As an example, we will use the factoring base case.

Actual Cost	Factoring Cost	Interest Difference
43 536	40 167	-3369

This saving was then subtracted from the interest expense in the annual report and a new interest expense was calculated. The taxes were assumed to remain the same in all the scenarios and that was determined by how much of the operating income went to taxes in 99.

Operating Income

- Interest Expense + Interest Difference (-3369)

= Operating Income After Interest Expense

- Taxes

= New Net Operating Income

The new net operating income was used in the ROE calculations.

Return On Equity

$$\frac{\text{Net income}}{\text{Equity}}$$