



School of Business
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GÖTEBORG UNIVERSITY

Handelshögskolans Civilekonomprogram
Bachelor/Master Thesis, ICU2006:33

Project Management from a Behavioral Finance Perspective - A case study of SCA -

Bachelor/Master Thesis

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Spring 2006



Summary

Behavioral Finance is a growing area within the financial field, in which psychologists like Daniel Kahneman, Nobel Prize winner 2002, and Amos Tversky have joined psychological and financial theories. They have challenged the investment community to better reflect the way that investors think and behave by using Behavioral Finance theories.

Most of the earlier studies within Behavioral Finance have been done in relation to individuals making private investments. That is why we find it challenging to conduct research on a relatively unexplored area where we apply the theories from Behavioral Finance into the world of corporate environments. Our aim in this thesis is to study the theory regarding Behavioral Finance focusing on project abandonment. We are doing this by researching what factors can influence the decision makers to hold on to failing projects too long in a company, in what way these factors affect the decision makers and what the consequences are. When it comes to corporate organizations performing lots of projects, it is crucial to make the right decision regarding whether a wrong going project should be abandoned or continued.

Within the theoretical framework we intend to implicate factors like loss aversion, sunk cost, mental accounting and commitment to a corporate organization. To find a suitable company in which we would be able to perform this research, we set up criteria that the company should meet. The criteria were that the company should be a large organization and which preferably would be working with product development. SCA (Svenska Cellulosa Aktiebolaget) which meets our criteria and is a global consumer goods and paper company was interested in working with us. We conducted the interviews within two different units in SCA; Packaging and Personal Care.

Throughout our thesis we have found how the factors which the Behavioral Finance theories indicate, influence the decision making process regarding project abandonment in SCA. In the conclusions we have highlighted a relation between these factors focusing on how much and in what way they are influencing the decision making regarding project continuation or abandonment. Moreover we could find other factors influencing the decision making process that have not been mentioned in the theories concerning individual investments.



Acknowledgments

We would like to start by thanking SCA and two of the units within the company, SCA Packaging and SCA Personal Care, for helping us through this thesis. We have experienced that writing a thesis is a long, demanding but at the same time a learning process.

We would like to express our special thanks to Peter Thorstensson, Financial Director in SCA Packaging Nordic Region, Henrik Breitholz, development manager within SCA Personal Care, Ingela Torstensson manager for a group of project leaders in SCA Personal Care and Per Marcusson, project leader within SCA Personal Care for letting us interview them and for their support all the way.

Finally, we would like to thank our tutor Professor Ted Lindblom for his guidance, advice and help through this research.

Göteborg, May 2006

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Glossary

Cognitive dissonance theory

Cognitive dissonance theory highlights the fact that a conflict arises after a decision between alternatives. This is because the chosen alternative often has negative aspects as well as the rejected alternative also has positive characteristics. These characteristics contradict the decision made and it is this contradiction that is called dissonance theory (Goldberg & von Nitzsch, 2001).

Dual system of cognitive functioning

The dual system of cognitive functioning divides the way of thinking into two different systems, System 1 and System 2 (Bazerman, 2006, Kahneman, 2002).

Endowment effect

This is a hypothesis about people valuing something they own higher than something they do not own (Thaler, 1980).

Framing effect

The Framing effect shows that depending on how an alternative is framed, people make different choices. Alternatives that are formulated in terms of gains are much more attractive than alternatives formulated in terms of losses and research has shown that the same alternative can be chosen and rejected only because of how it is framed (Kahneman & Tversky, 1984).

Loss aversion:

A theory introduced in the Prospect Theory by Daniel Kahneman and Amos Tversky which tells us that people have a tendency to feel more strongly towards losses than towards gains (Kahneman, 2003A).



Master File:

A model of project decision making within SCA that includes specific calculations covering all necessary areas. Master File together with another file, has to be filled in for projects that have a Capital Expenditure above €2.5 M (Interview: Peter Thorstensson, 2006-05-08).

Mental Accounting:

A theory established by Richard Thaler which says that people divide their current and future assets into different “accounts” in their heads. This eventually effects their consumption decisions and other behaviors regarding economic decisions (Thaler, 1999).

PRIME:

A model of project decision making within SCA which they base their decisions and valuations regarding project work on (Interview: Per Marcusson, 2006-05-12).

Project Reviews:

A model for Project valuation within SCA which shows the management how the projects are running and how the projects have been doing (Interview: Peter Thorstensson, 2006-05-08).

Prospect Theory:

A study by Daniel Kahneman and Amos Tversky of how people manage risk and uncertainty (Kahneman & Tversky, 1979).

Sunk Cost:

Costs within projects that have already occurred and which cannot be recovered regardless of future events (Goldberg & von Nitzsch, 2001).



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1. Introduction

This chapter begins with a background presentation to the subject of Behavioral Finance where the authors explain the connection between standard finance and psychology. The next section, where the problem is described, gives the reader a general understanding of the problems that occur and factors that affect when decision makers will make decisions regarding whether projects should be abandoned or continued. This leads to the problem formulation where the authors show the relevance of the decisions regarding projects and discuss the factors affecting these decisions. This part also includes the questions that are to be answered through this study. The chapter is finally concluded with the purpose and limitations of this thesis.

1.1 Background

Twenty years ago, Behavioral Finance did not exist as a field. Most economists were deeply skeptical towards the idea of importing insights from psychology into the field of finance. Today, Behavioral Finance has become virtually mainstream (Colin et al., 2004).

In the beginning of the 1960's, cognitive psychology became dominated by the metaphor of the brain as an information-processing device. The information-processing metaphor permitted a fresh study of neglected topics like memory, problem solving and decision making. Psychologists like Tversky and Kahneman began to use economic models to contrast their psychological models and they have challenged the investment community to better reflect the way that investors think and behave using Behavioral Finance theories (Colin et al., 2004).

To be able to easier understand the merger of psychology and finance, it is important to understand how cognitive functioning works. The dual system of cognitive functioning divides the way of thinking into two different systems, System 1 and System 2. According to the dual system of cognitive functioning, it may be possible to make wise decisions using System 2 (Bazerman, 2006). Bazerman notes that System 1 thinking refers to our intuitive system, which is typically fast, automatic, effortless, implicit and emotional, while System 2 refers to reasoning that is slower, conscious, effortful, explicit and logical. He indicates that, in most situations, our System 1 thinking is quite sufficient; it would be impractical, for example, to logically reason through every daily choice. However, System 2 logic should preferably influence our most important decisions. In this sense, Bazerman (2006) emphasizes that one key goal for managers is to identify situations in which they should move from the intuitively compelling System 1 thinking to the more logical System 2.



Although the concepts of the dual system of cognitive functioning explain how we think and make decisions, there is room for argument that the laws of logic are the laws of thought. Since humans are more concerned with practical reasoning, which has as its objective actions needed to be performed to achieve one's goals, rather than theoretical reasoning, which has as its objective the influence of true beliefs (Evans & Over, 1996). Evans and Over (1996), further, indicate how these behaviors lead to normative errors and point out the fact that humans do not reason to be logical, they are overconfidence and they use heuristics.

Thaler writes in an article that decision making is bounded in two ways, not precisely captured by the concept of bounded rationality. First, our willpower is bounded; such that we tend to give greater weight to present concerns than to future concerns. As a result, our temporary motivations are often inconsistent with our long-term interests in a variety of ways. Second, Thaler suggests that our self-interest is bounded; unlike the stereotypic economic actor, we care about the outcomes of others (Bazerman, 2006).

Why do judgment errors and managers make mistakes, when it comes to the investment decision process? The answer might be found by studying behavioral decision theory borrowing insights from cognitive psychology which take the decision environment and individual differences between decision makers into consideration (Gallimore, 2000).

The theory refers to that practitioners' experience that making decisions wisely is not always easy, especially if it deals with a huge amount of money over a longer period of time or if the company's future depends on the new project. To be able to make a rational decision, managers should use a large amount of information that is available and define the problem and relevant decision criteria and so on. Yet, lots of managers are unconsciously bounded in their rationality and still retain only a relatively small amount of information. Even though information should be gathered and analyzed in the right way in order to conduct a rational decision, judgment errors occur and managers often make mistakes because of the limitations of human information processing (Sjöberg, 2002).

Basically, the Expected Utility Theory has formed a ground to financial theories since Bernoulli wrote about it in 1738 (Kahneman, 2003B). Schoemaker (1982) indicates in a survey article on the theory that it is as "the major paradigm in decision making since the Second World War". However, Kahneman and Tversky (1979) thought that the Expected Utility Theory was not an adequate descriptive model and, therefore, proposed an alternative model. The Prospect Theory was developed in 1979 by the same authors. This new model modifies the Expected Utility Model, which was a theory used in decision making, in the sense that deviations are observed. In the Prospect Theory the results are expressed in positive and negative deviations seen from a neutral reference, which has the value zero. In this theory



Kahneman and Tversky (1979) also include the “loss aversion theory”, a theory where people value gains and losses differently and where the decisions are based on perceived gains rather than perceived losses.

In the following section we observe that people in general tend to resist project abandonment and discuss why investment decision makers find it hard to give up the wrong going projects.

1.2 Problem discussion

When we talk about the decision making process in the capital budgeting context, a decision can be defined as an allocation of resources. Subsequently, the decision makers are people who have authority over the resources that are being allocated (<http://faculty.fuqua.duke.edu>). Decision makers frequently face similar decisions of varying importance. They ask themselves whether they should invest more money into what is going wrong, how long they should continue with the wrong going project or whether they should abandon it, when it starts to fail. Inertia frequently leads us to continue on our previously selected course of action or we may feel that there is “too much invested to quit”.

As mentioned in the previous section, our interest lies in the area where decision makers have to decide whether they should terminate a project or continue with it. We are interested in what factors are influencing project abandonment. Statman and Caldwell (1987) write that people who undertake projects or who join existing projects tend to become committed to them. Moreover, commitment is generally regarded by society as positive, which may get people entrapped. In this sense, they define different types of commitments.

How do decision makers, then, know when to terminate projects that are going wrong? Why do people make mistakes, concerning investment decision making? These were some of the questions that we thought about when reading several articles and books concerning decision making, commitment, loss aversion, sunk cost et cetera. We lean against Behavioral Financial theories which are indicating a tendency that decision makers become entrapped in a project and therefore resist project abandonment.

Standard financial theory offers decision makers decision rules that are designed to maximize the value of the company, i.e. maximize the shareholders’ wealth an example of this is the net present value approach (NPV). Statman and Caldwell (1987) also point out that investment projects should be selected, continued or terminated based on, among many other figures based on economic calculations, their net present values.



Statman and Caldwell (1987) write about several investigations done on the NPV approach in relation to project terminations. However, the authors further discuss whether managers who are responsible for investment decision making process follow the advice to abandon a project as soon as it has an NPV below 0. In reality, it seems like managers who are responsible for investment decision making process find it difficult to always follow this advice, depending on things like overconfidence, organizational stress, managerial strategy, limitations of human information processing, loss aversion, wrong judgment resulting from self-interest and so on.

One obvious example that managers might have in the back of their minds can be “sunk cost”, which is the time and expenses already invested into a course of action. That is, costs which are historical, irrecoverable and should not be considered in any future course of action. Our reference point for action should be our current state and we should consider all alternative courses of action by evaluating only the future costs and benefits associated with each alternative (Bazerman, 2006).

Bazerman (2006) notes that decision makers who commit themselves to a particular course of action have a tendency to make subsequent decisions and the level of their commitment is often beyond the level suggested by rationality. Also, he emphasizes that managers do not follow financial theories and they make the same mistakes over time. Furthermore, he explains that this kind of mistakes show how we intuitively tend to include factors such as sunk cost in our calculations. According to him, to eliminate escalatory behavior, we need to identify the existing nontraditional behavior within ourselves, “unfreeze” that behavior and prepare for change. Besides commitment and sunk cost, we need to identify the existing nontraditional behaviors within ourselves, such as the aversion to realize a loss, to be able to make an optimal decision.

1.3 Problem formulation

Our thesis deals with one of the most loathsome of business topics, handling failure. More specifically, handling project failures. There have been a lot of research made and many books and academic articles written within Behavioral Finance about how people think around and handle failures and losses. However, the research within Behavioral Finance regarding the aversion of giving something up or losing something is relying on experimental research where individuals have been tested in simulated situations and on individual stock investors' behavior. Research performed by Kahneman and Tversky (1979) has shown that individuals are loss averse, i.e. that they hold on to a losing investment too long. This is due to factors such as that individuals become committed to a course of action (Staw 1981; 1976) and value the current situation higher than it is actually worth (Thaler, 1985; 1980) and that



they find it hard to realize that the money spent are sunk cost which they will not get back (Staw, 1981).

If the research made on people, on an individual basis, shows these factors, they might also influence people in groups, working in an organization. Even though, it has been written that loss aversion also exists on a wider scale, among groups of people, such as in large business organizations (Statman & Shefrin, 1985) and that companies tend to hold on to losing projects too long, very little research has been made in this field. At least it is not researched in the sense that the people who actually work in the businesses are interviewed and researched on the basis of their own working environment. The written material regarding companies holding on to failing projects too long are not based on research made in actual companies but persons' behavior in individual settings. It is assumed that the way a person behaves and makes decisions in a simulated setting is transferable to a person's behavior in her/his business environment where she/he might have been working for several years. This might well be the case but by doing this research we want to see, if the same factors are influencing a person regardless of the surroundings. Project work is a more and more common way of working, making loss aversion and other factors influencing decision making regarding project abandonment visible. This could have important implication for how managers operate. When decision makers cannot recognize the factors that may influence them when they are deciding if a project should continue or be abandoned, it is impossible to ignore this influence. On the other hand, being aware of the influencing factors could give the decision maker a great advantage as it would save her/him time in the decision making process as well as money if the decision maker is able to resist the influence and thereby making decisions on a more objective basis. Knowing what factors that might influence the decision maker would also make it possible for her/him to, to a certain extent, judge how much a certain factor is influencing her/him.

It is crucial for a decision maker, not only to be aware of *what* factors are influencing the decisions regarding projects' lives, but also to understand *how* the factors can influence when a decision regarding abandoning or continuing a project is to be taken and to know *what consequences* the influence from these factors may be. If the decision makers are not aware of, and do not understand, how these behavioral factors can influence them, they could be making decisions on a false basis, and hold on to projects that should be abandoned. This could lead to that a company end up spending a great amount of money on projects that are going wrong. By knowing in what way the factors might influence the decision makers and what the consequences of the influence are, the decision maker might be able to find ways to hinder the influence as well as recognizing influence that has taken place.



This leads the following questions with the research and these questions will also help us to understand the problem discussed above.

- *What factors, within Behavioral Finance, can influence the decision makers to hold on to failing projects too long in a company?*
- *In what way do these factors affect the decision makers and what are the consequences?*

1.4 Purpose

With this thesis we attempt to combine theories within Behavioral Finance with project abandonment in a corporate environment. By doing this, our aim is to get a better understanding of the problem regarding projects being abandoned too late and find out what factors, within Behavioral Finance, are influencing the decision makers regarding the decisions in relation to projects' future lives. We also want to find out in what way these factors are influencing decision makers and what the consequences of their influence on a company might be. We intend to do this by analyzing the empirical findings through comparing it with the theoretical findings.

1.5 Limitation

We have chosen to demarcate the study and only analyze factors that influence project abandonment which are connected to Behavioral Finance and that are relevant to our thesis. However, we are aware of that there can also be other factors such as bureaucracy within the company that are affecting the decision making regarding project abandonment. This also includes the decision making and decision making processes, where we choose to only focus on influencing factors on this in relation to project abandonment, due to the time factor and since this subject would be another area of research in itself. We do not aim to give a full description of the Behavioral Finance theory but only select the parts that we believe are valuable for our research aim.



2. Theoretical framework of Behavioral Finance

The concept of Behavioral Finance is a relatively unexplored and wide area which makes it hard to make the guidelines clear. The reason to why we choose the factors described in the theoretical framework is that they are highly related to human behavior and have a great importance in the economical framework. The factors were chosen after reading literature and many articles within Behavioral Finance and these factors are the most common and influencing ones according to the theories. The factors described are loss aversion, mental accounting, sunk cost, commitment and company climate. This theoretical chapter is concluded with a part about decision making, since this is what the factors might influence.

2.1 Introduction to Behavioral Finance

De Bondt (2004) describes Behavioral Finance as a theory which explores financial issues with the help of ideas borrowed from cognitive psychology. It not only casts doubt on the predictions of modern finance, such as the notion of efficient markets, but also on its micro-foundations, i.e., expected utility maximization, rational expectations and Bayesian updating. Prospect theory, mental frames, heuristics and related psychological concepts form the basis for a new theory of finance. Colin et al. (2004) write that when the new financial field, Behavioral Finance, was introduced it made most economists feel skeptical and antagonistic towards the idea of borrowing insights from psychology.

Goldberg and von Nitzsch (2001) highlight that Behavioral Finance is a young and growing area of research where the disciplines of psychology and economy meet which gives opportunities to ongoing changes and new aspects. So far only the most important aspects of human behavior have been connected to finance and Behavioral Finance has been developed. The authors further say that there have not been enough time and opportunity to examine and develop further theories within Behavioral Finance.

However, according to Kahneman (2003A), Behavioral Finance theories have now become virtually mainstream in the area of, for example, asset pricing, portfolio choice theory and decision making. Additionally, through lots of surveys and detailed studies with help of the methods of Behavioral Finance, a great deal of financial issues have been explored and suggested by better strategic policy. He believes that this is the real explanatory power of Behavioral Finance which provides us with more realistic psychological explanations. Kahneman (2003A) further means that, in corporate finance, the behavioral approach has stimulated interest in the determinants and the quality of executive decision making, e.g., excessive risk aversion, unjustified optimism, hubris et cetera.



Nevins (2004) writes that Behavioral Finance theories have disproved many of the assumptions conducted by traditional economics theories like “the rational investor assumption”. He means that this assumption indicates that investors have perfect information about economic- and market events and utilize that information to make rational decisions.

The main theory within Behavioral Finance is called the prospect theory. It was developed in 1979 by Kahneman and Tversky after much discussion whether Expected Utility Theory was an adequate description model for choice under risk. With the prospect theory model, Kahneman and Tversky (1979) modifies Expected Utility Model in the sense that deviations are observed and it expresses results in positive and negative deviations seen from a neutral reference, which has the value zero.

The origin of the prospect theory is about the behavior of decision makers who stand between two alternatives of choice. The original definition is:

“Decision making under risk can be viewed as a choice between prospects or gambles.”

(Kahneman & Tversky, 1979, p. 2)

Kahneman and Tversky (1979) divide the prospect theory into two phases in the choice process:

1. Early phase of editing: The function of this phase is to organize and reformulate the options so that it would be simpler to evaluate and choose among the offered prospects. It consist a preliminary analysis of the offered prospect.
2. Subsequent phase of evaluation: The edited prospect is evaluated and the prospect with the highest value is chosen. This is done by using several operations that converts the outcomes related to the offered prospect.

The formulas or equations used in the Prospect Theory are similar to the ones which lie behind the Expected Utility Theory and in order to encompass a wider range of decision problems, the authors write that the prospect theory can be expanded in several directions. This can be done by extending the equations and not only focus on monetary outcomes which the prospect theory mainly considers throughout many studies. Other factors that can be considered are quality of life or the number of lives that can be saved as a consequence of a policy decision.



2.2 Loss Aversion

As mentioned above, the prospect theory offers a descriptive model of risky choice in which the carriers of utility is not states of wealth but gains and losses relative to a neutral reference point. Kahneman (2003A) writes that the most distinctive predictions of the theory arise from a property of references called loss aversion. He further writes that loss aversion states that the response to losses is consistently much more intense than the response to corresponding gains, with a sharp kink in the value function at the reference point.

The theory of loss aversion is mainly based on experiments. The earlier experiments on the theory were carried out by Kahneman and Tversky. According to the experiments performed, a loss-averse decision maker would always reject a 50-50 bet to loose \$100 and to win \$105. Many other authors have continued to develop the theory and relating loss aversion to other aspects within the field of Behavioral Finance (Kahneman, 2003B).

The idea that investors are not risk-averse but loss-averse is one of the main tenets of Behavioral Finance. Previous studies have shown that investors will increase their risk, defined in terms of uncertainty, to avoid the smallest probability of loss. Kahneman and Tversky (1979) are showing with the loss aversion theory that it is not so much that people hate uncertainty but rather, they hate losing. They mean that people do not adapt easily to losses and people display risk-seeking behavior when faced with a choice between a sure loss and a gamble. Statman and Caldwell (1978) extend the discussion and say that for decision makers, a distinction is made between unrealized “paper” losses and “realized” losses and the asset position is adapted only when the losses are realized.

Statman and Shefrin (1985) write that one of the most significant features in investors seem to be selling winning investments too early and keeping losing investments too long. The main reason for this lies in human behavior that we tend to avoid regret as well as seek pride.

Indifference curves have been used in economics for a long time to show individual preferences and how people would choose in various decisions. However, Kahneman (2003A) and many others do not believe that they are a good representation of choice of preference, since they do not show the individual’s reference position. Kahneman calls this “reference independence” and says that it can be viewed as an aspect of rationality. He writes that research has shown that depending on the current position, people make different choices. According to Kahneman (2003A), choice depends on the status quo or the reference level and a change of reference point often leads to a change in preference. This is a part of the endowment effect. Reference dependence and loss aversion are both involved in the sharp distinction that most people draw between opportunity costs and losses.

Kahneman et al. (1991) describe that Thaler extended the idea of loss aversion with riskless choice and with this explaining the endowment effect, which suggests that receiving a good has a much smaller valuation than losing the same item. With the help of loss aversion he explained the endowment effect, which he defined as a discrepancy between buying and selling prices. The main effect of the endowment effect is not to enhance the appeal of the good one owns, only the pain of giving it up.

Kahneman and Tversky (1984) write that the shape of the value function which describes decision making from different reference points goes against traditional rationality theory as it is steeper for losses than for gains and shows that people are more sensitive to losing than to winning (loss aversion). This has been tested by using the framing effect, which shows that depending on how an alternative is framed, people make different choices. The authors further write that alternatives that are formulated in terms of gains are much more attractive than alternatives formulated in terms of losses and research has shown that the same alternative can be chosen and rejected only because of how it is framed.

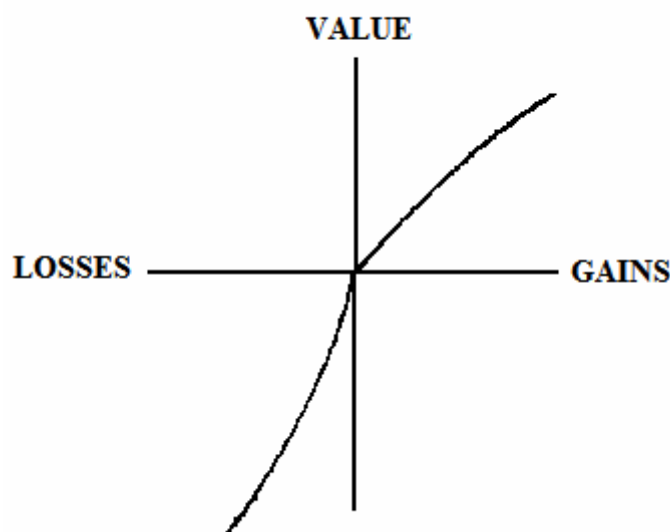


Figure 1: A hypothetical value function

Source: Kahneman & Tversky, 1979, p. 279

The distinctive predictions of prospect theory can be seen from the shape of the value function in Figure 1. Kahneman et al. (1991) describe the value function and explain that it is defined in gains and losses and there are three main features: (1) it is concave in the domain of gains, favoring risk aversion, (2) it is convex in the domain of losses, favoring risk seeking behavior, (3) most important the shape is kinked at the reference point, and loss averse – steeper for losses than for gains. According to Goldberg and von Nitzsch (2001), when a loss is evident

this implies that a decision was wrong. They mean that this puts pressure on the decision maker to justify the decision, which then invokes a psychological cost.

According to Loomes and Sugden (1982), regret aversion is similar to loss aversion and signifies the fear of regretting decisions after an event. The authors write that the difference between loss aversion and regret aversion is that regret aversion can be felt even when a particular decision has not been made. Also Goldberg and von Nitzsch (2001) discuss regret aversion and say that an example of this can be if a particular share has not been bought and the share price rises significantly, we feel regret even though there has been no actual loss. They further say that the decision here lies within the decision of not acting. In the same way as commitment influence loss aversion it changes the value function in the same way for regret aversion. This means that also regret aversion grows with increased commitment.

2.2.1 Mental Accounting

One way to describe Mental accounting is by comparing it with financial and managerial accounting practiced in organizations. According to a dictionary, accounting is defined by “the system of recording and summarizing business and financial transactions in books, and analyzing, verifying and reporting the result”. Individuals and households also have to do this for similar reasons used by the organizations, while they also have to keep trace of where their money is going and to keep spending under control. Mental accounting is a description of ways they do these things (Thaler, 1999). Goldberg and von Nitzsch (2001) mean that a conclusion to all this, is that the basic idea of mental accounting is that people making these decisions, mentioned above, debit costs connected with transactions into different “mental accounts”. Each individual transaction is subconsciously characterized by its own account carried in the head.

In the economic theory the comprehensive account is used, but in mental accounting the topical account is a more common choice. The following examples were given by Tversky and Kahneman and are evidence of this (Thaler, 1999, p. 186).

“Imagine that you are about to purchase a jacket for \$125 and a calculator for \$15. The salesman informs you that the calculator you wish to buy is on sale for \$10 at the other branch of the store, located 20 minutes drive way. Would you make the trip to the other store?”

“Imagine that you are about to purchase a jacket for \$15 and a calculator for \$125. The salesman informs you that the calculator you wish to buy is on sale for \$120 at the other branch of the store, located 20 minutes drive way. Would you make the trip to the other store?”



The answer to these questions differs depending on how much the person will save. Most people say that they will travel 20 minutes if the item cost \$15 but not if the item cost \$125. The next question is then why people are willing to travel 20 minutes when the item cost \$15 and not when it cost \$125? Thaler means that it could seem more significant saving \$5 on \$15 than \$5 on \$125. He further means that the saving must be associated with the difference in values rather than value of difference meaning that the utility of saving the expensive item would be $(v(-\$125) - v(-\$120))$. There would, otherwise, not be a difference between the two versions of the problem (Thaler, 1999).

2.2.2 Sunk Cost

According to Goldberg and von Nitzsch (2001), sunk cost represents past cost “sunk” in a particular project, which can not be retrieved. Devaney (1991) writes that the decision rule for the abandonment of a project is a straightforward present value problem which requires that sunk cost is ignored. When relating the problem regarding sunk cost to decision making regarding projects, Statman and Caldwell (1987) say that economists have different views on investment calculations but most of them share the same conclusion that sunk cost should not be taken into consideration when a decision regarding project continuation or project termination is to be taken. When the expected present value of cash flows, given that the project is terminated today, is greater than the expected present value, given that the project is continued for at least one additional period, the project should be terminated. Devaney (1991) further writes that the difficulty arises in the very human problem of self-control and recognition. He believes that in many cases there is a psychological temptation to try and recoup what has already been spent.

According to Goldberg and von Nitzsch (2001), the sunk cost effect is greater for the decision maker, if there are other people that can see the project failure. The more people knowing about an unsuccessful project, the harder it is to abandon it at an early stage. It is, therefore, not surprising that people in responsible positions are particularly prone to fall victim to the sunk cost effect and its consequences. The authors mean that it is also understandable that decision makers prefer not to make mistakes in front of their staff, as a manager’s behavior will set standards for the company and some staff members might copy his or her behavior. Letting losses run could become a trading maxim.

Devaney (1991) compare financial and corporate markets and writes that the recognition of a loss in financial markets is relatively anonymous compared to the cancellation of a major capital budgeting project. He says that presumably in financial markets, losses on one investment are off-set by profits on others. Those involved in a major project do not have the luxury of diversification. They often devote years of their working life to a losing project, while others who are changing jobs often advance their careers by skillfully avoiding long



term commitment. The authors further say that many projects that are losing money are identified by accounting of finance departments but go unchallenged, since the opposition does not feel secure enough to confront project champions.

2.3 Commitment

Statman and Caldwell (1987) write that people who undertake projects or who join existing projects tend to become committed to them. Commitment to a project is related to the responsibility felt with it and can be useful as a motivator, compelling people to work harder and accomplish more than otherwise. Fox and Staw (1979) have done experiments where they investigated whether decision makers can be overly committed to a course of action and he shows that when people are faced with a condition with high job insecurity, the policy resistance increases and they invest a larger amount of money on their previous course of action than they would have, if they felt secure in their job.

Commitment is related to several other aspects within Behavioral Finance. Goldberg and von Nitzsch (2001) write about accountability which is one of these. A distinction can be made when assigning accountability as to whether people are accountable to themselves or to others. According to the authors, commitment to a decision will increase in line with accountability and people tend to be much more committed when there are other people involved in their actions, even if these are only observers. The authors further say that commitment is also depending on what costs that come with the result of a decision, including, sunk cost. The higher the cost is, the more committed the decision maker becomes.

Commitment to a project also increases the longer it departs from the norm, according to Kahneman, Knetsch and Thaler (2001). If a decision maker makes a decision that is seen to be far from the norm and departs from status quo, a strong commitment will be connected to the decision. Goldberg and von Nitzsch (2001) further say that taking into account that any departure from the norm (i.e. a conscious departure from the present situation) leads to a commitment, then loss aversion also plays a role when weighing up a decision that changes the status quo. This will give rise to a further important effect – the “endowment effect”.

Statman and Caldwell (1987) describes an experiment by Staw where he illustrated how responsibility for a project influences the feeling of regret and loss aversion and found that the interaction between personal responsibility and decision consequences was very strong. However, the authors further say that commitment to a losing project imposes great costs. Staw found that high personal responsibility increases the resistance to project termination. That relationship is consistent with the link between regret and the availability of choice. A manager who chooses to accept a project has a choice between acceptance and rejection. The



regret that this manager feels when she/he terminates the project is greater than the regret felt by a manager who is terminating a project that has been accepted earlier by another manager.

According to Statman and Caldwell (1987), commitment has two faces: (1) the first is a motivating face that helps people to generate the force needed to complete difficult projects. (2) The second face of commitment is wasteful, i.e. commitment that entraps people into losing projects. The authors further write that Behavioral Finance offers a useful framework for the analysis of the pervasive tendency to cross the line from commitment as motivation to commitment as entrapment.

Staw (1981) has also through experiments found that commitment has a strong relation to sunk cost as a decision maker who is highly committed to a project will find it harder to ignore sunk cost compared to somebody who is not as committed or has not made the initial decision.

Goldberg and von Nitzsch (2001) relate commitment to the cognitive dissonance theory which highlights the fact that a conflict arises after a decision between alternatives. This is because the chosen alternative often has negative aspects as well as the rejected alternative also has positive characteristics. These characteristics contradict the decision made and it is this contradiction that is called dissonance theory. The authors add that the extent of commitment and therefore the possible dissonance in the case of a particular decision depends on four factors: freedom to choose, irreversible cost, accountability and departure from the norm.

Researchers have found that dissonance can arise only if a decision has been taken voluntarily, i.e. a free choice between at least two alternatives (Goldberg & von Nitzsch, 2001; Frey & Gaska, 1998). According to Staw (1981), if a decision maker is not responsible for the decision her/himself but just following order the decision maker will not feel any commitment to this decision.

Goldberg and von Nitzsch (2001) write in relation to the figure below that the drive to remove the dissonance from a wrong decision depends on the commitment of the decision maker. This means that the degree of loss aversion depends directly on commitment and it can be measured against a particular reference point. The area around the reference point in the middle indicates that the curve of the value function around the reference point in the profit and the loss zones is identical without commitment. Loss aversion grows with increased commitment, which can be seen in the value function as it is steeper in the loss zone.

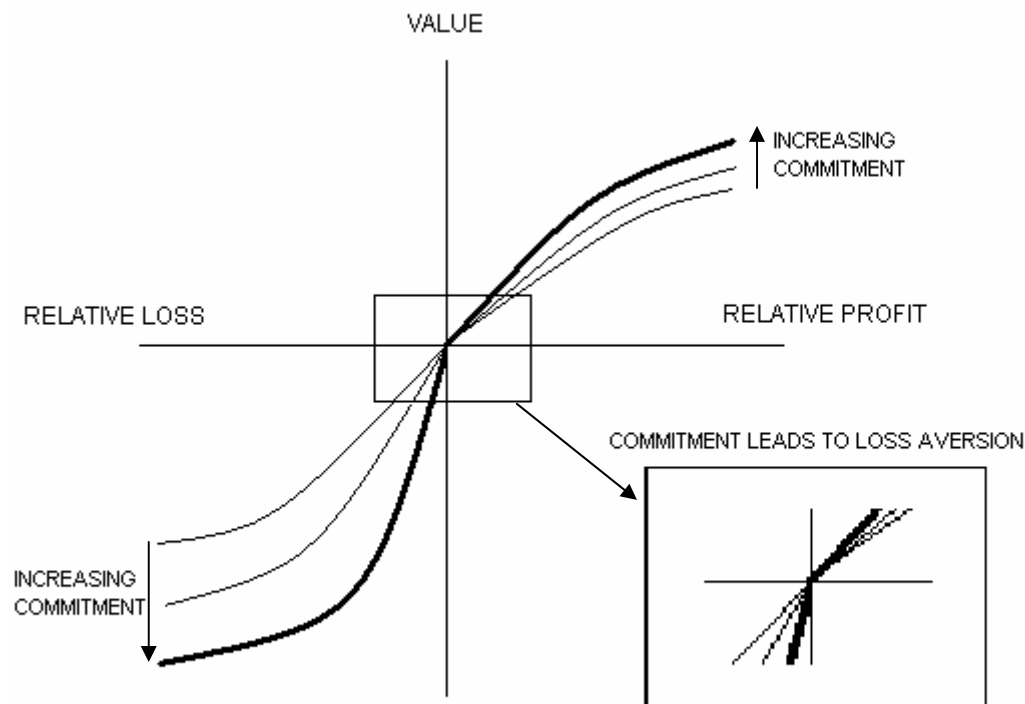


Figure 2: Relationship between commitment and loss aversion.

Source: Goldberg & von Nitzsch, 2001, p. 98

Goldberg and von Nitzsch (2001) further write that the concept of loss aversion indicates that losses are valued significantly higher after decisions with a high commitment than losses following decisions with a minimal commitment. This phenomenon is economically irrational. For the conduct to be economically rational, the commitment has to have absolutely no influence on the evaluation and decision making. The authors say that to make this judgment, people should first try to estimate how high their commitment is, i.e. consider whether any sunk costs have already incurred, or whether the imminent decision signifies a departure from the norm, in order to make a rational decision. The higher the commitment that accompanies the decision is, the greater the risk that possible negative results will be overestimated. In other words, one's capacity for judging is limited and the perception of the situation is distorted. Only those who are aware of this can correct these errors. Goldberg and von Nitzsch (2001) further write that in order to be able to make decisions free from regret or loss aversion in the financial markets, people should try to keep their own commitments to a minimum. The most important influential factor, sunk cost, can be avoided, for example by trying to forget the purchase price. To make economically rational decisions in relation to shares, people should only hold on to it if they would currently also invest in the share.



2.4 Company Climate

Statman and Caldwell (1987) say that companies can develop formal structures whereby people other than project managers and their teams evaluate each project periodically and decide on continuation or termination according to the prescriptions of economic accounting. Rules that are externally enforced can be useful where internally enforced rules fail. Periodic structured reviews of projects are common in companies and often companies set up project “milestones” in their project plans and evaluations are measured against these. This can be an effective way to identify projects that should be abandoned. However, according to the authors, it only works if the rules are followed strictly. Reviews require precommitment, which means that the project plan should be measured strictly against the milestones and be abandoned automatically when they are not reached.

Caldwell and O'Reilly (1982) believe that even though precommitment might not be optimal in some cases, it might still be preferable to base the decisions on biased information. Specifically, when people are confronted with failure, they might attempt to justify their position by manipulating information that is to be presented to others. They performed a laboratory experiment where they researched information manipulation. The experiment was designed so that it permitted manipulation of subject's choice of a course of action and responsibility for the outcome of the decision. When the subjects were told that their initial course of action had failed they were asked to write a report for superiors. The results of their study demonstrate that, when confronted with failure, subjects may attempt to justify their position by manipulating the information that is to be presented to others.

According to Devaney (1991), it is extremely important for a company that correct information is forming the base for decision making. A corporate climate, which is encouraging the exchange of accurate information, can be fostered by the CEO. Also being able and allowed to express conflicting opinions is important to avoid information manipulation. In relation to this, Statman and Caldwell (1987), write that accurate information can provide a way out of the costly choice between reliance on outdated information and reliance on updated but possibly biased information.

Statman and Caldwell (1987) further say that since finance people are not committed to projects they often serve as a source of accurate and unbiased information. It is not better knowledge that makes their analysis more accurate but rather the project managers that possess the best information about their project as they are working with them directly. However, the authors add that project managers are likely to get too committed and perhaps entrapped in their projects and therefore they are also prone to conceal negative information. This selected information would serve the basis of the decision making.

2.5 Decision Making

It is often hard for a person responsible for an ongoing project to realize when to abandon or continue it and as written previously, research have shown that there are many aspects that might be involved and influence decision making. According to Goldberg and von Nitzsch (2001), it is easier to see incorrect behavior which leads to economic losses when parallel projects are compared. They illustrate this in the following example.

“Imagine an entrepreneur who has started two ventures and “opened” mental accounts for them. Unfortunately, a loss about \$1000 was incurred in the first project, while the other one produced a profit of \$1000. The entrepreneur must now decide in which venture he will invest time and energy. The choice becomes even more difficult: it is assumed that he can only produce an additional \$1500 in the case of the loss project (which has already incurred a sunk cost), while he will achieve an additional profit of \$3000 for the same effort in the case of the profitable project”
(Goldberg & von Nitzsch, 2001, p.75).

In the example, the entrepreneur chooses the loss project because it will bring him some sort of satisfaction despite the low value of the project and despite that the project had a loss of about \$1000 in the beginning. They would not “close” the account until they gained the loss. The most natural behavior to this is that people have a will to gain the loss at the expense of a voluntary sacrifice (Figure 3).

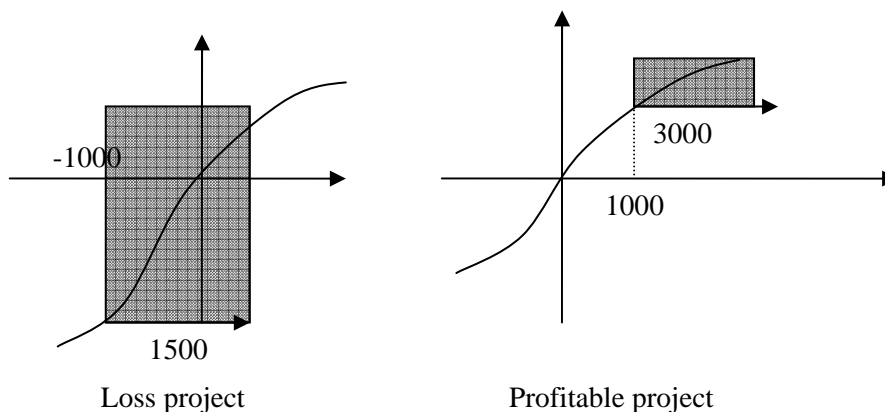


Figure 3: Increases in value in different mental accounts
Source: Goldberg & von Nitzsch, 2001, p.76



Evans and Over (1996) describe in their book, *Rationality and Reasoning*, the mechanism how humans make decisions, what is the reason for the paradox of humans making decision errors and how the two complementary reasoning systems work. Furthermore, the authors try to define rationality. De Bondt (2002) writes that the rational behavioral debate is critical in the sense that the taunts traded by each side in the rational behavioral debate are often both inconsistent and unconstructive. Rational finance advocates have long criticized Behavioral Finance for lacking quantifiable predictions of financial market behavior. But rational finance itself has few achievements of that sort. The author adds that at the same time, Behavioral Finance advocates criticize the effort to “rationalize” behavior by factoring information sets, utility functions, and transaction costs into the rational choice model.

Gallimore et al. (2000) highlight that investment decision makers have been found to overreact to current information, to act with too much confidence and to display excessive optimism. These biases may interact to reduce an investor's adherence to a strictly normative investment model. For example, information received through personal contacts may have a bigger impact than general market data available more generally. In other words, an interesting fragment or story of market information is more memorable than more routine market information and so is more easily recalled by the investor when making a decision. According to Olsen (1997), this is contrary to theories about rational behavior that suggests that optimal forecasting involves minimal commensurate changes. Subjective bias may also occur in forecasting and it has been found that investment managers exhibit “wishful thinking” when forecasting economic events.

According to Ehrbeck and Waldmann (1996), overconfidence may also be present in investor decision making. Overconfidence is the underestimation of the probability of being incorrect in a choice or decision. This can be expressed as overconfidence in personal intuition and may be coupled with retrospective overconfidence, where an individual is certain in her/his ability to have predicted an event that has already happened.

On the other hand, Sjöberg (2002) writes that also uncertainty is an important aspect in the analysis of decisions. It is a state in which one encounter difficult problems and expects little success. He further writes that uncertainty is a reflection of lack of knowledge, but to know that one is lacking in knowledge is knowledge in itself.

Sjöberg (2002) further indicates that interest and other facets of intrinsic motivation are the most important determiners of job motivation together with involvement and commitment to the job and the company. He adds that it can be another starting point that people need to take into consideration, when it comes to adherence of the decision makers to the ongoing projects.



2.6 Summing up and highlighting the factors

Several factors within Behavioral Finance have been described in the theoretical framework which concluded with a part about decision making which is the part that the factors might influence to various extents. These factors are highly linked to each other. Loss aversion which was described early in the chapter is highly connected to all other factors and serves as a ground for our research. Loss aversion is in itself a reason for abandoning projects too late and mental accounting is a part of the thinking process around loss aversion. Further, both sunk cost and commitment is also related to loss aversion as these factors influence each other as they could both be a reason for loss aversion. However commitment can also be an influencing factor in itself. Also a part called company climate was included which should help us analyze the factors in relation to the work in a corporate environment. Finally the process which might be influenced by the factors is the decision making process. This is a relevant part to this thesis as this is where it is decided whether a project should be abandoned or continued. Wrong decision making could make huge damage in connection with project work and lead to great losses in the future.

3. Methodology

This chapter presents the method that is used in this thesis. It begins with the problem approach and the chapter further continues with the research method where the qualitative method is described. Following this, the explorative approach is discussed under the heading scientific approach. The part about the empirical approach is where the authors make a presentation of the company SCA, explain different types of techniques used when an interview is being done and furthermore give the reader a deeper understanding of the relevance between the questions asked through the interviews and the theoretical framework. The chapter is concluded with a discussion about validity and reliability.

3.1 Problem Approach

Esaiasson (2002) describes that there are several approaches a researcher can take when performing research. Many are based on a hypothesis dependent on previous research or theoretical discussions that empirical research will validate or not. Another approach is to compare and try to develop existing theories by performing research in an unexplored area (Esaiasson et al., 2002). This thesis belongs to the latter approach, since we will perform our empirical research within a somewhat unexplored area where theories are mainly based on simulated experiments and individual investors. These theories will be applied to our empirical research performed by conducting interviews with managers within a large business organization and using their experience as the basis of our findings. The research is focusing on project abandonment and what factors that might influence the decision making in a company. The factors that are mentioned above are loss aversion, commitment and sunk cost among others. They are all carefully described and developed in the theoretical framework and are compared and analyzed with the empirical framework.

3.2 Research Method

In this thesis we are using a qualitative research method and our goal with using this method is to reproduce an extensive picture of the situation. The difference between quantitative and qualitative research methods lies in how data is collected, processed and analyzed. The type of method is chosen depending on the research statement and problem (Holme & Solvang, 1997). The reason for choosing this method is that the qualitative method is mainly used when a small number of objects are being looked into and a study like this can be done through source studies, observations and interviews. In our case we will be using interviews as we believe this is the most suitable way to receive information from experienced decision makers in a company about decision making regarding projects' future lives and possible influencing factors.



The advantage with the qualitative method is that deeper researches with more detailed information can be done. This will at the same time give the respondent a chance to influence and develop her/his answers. The disadvantage of this method is that it gets more difficult to make general and short conclusions (Holme & Solvang, 1997).

The qualitative method does not only include the empirical research but also the way that the academic text data is processed. By using a qualitative text analysis method (Esaiasson, 2002), we will use existing research and instead of using the total context of it, select areas and interpret previous research into our area of investigation. The results of the empirical research in the thesis will also be interpreted and analyzed with the help of various theories and models. We are using the explorative approach when doing this study as we intend to do our research in an unexplored area and as we are doing our research through interviews.

3.3 Scientific Approach

Our thesis is based on an explorative approach (Eriksson & Wiedersheim-Paul, 1997) since our research problem which is to find out what factors are influencing decision makers regarding projects' future lives and how these influence, have not been performed in the same way previously. Since previous studies in the area has mainly been conducted through simulated experiments and on individual investors this thesis is exploring a new approach within Behavioral Finance by conducting interviews in a business and base the empirical information on experience within project work. Björklund and Paulsson (2003) write that explorative studies are used when there is little knowledge in the area of research and one try to find a basic understanding. This is applicable to our thesis as we have not found any previous research made on the basis of our research problem and since we are further trying to form a basic understanding on how factors within Behavioral Finance might influence decision makers in relation to our research aim. To be able to do this we conduct interviews where we give the respondents a chance to give their views and interpretations to the problem regarding project abandonment and factors behind it on the basis of their experience from project work.

The results from the interviews are not being measured in any way but rather analyzed as we try to understand the individual ways that the respondents are making decisions. We aim to find out what factors, within Behavioral Finance, can possibly influence decision makers to hold on to failing projects too long in a company and in what way these factors affect the decision makers and what the consequences are. We do this by analyzing information that we get through interviews with persons responsible for the projects and investments within two different units within the company that we perform our research in. We also aim at



researching what factors are laying behind their decisions, if they continue the projects under a longer period of project life.

We are gathering the empirical information through questions that we are forming ourselves on the basis of the theoretical framework. This is called an inductive method (Hartman, 2001). The data information will later be analyzed and the connection between the frameworks is found.

3.4 Theoretical Data Collection

Data collection is mainly divided into two groups, (1) primary data and (2) secondary data. Primary data refers to data which is collected for a specific purpose and is required in order to complement the secondary data (Eriksson & Wiedersheim, 1997). The primary information in this thesis is gathered from four occasions of interviews at the researched company. Secondary data refers to collected and summarized material of the subject in question. This data is originally from sources such as literature, articles in journals, databases and Internet (Eriksson & Wiedersheim, 1997). The secondary data used in this thesis refers to existing theories in Behavioral Finance. This data was collected from articles in journals, literature and the Internet. The main attempt was to find recourses to be able to create a foundation from which we could investigate in new and unexplored areas. The articles used in the research are mainly taken from two databases: Business Source Premier and JSTOR. Literature used in this thesis was found in the library of the School of Business, Economics and Law in Göteborg University and in the Göteborg University Library. The collection of the theoretical data was first made on a very wide basis where we read about the subject to get a broad understanding of the field of Behavioral Finance and learned about theories and models within this area. When the specific research statement and aim was formulated, the data collection continued but then against more targeted data which would relate to our area of research. Most data has been collected through the databases and the frame of references relies mostly on academic articles but also on other Internet links and academic literature.

The initial ideas to our research problem came from the article *Applying Behavioral Finance to Capital Budgeting* written by Statman and Caldwell in 1987 as this is one of very few articles mentioning project work, even though it does not carry out any research. None of the articles we read have performed a research where they study the factors regarding project abandonment by conducting a research in a corporate organization. This is why we are interested in doing this.

3.5 Empirical Approach

After studying the theory regarding Behavioral Finance with focus on project abandonment and forming our research problem, this should be applied on to a case in a company. By our empirical work, we try to find out what the decision process looks like in the company to get a basic understanding of their work which would make it easier for our further analysis regarding project abandonment and factors influencing the project abandonment. To find a suitable company, in which we would be able to perform this research, we set up criteria that the company should meet and then sent out information and requests to companies which met these. The criteria were that the company should be a large organization, preferably a company which is working with product development as this would probably mean that work is carried out in project form. It would also be preferable if the company is located in the Göteborg region so that we could conduct personal interviews.

We were fortunate that SCA were interested in the theme of our research, which is one of the leading companies in the markets it is operating in. Moreover, the organization is divided into different business units which make it possible for us to research more than one unit and study the decision processes and how projects are being handled.

3.5.1 SCA

SCA (Svenska Cellulosa Aktiebolag) is a global consumer good and paper company that develops, produces and markets personal care products, tissue, packaging solutions, publication papers and solid wood products (www.sca.se, 2006-05-15). The organization is divided into three main units; Packaging, Hygiene Products (including Personal Care and Tissue) and Forest Products. Together they form a large organization with 55 000 employees with their main markets in Europe and North America.

To study the decision making process at SCA, we have conducted four interviews at SCA with people at various positions within SCA Packaging and SCA Personal Care. The people interviewed are; Peter Thorstensson who is the Finance Director in the Nordic Region within SCA Packaging, Ingela Torstensson who is managing a group of project leaders within SCA Personal Care, Per Marcusson who is a project leader within SCA Personal Care and Henrik Breitholtz who is development manager, also within Personal Care. They have all been working within SCA for over ten years and they all have experience of project work in various ways. Taking the long experience of project work into consideration, we question the four respondents on various aspects regarding project work within SCA. The people interviewed were highly recommended by their manager since their positions in the company requires great experience and knowledge about project work. We choose to interview only a few people and conduct longer and deeper interviews with them. We also find it necessary to



interview people with solid project experience and people in the decision making positions. We valued few interviews with people on managerial position and with extensive project work experiences higher than a larger amount of interviews with people who would not meet the criteria. By setting up these criteria we obviously reject an amount of people working in the company but we found that by setting up these criteria and only interviewing these respondents, we increase the quality of our research.

3.5.2 Empirical Data

Our research is based on standard questions, since we prepare our questions based on our theoretical framework. The questions are formed so that the respondents could develop their answers.

We defined our interview questions in advance and the questions are based on our problem formulations and the questions asked in SCA. We asked the respondents to answer based on their own view, independent from the outstanding participants or factors. There are many ways of interviewing one person but the most common way is to either do an open interview or a structured interview. In the open interview, the interviewer asks wide and open questions where the respondent can develop her/his thoughts. Structured interviews are based on questions formulated in advance which are asked in a certain order (Lantz, 1993). Our interview questions can be said to be a combination between an open and a structured interview, a so called half structured interview (Dahmström, 2005), since our starting point is to understand how the definitions and concepts of Behavioral Finance are used in SCA and the models supporting this theory. We try to find the knowledge concerning the definitions and if there are some relations between these. The interview questions are established in a certain sequence in areas concerning the subject of Behavioral Finance.

Interviews can basically be conducted in two different ways, (1) visiting interviews and (2) phone interviews (Dahmström, 2005). We wanted to visit the respondents and, therefore, organized the interviews in advance through phone calls and emails and then visited the respondents to conduct the interviews face to face. The reason for valuing the visiting interviews higher was mainly that we consider it being easier to understand the answers and interpret the meaning of them.

As it is important for the result of the research to have a well structured questionnaire that answers the questions asked in the problem formulation and that it has a high quality (Dahlström, 2005), the questions we asked were prepared and structured in advance. This helps the respondent to be able to estimate and understand the questions in that way that we intend them to be understood (Dahlström, 2005). As we wanted to get a dialog with the respondent and be able to ask follow-up questions, we constructed the interview questions



around eight different headings. Most of these are directly connected to the theoretical framework, but the first is chosen with the intention of getting background information about the respondent and the third to get an understanding of SCA's way of working (See appendix 1).

As we are conducting visiting interviews we, like Dahlström (2005) writes, carefully have to think about and formulate the questions asked in the interview in a correct way, to make sure the respondents would understand the questions correctly. Further, we have to be careful with our intonation and words used as this may mislead the respondent.

3.5.3 Motivation to the Interview questions

This part of the chapter contents our motivations regarding the interview questions (See Appendix 1). The reason for choosing the interviewed people is to get a wide understanding of how the company works regarding projects. We also wanted to interview people with various experiences that are involved in projects differently and that might have different views on project work. Since SCA Personal Care uses project based work to a much larger extent than SCA Packaging, three out of the four interviews were conducted at the Personal Care unit. However, we still found it useful to conduct an interview at the Packaging unit to get a broader understanding of how the company works and this also made it possible to conduct an interview with a Finance Director.

Background Information

One of our intentions to get background information about of the respondent, like how long she/he has been in the present position and which position(s) the respondent have had previously, is to be able to investigate how factors such as tenure and earlier experiences of the decision makers affect the decision makers' behavior. Since we see that the decision makers will make decisions consistent with their values which have been formed both by themselves and/or from outside throughout their work experiences, we expect that our background questions would help us to get insight of the decision makers' behavior.

Decision process

When it comes to the decision making process, we aim to set some specific questions to the decision makers in order to get empirical materials for our analysis of termination and continuation of the projects. We begin this process by questioning where the ideas of the projects are coming from, how many staffs are involved in the decision making process, and who is responsible for this process. Depending on how the ideas of the projects reach the decision making process and where the initiation of the projects comes from, the importance of keeping the projects open or abandoned might be varied and the entrapment of the decision makers also might be shown. The number of staffs taking part in the projects, their role as a



team and the team members' capacity, we consider, might affect the behavior of the decision makers and the process. Furthermore, we think that the final point, if this exists in the company, where the investment project decision comes from, can play a role more or less concerning the process. We also find it valuable to investigate whether the company has ready-done models or patterns which the decision makers are expected to follow, when it comes to the decision making process.

Valuation and Evaluation of projects

The motivation for the next questions is to find out the factors which affect the behavior of the decision makers, like evaluation, the rules of thumb, heuristics, control from outside, cooperation with the consultants, methods of calculation, established components for evaluation of the projects, historical experiences of termination and so on. To be able to find out these factors, we ask the respondents what the whole decision making process looks like, whether the company has set up some categories dividing which projects must be abandoned and which projects can be continued, who conducts the evaluation process of the projects and whether the same person evaluating the projects also has the right to decide to quit the projects.

Sunk Cost

Regarding analyzing of sunk cost, we attempt to ask the respondents direct how they feel when the project where the company already invested a lot is going bad and whether they have tried to rescue the wrong going projects before. Since we believe that the honest answers, like earlier projects abandoned too late causing a huge cost, should give us a picture whether the decision makers have been entrapped by sunk cost or whether they behave in line with the theory regarding mental accounting, we ask them to give some true examples.

Loss Aversion

The question under this heading is about risk, regret and the feeling of losing or winning. We ask the respondents if they have regrets about decisions regarding projects when they were in charge or working with projects since regret aversion is similar to loss aversion and signifies the fear of regretting decisions after an event (Loomes & Sugden, 1982). The next questions are about the willingness of taking risk in the company and for individuals and which feeling can be stronger – the feeling of a project ending or a feeling of a successful project, This is to be able to compare it to the theoretical framework which says that people do not adapt to losses easily and people display risk-seeking behavior when faced with a choice between a sure loss and a gamble (Kahneman & Tversky, 1979).



Commitment

If many factors influence the investment decision maker, our task is, then, to study further how and why these factors are involved in the decision making process. As previous study about interest and other intrinsic motivation indicates (Sjöberg, 2002), we are also interested in investigating the relations between job motivation and commitment to a wrong going project. We ask many questions about commitment such as what the respondents have experienced about a person involved in the decision process concerning project abandonment and how strongly committed a person can be to a project.

Company Climate

Our intention of asking a question connected to this part was to find out if and what the company (SCA) does to prevent or minimize failures of projects.

Information

We also asked our respondent if they ever experienced that project leaders/managers filter/refine information when they make project reports since according to Statman and Caldwell (1987), project managers are likely to get too committed and perhaps entrapped in their projects and therefore they are also prone to conceal negative information.

3.6 Criticism of the Data Collection

To be able to judge whether the written material is telling the truth, if it is distorting it, or if it is simply made up we have tried to judge our references with four main criteria. These are (1) *independence*: whether the source is depending on other sources or not, (2) *contemporary demand*: if the writer/teller is referring to something happening now or in the past, (3) *tendency*: what the writer's/teller's own interest is and if this is influencing the source and (4) *authenticity* (Eriksson & Weidersheim-Paul, 2001). By taking these criteria into consideration we believe that our references form a valid description of former research made within the area.

Behavioral Finance is a relatively new approach and therefore the literature and theories in this area is currently developing and changing. This makes that there are a lot of interpretations and they are sometimes in contrast to the standard finance. We have tried to reflect our approach as objective as possible when writing about the different theories. The majority of the secondary data is taken from scientific sources and they are relatively new among financial theories.

A vast majority of our references is written in the United States. Criticism could be directed to the analysis where the empirical studies performed in Sweden and the frame of references



mainly written in America are joined together. However, since the theory is discussing human behavior from an internal perspective and not from an external, where external factors should influence, we do not see a problem with joining the two. As we have mentioned previously the core of the Behavioral Finance approach is based on the limitations of human information processing, that we are not wise enough to make rational decision and that the market is not efficient.

There is a possibility that the questions asked did not cover the whole area of the subject, while some parts were difficult to asked questions in, for example, Mental Accounting. This theory had to be observed on the human behavior in a situation where she/he had to make a decision. Only conducting four interviews could be seen as few, however, we are not aiming to be able to generalize our findings. Instead, we want to get deeper a understanding through our research.

3.7 Validity and Reliability

When conducting research like ours, it is important to take a step back and think about whether we are actually researching what we are aiming to research and whether we are doing this in a reliable way. There are requirements of reliable research with validity in both quantitative and qualitative research methods. We have been careful in the way we gathered the material and have used mainly academic articles as our secondary data from authors, like Kahneman who is the founder of many of the ideas, to avoid misinterpretations of the theories. This would, then, serve as a reliable ground when we further analyze the material. Validity and reliability are closely linked to each other and as researchers we can not only focus on one of the aspects and not on the other. To be able to get a good validity, we have tried to make sure that we are researching what we intend to research (Patel & Davidson, 2003). We have done this by selecting only parts of the Behavioral Finance theory which are in the field of our research. Regarding the empirical study, the respondents all have extensive experience with project work and they are all on managerial positions where they are influencing the decision making process. This will serve as our valid base of experience but it is important to stress that we are not aiming to generalize our answers and the results will only serve as an indication and how it *can* be. Further, the way to transfer theoretical data in the shape of models and expressions to empirical observations is risky (Eriksson & Weidersheim-Paul, 2001). To decrease the risk of taking in our own interpretations at this stage, the interview questions are directly based on the material from the frame of references.

In our thesis we want to, with the help of behavioral factors, find out what factors are influencing project abandonment and in what way these influence. The most optimal way of doing this is by looking into the decision processes within a corporation and finding out what



managers base their decisions on. The key is to find out what their experience is telling us regarding different aspects of project abandonment. Throughout our research we have documented the procedures thoroughly in order to achieve transparency and a high quality.

4. Result & Analysis

The fourth chapter, named Result and Analysis, contents Empirical findings which starts with a short presentation of SCA's way of working and continues with presenting the three main models used in the company regarding projects. The next section contents a presentation and analysis regarding the Decision of project abandonment. The final heading is Factors behind decision making regarding project abandonment where the authors describe factors like loss aversion, sunk cost, commitment and company climate are applied on SCA and the results are analyzed.

4.1 Empirical findings

SCA (Svenska Cellulosa Aktiebolag) is continuously working with projects and the decisions that they make regarding whether to continue with large scale projects or abandon them are crucial. Since there are huge costs involved in these large projects, it is essential that they do not hold on to losing projects too long as the consequences of this can be extremely costly.

Peter Thorstensson, who is the Finance Director in the Nordic region of SCA Packaging, considers projects as an instrument that allows the allocation of dedicated resources to a task within a structured framework, including a clear start and end as well as clearly defined targets. He also adds that he sees project work as a good opportunity in the sense that the project managers can get feedback from their result.

Per Marcusson considers working in a project team to be interesting and challenging, especially when he is involved in a project within an area that he has never worked before. The newer area the project deals with, the more active interest he takes. According to him, even though some projects seem to be more interesting and some do not, the project leaders must remember that they are actually one part of the whole project and they should remain neutral.

As the head of a group of project leaders within the Personal Care unit, Ingela Torstensson focuses on the portfolios and the whole project structure and she tries to take small-scaled and unusual projects. If the projects relating to the organization and business are needed to get started, it is Ingela Torstensson who is in charge of the projects, since these projects are more flexible and she must take time for coaching and dividing the staff and the process. She says that she has a fantastic style of work, one day she can work with one criteria and the other day with another.

According to Henrik Breitholtz, working with projects which involves several departments or functions is the most efficient form of working. He further notes that he has always been

working with projects within SCA in all the positions he has had: as project leader, manager of project leaders and now development manager. These positions have all been connected with project work.

4.1.1 Models for project valuation: Project Reviews

Regarding project valuation, Peter Thorstensson indicates that the company considers project valuation an important process, since this is one of the vital stages and the project team can observe how the projects are running and how the projects have been doing. Peter Thorstensson says that SCA Packaging evaluates projects with large investments through project reviews. He notes that the valuation process is very central for the Board of Directors at SCA. A report has to be handed in some 12 months after the finalization of an investment project. This report may be considered as an “after-calculation” which shows how the investment has been executed. A project review includes information from the starting point to the conclusion of a project. Peter Thorstensson further says that this is a very good instrument for the project valuation, since the involved staffs in the projects can see if the project generated the amount that was expected.

SCA Packaging uses, like Personal Care, a Cash Value Added (CVA) Index when valuing a project, which is the sum of future discounted cash inflows divided by the initial investment cost (outflow). To be able to evaluate whether the projects are generating or have generated the amount that they expected, and thereby, to use as basis of decisions regarding abandoning projects, SCA demands a CVA of 1.2 as minimum requirement. Peter Thorstensson says that a project where the CVA Index value lies below 1.2 should not go ahead. The most important basic data for decision making regarding a project is the economic estimations.

4.1.2 Models for project decision making: PRIME

During the interviews it became clear that both SCA Packaging and Personal Care have a structured way of working, when it comes to project work. They have rules and also developed models in place following the project phases and the decision process with it. The model which they base their decisions and valuations regarding project work on, is called PRIME. The model is used mainly within Personal Care, but Packaging is also using parts of it in their work. The model starts with the project’s “Prestudy phase” which is followed by a “Preparation phase”. After this, it is the “Execution phase” which is the longest and finally the “Termination phase”, which is the closure of the project. During a project’s life, it has to go through five checkpoints, called “tollgates”, where the information and results regarding the project is presented and evaluated. At each tollgate, the project is measured against its set goals and if it does not reach the goals at a specific tollgate, it either should be abandoned or some of the work has to be redone.



As Henrik Breitholtz defines, the purpose of PRIME is that the project team should report its achievements in a structured way to be able to determine whether the ongoing project is entitled to continue to the next phase. He continues that, if a company does not have such a system that gives a basis of decision regarding project progress, it can easily happen that the projects are terminated too late.

Henrik Breitholtz explains that before PRIME, SCA Personal Care used different types of project models, which resulted in inflexibility to adapt to a new organization whenever it changed. On the other hand, PRIME is connected entirely free from the organization and can be used by any department or unit within the company. It is a part of a project that is objective all the time.

To be able to spread out and establish this model, the company educates between 300 and 500 employees every year all over the world and during this training occasion, they are learning how to evaluate the project using PRIME. Ingela Torstensson and Per Marcusson say that they are among many others that are educating other employees on the model.

4.1.3 Models for project decision making: Master File

The Packaging unit has a Master File together with another file which has to be filled in for projects that have a Capital Expenditure (CAPEX) above €2,5 M (or >25 M SEK). The Master File includes specific calculations covering all necessary areas and the other file states areas which have to be analyzed and presented. These areas include general background information, market analysis, product and production information, project description, project realization and valuation assumptions (See Appendix 2).

According to Henrik Breitholtz, the Master File has to be filled in for the projects which reach the Board of Directors at SCA. For the rest of the projects, however, the use of Master File is not essential.

4.2 Decision of Project Abandonment

As Shefrin and Statman (1985) note, the more personal responsibility for the initial decision, the harder it is to realize the loss in the subsequent stage and to terminate the projects. Further, they indicate that decision makers may resist the realization of a loss because it stands as proof that their first judgment was wrong.

Peter Thorstensson emphasized that it is crucial to spend time and money during the evaluation process of an investment project. This evaluation process and the decision criteria must also be well documented to support the continuous evaluation process during the



implementation period of the project. Through this documentation it is easier to objectively evaluate the status of the project and to decide if to abandon or not. Since all project members at SCA Packaging are served by the existing models saying how they should make a decision or what calculation methods they should use, concerning the investment decision process and the project evaluation, it should not be very hard for them to find out when the loss occurs and to terminate the failing projects.

Even though it is painful to abandon the projects, for example, when, discounted cash flows indicate that the investment has been approved incorrectly already at the absolute first stage, Peter Thorstensson indicates that SCA Packaging decides to terminate the projects. Even, the company seems not to take sunk cost into consideration when a decision regarding project continuation or project termination is to be taken, which also can explain that the decision makers at SCA Packaging are not entrapped, to a great extent, with self-control and recognition as theories indicate.

However, as Peter Thorstensson acknowledges during the interview, that the decision makers should feel failure to operating the investment projects which they have struggled with for a longer time period, when they realize that the projects must be abandoned.

Peter Thorstensson gives us an example of one of the earlier terminated projects whose initial cost of investment exceeded the initial calculation. He then noted that the project members began to suspect whether the calculation of the whole cash inflows might not be correct. This ended up in terminating the project, even though the sunk cost was a large sum. In this case, we can see that the decision to terminate the project could be taken at an early stage because the project team in the company was able to ignore sunk.

As Peter Thorstensson notes, SCA Packaging produces a structure that nobody is allowed to avoid or depart from, when it comes to the investment decision making process. In this sense, at least every large project becomes a manufactured product which has gone through the whole process, from the CVA Index to the Board of Directors, based on the Master File (See Appendix 2).

Regarding calculation methods, SCA Packaging uses methods such as CVA Index and weighted average cost of capital (WACC). According to Peter Thorstensson, these methods are used, first of all, to see what value the projects can bring to the company and secondly to be able to follow up the on-going projects with the purpose of checking the profitability. We asked Peter Thorstensson if it might be harder for people in responsible positions to abandon a project at an earlier stage, since Behavioral Finance theories say that people in responsible positions are particularly prone to fall victim to the sunk cost effect and its consequences.



However, his answer do not give us enough evidence for this argument, since many projects at SCA Packaging must be approved by several criteria defined in detail in the Master File and then be selected as profitable investments.

A question to Henrik Breitholtz was how SCA decides whether a project should be abandoned or continued considering PRIME with its tollgates, since a project may be affected by a series of unexpected circumstances during its drift. He indicates that the basic conditions for the projects can be changed; people can observe that the projects are wrong and the projects can be evaluated in an incorrect way in the first stage. Further, he says that it sometimes happens that a project is initiated very strongly by a person in an influential position. Even though there are methods of calculations and other tools that decision makers can use as a basis to their decision making, it is not always the logical decisions that drive the business world, Henrik Breitholtz says. He further says that when you have worked for a while at a company, then you begin to believe that it is often greediness from a person in an influential position that drives the business world. However, if you have worked for a longer period like me, then you understand that there is another parameter that is much more important than that. This is “prestige”; “I have promised to handle this project to people higher up in the company.” Or “It cannot be revealed that I have done something wrong.” Henrik Breitholtz emphasizes that prestige is a vital factor within the business world and also within other areas.

To the question of who can decide that a project should be terminated, Henrik Breitholtz answers that these people are outside the projects. The project managers who are involved in the projects do not possess any power or possibility to stop or start the projects as a whole, even though they often have very strong opinions about the projects. Instead, it is often the senior managers involved in the business that are deciding that a project should be abandoned.

On a question about what they believe a company can do to prevent that projects are being abandoned too early, Ingela Torstensson mentions two things. First of all, she says that it is very important to prepare and analyze the whole project before it goes ahead, in other words to do a good job at the first tollgate. The second thing is that everybody involved should be aware of what the criteria for the projects are and should keep to these all the way through. This is structured through PRIME. Per Marcusson also mentions a third aspect and this is that the person ordering the project should do everything in her/his power to control the environment. Since it takes several years between the initial analysis and launching the product on the market, and even the market can change during this time, the confirmation of the person ordering the project that she/he would take responsibility for the changing environment is essential.

4.3 Factors behind decision making regarding project abandonment

4.3.1 Loss Aversion

Kahneman and Tversky (1979) write that the loss aversion theory which describes that the idea that investors are not risk-averse but loss-averse shows that people do not easily adapt to losses and that a risk-seeking behavior is usual when they are faced with the choice between a certain loss and a gamble. Previous studies have proved that investors will increase their risk, defined in terms of uncertainty, to avoid the smallest probability of loss. It is not so much that people hate uncertainty but rather, they hate losing. The authors further write that people do not adapt easily to losses and people display risk-seeking behavior when faced with a choice between a sure loss and a gamble.

According to Peter Thorstensson, it is quite difficult to sense whether a project is good or bad in the first place. The risk factor is one thing that can be estimated in advance and is also the only factor that tells us something about the investment or the project. He says that their goal is to constantly learn and they do this by using project reviews. Peter Thorstensson continues explaining that they are trying to make a structure by identifying what they have done and what they did not do well to be able to improve similar projects in the future. This means that SCA Packaging uses the risk factor but only to get information about the project. It can not be said that they have a risk seeking behavior in the sense of how Kahneman and Tversky describes it since they use the risk to identify future projects and improve them. This can also be a defense mechanism used to avoid losses in the future.

Both Per Marcusson and Ingela Torstensson give evidence of loss aversion when asking what feeling they believe is stronger between the feeling of a project ending up successfully and the feeling of a project ending up unsuccessfully. According to Kahneman (2003A), the most distinctive predictions of the theory arise from loss aversion and loss aversion states that the response to losses is consistently much more intense than the response to corresponding gains, with a sharp kink in the value function at the reference point. The answer to this question could indicate that decision makers at SCA do not seem to adapt easily to losses (See Figure 1).

However, the answer from Henrik Breitholtz concerning loss aversion is not corresponding exactly to what Behavioral Finance theories are saying. Since he feels stronger when a project ends up successful than when a project ends up unsuccessful, his response to gains is consistently much more intense than the response to corresponding losses. This finding gives us room for understanding that Henrik Breitholtz adapts easily to losses. As the answers differ from the answer indicating loss aversion from Per Marcusson and Ingela Torstensson it is clearly not so that all managers feel more strongly towards losses than gains.



When asking whether the respondents see that people are willing to take larger risks when a project is going bad, Ingela Torstensson indicates that it depends on the projects. However, she adds that it sometimes happens that people take more risks to be able to get rewarded in the future. The purpose of this question about taking risks is to investigate whether the decision makers at SCA are affected by the fact that the higher result of performance of the projects may come true through taking higher risks. Since it is well-known on financial markets that high risks may promise the investors higher reward, we are interested in finding out how the respondents would answer to our question.

If they would say that they are aware of taking higher risks, this may serve positively for the company and the idea that investors are not risk-averse gets confirmed by one of the main tenets of Behavioral Finance, i.e. investors are loss-averse.

In answer to the question whether SCA takes high risks with their projects or not, Per Marcusson says that it varies a lot. Since the company cannot always afford taking risks, they need to adapt to the different businesses. It may happen that the market itself helps SCA not to take any risks at all and/or it may happen that the company has to take higher risks because of the competitors on markets. However, as Ingela Torstensson acknowledges, there are a number of high-risk-projects within SCA. She emphasizes at this moment that the most important thing is that people are aware of the risks they are taking and taking high risks is neither wrong nor right. It is the question about awareness rather than the question about value. Furthermore, she tells us that taking risks also may depend on forthcoming reward: people hope that the higher risks would bring higher reward.

When asking Henrik Breitholtz whether he has experienced that he regrets a decision that he has taken, he refers to the project which he recently has postponed 6 weeks hoping that the sales could be improved on markets in the future. Even though the basic data on the project indicated that they must not start the project from the beginning, they conducted the project. According to him, the reason for this decision was political. He continues that they now wish to get a review from the sales division and the marketing section, which, he thinks, they should have had before they conducted the project.

4.3.2 Sunk Cost

According to Devaney (1991), there are different views on investment calculations and the cost of a project, but most people share the same conclusion that sunk cost should not be taken into consideration, when a decision regarding project continuation or project termination is to be taken. He further says that the decision rule for the abandonment of a project is a straightforward present value problem which requires that sunk costs are ignored.

Statman and Caldwell (1987) write that when the expected present value of cash flows, given that the project is terminated today, is greater than the expected present value given that the project is continued for at least one additional period, the project should be terminated. According to Devaney (1991), the difficulty arises in the very human problem of self-control and recognition. In many cases there is a psychological temptation to try and recoup what has already been spent. Goldberg and von Nitzsch (2001) further mean that the sunk cost effect is greater for the decision maker, if there are other people that can see the project failure.

The respondents are quite certain that these kinds of problems are minimal at SCA, since they are using the model PRIME when doing project evaluations. Per Marcusson says that he tries to be as neutral as possible in his position as project leader. He says that it is very important to focus on the job and not take a failure personally, while there are many factors affecting the success of the project. Ingela Torstensson points out that a successful project might fail on markets, if the people making the analysis of the market fail to do their job, since they can not be as neutral as possible. Ingela Torstensson means that there are certain things that can be done in order to prevent these kinds of mistakes. She says:

“One of them is to be part of the Prestudy of the project and help the company or division ordering the project. We have to be inquisitive all the time and ask them questions to be able to get them on track.”

Peter Thorstensson agrees that there is a certain structure of the decision making regarding projects. He mentions that CVA Index rules the work in the investment project decision process in the Packaging unit, while there are forms that have to be filled.

Peter Thorstensson gives us an example of how sunk cost is considered or how they are not;

“...Let us say that the original calculations show that the investment cost will be 100 but when you have invested 90 a later calculation shows that the total cost will be 200. The inflow was, and is, calculated to 150 and according to the first cost calculations the CVA would have been 1.5. The question is whether to terminate the project or not. On the basis of the available information, the relation between 110 (200 minus the already spent 90 – also assuming that you cannot get any of the 90 back) and 150 gives us a positive CVA but if the total cost had been known from the start this project would never have been started. The conclusion is that the project was subject to poor cost estimation from the beginning but if we look at the current situation, the continuation of the project is profitable. In this case the right financial decision is to continue the project.”



Peter Thorstensson says that it is not an unrealistic situation to be in, to be able to see that something is wrong in the initial calculations but the current situation shows us that it is still profitable to continue. He continues:

“The 90 spent is a sunk cost and is gone, but on the other hand, if we knew that the project would have cost us 200 instead of 100 from the beginning we would not have started it. Any overspend on a project must however be approved by the same approval body that approved the original project. “

When bringing up sunk cost with Ingela Torstensson she means that they are careful when evaluating or suggesting a project. There are different levels of approval in the project's process depending on the cost of the project. She mentions the emotional part and that it is not only about the figures. It is also about the person who applies for the amount. Per Marcusson believes that it is a matter of trust for the future.

“It is not a pleasant feeling to tell your bosses that the 25 million project you have got did not work out because of mistakes in the calculations. This may affect the business result of the company at the end of the year when every unit evaluates the individual. It is, therefore, very important to be able to do correct calculations and be certain of your figures before applying for a higher amount and to avoid sunk cost.”

Per Marcusson continues to tell us that there are projects that are being rescued and the most effective way of doing this is to procrastinate. The problem is often a matter of time and an example given was a recent project in Stockholm. The persons involved were committed to the project, but it did not work out since the market was not ready. Instead they decided to postpone the project until they find the right opportunity to launch the project. Per Marcusson finally adds that it is an extremely expensive process to work on things you do not need. There are not many projects like that, but they occur now and then.

4.3.3 Commitment

People who are involved in projects can easily become committed to them. Commitment to a project is related to the responsibility felt with it and can be used as a motivator to work harder and accomplish more than otherwise (Statman & Caldwell, 1987). On a question if commitment makes it harder to abandon a project, Per Marcusson's answer is in line with this theory as he can clearly see that people who are committed to a project can find a termination more difficult than people who are not. He further adds that as a project leader he should always try to remain neutral.



Unlike the theory, which states that project leaders become committed to projects, in SCA Personal Care, the project leaders are organized outside the regular organization and are usually not involved in the development of the project idea. Instead of being a part of the project from the development phase, the project leader starts working with the project after the preparation work is done. This is partly to avoid that they become emotionally attached and so that they can remain neutral and produce neutral reports.

Even though this is the case, Per Marcusson adds that he and the other project leaders are also human and can sometimes feel more for one certain project than for another. The fact, that SCA organizes the project leaders beside the regular organization, can be interpreted that the company is using structures to avoid commitment. However, like Per Marcusson says, the company can not always protect itself from having project leaders who still get committed to their projects and their course of actions. Anyhow the project leaders' commitment does not seem to be as strong as the theory states, but it is rather other people involved in the project that are more committed to it. Peter Thorstensson describes how they use consultants in some of the projects and these can sometimes become overly committed to a project as they might be without work if the project does not continue. This could be dangerous as the committed consultants, who are not a part of the company, can try to push the project to continue even when it is not doing well.

Statman and Caldwell (1987) write about that there are two sides to commitment. (1) The first is that it works as motivation which helps people to generate the force needed to complete difficult projects. (2) The other side to commitment is wasteful i. e. commitment that entraps people into losing projects. A question was asked to the respondents whether they can see a danger in that people become committed to a project. Relating their answers to the findings of Statman and Caldwell (1987), this seems to also be the general belief among the respondents. Henrik Breitholtz answers that he can see a danger in commitment but also says that it is a necessity for a project to become successful. He says that project work is not just intellectual work but it needs people to do extraordinary achievements and sacrifices and he would without a doubt choose a project leader who is committed to a project before somebody who is not. Without commitment, he says, a project leader would never get everybody in the project to work in the same direction. According to what Goldberg and von Nitzsch (2001) write, this type of project leaders would influence that decisions are not made free from Loss Aversion as they say that, to be able to do this, people need to keep their commitment to a minimum. Further, Henrik Breitholtz believes that the most important thing is that the decision makers remain neutral and objective but at the same time they have to be able to learn to handle the emotions in the organization when a project is abandoned. It is then important for the decision makers to highlight that the project is not abandoned because somebody has done a bad job but rather, for example, that the situation has changed.



Ingela Torstensson also believes that there is a general danger in getting overly committed to a project. She says that the fact that her group of project leaders is outside the organization should help them in not getting overly committed. In the Packaging unit the project leaders are, compared to the Personal Care unit, often a production manager who is responsible for the project besides the regular work. Applying Ingela Torstensson's answer to this, it could lead to a higher commitment as the project leader, then, is involved in the development of the project and it is then harder to act neutral.

Peter Thorstensson says that people involved in a project develops a loyalty towards the project. He says that people involved can spend 70-80 hours per week working on the project and there is a risk that they become more loyal to the project than to the company. This loyalty is a sign of commitment to the project and like Ingela Torstensson, Peter Thorstensson also sees a danger in this. This commitment can lead to reluctance to let go of the project.

According to Goldberg and von Nitzsch (2001), commitment is directly linked to loss aversion with a positive correlation. On a question whether they can see that people who are highly committed to a project also are finding it harder to give it up, Per Marcusson says that this can definitely be the case, however, it is very much depending on the individual and how she/he handles failure. He says that he has seen people who can remain neutral, even though they are the person who assigned the project which is usually somebody who is committed to continue with projects. Ingela Torstensson says that she believes that it also has to do with personality whether a person who is committed to a project finds it harder to give it up than people not committed to it. Henrik Breiholtz says that he can definitely see a relationship between commitment and the aversion of loosing and says:

*“Clearly, the more engaged in a project you are and the more you feel for it,
the more eager you become for the project to go well”*

This is in line with the Figure 2, which shows that loss aversion increases with Commitment. Further, Henrik Breitholtz can see a strong relation between project work and prestige. He says that after working in SCA for 26 years he has learned that this is one of the most important factors influencing decision making and behavior in businesses today. He says that the reason for not wanting to give up a project can often be that a person feels that she/he has promised a course of action to others higher up in the organization and not continuing this would feel like a failure.

Ingela Torstensson says that it feels worse if a project fails when you have to go higher up in the organization to report the project failure. This seems partly to be because the project is then larger and more money is spent, but also because it does not look good in front of others. This can be related to the theory which says that people tend to become more committed to a

course of action when there are other people involved that can see the success or failure when the project is finished (Goldberg & von Nitzsch, 2001). Per Marcusson says that the people who have been committed to a project and know why it is abandoned are usually handling the abandonment better than those who believe that the project is abandoned for the wrong reasons. This shows that people get attached to the project and are finding it hard to accept decision makers' decisions when it goes against their beliefs.

Staw (1981; 1976) has illustrated in an experiment how responsibility for a project influences the feeling of regret and loss aversion and found that the interaction between personal responsibility and decision consequences was very strong. According to an answer that Henrik Breitholtz gives, he believes that this can be a positive thing. He says that with increased responsibility for the decision maker at each tollgate, by having her/him signing an agreement that the project is economically motivated, would increase the chance of abandoning wrong going projects earlier. This means that commitment would increase with responsibility, like Staw has illustrated in his experiment.

4.3.4 Company Climate

According to Statman and Caldwell (1987) people might manipulate information about projects when they are committed to a project to get approval for starting or continuing the project. This shows a very high commitment to the project, and not being totally honest towards the company. They also argue that project managers might report biased information if the project is going worse than expected as they are afraid to realize the loss, in other words showing loss aversion.

When asking Peter Thorstensson whether he believes that calculations around the inflow are usually undervalued or overvalued, he says that he can see that calculations behind a project very often end up with a CVA around 1.3. Further he adds that these figures are based on many assumptions and that especially assumptions on future inflows are made with a conservative mind in order not to exaggerate future expectations.

Caldwell and O'Reilly (1982) have done research on this subject and find that people sometimes manipulate information that they are presenting to others when they are confronted with failure. Peter Thorstensson is also aware of this and says that the information which the decision makers higher up in the organization base their decision on comes from the project managers' reports. Peter Thorstensson further says:

“The decision makers are depending on the reports coming from the people working with the project. If the reports are not correct, one can not make the right decisions.”



According to the literature, this type of reporting is open to manipulation by the people engaged in the project who are making the reports. In SCA a project's profit is measured with a CVA Index. Peter Thorstensson says that behind the CVA calculations there are many assumptions in relation to the market and the products. The numbers are based on two things; revenues and cost savings. Peter Thorstensson says that it is relatively easy to calculate how much savings one can make by cutting down but it is much harder to make correct calculations when it comes to revenues.

To be able to receive as accurate information as possible regarding the projects, Statman and Caldwell (1987), write that a company can set up strict rules for the project and also milestones that it can be measured against. Peter Thorstensson explains how the company has strict models for how they evaluate whether a project should get approval to go ahead, this includes a Master File with areas that should be described regarding the project and detailed calculations on inflows, outflows and some market analysis. He says that it is very hard to get approval for a project, if it has a CVA Index lower than 1.2 and this is a limit which the company has set up.

Henrik Breitholtz also agrees that there is a possibility to select valuable information and leave other out when making reports but also adds that this might not be done consciously. It could be that people value information differently and find different information important for the project. Even though this type of reporting would happen consciously or not this would be harmful for an organization.

All people involved in a project should be precommitted to the milestones which should be set up for a project and if the project does not reach them it should automatically be abandoned (Statman & Caldwell, 1987). According to PRIME, a project should be evaluated at each tollgate and if it does not reach the set up goals it should not continue but either take a step back and redo some of the work or be abandoned. The respondents say that they are following this relatively strict but it could sometimes happen that a project continues even though it do not reach its goals.

Henrik Breitholtz highlights how important it is for a company to have a model like PRIME for valuing and evaluating project. He says that without a system and model like this the company would without a doubt abandon projects too late but he adds that the model is no guarantee for the projects to be abandoned in time and it still happens that the projects are abandoned too late. He says that a structure like this might be able to half the mistakes that could be made. Henrik Breitholtz further stresses that it is the behavior of the managing director who influences the organizational climate the most. He says:



“If it is allowed to make mistakes, the mistakes are also exposed earlier and if it is not allowed to make mistakes this will pervade the organization and create a blame culture. People would then try to hide the mistakes and hope that somebody else would be blamed for them.”

This is in line with what Devaney (1991) writes, that a corporate climate can be fostered by the CEO which encourages the exchange of accurate information and the expression of conflicting opinion. When Henrik Breitholtz is asked whether he believes that SCA has what he calls a “blame culture” he says that it used to be this type of company climate but from a few years back it is much more “allowed” to make mistakes. This is due to a change of manager.

4.4 Summary

To sum up the results of our research performed in SCA Packaging and SCA Personal Care we can see that the company is using mainly three different models in relation to project work. The Personal Care unit is working more with project work and is therefore also using the models to a further extent. According to the answers from our respondents the decision making regarding abandoning or continuing a project is taken at different levels in the company depending on the size of the project. The factors which could influence decision makers in connection with project work were clearly seen in the interviews and their influence will be discussed further in the following chapter, conclusions.

5. Conclusion

The final chapter begins with a Discussion of the findings where the conclusions of decision making, loss aversion, sunk cost, mental accounting commitment and company climate is discussed. In the part about additional observations the authors describe their findings from the research. The chapter is concluded with further study proposals.

5.1 Discussion of the findings

Our intention was to be able to investigate influencing factors behind decision making regarding project abandonment within Behavioral Finance and further be able to study if the theory is in line with our findings through our work. We have found that there are additional factors which the theories have not indicated. Further, we have seen how these factors are influencing, to what extent, by each other and what meaning they have in a corporate environment.

5.1.1 Decision making

We found that SCA has developed several models like Project Reviews, Master File and PRIME concerning the decision making process and project evaluation. We understand that this effort is helping the decision makers to behave more rationally. Since the Master File indicates exactly which criteria must be fulfilled, what CVA is needed for every project to be selected and which routine every project must go through to be approved as a profit creating project to the company, the decision makers can be satisfied with the decision making process as long as they have met all requirements for the decision.

We think that these models that SCA is using for decision making process and evaluating projects are designed to make optimal decisions. It is crucial for a large organization like SCA to have a model like PRIME, signaling at every tollgate whether it is worth to continue the project or not. Also, as all four respondents acknowledged, the company would abandon projects too late, if they would not have had such models. The system and models, however, may cause the decision makers to feel overconfidence, which may lead up that the decision makers underestimate the probability of being incorrect or/and overestimate the probability of being correct in a choice or decision. The models probably lower the mistakes concerning decision making process about projects, but these models do not guarantee that project terminations can take place in time.

5.1.2 Influencing factors from the Theoretical Framework

According to our findings in SCA as well as studying the theories we can see a clear connection between the factors and it is sometimes difficult to separate them from each other.

Loss Aversion

We find it difficult to conclude how much loss aversion really influences the decision makers, since the answers of the respondents did not give strong evidence that we could believe that loss aversion *is* an affecting factor in SCA. In contrast to what the theory says, one of four respondents noted that she/he feels stronger when the projects end up successfully than when the projects end up unsuccessfully. We analyze that this may depend partly on that the respondent's answer is influenced by her/his personal belief and partly on that she/he might not be so sensitive to losses which might indicate that the theory does not include every individual. However, apart from the answer to this question, it should be added that a factor like loss aversion is hard to relate to on its own. As written above, the answers about loss aversion shows an indication of loss aversion to a certain extent but we think that loss aversion can be better seen in relation to a factor like commitment. Commitment is easier to relate to and when studying this factor we could also see indication of loss aversion. Also through studying the company climate and finding strict models we could see an indication of that the company is afraid that loss aversion occurs without these and tries to avoid the factors by creating the models.

Sunk Cost and Mental Accounting

According to the theories which are based on individual investors, sunk cost is the most influential factor regarding investment decision making. We have found that the respondents are aware of the sunk cost effect, but they are quite certain that this kind of problem is very small at SCA, since they are using the model PRIME when doing project evaluations. However, sunk cost can not totally be excluded from the influencing factors as it is hard for a human being to close a mental account as a loss, which is what sunk cost does. When sunk cost can not be ignored it influences the decision maker negatively. However according to our findings, we could clearly see that a company like SCA can avoid the influence of this factor to a much larger extent by forming models and structures around their decisions.

Sunk cost is the factor which is most on its own and is the one that is the easiest to avoid with models and structures. It is a factor which is the most tangible and therefore the one that is the easiest to see.

The factor which we consider being the most difficult to see is mental accounting. It is very hard to measure as it is based on unconscious behavior and it is more a factor which lies behind a factor such as loss aversion and sunk cost. Mental accounting is a factor which is



easier to capture in experiments, as it is a highly psychological factor and it is difficult to directly research in a study like ours.

Commitment

Through our interviews we have found that the respondents from SCA are in line with the theories regarding commitment and people who are committed to a project can find a termination more difficult than people who are not. As one of our respondents notes that she/he and the other project leaders are also human and can sometimes feel more for one certain about one project than about another.

However, in SCA Personal Care unit, instead of being a part of the project from the development phase, the project manager starts working with the project after the preparation work is done. This partly avoids that they become emotionally attached and they can remain neutral and produce neutral reports to a greater extent. Even though the company can not always protect itself from having project leaders who still get committed to their projects, as long as the company is aware of the risk of commitment and is trying to establish a proper decision making process like PRIME, commitment can be controlled to a certain extent, but not totally.

We can see that commitment is the factor which the respondents could relate to the most, which could be explained by that it is a behavior which is relatively easily observed and recognized as it is a somewhat a direct behavior. However the connection between commitment and loss aversion, when it comes to project abandonment, is very clear and we can see that loss aversion increases with commitment, as in Figure 2. Commitment seems to be a factor which has both negative and positive consequences and we think that it is up to the people involved in a project to be able to separate commitment with loss aversion. Commitment in itself works more as a positive and motivating factor and increases the work performance as our research shows that an amount of commitment is necessary for fulfilling the projects. However, when commitment is combined with loss aversion, the consequences can be more negative. Then it is harder for a person to remain neutral as an abandonment of a project can then be perceived more as a failure since a loss averse person who is committed to the project, tries to avoid losses. The factors commitment and loss aversion could together lead to that the committed people try to distort information about the project.

In comparison to sunk cost, commitment is hard to take away and avoid. Even though, commitment was the factors that the respondents could relate to the most, this does not necessarily mean that it is the factor which influence the decisions the most but we feel that it is right to say that it *does* influence the decision making process. There are many other factors



that can be related to commitment such as an individual's interest, feelings and personality which includes a factor like loss aversion.

Company Climate

One of our findings, indicating how important role the company climate plays, is the environment where the decision makers can stop the wrong going projects. Stopping the projects which are not going well is central concerning the loss of money and energy in today's business world. Here, we would like to stress that the climate of a company plays a significant role, since the project managers working in a "blame culture" might try to rescue the projects, on the basis of incorrect information and self-biased interest et cetera.

Even though the company climate is one of the factors which influence project abandonment the most, we do not see it as a worrying factor since the company climate can relatively easily be influenced and changed to the better if needed, even though it might take some time. This can for example be improved by changing leadership style. Taking this fact into consideration, the company working with a project can create a better climate which in turn also influences the result of a project.

5.1.3 Additional Observations

After performing our research, we have found out that project should be allowed to make mistakes and to have their own opinion, just like an external consultant. In this sense, the way SCA works with the projects is very good, since being as neutral and objective as possible can decrease the loss of resources. However, we have found that there are some other factors that the field of Behavioral Finance does not take into consideration. One of these factors is *prestige*. *Prestige* is a factor which appears as a result of that it is a corporate environment. This might also be a factor influencing individual investors but not at the same level. The factor has another meaning when a person is working in a company where competition might be a driving force and where the person could be compared to other colleagues and judged by her/his superiors. In addition to this factor, also *career thinking* seems to be an influencing factor, which is connected to the *Prestige* factor.

There are both negative and positive aspects to these two factors. If a person is not committed to a project and do not feel loss aversion towards it but still is affected by the factors *prestige* and *career thinking* this could lead to that a project is analyzed carefully and abandoned if necessary. On the other hand, if a person is influenced by *prestige* and *career thinking* as well as commitment and loss aversion this would most probably lead to a negative influence on the company climate. The company climate would then be characterized by people who blame others when a project is abandoned. We would like to point out that the factors *prestige* and *career thinking* are factors which the respondents brought up on the basis of their own



experiences and thoughts and they might not be mainly relating the factors to the work today. The reason for that these factors have not been mentioned in the theories previously could be that the theories are describing individuals in individual settings.

To sum up, we can see that the factors which the Behavioral Finance theories bring up in relation to giving something up can to a great extent, but not totally, be applied on to the corporate environment which we researched. We found that there are also other factors which can influence people in a corporate climate. These can be the company climate, prestige and career thinking which are factors that most likely would not influence an individual investor the same way. We also see that unlike an individual investor, a company creates clear structures and models which can increase the rational behavior and decrease the influence of the affecting factors. A company can never protect itself totally from the human behavior which include these factors but by being aware of them and knowing how they influence, at least a company might be able to decrease the number of mistakes made in the decision making process when deciding the future life of a project.

Finally, we would like to highlight that as we only performed our research in a single company, this research are most likely not applicable to all companies. However we do feel that a large company like SCA where people with extensive experience within project work have been interviewed can give a good indication of how it might be in several other companies, at least in the same type of business. This leads us to what further research this thesis could give ideas to.

5.2 Further Study Proposals

During our thesis work we have often asked ourselves 1) whether other types of companies, for example, the consultant companies or small-scaled companies which are doing business on local markets, have models like SCA which they follow to be able to make optimal decisions concerning project evaluations, 2) what factors may possibly influence their decision making process regarding project abandonment and 3) what consequences they have. Another research could be to investigate which factors influence in other branches and if they are related to company size. These questions can be recommended for further research.



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Interviews:

Peter Thorstensson, 2006-05-08, SCA Packaging, Finance Director in the Nordic Region.

Per Marcusson, 2006-05-12, SCA Personal Care, Project Leader.

Ingela Torstensson, 2006-05-12, SCA Personal Care, Manager of a group of project leaders.

Henrik Breitholtz, 2006-05-19, SCA Personal Care, Development Manager.



Appendix 1

Interview questions

Background information

1. How long have you been working for SCA?
2. How long have you been working in your current position?
3. What are your main working tasks?
4. What type of projects are you involved in/ do you get in contact with?

Decision Process

5. Where do ideas about projects come from? Individuals? Departments?
6. How many are involved in a decision that a project should go ahead?
7. Do you have any models or structures which you use when it comes to the decision making process regarding projects?

Valuation and evaluation of projects

8. How does it work when an idea about a project is valued?
9. What valuation methods do you use when valuing a project? (NPV, IRR, Payback, etc)
10. Do you have set up components which are always included when a project is evaluated?
11. Do you categorize projects into successful and unsuccessful projects? Do you have any statistics on successful and unsuccessful projects?
12. Who evaluates and decides whether a project should be abandoned?
13. Do you have any set rules for when a project should be abandoned?
14. A project with a CVA index in phase one was 1,4 is now in its third phase down to 0,8, do you then choose to abandon the project? What does the discussion sound like and what factors would influence on a decision to continue with the project?
15. Does it happen that project leaders try to argue for projects to continue?
16. Have you experienced that a decision regarding a project that is not going well is postponed?

Sunk cost

17. Have you ever tried to save a project that is not going well?
18. Have you ever tried to repair sunk cost?

Loss Aversion

19. Have you experienced that you regret a decision that you have taken?
20. Have you experienced that you regret that you did not take a decision when you were working with a project?
21. Do you believe that SCA takes high risks with their projects or not?
22. Can you see that people are willing to take larger risks when a project is going bad?
23. What feeling can you see is stronger - the feeling of a project ending up successful or a project ending up unsuccessful?

Commitment

24. When a decision is taken that a project should be abandoned, have you experienced that the persons, who have developed and forced it through, fight for continuing the project?



25. Do you feel that people become too committed to projects and find it hard to abandon them? If so, why do you think this is?
26. Do you believe there is a danger in getting too committed to a project? If so, why?
27. Can you notice that somebody who have been fighting for a project is seen as a failure if the project is abandoned?
28. Can you see that increased commitment to a project leads to that a person is willing to do more to save the project from being abandoned? In other words, can you see a relation between commitment and fear to loose (loss aversion)?
29. Do you think that a project leader's commitment to a project increases when more people are involved in the project does this affect the decision making?

Company climate

30. How do you think a SCA can prevent that projects are abandoned too late?

Information

31. Is it possible that project leaders can filter/refine information when they make project reports? Does this happen?



Appendix 2

Document for valuation

Format for Capexes above €2.5 M (> 25 M SEK)

All relevant information on the capex project should be put together in a so-called Master file defined by SCA Group and summarised below. This Master file should be submitted in IM.

1. General

- a. Background
- b. Link to SCA strategy and the business idea
- c. Targets
- d. Scope and project limitations; linked investments

2. Market

- a. Market strategy
- b. Sales prices and volumes
- c. Plan for market introduction

3. Production and product

- a. Production learning curve
- b. R&D plan
- c. Patent situation
- d. Product quality

4. Project description

- a. Technical/functional description
- b. Authority/permits
- c. Technical risk exposure
- d. Safety aspects
- e. RMS-analysis (Resource Management Systems)
- f. Environmental impact
- g. Organizational impact and personnel plan
- h. Training

5. Project realization

- a. Project organization
- b. Time schedule
- c. Description of realization and consequences (e.g. removal of existing buildings and infrastructure, production stops, redundancies, etc.)

6. Valuation assumption

- a. Valuation methodology
- b. Investment capital
- c. Capital spending
- d. Cost of capital
- e. Volume development
- f. End-product price development
- g. Variable cast specification and development
- h. Fixed cost specification and development



- i. Operating margins
- j. Earnings and cash flow
- k. Current capex
- l. Change in working capital
- m. Subsidies

If the project is carried out in an emerging market, a macro economic level description should also be added, including country description, political situation and risks, inflation and growth development etc. It should also be stated whether it is possible to hedge political risk or not.

All supporting powerpoint presentations and valuations should be forwarded via e-mail in advance of both Investment and Board meetings to ensure we can include in any further presentations.