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Abstract

The stock markets grow constantly, and trade has become more international and mobile. The interest in understanding the investors' and managers' attitudes towards risk and financial decision-making is stronger than ever before. The purpose of this study is to increase understanding of institutional investors' attitudes towards risk as well as some of the factors influencing value creation in financial decision-making. It compares the theoretical concept of risk in investing with the reality of the finance world of today, as viewing risk in a way that differs from the assumptions of financial theory has implications for the actual financial decision-making.

The results of this study show that investors' perception of risk diverges from what is stated in the financial theory. However, managers and investors do not differ much in their view of risk, or their attitudes towards financial decision-making. This study fails to support the theory of a rational decision maker, since the results show that managers can influence investors through such factors as personal characteristics, problem framing, and financial measures. The results also reveal myopic loss aversion among institutional investors.

Key words: risk, investor behaviour, institutional investor, attitude, decision-making

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1 Introduction

There is a growing interest in understanding how investors actually behave, and the reasons behind their actions. Discussion around the relationship between company management and investors has become more intense. At the same time, the share of institutional investors is growing among all investors. This study aims to reveal how institutional investors think about risk and behaviour by management that can affect the investors' equity choices.

1.1 Background

Behavioural finance has created much interest over the past two decades, not least since 2002 when psychologist Daniel Kahneman received the Nobel Price in Economics for his and Amos Tversky's prospect theory. More interesting, however, is the practical approach of behavioural finance to business life today. Economists have begun to realise that assumption of a rational man in financial theory[1] is not always in accordance with the man in real life.

As Thaler (2000) writes in his article about "homo economicus", economics is becoming more and more human. According to Thaler (2000), one of the reasons why economics did not start out this way is that behavioural models are harder to create and to understand than traditional economic models. As economists in time become more sophisticated, their ability to incorporate their findings of other disciplines, such as psychology, improves. As he playfully concludes, in the future we can expect "*homo economicus to evolve into homo sapiens*".

When talking about investors, a separation must be done between private and institutional investors. In the focus of this thesis are institutional investors. Using the definition by Hellman (2000), these are investors who are legal persons, acting as instructed by their principals. Many of institutional investors can be described as financial intermediaries who manage other people's money. The services provided by investment firms include e.g. purchases, sales and exchanges, subscriptions, and intermediation of orders of various investment

[1] In this study the term "financial theory" is used to describe those assumptions of existing economic theory that are generally approved and applied to financial theory. We refer to it as financial theory, normative financial theory, decision theory, decision-making theory, or classical financial theory.

instruments in the firm's name on behalf of other entities, issue underwriting, organisation of issuance and asset management. The amount of wealth managed by institutional investors has grown considerably over the past 20 years. According to Grinblatt et al. (1995), institutional investors have become more active traders and, as a result, have become increasingly important in terms of setting market.

The media has exposed us to what the different financial actors think about market trends and companies' credibility. An increased media attention has been drawn to several intrigues and scandals of large corporations worldwide, e.g. the accounting fraud at Enron in 2001 and the bonus scandal at Skandia in 2002. In general, when company managers[2] are taking certain liberties at the cost of the shareholders, what is behind these unethical deeds? Can this be explained by investors' and managers' attitudes? If we think about it logically, it is peoples' attitudes towards other people and changing circumstances that determine people's actions. One can say that whatever role and responsibilities managers and investors perceive they have towards each other and other players in the financial markets, decides what kind of actions they take.

The media gives us an illustration of reality, however sometimes somewhat biased. Nevertheless it makes us question financial theory, whether it is followed or not. Are investors truly able to see managers as purely professionals who are set to lead the companies as employees? Or do they mix the managers' personal characteristics together with the company image in their evaluation and interpretation of that company's performance and risk level? How does this daily exposure to headlines revealing managers' behaviour in different situations affect investors' attitudes? Several studies have investigated market actions, investment outcomes, value strategies, and portfolio performance. However, still there seems to be an urgent need to further investigate and create a better understanding of investors' attitudes towards manager behaviour and risk taking. Since this study is performed in the Finnish and Swedish stock markets, a brief discussion over the latest developments on the two markets is presented in Appendix 1.

[2] In this study the term "manager"/"management" refers to the managers of companies that institutional investors invest in.

The manager compensation scandals at ABB and Scandia - among many others - make us question whether managers are truly working in line with the assumptions of financial theory, shareholder wealth maximization as their goal. Do managers make decisions in favour of their shareholders?

A study made by Hamberg (2004), "Managerial Attitudes towards Risk in Financial Decision-Making", will function as our profound starting point. At the end of our analysis the results of this study concerning investor attitudes are compared with Hamberg's results concerning managerial attitudes. Hamberg's study consists of a survey made on the Chief Executive Officers (CEO's) and Chief Financial Officers (CFO's) of the largest quoted non-financial companies in the Nordic countries. He investigated their view of risk when making financial decisions, and the results of the study imply that the managers' perception of risk is not in accordance with the assumptions of financial theory. The main findings of Hamberg's (2004) study point out that managers see risk as something negative and their goal is to minimise that. Further, top managers do not believe that low exposure to risk implies a low return but rather that success has a relation to earning high returns while being exposed to low risk.

This study investigates same features of risk and financial decision-making as the study introduced above, but from an investor perspective. Supplementary questions concerning changes in risk and social behaviour and attitudes are presented. Further, some management value creation factors influencing investors' financial decision making are investigated. The data collected in this study are comparable data with Hamberg's data, as the investors were confronted with similar questions as stated by Hamberg to managers, but from the "opposite view".

Since we have the opportunity to complete a mirror study, it intrigues us to investigate if there is a gap between managers' and investors' view of risk. As discussed above, media constantly gives us a picture over the activities in the market, including issues concerning whether to buy, hold, or sell. What factors are considered in these investment decisions? One of the factors deciding whether to buy or sell is dependent on the level of risk the investor[3] is willing

[3] In this particular case "the investor" is either the manager who is deciding whether to invest in a project or not or an investor deciding whether to invest in a company or not.

to take on. Both the managers and the investors are faced with the same risk but from different perspectives. Do managers and investors view risk the same way or do their views differ concerning risk in financial decision-making? We believe this question is interesting since the answer would provide us with a better understanding of how managers and investors view one of the main factors in financial decision making, i.e. risk.

1.2 The Research Issue

The original research idea was to investigate investor behaviour towards risk and financial decision-making in companies. The research idea was formed on general focus research questions, then to research questions and finally to research objectives[4]. This was developed to a *general focus research question*: "Do investors see the risk and value creation perspectives of decision-making in the same way as company management does?" This procedure and the research questions are further elaborated in Section 3.2.

Does the reality correspond with the assumptions of financial theory? Whenever we read articles or scientific papers or listen to the news, it seems as if what we have learned does not match with the reality. The actors in the market do not behave as they "should", according to the assumptions in the financial theory. An individual given the same information about a problem twice should not differ in his/her choice, no matter how the problem is framed. A manager should act in the favour of company shareholders, and even more so if he/she is given incentives connected to company performance. The theory cannot explain all different behaviours. Is there any theory that can explain behaviour? Perhaps the closest solution would be to find common factors that do explain some of the behaviour. We intend to find some of these factors or explanations by investigating investors' attitudes.

Investors are, to an increasing extent, demanding that public companies disclose information of their specific risks, as well as information on how they attempt to handle them. However, not all companies are willing to disclose the information demanded. Thus, investors are forced to act based on incomplete information. One might assume this is one of the main factors causing

[4] According to Saunders et al. (2000), research objectives lead to greater specificity than research questions.

behaviour deviating from the financial theory, which should also be considered when analysing the problem area.

Besides Hamberg (2004), another research that has given inspiration to our thesis is the empirical study of how large Swedish institutional investors make equity investment decisions by Hellman (2000). His study concentrates largely on information usage by investors and their actual actions. Reading about the investment actions described by Hellman (2000) made us eager to understand the attitudes behind these actions.

The *purpose of this study* is to increase understanding of institutional investors' attitudes[5] towards risk[6] and to examine how managers by different means can influence investors in their perception of a company. Further, this study compares the investors' risk perception to managers' view of risk, and approaches these differences and/or similarities between the opinions in a way that provides knowledge to both investors and managers reading this paper.

This study aims to reach academics in economics and finance, and professional actors in the financial market. It will provide them with a wider understanding of investor behaviour concerning risk and means used by managers with aim to influence investors' perception of a company, thus influence investors' financial decision-making.

1.3 Outline of the Paper

The background and the research issue of the study are explained in the introduction. The theoretical background of our study is positioned in Chapter 2, where the research propositions are developed through an investigation of prior research in the field of finance. The prior research evolves from the normative financial decision making theory and continues with behavioural finance. In the latter part, behavioural finance, we discuss more specifically investor behaviour, in order to link it closer to our target of this research;

[5] The word attitude is defined in social psychology as a predisposition to classify objects and events and to react to them with some degree of evaluative consistency. While attitudes logically are hypothetical constructs (i.e. they are inferred but not objectively observable), they are manifested in conscious experience, verbal reports, gross behaviour, and physiological symptoms. (Encyclopaedia Britannica Online 11.1.2005).

[6] In this study risk implies financial risk.

institutional investors. In Chapter 3, the methodology choices are exploited in detail as well as the data collection, research procedure and characteristics of this study compared with prior studies. Further, in Chapter 4 an analysis is made and the results to all research propositions are revealed. The analysis and findings are explained and illustrated by graphics and charts. The complete survey (together with results), as it was sent out to the respondents, can be found in Appendix 2. Finally, the important results of this study are pointed out in Chapter 5 in the form of conclusions, together with suggestions for further research.

The structure of this thesis has been chosen through following three lead words; why, what and how, illustrated in Figure 1. In the introduction part we motivate *why* this research needs to be done. Next, in the theory chapter, the reader is made familiar with the research area in order to understand *what* we investigate. Also the research propositions are developed and introduced, enabling us to elaborate further in our research issue. This provides the reader with a better basis to judge our methodology choice, which explains *how* the research is completed.

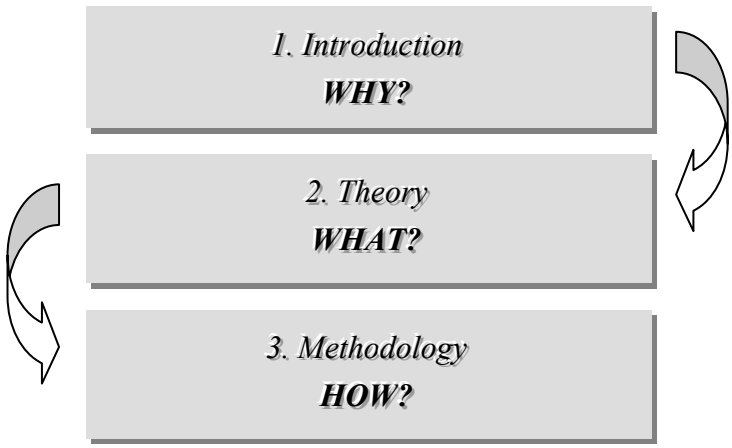


Figure 1. Motivation to the structure choice of this paper.

“We are all humans, we all make mistakes”

[[unknown]]

2 From the Decision-Making Theory to Behavioural Finance

Do institutional investors act as rational as the economic man in the financial theory? Quantitative measures are always an easier concept to comprehend when describing individuals' behaviour in the financial market. However, both decision-making and psychological theories propose biases that are measurable in the equity markets. In fact, the field of behavioural finance is based on the assumption that investors systematically make irrational decisions that can be predicted. Below section presents the evolution from normative decision theory to today's new decision theories that are embedded with cognitive psychology. Further, our research propositions, based on these theories, will be introduced.

2.1 Normative Decision-Making Theory

Decision theory, also known as the normative[7] theory of decision-making, has been the only 'thinking' in decision-making until the 90s. Decision theory aims to explain actual behaviour of an agent, based on a rational decision maker who aims to maximise his/her utility[8].

Von Neumann and Morgenstern formulated the modern theory of choice under uncertainty, the expected utility theory[9], when they published '*Theory of Games and Economic Behaviour'* in 1944. This was an extension to the game theory formulated by Bernoulli (1738) who also developed the concept of utility[10].

There are three economic conditions that one can apply in decision theory: certainty, risk or uncertainty. A decision of *certainty* leads each alternative to one and only one consequence, and a choice among alternatives is equivalent to a choice among consequences. Under a decision of *risk,* each alternative will

[7] A normative theory characterizes rational choice.
[8] Optimal choice is based on utility, which in return is related to theories of probability.
[9] This theory is a result from Bernoulli's (1738) resolution of the St. Petersburg paradox, and Allais' (1953) invention of a thought-provoking problem known as the Allais paradox.
[10] Economists and philosophers explain utility as an amount of satisfaction, which the individual gains from an action. Example: an individual who has a strong preference for something relates that object with high utility and vice versa. Game theory demands us to maximize our utility in mathematical terms and therefore we need a utility function. The utility function creates real numbers and they are used to look at the agent's preferences.

have one of several possible consequences, and the probability of occurrence for each consequence is known. Thus, a probability distribution is associated with each alternative, and a choice among probability distributions. When the probability distributions are unknown, a decision is under *uncertainty*. The concepts of risk and uncertainty will be further developed below.

Economists today argue that people are highly rational utility maximisers who compute any action's likely effect on their total wealth, and choose accordingly. However, in order for us to understand why the financial theory is challenged, a more in depth explanation of certain factors used in the financial models, such as rational decision-making, risk, risk aversion, and uncertainty, must be given.

2.1.1 Rational Decision-Making

Financial theory assumes that all actors in the market are rational decision makers. When the payoff for an individual's own decision is affected by other individual's decision, the term *interdependent decision-making* (Cabral, 2000, 49) is used. The individual's optimal choice therefore depends on what he/she believes other individuals' actions are. In game theory there are strategic interactions made by rational players[11] that produce outcomes with respect to their utilities (preference). The normative decision theory says that the decision maker is economically rational, i.e. the individual can (a) assess outcomes, (b) calculate the alternative paths to outcomes, and (c) choose an action that yields their most-preferred outcome (that is assumed to be an interdependent decision). Thus, the individual is maximising his/her utility.

2.1.2 Risk in Rational Decision-Making

In economic terms, a person's attitude towards risk concerning a gain is different and much more valuable than his/her attitude concerning a loss. Risk is defined as variations in the possible outcomes (Pratt 1964, Arrow 1965). It can be measured by nonlinearities in the revealed utility for money or by the variance of the probability distribution of possible gains and losses associated with a particular alternative. A risky alternative is one for which the variance is large; and risk is one of the attributes which along with the expected value of the alternatives are used in evaluating alternative gambles.

[11] An agent participating in a game is called a player.

Risk means uncertainty for which the probability distribution is known. The choice involves a trade-off between risk and expected return. The theories of choice assume that decision makers prefer larger expected returns to smaller ones, provided all other factors (e.g. risk) are constant (Lindley 1971). Also, it is assumed that decision makers prefer smaller risks to larger ones, provided all other factors (e.g. expected return) are constant (Arrow 1965). Hence expected return is positively associated and risk is negatively associated.

Risk averse decision makers prefer relatively low risks and are willing to sacrifice some expected return in order to reduce the variation in possible outcomes. Risk-seeking decision makers prefer relatively high risks and are willing to sacrifice some expected return in order to increase the variation. The theory also assumes that the decision makers deal with risk by first calculating and then choosing among the alternative risk-return combinations that are available.

Often today people tend to mix the concepts of risk and uncertainty. In decision theory a precise distinction is made between a situation of risk and one of certainty: we face risk when we have all needed information and we know how to use it. If we do not have all information needed and perhaps also not certain how to use it then we are faced with uncertainty. Knight (1921) separates the risk/uncertainty distinction by (a) future outcome is known and (b) the probability that a future outcome will occur is known. In real life it would be illogical to assume that we face only economic risk[12], a case where an outcome can be estimated from an objective perspective. An individual cannot know everything and he/she starts to trust own perception and make own judgment over different situations, in accordance with behavioural finance.

2.1.3 Risk Aversion in Rational Decision-Making

Risk aversion will help us understand how investors confront risk and behave thereafter according to financial theory. In classical financial theory, utility functions are assumed to be constant over time and between situations. Being a risk averse expected utility maximiser means that one will turn down any bet with 50/50 of lose/gain risk for all initial wealth levels (Rabin and Thaler,

[12] Economic risk is defined in financial theory as identified outcome; known probabilities (e.g. a lottery).

2001).

The concept of "risk aversion" was formulated by Friedman and Savage in 1948. They state that when faced with a problem, individuals have a tendency to choose the less risky alternative given the same expected return.

2.1.4 The Portfolio Theory

The modern portfolio theory, or portfolio theory, was developed by Markowitz in 1952. As often, investors did not acknowledge it and put it into practise until Markowitz together with Miller and Sharpe were awarded the Nobel Prize in 1990. The axiom of the expected utility theory set a start for new insights into portfolio theory on how to manage choices, hence risk. Classical modern portfolio theory assumes markets are free, societies are free, and investors are rational wealth maximisers (Curtis 2004). Modern portfolio theory explains how risk averse investors can construct a portfolio in order to optimize expected returns for a given level of market risk (with emphasis that risk is a natural part of higher reward). Markowitz developed the concept of mean-variance optimization. Earlier the idea of diversification was just to have a few different stocks in the portfolio. Markowitz stated that it is not the number of different stocks that is important for diversification but the correlation of the chosen stocks that counts. So the efficient frontier was constructed. The efficient frontier offers the maximum possible expected return for a given level of risk. Investors should hold one of the optimal portfolios on the efficient frontier and adjust their total market risk with risk free assets. The capital asset pricing model[13] states that the market portfolio locates on the efficient frontier and all investors should hold that portfolio, leveraged or deleveraged with positions in the risk-free asset.

2.1.5 The Efficient Market Theory

The efficient market hypothesis was formulated by Fama in the 1960s. He stated that in an active market, the market price of a financial instrument should reflect all available information. In other words it should not be possible for a

[13] "A model describing the relationship between risk and expected return that is used in the pricing of risky securities. Capital asset pricing model states that the expected return of a security or a portfolio equals the rate on a risk-free security plus a risk premium. If this expected return does not meet or beat the required return then the investment should not be undertaken" (http://www.investopedia.com).

company to modify the books to misrepresent the value of the financial instrument. Hence the market correctly prices all securities, which results in that they cannot be undervalued nor overvalued for a long enough period to make a profit from. In an efficient market, the expected market value on a security will equal the true market, and if this is not the case, then the trader has not taken all available information into account. Figure 2 shows all information included in prices of securities.

The random walk model of asset prices is an extension of the efficient market hypothesis. The efficiency hypothesis implies that stock prices are a random walk (random and unpredictable), why is this? Supporters of this model believe that it is pointless to search for undervalued stocks in order to predict a trend in the market through any technique from fundamental to technical analysis. The random walk theory was discovered over 30 years ago, in 1973. It has been tested many times. In 1973 Malkiel wrote the book "A Random Walk down Wall Street" in which he puts both technical and fundamental analysis to test. His results showed that they are of no use.

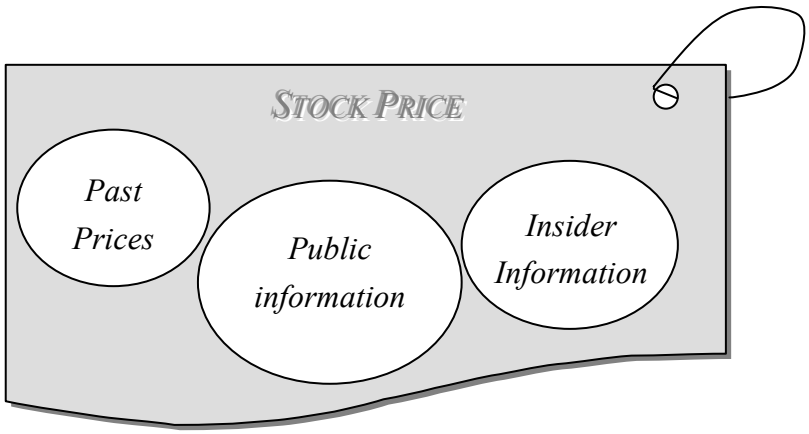


Figure 2. All information included in a priced security according to efficient market theory.

2.2 Behavioural Finance

Alternative theories have started to compete with classical theory of finance in explaining investor behaviour. Reality has shown that investor behaviour is much more dynamic than quantitative measures performed by rational decision makers who seek to maximize their utility. Researchers with various backgrounds have tried to explain investor behaviour. These disciplines, although often based on different approaches, have a lot in common.

Economists seem to focus on the "rationality" or "irrationality" of investor's decision-making. Sociologists explain investor behaviour by investigating investors' social environments, whereby psychologists concentrate on investor's individual characteristics. However, all of them end up finding anomalies[14] in the behaviour of both individual and institutional investor behaviour, and evidence against the financial theory according to which all investors are assumed to be economically rational and utility maximizing.

2.2.1 The Prospect Theory

Behavioural finance is a topic that has been discussed over the past twenty years but has been taken more seriously since 2002, when Kahneman received the Nobel Prize for the prospect theory,[15] which Tversky and Kahneman formulated in 1979. The prospect theory suggests that people are risk averse for gains but risk seeking for losses. This approach to decision-making under risk was born as Tversky and Kahneman identified a gap between actual behaviour and expected behaviour according to the normative decision-making. Normative decision theory explains this gap as a systematic error, however Kahneman and Tversky argued that this spread was too wide to be a systematic error, rather it was explained by cognitive psychology, simple human errors. What normative decision theory ignores is the fact that human beings make these decisions, each individual being unique. The normative model constructs an idealised decision maker rather than a real human.

The prospect theory focuses on behaviour of decision makers who face a choice between two alternatives. The theory states that we have an irrational tendency to be less willing to gamble with profits than with losses. Thus, it violates the expected utility theory which states that the decision maker chooses between certain, risky, or uncertain prospect by comparing their expected utility values (Varian, 1992).

Judgement is the focus in Tversky and Kahneman's work. Individuals have cognitive capacity constraints and therefore they simplify the complex problems they face, which is against the model of rational decision-making in

[14] An empirical result qualifies as an *anomaly* if it is difficult to "rationalize" or if implausible assumptions are necessary to explain it within the paradigm. (Rabin and Thaler, 2001)

[15] Kahneman formulated the prospect theory together with Tversky who deceased in 1996 and therefore did not receive his Nobel Prize in 2002.

economic theory. What Tversky and Khaneman noticed that people tend to focus on the single action, which may result in a gain or a loss. Further, they found that people are sensitive to how choices are framed (presented) and less focus is put on the probable effects of their final assets. The results of Kahneman and Tversky's work reveal that people tend to value a gain that is certain more than a gain that is less certain, this even when the expected value is the same.

By introducing the prospect theory, Kahneman and Tversky opened a new angle into research areas within economics and finance. Researchers in the field of economics began to use cognitive psychology and turned it into fundamental human behaviour. Today the prospect theory has become one of the leading theories of decision-making due to its ability to successfully describe and predict a wide range of data.

2.2.2 Risk in Behavioural Finance

Proper definition and measurement of risk seem to be the two basic problems in understanding investment risk. However, investor behaviour depends on the "perceived" risk rather than the actual risk. Thus we need to find out what affects the investors' perception of risk (and return) in order to understand their behaviour.

According to financial theory, individuals confront risk when they have all the information and know how to use it; otherwise they are confronted with uncertainty. In share markets with a diversity of participants, the prices of securities are likely to reflect the expected returns and risk preferences of individual investors. But this does not mean that investors are able to make objective decision. It must be understood that if investors act in an irrational way, the stock prices will not be accurate and the market is not efficient. Investing on the stock market is indeed much more complicated than the finance theories let us expect: Knowing that the financial market is not totally rational/efficient and thus understanding that it is possible to beat the market in the short term, investors behave in different ways - of which most are far from rational - in order to beat the market. One might even argue that unsophisticated investor behaviour is the biggest threat to efficient market.

However, other factors such as preference have been researched as an axiom of how people perceive risk. March and Shapira (1987) discuss that it is possible that risk preference is partly a stable feature of individual personality, but a number of variable factors such as mood (Hastorf and Isen 1982), feelings (Johnson and Tversky, 1983) and the way in which problems are framed (Tversky and Kahneman, 1981) also appear to affect perception of and attitudes towards risk. The risk preferences of an investor affect how much they are willing to pay for a particular investment and whether they accept it at all. In financial theory, utility functions are usually assumed to be constant over time and between situations. However, risk preferences seem to vary in practice between different situations, and investors' risk preferences might change over time. An investor who would receive great utility from an increase in wealth will tend to be risk seeking. Wydeveld (1999) explains this as follows: at a low level of wealth, an investor is more likely to receive much utility from an increase in wealth. Youth is seen as a stage of low wealth, middle age as a stage of high/rising wealth, and retirement as a stage of high, but decreasing, wealth. According to this, younger people are probably the risk seekers of an economy, while ageing population is likely to accumulate an economy of slower and more stable wealth. Empirical research has found that a decision maker, who initially is risk seeking in area of loss, changes attitude towards risk while gaining experience. This fact has lead Myagkov and Plott (1997) to formulate the assumption that with experience, risk seeking in the losses evolves into either risk neutral or risk averse behaviour.

Shapira (1987) found in his research that managers had a tendency to only consider risk if the outcome was negative. Neither did managers view risk as a concept of probability, rather as the expected amount to loose. This is supported by Kahneman and Tversky’s (1979) concept of loss aversion. Shapira (1987) identified that this negative attitude towards risk was particularly a characteristics of managers who see risk as unconnected to uncertainty, i.e. as being defined in terms of the magnitude of a projected loss or gain rather than the magnitude weighted by its likelihood.

The return an investor expects to receive is an important determinant of one's risk preference and thus behaviour. Calculating expected returns is not an easy task. First, the certainty regarding an investment's potential can vary

significantly. Second, the risks associated with an investment can be realistically quantified, while others are variable and very hard to make a reasonable estimation of. Not to speak about risks which emerge concerning the product, the product provider and the market in general. However, a best estimate of the potential of the investment and its risks has to be made in determining expected returns. Arnswald (2001) did a survey on personal notion on investment risk and found that, out of 269 professional investors asked, 37.9% considered significant price fluctuations secondary in their personal ranking[16] when estimating risk, and 36.4% considered underperformance of stocks as most adequate. Thus, the institutional investors relate risk to price movements, and especially underperformed stocks.

An interesting point was made when De Bondt (1998) asked professional investors concerning their beliefs about risk and return: only 18% of the questioned investors said that risk depends on whether a share price moves with or against the market, i.e. covariance[17]. Again, in contrast to the financial theory, risk was not seen as a variance in a probability distribution. Cooley (1977) provided some contradictive evidence on investor variance-aversion in his multidimensional analysis of investor perception of risk. Cooley's (1977) main objective was to determine the perceptions of risk as reflected by return-distribution moments for a group of institutional investors. He found that almost all portfolio managers viewed variance as synonymous with risk, or at least an important part of risk. However, a substantial number of investors associated an additional dimension with risk, namely asymmetry of return distributions. Further, the findings of Cooley's (1977) study suggest that dispersion and asymmetry capture most of what is perceived as risk by investors.

Risk is certainly something that investors put a lot of attention to, but not in accordance with the financial theory. From everything mentioned above we can conclude, with the words of Cooley (1977, 76-77): "*Although risk is related to the uncertainty of future events, and more risk implies more uncertainty, risk is*

[16] This personal ranking was scaled as follows: most adequate, secondary, tertiary, and least adequate.
[17] Covariance is a statistical measure used to express the tendency of two random variables to move together. If they move in the same direction they have a positive covariance and if they move in the opposite direction, they have a negative covariance.

a personal concept reflected by the viewpoint of a particular investor."

2.2.3 Risk Aversion in Behavioural Finance: Loss Aversion

Financial theory assumes risk aversion due to individual's diminishing marginal utility of wealth[18]. However, the prospect theory suggests that a person is risk averse only when the probability for a gain is high and probabilities for losses are low, and a person is risk seeking when there are low probabilities for gains and high probabilities for losses.

Rabin (2000) demonstrated that, in the expected utility framework, reasonable degrees of risk aversion for small and moderate stakes imply unreasonably high degrees of risk aversion for large stakes (see also Rabin and Thaler 2001). Rabin and Tahler (2001) had data sets dominated by smaller-scale investment opportunities that were likely to yield higher estimations of risk aversion and data sets dominated by larger scale investment opportunities. Rabin and Thaler (2001) concludes that people display an inconsistency in their coefficient of relative risk aversion, thus there is no point in trying to find a measure for it. This inconsistency of risk aversion is caused by loss aversion and mental accounting[19].

Advocates of prospect theory state that risk aversion should be replaced by "loss aversion" (Rabin and Thaler, 2001). An individual views monetary consequences in terms of changes in reference level (usually the individual's status quo). The values of the outcomes for positive and negative consequences of the choice have "diminishing returns characteristic", i.e. the resulting value function is steeper for losses than for gains. This implies loss aversion, as gains and losses of equal magnitude do not have symmetric impacts on the decision. Losses hurt more than gains satisfy; actually most empirical estimates conclude that losses are about twice as painful as gains are pleasurable (Thaler et al; 1997, and Curtis, 2004). The concave curve for gains and convex for losses imply that decision makers will be risk averse when choosing between gains, and risk seeking when choosing between losses.

[18] Diminishing marginal utility refers to the amount of any one input increased (assuming all other inputs are constant) the amount that output increases for each additional unit of the expanding input is decreasing.

[19] Mental accounting refers to the way individuals evaluate financial transactions. They have a tendency to consider risk in isolation rather than in a broader perspective (Rabin and Thaler, 2001).

Kahneman and Tversky's (1979) view of loss aversion follow as such: An individual is loss averse if she or he dislikes symmetric 50-50 bets. Also they showed that loss aversion is equivalent to a utility function which is steeper for losses than for gains. The popularity of loss aversion is based on its ability to explain many phenomena which remain paradoxes in traditional choice theory. Examples are the endowment effect[20] (Thaler 1980) and the equity premium puzzle[21] (Benartzi and Thaler, 1995). Another important aspect of loss aversion is the fact that it can resolve the criticism on expected utility put forward by Rabin (2000) and Rabin and Thaler (2001).

An important difference between the use of risk aversion and loss aversion has emerged in the literature. The subsequent literature of loss aversion defines it in terms of properties of the functional representation (e.g., utility is steeper for losses than it is for gains). In fact, all the recent formal studies we are aware of concerning loss aversion define loss aversion in terms of the shape of the utility function.

Obviously there are several contradictions between the normative rational decision-making theory and the decision-making aspects introduced in behavioural finance. To gain insight concerning the actual decision-making process and attitudes leading to actual investment decisions, our first research proposition investigates the investors' perception of risk.

P_1: The investors' perception of risk differs from what is stated in the financial theory[22].

The financial theory states that an investor is rational and utility maximising. In case the investors do not think about risk in accordance with the aspects of financial theory, how do they actually think about it? Is risk seen as something

[20] In simple terms the endowment effect means that individuals "…place an extra value on things they already own" (http://www.turtletrader.com/endowment-effect.html 2005-01-13 at 22.40).
[21] An equity premium is defined as the difference in returns between equities (stocks) and a risk free asset (e.g. treasury bills) (Thaler et al; 1997).
[22] We do understand that applying financial theory to individuals is not totally correct, as economists when creating theories do not deal with individual behaviours. However, in modern financial theory it is considered the best benchmark.

negative, something to be avoided? Or do investors perceive that without risk no return can be expected? Do they consider one's risk aversion to change over time, vary between different decision-making situations or change when gaining more professional experience? By testing the proposition mentioned above, we aim to find out how institutional investors perceive risk, which they confront in their work daily.

The first research proposition aims to reveal what investors think about risk and whether the financial theory is up to date in observing investor attitudes. It will be interesting to see, which of the two theories is closer to our respondents' thoughts, the normative decision-making theory or the ideas presented in behavioural finance. Further, as we have the possibility to compare our results to a study made among managers, we form our second research proposition in order to find out whether managers and investors differ in their perception of risk:

P_2: Investors and managers share a common perception of risk.

It is commonly known that investors and managers do not always share the same view of how the company should be lead and what kind of decisions should be made. Hamberg (2004) found that only 1.6% of the managers attending the study believed that shareholders and managers have an identical view of the optimal level of risk in a company. By comparing the investors' and managers' risk perceptions, we aim to contribute knowledge and understanding of the differences and similarities in the attitudes of the main actors in the financial market.

Traditional financial theory states that firms maximize profit. Is this how the investors also view the situation and are the managers really acting in favour of the shareholders? It will be seen whether the investors think that managers are too risk averse, or if they think that managers are not willing to take risks. The data for the management's perception of risk is taken from the study by Hamberg (2004), on his approval. Over 300 CEO's and CFO's from listed companies in the Nordic countries participated in his study about managerial attitudes towards risk.

The second research proposition, as a continuum to the first one, will reveal whether the investors and managers share a common perception of risk. Further we will be able to compare both groups' attitudes to risk to the ideas presented in the normative decision-making theory. It will be very interesting to find out whether managers and investors in real life come close to the economic man created in financial theories.

2.2.4 Irrational Decision-Making - Human Error not Systematic Error

The saying *"we are all humans, we all make mistakes"* explains perfectly why the area of psychology is today incorporated into financial decision-making. Models of classic financial decision theory are described with mathematical functions and idealised rational decision makers, yet these decision makers are real people. Therefore we need to understand the cognitive fundamentals in order to fully understand decision makers' actions in the financial market.

Most people make mistakes, often without even knowing it, using shortcuts in doing so. They act upon impressions they have formed and use their intuitive judgement in their decision-making. What if their judgment is wrong and irrational? There is not much to do about it, expect perhaps question the classical decision theory. In general investors believe to be above average concerning beating the market. Tversky (1986) advocates the irrationality behind the descriptive theory of decision-making where rational choices are made. Other examples of the violation of rational principles (of the decision theory) are attributed to the apparent failure to think through the consequences of uncertain alternatives. For example, when a student is waiting for the result of an exam just written, future planning requires the student to imagine two possible futures in which he/she has passed or failed the exam. The idea of bounded rationality in judgment and decision-making has proved to be a powerful one, motivating the search for various mental shortcuts in thinking. However, an overemphasis on errors in thinking may have helped lead to a view of people as 'irrational' No matter how experienced, balanced and focused professionals in the financial market are (or in any other decision-making situation) they will at some point let bias, overconfidence, or emotions affect their judgement and mislead their actions.

This irrational behaviour is applied to portfolio theory by Curtis (2004), who

explains the limitations of modern portfolio theory and behavioural finance. Modern portfolio theory only explains how the capital markets work and behavioural finance explains how the investors actually behave and not how they should behave. With knowledge of both of these theories, which have been discussed throughout Chapter 2, Curtis (2004) tries to formulate a way on how to combine the best parts out of both theories. After all, this is the purpose of understanding behavioural finance, how we can adapt human behaviour into the capital markets.

How does the irrational behaviour show? Dreman (2001) believes that e.g. the Internet bubble is not a financial phenomenon but a psychological one, based on extreme overvaluations. De Bondt and Thaler (1990) test security analysts for their tendency to make forecasts that are too extreme, given the predictive value of the information available to the forecaster. The conclusion they reach from their examination of analysts' overreactions is that they are "decidedly human". In the following, some of the most discussed phenomena of investor behaviour are shortly introduced.

Grinblatt et al. (1995) found in their study that 77% of the investigated mutual funds were "*momentum investors*", i.e. buying stocks that were past winners. Interestingly most funds did not sell systematically past losers. According to DeBondt and Thaler (1985), past winners often turn out to be future losers and the other way around as well (this particular research was made when stocks were ranked on the three- to five year past returns). Investors put too much trust in the past performance and give too little attention to the actual performance.

Gneezy and Potters (1997) have shown that investors given two options, accepting a certain gain, or accepting a gamble with a marginally better than equivalent expected return, act in a risk averse manner. Inconsistently investors faced with a sure loss, or the chance to recover their money while risking greater losses, are seen to act in a more risk-seeking manner. Thaler et al. (1997) argue that losses are often given more importance than the possibility of their occurring would suggest. A myopic investor tends to have narrow framing of decisions and narrow framing of outcome. When an investor has these tendencies he/she tends to make short-term choices rather than long term. Greater sensitivity to losses than to gains and a tendency to evaluate outcomes

frequently, "*myopic loss aversion*", has been investigated by Benartzi and Thaler (1995) and Thaler et al. (1997). Both of these latter researchers among others have used myopic loss aversion to explain expected utility theory. Other names used for myopic loss aversion are decision isolation, narrow framing, and narrow bracketing. As mentioned earlier, Benartzi and Thaler (1995) state that myopic loss aversion explains the equity premium puzzle. If investors would focus on long-term returns on stocks they would realise how small the risk is, relatively to bonds, and would be willing to hold a smaller equity premium. However since they focus on shot-term volatility, with frequent mental accounting losses, they demand a substantial equity premium as compensation.

Financial theory suggests that risks can be generally reduced by diversification, because the returns of some investments are inversely related to those of other investments for certain risks. But evidence suggests that investors are not highly diversified. Despite an increasingly global economy, most investors still overwhelming hold equities in their home economy, an anomaly called *home bias*. Earlier this could have been blamed on the transaction and monitoring costs, but with today's technology and advanced financial intermediaries, these costs are increasingly eroding. Other factors, such as risk aversion, must explain why home investments constantly dominate portfolios. Home bias can be explained by another anomaly, called *ambiguity* aversion, which states that people feel more comfortable in situations of risk than in situations of uncertainty.

Herding has frequently been highlighted in financial markets and suggests investors can be influenced by the actions of others. Investors believe everyone else has better information and then to buy and sell stocks at the same time. Hellman (2000) found that large Swedish institutional investors were occasionally seen to go against other investors' opinions but they more often acted in accordance with them. The opposite of herding is called *contrarian behaviour* and it means going against the herd, against the other investors' opinions.

Daniel et al. (1998) propose a theory of securities market under- and overreactions based on investor *overconfidence* about the precision of private

information and biased self-attribution (which causes asymmetric shifts in investors' confidence as a function of their investment outcomes). Also pride has often been highlighted as an explanation of investor behaviour. People tend to be highly confident in their intuitive judgement, which disposes them to illusions and poor judgement. Investors often think their choices are based on superior information or on superior information processing methods without even knowing what information is available to the counter-party to their trade (Bernstein, 1996).

Investors faced with the decision to sell an investment are affected by whether the security was bought for more or less than the current price. *The disposition effect* means that investors might sell winners too early and ride losers too long (Shefrin and Statman, 1985), which often leads to the opposite of pride, namely *fear of regret*. Pride helps to explain why some investors faced with choosing between a popular or unpopular security, may choose a popular security, because it would be easier to explain losses if everyone else bought the same security. Institutional investors may also display this behaviour when they seek to preserve their reputations.

One more important question is: Why do investor's behave in irrational way? The explanation is very simple. Curtis (2004, 16) hits the point by stating: "*True, sometimes we behave like perfect economic beings. But other times we behave like, well, human beings. We make decisions on the basis of biases that don't reflect real world facts. We allow our responses to decisions to depend on how the questions are framed. We engage in complex mental accounting, ignoring the fact that our various asset baskets are all interrelated. We allow ourselves to be driven by hopes and fears, rather than facts."* Thus it can be concluded that investors, both individual and institutional, behave sometimes like human beings because that is what they are.

2.2.5 Institutional Investors' Decision-Making Process

How do institutional investors make decisions? Even though this study concentrates on institutional investors, i.e. financial intermediate organisations, the analysts need to consider the goals and needs of their clients, individual investors. These individual needs are then mixed with the organisational context, where different policies, company structure, and personal

characteristics affect the analysts' work and the investment decisions they make.

The most effective decisions in financial markets can naturally be done when acting on complete information, meaning that the exact implications for taken actions are known. That is why analysts and investors try to generate information for trading through all possible means, such as analysing financial statements, interviewing management, and validating rumours. This is where the first biases come into picture: in financial markets the conditions are always uncertain, there is no "complete information". If an investor overestimates his ability to generate information or to classify the importance of the data, which other possibly neglect, he will underestimate his forecast errors. If he overestimates the precision of signals and evaluations on which he has greater personal involvement, he will tend to be overconfident about this private information, but not about information signals publicly received by all (Daniel et al; 1998). This implies that investors overreact to private information signals and underreact to public information signals.

There are controversial opinions about the ability of institutional investors to perform above average. Among others, Malkiel (1995) argues against their ability to perform above average yet e.g. Daniel et al. (1997) and Pinnuck (2003) find evidence on portfolio managers showing abnormal performance. Similarly, investors themselves perceive their primary role to consist in the pursuit of above-average market-price increases (Arnswald 2001). According to Hellman (2000), institutional investors' decision-making process includes legal conditions, portfolio strategy, the investor's own financial conditions, and organisational aspects. These contextual premises could lead to investment actions that deviated from the fundamental opinions.

Arnswald (2001) describes the decision-making process of an institutional investor like drawn in Figure 3 below. On the very basis, there are investors' basic views and basic philosophy for investing. Next, very important and sometimes the only steps considered, are acquisition of accounting and non-accounting information and the analysis of these. How investors process the information required in determining an investment's expected return can be problematic. Investors become susceptible to poor judgement as the uncertainty

of decision-making increases. Investors are said to find patterns in what is statistically random data (Fisher and Statman, 2002). Other studies have suggested investors disregard information and risks that do not support their view, while placing too much weight on information that does support it (Wydeveld, 1999). According to Hellman (2000), in a situation with a lot of uncertainty, investment decisions are postponed and more information searched. Further he found that uncertainty regarding the forecasts was dealt with by using non-qualified information as a complement.

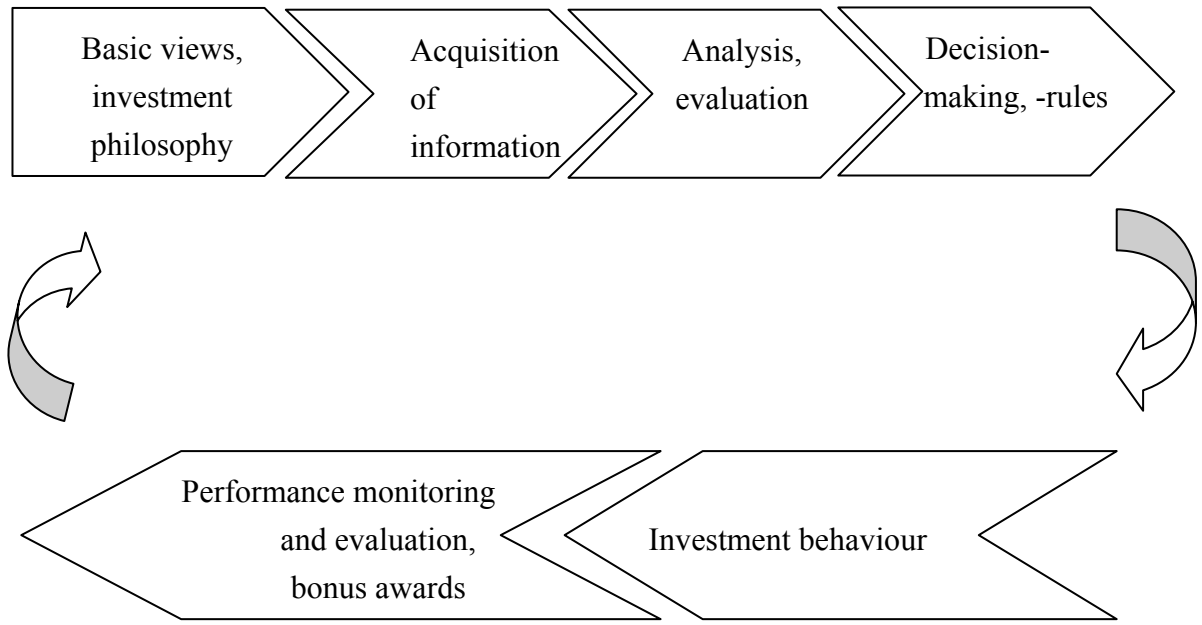


Figure 3. The investment decision-making process of an institutional investor. (Source: Arnswald, 2001, 56).

As institutional investors cannot act simply based on their own preferences, they need to take into consideration the decision-making rules of the employer organization. As Hellman (2000) notes, institutional investors are organisations, not individuals, and their buy, hold, or sell decisions are made within organisational contexts. Thus several general organisational phenomena affect the way institutional investors deal with uncertainty.

The following step is most interesting for this study: the impact of investment behaviour on the final investment decision. Different anomalies mentioned

earlier affect the investor behaviour and make the investors deviate from the economic models. Finally, the investor's performance will be monitored and assessed and possibly rewarded by bonuses.

There are further factors affecting institutional investors facing an investment decision. According to Arnswald (2001), fund managers are extremely competitive in responding to markets. They work under a lot of pressure to take investment decisions quickly, and even when facing great uncertainty. At the same time they have access to enormous amounts of potentially relevant information. They need to think constantly about the client's needs and wishes, not their own. Further, the competition at the workplace increases the pressure to perform well. According to Arnswald (2001), the findings of behavioral science indicate that human beings under such working conditions tend to simplify the decision task in line with their experiences and means. This is supported e.g. by Brown et al. (1996) who investigated how portfolio managers adapt their investment behaviour to the economic incentives they are provided. They argue that even without incentive fee contracts, the competitive nature of the mutual fund environment alone can affect a manager's portfolio decisions. Further, they state that the current tournament structure of the mutual fund industry does provide adverse incentives to fund managers. Thus managerial objectives are changing from long-term to short-term perspective.

Hellman (2000, 235) writes about institutional investors' decision-making as follows: "*The institutional investors' fundamental opinions about particular companies/equities were often developed as a quantitative analysis, in terms of forecasts and an equity valuation, adjusted for a number of non-quantified pros and cons. Assessments of managers and their personalities constituted the most common non-quantified matter of judgment. These assessments not only concerned what the manager did inside the company, but also how s/he related to the analysts*."

We can conclude that the investment decision-making process is not a simplified procedure but includes many complicated steps, full of possible threats of biases, and demands a lot from the decision maker. Several factors affect institutional investors while making decisions. To map some of the factors influencing investors, we decided to investigate whether company

management is able to affect investors through certain means. Our third research proposition concentrates on managers' ability to influence investors.

P_3: Managers are able to influence investors' perception of the company.

Actions by professionals in the financial market today can not always be explained by traditional financial theories. Today psychological factors have come to play a much more important role in decision-making. The actors are humans and they get influenced in many different ways which puts science of investor behaviour on a much more dynamic level. Before the attention given to prospect theory, the behaviour in the financial markets was explained with normative financial decision theory. Research proposition 3 will contribute with better understanding of how managers can affect investors' perceptions of their company, e.g. through management quality, personality factors, and how these impact the company performance. This proposition aims to give insight on how investor perceives value creation from managements' verbal communication and company performance.

This research proposition further supports the two earlier appointed propositions: If the investors perceive risk in accordance with the aspects of financial theory (thus showing perfect rationality), managers probably have less influence on their perception of the company. On the other hand, should the results reveal that investors are closer to human behaviour than rational "economic man" behaviour, we could expect them to be more prone to let managers affect their views.

All these three research propositions together give insight about investors' true attitudes and ways of thinking. Our goal is to find out whether the theories we have learned during our finance studies really apply to the business world we are about to step in. Further, our findings will give direction whether further development of behavioural finance is relevant or not.

3 Methodology

The research approach chosen in this study is of a quantitative nature, to be more precise it is a postal survey; a questionnaire with closed questions. Below the choice of this method and the sampling procedure are explained in detail, as well as the course of actions used in this research process. With the information given in this chapter, it is possible to replicate[23] and evaluate[24] the study.

3.1 The Chosen Research Approach and the Research Procedure

Our intended research contribution is to provide knowledge about investor behaviour. Institutional investor in Finland and Sweden were asked to participate in our study in order to obtain information about institutional investors' attitudes towards risk and factors influencing their decision-making. To achieve this, a research study in the form of a questionnaire was executed. These results were analysed in accordance with our propositions. The second proposition was mirrored to Hamberg's (2004) study, a comparison of managers and investors view of risk which we hope will provide valuable information both to managers and to investors. With this study, we wish to give insight to both managers and investors, to give them a peek "behind the curtains" to find out what the opposite party thinks about exactly same statements concerning risk and value creation in a company.

This study can be considered as basic research.[25] Investor behaviour is a rather young field of finance, and every study in this field aims to expand the knowledge on processes of business and management. Further, our study aims to reveal more information about investors' attitudes and their behaviour, compared with that of managers. Thus, it results in universal principles relating to the process and its relationship to outcomes. Clearly, this type of research aims to expand general knowledge and can be applied to wider use. The following research propositions were formed in Chapter 2:

[23] Replication means that with the written method it should be possible to repeat the same actions under identical circumstances and end up with the same result. (Björklund and Paulsson, 2003)

[24] Evaluation includes an assessment of the chosen method and its capability to give an answer to the research question, and further its ability to support analysis and conclusions. (Björklund and Paulsson, 2003)

[25] Basic research can also be called fundamental or academic research.

P_1: The investors' perception of risk differs from what is stated in the financial theory.
P_2: Investors and managers share a common perception of risk.
P_3: Managers are able to influence investors' perception of the company.

After defining and formulating the research problem and research objectives, we concentrated on gathering information and planning the most appropriate research approach. This thesis employs the deductive research approach, as we investigate an existing theory and add to it our own findings from the survey. In order to collect information about the attitudes, it was concluded that survey is the most suitable method. Data collection and sampling procedure were planned in detail, as well as the completion of data analysis.

The data used in our study includes all categories of information. Primary data is collected through the survey and some unpublished reports. Secondary data is used in large extend in investigating the theory of behavioural finance, e.g. in the form of journals, books and Internet sources. Furthermore, some tertiary sources are used in this thesis, such as encyclopaedias.

3.2 Survey as the Research Method

Considering our purpose of the study - to explore the attitudes of institutional investors in Finland and Sweden - obviously no appropriate data was readily available. Thus new data was collected for this study. When considering the number of replies wanted and the cost efficiency of different methods, survey was selected as the research method. Questionnaires and interview studies reflect investors' opinions and beliefs, which is what we wish to obtain information about in this study. Choosing survey as the data collection method gives us many advantages. It allows the collection of large amounts of data from a sizeable population in a highly economical way. According to Saunders et al. (2000) people perceive the survey method as authoritative in general. The chosen data collection tool belonging to the survey category is that of a questionnaire. Questionnaires are best used with standardised questions which can confidently be interpreted the same way by all respondents, and this was taken advantage of in this research. Each respondent was asked to answer the same set of questions. *Descriptive research*, undertaken using attitude and

opinion questionnaires, enables us to identify and describe the variability in different phenomena.

The survey questions were developed in order to test our research propositions. The questionnaire was first created in English. The survey of Hamberg was carefully investigated, and the most suitable questions to fit into our comparison of managers' and investors' attitudes were revised. Some of the questions in Hamberg's study about managerial attitudes towards risk and financial decision-making were turned into a mirror question of the original, reflecting the opinion of investors instead of managers, and some of his questions were repeated as such. The survey was constructed under the supervision of Prof. Hamberg, as the results were collected to be used by ourselves as well as by Hamberg. All the data collected will not be analysed in this paper, and it is not the purpose of this thesis to accommodate all information.

In Figure 4 is illustrated the development of how the statements were formulated in the survey. As we briefly discussed in Section 1.2, after studying Hamberg's study and reading a lot of theory in the area of traditional financial theory and behavioural finance, we began asking ourselves lots of research questions. From these questions we could later identify three problem areas we wanted to investigate further. Once we had discussed our areas of problem, the statements in the survey began to clear up. As we already had Hamberg's survey as our ruler, it was rather easy to decide which questions to keep and which questions to add, in order to investigate the three areas. These three areas were then later developed into three propositions which became this study's research problems. The survey statements were then formulated to answer our research propositions.

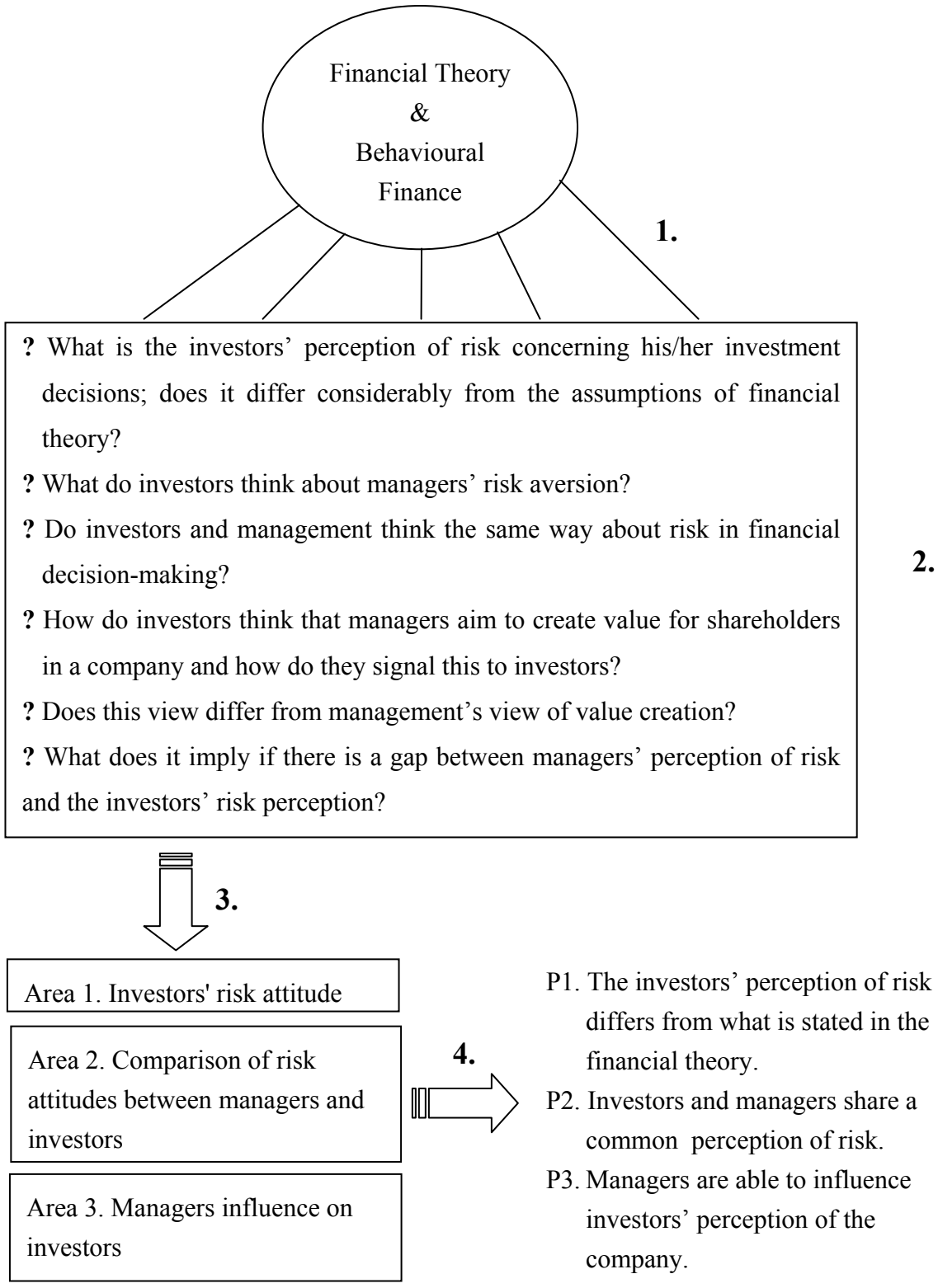


Figure 4. Illustration of the development of the statements.

The questionnaire was highly structured, consisting of a series of closed statements[26] on a 5-degree Likert-scale. The statements were formulated so that the respondents could easily understand them, and that the statements could be understood in only one way. Further, we formulated the statements so that our target group - financial analysts, portfolio managers, traders, and others – were able to answer all the questions. The Likert-scale used in most questions, varied from 1 to 5, where 1 represented "completely disagree" and 5 represented "completely agree". One question also asked to rank the given options with numbers from 1 to 5, smallest number being the best rank.

Finally, the questionnaire was translated from English into Swedish and Finnish. The accuracy of the translations was proved by at least two people in each language. The participants answered each survey almost completely; therefore we assume that the statements were well formulated and easy to interpret. Further, as no remarkable differences between the replies between the countries were identified, it can be concluded that the translations did not deviate from each other, which is very important for the trustworthiness of the whole project.

While the survey questions were formulated into their final form, a list of institutional investor companies in Finland and Sweden was created[27]. Through a selection process explained later, 10 companies in Finland and 15 companies in Sweden were contacted[28], first by a letter and then by phone. The companies that gave their acceptance to our survey were sent the requested number of questionnaires by regular mail, which the contact person then mailed back.

It is generally known that the drawback of mail survey is response rates: not that the response rate would always be very low but rather that the rate is difficult to forecast and there is substantial risk that an adequate response rate will not be achieved. The examination of response rates to recent business surveys by Saunders et al. (2000) reveals rates as low as 15-20% for postal surveys. Unfortunately this was also the case with our survey; the wished response rate was not reached due to several reasons. Many companies,

[26] Questions with a number of alternative answers that the respondent is instructed to choose between.
[27] In creating these lists, www.osakesaastajat.fi and www.bolagsfakta.se were used.
[28] The difference on the size of samples reflects the size of the stock markets of Sweden and Finland.

especially in Finland, referred to bad timing, i.e. they were in middle of reporting period where their analysts already work very long hours and thus were not eager to fill in our survey, even if it only took about 10 minutes/respondent to participate. Another failure was too small number of companies originally contacted. It would have been reasonable to contact at least twice the amount of companies in both countries.

3.3 Data Collection among Institutional Investment Companies

The primary data was collected from Swedish and Finnish institutional investment companies. Much attention was paid to sampling, as the most important aspect of a *probability sampling* is that it represents the population. First a larger sample of about 50 institutional investor companies in both countries was collected. Then this sample was restricted to 10 companies in Finland and 15 in Sweden, and to investment banks and bankers. This sampling was done randomly among the largest investment companies, using a probability sampling method called *systematic sampling.* For Finland, the sampling fraction was calculated by dividing the actual sample size (10 companies) by the total population (list of 50 companies) and by starting with a random number, every fifth company on the list was selected. For Sweden, a similar process was completed. 5 of the 10 Finnish companies contacted wished to participate, of which 2 were rejected as they would have provided only 1 reply. In the end only 3 companies returned the replies on time. Of the 15 Swedish companies contacted 7 provided us with replies.

In Sweden and Finland the companies were contacted according to the following procedure: A cover letter (Appendix 3) was sent to the CEO or head of financial analysts together with one questionnaire form, an advertisement of the reward book ("Strategic Financial Decisions" by Hamberg) and some preliminary results of Hamberg's study concerning managerial attitudes towards risk. Institutional investors' behaviour has become too important for us to let our knowledge to rest on untrustworthy or partial evidence. In order to capture the attitudes of the investor at their daily business activities, we offered participation that was both voluntary and anonymous. In our cover letter attached to the survey we tried to convince that the responses would be handled with confidence and anonymously (the respondents did not write their names on the survey, the only identification information asked were current work

description and years of work experience) we aimed to receive reliable answers. Two to five working days later these managers were contacted by phone, in order to enquire their interest in letting their employees reply to the survey. After this phone contact the number of surveys' asked for were sent, either to the manager in question or to a contact person named by the manager. The contact person inside the company who received the surveys then delivered the forms to others to be filled in, and returned them by post after completion. This type of *postal questionnaire* is a cost effective way to reach many consignees.

To analyse the data, two computer programs were used: the spreadsheet program Microsoft Excel and the more advanced data management and statistical analysis software package SPSS for Windows. The data were analysed mainly by using frequency distributions and descriptive statistics.

To check for errors in data, both of us went through the whole spreadsheet with the original response forms once after inserting the data. The form of our questionnaire made it somewhat easier to avoid errors as there were only two questions in which the respondents were asked to use letters (three letters from a to e) and one question with marking of numbers (from 1 to 5). Empty answers were given as empty spaces in the spreadsheet and a check for missing values was made.

3.4 Characteristics of This Study Compared with Prior Research

In spite of the young age of behavioural finance, much research has been done in the area. As a distinction to many other studies in the field of investor behaviour, this study intends to observe and analyse how investors *think* when they make investment decisions, i.e. what are their attitudes and opinions behind the investment actions. We aim to provide valuable insights for understanding investors' definition of risk and their attitude to certain factors affecting the investment decisions. Thus we concentrate on the attitudes, views, and perceptions of the investors, not the actual investment decisions made.

Figure 5 illustrates the research area that we concentrate on in this study, and how we look upon it. As can be seen, there is a gap between financial theory and behavioural theory. We aim to investigate this gap, in order to see whether

the actors' behaviour differs from theory. This gap will only be investigated in terms of attitudes.

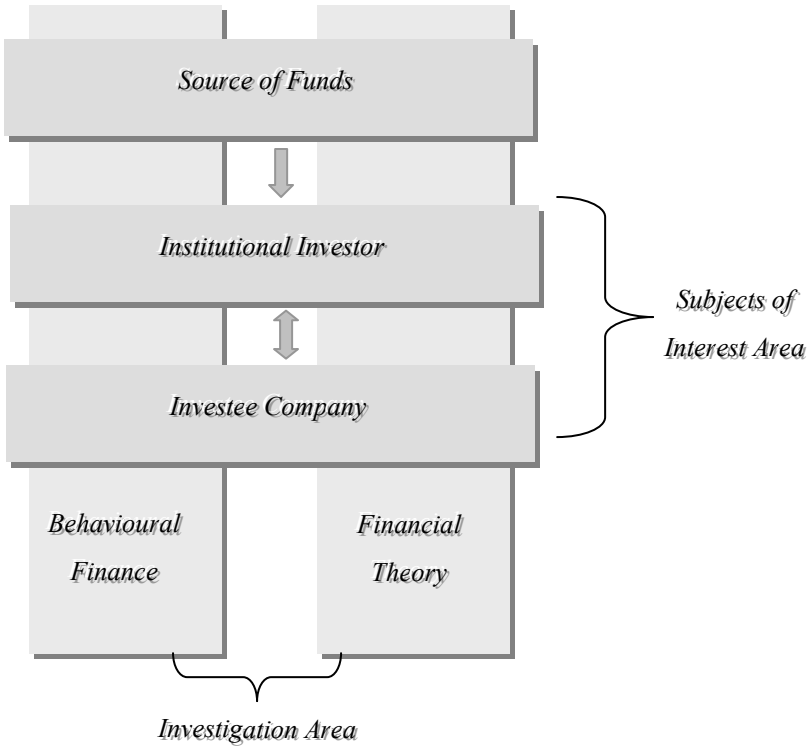


Figure 5. Players in the financial market and the theories supporting their behaviour.

In this paper we concentrate on institutional investors instead of individual investors. In addition, the participants are from two Nordic countries, Finland and Sweden. There has been research done in this geographic area in behavioural finance, such as Hamberg (2004) and Hellman (2000), but not specifically as an empirical study of institutional investors' perception of risk.

Finally, we have not been able to find a similar study directly comparing the risk attitudes of company CEO's and CFO's with institutional investors.

3.5 Reliability and Validity of the Study

The books referred to in this study are written by known scholars and used and recommended by professors and academics. The journals from which reference articles are taken are known as reliable and appreciated academic papers. Also, the articles have been peer-reviewed by several other scholars, and there are even Nobel Prize winning articles among these. The chosen articles are found

on well-known databases, Business Source Premier and J-Stor. The newspapers referred to are appreciated publications. The Internet sources used are either written by known scholars, finance professionals, or use their work as basis. Therefore we believe the guidelines concerning data collection followed in this paper to be of high reliability[29] and validity[30].

To increase the reliability of the collected primary data, we have used control questions in our survey (see Appendix 1, e.g. statement pairs 3 and 8, and 5 and 10). In order to increase the validity of this study, much attention was paid to formulating clear survey questions, which should produce unbiased results.

Further, we have paid attention to the objectivity[31] of this study by explaining in detail the choices made both concerning the theories introduced and the data collection, and by motivating them throughout the study. This we have done in order to give the reader the possibility to have an opinion about the results of the study, and to judge our objectivity as authors.

Concerning the primary data we collected for this study, we have no reason to assume that the respondents did not respond with their best knowledge, since those surveyed were guaranteed anonymity. Further, there are no indications that selectivity in response has tainted the survey data obtained. For these reasons, we regard the result as providing a reliable source of information over institutional investors' thoughts and attitudes.

[29] Reliability is the level of trustworthiness of chosen method, i.e. to what extent one would get the same results when repeating the research.
[30] Validity tells to what extent one measures what is intended to measure.
[31] Objectivity describes to what extent values affect the study.

4 Findings and Analysis

The results of investigated research propositions indicate that investors do not follow in the footsteps of the "rational man". The institutional investor under loop in this study reminds us of homo sapiens, a human being, rather than the so called "homo economicus". The findings also point out that managers and investors do not differ remarkably in their attitude towards risk.

4.1 Introducing the Sample

The data collected resulted in a sample with 52 observations, of which 36 are from Swedish investment companies and 16 from Finnish investment companies. This approximately reflects the size of these two stock markets, as the turnover of Stockholm Stock Exchange is a little more than twice as big as the turnover of Helsinki Stock Exchange.

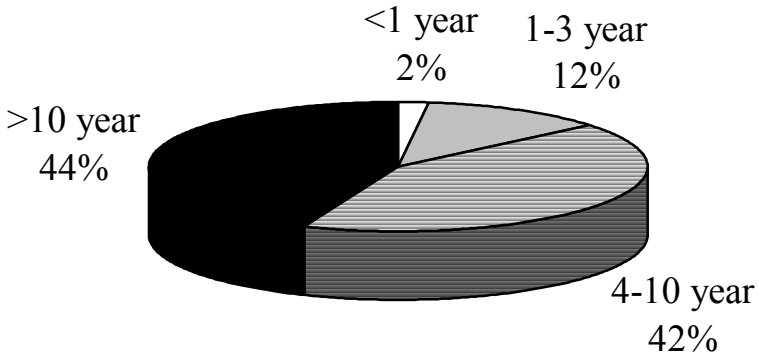


Figure 6. The distribution of respondents' work experience in the field.

The respondents were asked to mark their work experience in the field. They were not asked to reply in exact years, but were given the following closed-end categories: less than 1 year, 1 to 3 years, 4 to 10 years, and more than 10 years. This was done in order to make replying easier and faster. Moreover, we think this classification reflects well enough the changes in attitudes that experience brings along. As seen in Figure 6, the majority of the respondents have collected work experience in the field of finance for more than 4 years. 21 of the respondents have been working for 4 to 10 years, and 22 of them have work experience in finance for more than 10 years. In the sample there is only one

true newcomer with work experience less than 1 year, and 6 respondents with 1 to 3 years experience. This can be assumed to be a good reflection of the true situation in the market, as investing is not a job that is given up easily after one has gained experience in it.

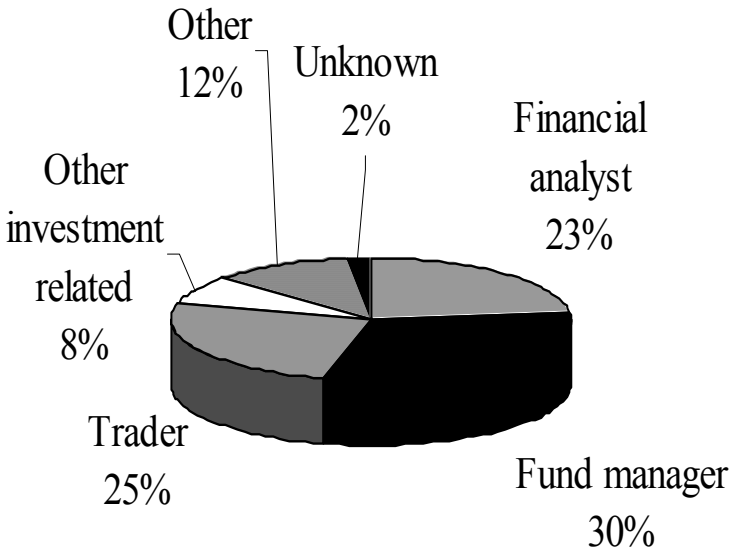


Figure 7. The distribution of respondents' profession in the financial market.

The data sampling was very successful in the sense of receiving most replies from the three main categories: 16 of the respondents are fund managers, 13 traders, 12 financial analysts, and 4 work in other investment related tasks (see Figure 7). The other 6 respondents defined their segment as investment banker, vice president, trader for private clients, institutional trader, and two of them work with institutional sales. The participants' profession in the financial market is not seen as a crucial factor for the analysis, but it rather gives information about the type of population. Collecting work experience is assumed to be more relevant to changing risk attitudes, rather than the type of work tasks in this segment of finance. Although the sample is rather small, it is seen as a representative sample of the population because of the even dispersion between different segments, the relation of responses from the countries reflecting the size of respective stock market, and the representative spread of investors with different work experience.

The data concerning managers is taken from Hamberg's (2004) study "Managerial Attitudes toward Risk in Financial Decision-Making". The survey

was answered by 309 CEO's and CFO's of large quoted non-financial companies from Sweden, Norway, Denmark and Finland.

4.2 Investors' Perception of Risk

The first research proposition concerns investors' perception of risk, whether it is in accordance with the assumptions of the financial theory or not. This proposition is tested from different perspectives with statements introduced in Table 1. According to financial theory, risk is uncertainty leading to positive or negative outcome, both by the same probability. However, this is normally not the case in real world where different players have biased views of risk and they mix risk with uncertainty. Often risk is also related to only negative outcomes, e.g. calling something "risky business" has a very pessimistic character.

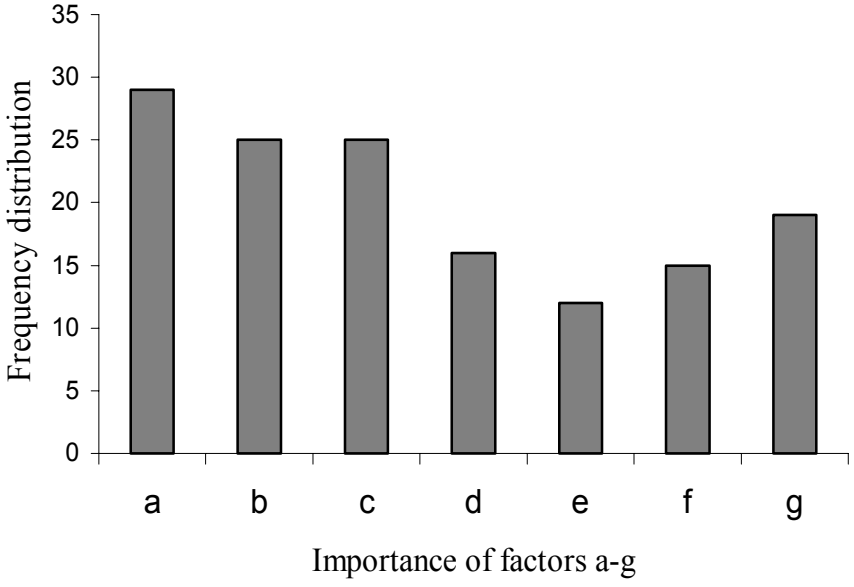
Table 1. Statements related to proposition 1; frequency distribution, median and mean

No.	Statement	Frequency Distribution 1	2	3	4	5	Median	Mean
3.	A successful company has a high profitability while it is exposed to - r. s. - less risk.	2	8	15	15	9	3.00	3.36
8.	By eliminating risk managers increase the possibility of earning high returns.	8	18	14	8	3	2.00	2.61
14.	In your opinion a successful investor is good at:							
	a) choosing an optimal level of risk for his/her portfolio		2	5	24	21	4.00	4.23
15.	An investor's attitude to risk varies over time.		4	6	17	25	4.00	4.21
16.	An investor's attitude to risk varies between different decision-making		2	8	30	11	4.00	3.98
17.	An investor's attitude to risk changes as more professional experience is gained.		5	9	27	11	4.00	3.85
18.	An investor's attitude towards risk is rather a personal char. than a learned behaviour.	1	10	13	21	7	4.00	3.44
19.	Besides the risk-return relationship, there is a level of attractiveness/thrill in the exposure to risk.	1	12	16	19	4	3.00	3.25
20.	The risk associated with investments in financial markets is determined by whether the price of the individual security moves with or against the market.	9	9	14	12	5	3.00	2.78
23.	Assess the following factors' importance for an investments's risk, 5=very imp.							
	a) the total capital tied up by this individual investment	1	3	6	29	13	4.00	3.96
	b) the probability that the return is worse than expected		3	7	26	15	4.00	4.04
	c) the size of a possible negative return		1	11	23	16	4.00	4.06
	d) the probability that the return is better than expected		3	16	22	9	4.00	3.67
	e) the size of a possible positive return		4	10	22	14	4.00	3.84
	f) the points in time when positive cash flows will materialise		5	17	20	8	4.00	3.55
	g) the probability that the inv affects the portfolio's overall ability to meet expectations.		2	18	20	10	4.00	3.76

We tested the general opinion the investors had about risk by letting them assess different factors' importance for an investment's risk. The respondents considered all the given factors to be important, as mean responses varied between 3.6 and 4.1 and median for each factor was 4. The *size of a possible negative return* and the *probability that the return is worse than expected* got the highest amount of completely agreeing responses with average responses 4.06 and 4.04 respectively. Lower scores were given to the opposite statements about the *size of a possible positive return* and the *probability that the return is better than expected,* which received average responses 3.92 and 3.74 respectively. This implies that the respondents view risk as uncertainty leading to a negative outcome, rather than uncertainty leading to either negative or positive outcome. This finding on investors' view of risk supports the prospect theory and specifically the phenomenon called loss aversion, i.e. stronger aversion towards losses than gains.

However, the dispersion of answers was smaller in the factor *total capital tied up by this individual investment*, where 80.8% of the respondents either partly or completely agreed on its importance. This factor was also mentioned most often when we asked to mark "*three factors you believe are the most important"* (see result in Figure 8). The remaining two factors, which the respondents considered most important when assessing an investment's risk, were the above mentioned *the probability that the return is worse than expected* and *the size of a possible negative return.* There is a clear difference between the importance of negative and positive outcomes. The results confirm the speculation that investors relate risk to negative outcome rather than to neutral or positive outcome.

One should keep in mind that institutional investors invest other people's money and the responsibility they have in their work probably has a great effect on the investment decisions they make, hence their replies to this question. Further, the investment strategies they employ influence the level of risk on their investment decisions.



a) *the total capital tied up by this individual investment*
b) *the probability that the return is worse than expected*
c) *the size of a possible negative return*
d) *the probability that the return is better than expected*
e) *the size of a possible positive return*
f) *the points in time when positive cash flows will materialise*
g) *the probability that the investment affects the portfolio's overall ability to meet expectations*

Figure 8. Different factors' importance for an investment's risk.

The financial theory states that there is a positive association between expected return and the risk taken, i.e. more expected return implies more risk. Thus an investor would only accept greater risk if an additional return can be expected. To test the accuracy of this theory in practice, we asked the respondents to comment on two statements concerning the risk-return relationship. First we stated: *"A successful company has a high profitability while it is exposed to, relatively speaking, less risk"*. The median response is 3 and the average score is 3.43. As we can see in the frequency distribution, 46.6% of the respondents partly or completely agree on this statement and only 3.8% completely disagree, see Table 1. How can this be understood? In the product market it is possible to "beat the market", at least for some time, on contrary to the highly efficient capital market, where beating the market is very difficult - if not impossible - in the long run. Thus we understand that the investors can deviate from the financial theory, stating the positive association between risk and return, when it comes to product markets where the companies operate. Based

on these replies it is clear that investors do not systematically relate less risk to less return but that success, i.e. high profitability, can be achieved while being exposed to less risk.

To check how absolute the investors are concerning the risk-return relationship, the following check-question was stated: *"By eliminating risk managers increase the possibility of earning high returns"*. This is a very strong statement against the financial theory, which is also reflected in the answers of the investors: They agree less with this statement concerning total elimination of risk compared with the above statement concerning relatively less risk. The mean of all responses is 2.61, median 2, and only three respondents completely agree with this statement.

According to studies made in the field of investor behaviour, investors' risk preferences may change over time. For example, a gambling addict may be educated on the implications of his behaviour. Sometimes investors become overly optimistic regarding future prospects following a successful investment experience. Yet if they have lost money, they may become more myopic in their aversion to future potential losses. In addition, time preferences can affect or change investors' risk preferences. According to the financial theory, the typical investor is risk averse, and utility functions are assumed to be constant over time and between situations. Are there variations in risk behaviour by investors over time? To test what investors think about the stability of a certain risk aversion, we asked whether an investor's attitude to risk changes or varies in different situations. First the respondents were confronted with the following statement: *"An investor's attitude to risk varies over time"*. As stated earlier, in practice a person's risk aversion normally changes by age, i.e. young people are less risk averse than pensioners. The result on this statement is very clear: the average reply is 4.2 with 32.7% of respondents partly agreeing and 48.1% completely agreeing with the statement. This clear opinion is especially significant as the respondents certainly have experience about the changing risk aversion both concerning their clients' risk aversion as well as their own.

The next statement reveals how constant investors think their risk aversion stays between different situations: *"An investor's attitude to risk varies between different decision-making situations"*. Similarly as with the previous risk

question, the majority of respondents clearly agree with this statement. Only 3.8% of the respondents partly disagree, average response being 3.98 and median 4.

To continue with the changing risk aversion, the respondents were confronted with a statement concerning the relationship between their risk aversion and professional development. *"An investor's attitude to risk changes as more professional experience is gained"*. Again, 73.1% of the respondents either partly or completely agree with this statement and the average response is 3.85. This supports the findings of Myagkov and Plott (1997) who confirmed the same change in attitudes towards risk while gaining experience on decision makers. In Figure 9 below the different factors changing investor's attitude to risk are presented. The conclusion made is that investors certainly see their attitude to risk as something that varies due, and according to, different factors and changes in circumstances.

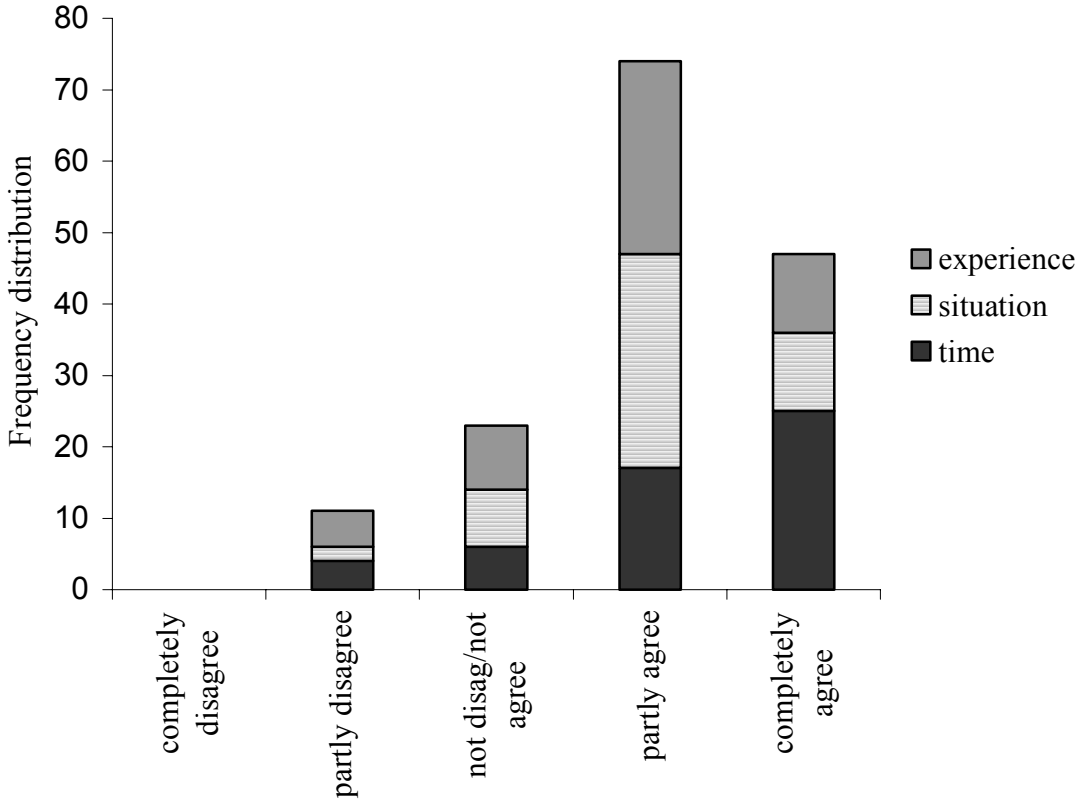


Figure 9. An investor's attitude to risk varies over time, between different decision-making situations and as more professional experience is gained.

Thus we can conclude that the respondents think an investor's risk aversion changes over time, between different decisions, and as they become more professional. How do institutional investors look upon an investor's risk aversion in connection to their nature? We asked whether *an investor's attitude towards risk is a personal characteristic rather than a learned behaviour*. Interestingly, more than half of the respondents agree with this statement, with median 4 and average response 3.44. This could be put into common language by stating that one either does or does not like bungee jumping, and "what mother says" can not affect this like/dislike. Does the fact that respondents view risk aversion as a personal characteristic also affect the way institutional investor companies recruit their analysts and traders? If so, how could this be tested?

As a continuum to this, we wanted to test whether there is a "flutter" on investing, as Wydeveld (1999) stated. *"Besides the risk-return relationship, there is a level of attractiveness / thrill in the exposure to risk."* Only 7.7% of the respondents completely agree on this, but 36.5% of respondents partly agree, mean being 3.25 and median 3. This weakly supports the view that many non-finance related people have about investing being an exciting job - the picture created by movies like "Wall Street". It can be questioned how objectively and honestly investors are able to reply to this type of statement. As investing is a field where no "Average Joe" can be highly successful, one could expect people ending up in the investment business to feel a certain thrill in handling risk.

Markowitz (1952) stated in his modern portfolio theory that risk is a natural part of higher results. An optimal portfolio is thereby selected by knowing the market risk. By using the CAPM model one can find the expected return by knowing the market rate, the risk free rate and the firm beta. Asset pricing theory tells us that beta explains the type of risk we are faced with, it measures the co-movement rather than the volatility. How can we find out whether investors believe risk is associated to firm beta, and are investors in favour of the modern portfolio theory's view of risk? To test this we stated: *"The risk associated with investments in financial markets is determined by whether the price of the individual security moves with or against the market"*. When De Bondt (1998) asked investors about their beliefs about risk and return, only 18% of the questioned professional investors said that risk depends on whether a share price moves with or against the market (covariance). The agreement with the above

statement is a little bit larger among our respondents, but still only 32.7% agree with it. Thus, this contradicts with the view within financial theory. Most respondents do not see risk as variance in a probability distribution.

Table 2. Cross tabulation on work experience and the Statement 20; "The risk associated with investments in financial markets is determined by whether the price of the individual security moves with or against the market".

	Statement 20.					
Experience	**1**	**2**	**3**	**4**	**5**	**Total**
< 1year	0	0	0	1	0	1
1-3 year	1	2	1	1	1	6
4-10 year	5	4	8	1	1	19
> 10 year	3	3	4	8	3	21
Total	9	9	13	11	5	47

To understand better the dispersion received on this question, we create a cross table on work experience and the above statement concerning covariance (Table 2). However, there is no clear answer to be found. It seems as if investors with 4 to 10 years experience disagree most strongly with the statement, whereby respondents with the longest work experience rely more on classic financial theory.

How important do investors consider the role of assessing risk in their everyday work? The respondents were asked whether in their opinion *a successful investor is good at choosing an optimal level of risk for his/her portfolio.* The clear majority agreed on this statement (86.6%), average response being as high as 4.23 and median 4. This implies that investors pay a lot of attention to finding the optimal risk level to their portfolios and they consider the "correct" risk aversion to be an important factor in being successful. This is in accordance with the portfolio theory, as obviously the investors are interested in finding the optimal risk level thus locating the efficient frontier.

To conclude the results discussed above, we can say that investors do not think about risk in line with the financial theory. Investors perceive risk as uncertainty leading to negative outcome rather than uncertainty leading to positive outcome. This implies loss aversion, i.e. the investors tend to give more importance to the possible negative outcome (loss) than the possible positive outcome (gain).

Further, this attitude contradicts the assumptions of the classical financial theory, which states that risk is uncertainty leading to positive or negative outcome with the same probability.

Next contradiction between investor attitudes and the financial theory concerns the basic assumption that more risk implies more return. Our respondents seem to consider it possible for a company to have high profitability while being exposed to less risk. Two classical assumptions of the financial theory imply that the typical investor is risk averse and his/her utility function is constant. However, our results show the opposite: The respondents consider risk attitude to change over time, between different situations, and while more professional experience is gained.

Thus what we have learned from the results and analysis of proposition 1 is that institutional investors do not perceive risk in accordance with the mentioned assumptions of the financial theory.

4.3 Investors' Perception of Risk vs. Managers' Perception of Risk

The theory of corporate control acknowledges that managers do not always behave as shareholders would want them to. Incentive systems are one way of controlling managers to work for increasing company value thus shareholder wealth. However, managers need to consider the pressure from other interest groups too; they are unable to concentrate 100% on shareholders' interest. The basis of all factors affecting managers' financial decision-making is their perception of risk.

Outside the financial theory, the definition of risk gets many different forms. It might feel like a confusing term to discuss as different individuals use it in a varying ways. In this section we aim to create a picture of the differences and the similarities concerning risk perception by institutional investors and by top executives. This should result in a better understanding of the behaviour in the financial market by both, top managers and institutional investors.

The first step will be to investigate how the investors perceive the managers' risk taking. Do investors consider managers to be too risk averse or risk

seekers? The following statement was proposed to the investors: "*In general, managers prefer: a) too little risk b) a reasonable amount of risk c) too much risk*".

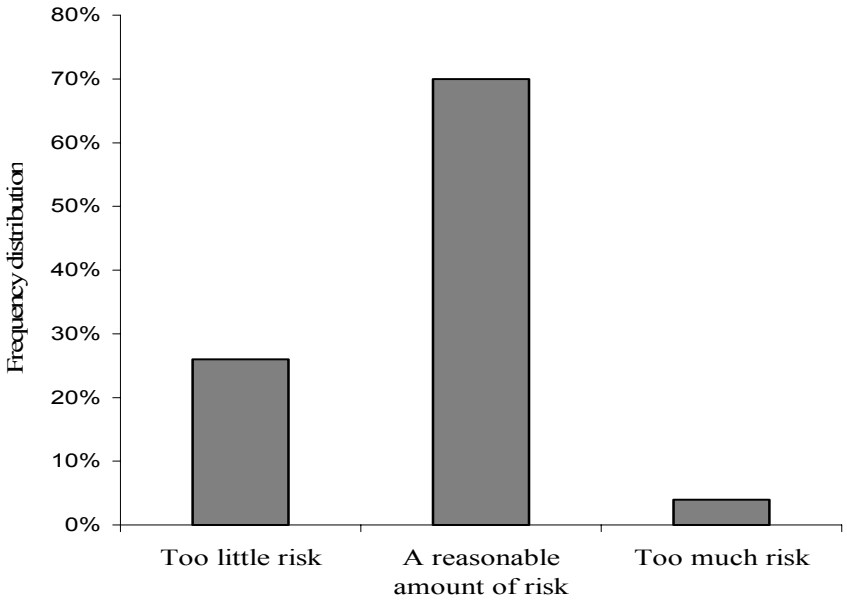


Figure 10. Investors' perception of managers' preference on risk taking in general.

The result in Figure 10 clearly shows that investors believe managers take a reasonable amount of risk, where the term 'reasonable' is defined by the respondent's preference. As can be seen, the majority of investors replied that managers generally prefer reasonable amount risk, 67.3 %.

In order to find out the possible similarities and differences in investors' and managers' risk perception, we compare our findings on investors' definition of risk with Hamberg's (2004) findings on managers' definition of risk. Table 3 below lists which statements are included in the mirror analysis.

Table 3. Mirror statements related to proposition 2; frequency distribution, median and mean

No.	Statements Hamberg (2004) / Karlsson & Lamminpää (2004)	Frequency Distribution 1	2	3	4	5	Median	Mean	Authors
1.	A professional investor in the share market has the same view of the optimal level of risk in a company as a manager (in that company) / A manager has the same view of the optimal level of risk in his/her company as the shareholders of that company.	57	153	61	29	5	2.00	2.25	Hamberg
		7	22	20	3		2.00	2.37	Karlsson & Lamminpää
2.	Assess the following factors' importance for the risk of an investment project (factors listed below in table 4) / Assess following factors' importance for an investment's risk (factors listed below in table 4)	Result for mirror statement 2, see Table 4.							Hamberg
									Karlsson & Lamminpää
3.	By eliminating risk the possibilities of earning high returns increase. / By eliminating risk managers increase the possibility of earning high returns.	5	36	85	119	36	4.00	3.37	Hamberg
		2	8	15	15	9	3.00	3.36	Karlsson & Lamminpää
4.	A successful company has a high profitability while it is exposed to, relatively speaking, less risk. / Identical formulation.	27	90	79	82	28	3.00	3.00	Hamberg
		8	18	14	8	3	2.00	2.61	Karlsson & Lamminpää
5.	The risk associated with investments in financial markets is determined by whether the price of the individual security moves with or against the market / Identical information.	20	64	158	54	5	3.00	2.87	Hamberg
		9	9	14	12	5	3.00	2.78	Karlsson & Lamminpää
6.	Bonus systems and options schemes to top management increase their willingness to make risky decisions. / When managerial compensation is based of creation of shareholder wealth top managers make more risky decisions.	11	59	114	92	28	3.00	3.22	Hamberg
			8	20	22	2	3.00	3.35	Karlsson & Lamminpää

Figure 11 shows the results of the first mirror statement, "*a professional investor in the share market has the same view of the optimal level of risk in a company as a manager (in that company)"*. The managers' average score for this statement is 2.25, whereby investors' average response is 2.37, both having a median of 2. As the comparison reveals, both parties think that professional investors in the share market and company managers do not share the same view of the optimal level of risk in a company. Actually, only 3 investors (5.8%) and 5 managers (1.6%) agree with this statement. This again confirms the need for this type of comparative study, as certainly for both parties it is essential to know how the other one perceives risk – not only that they do not share the same view.

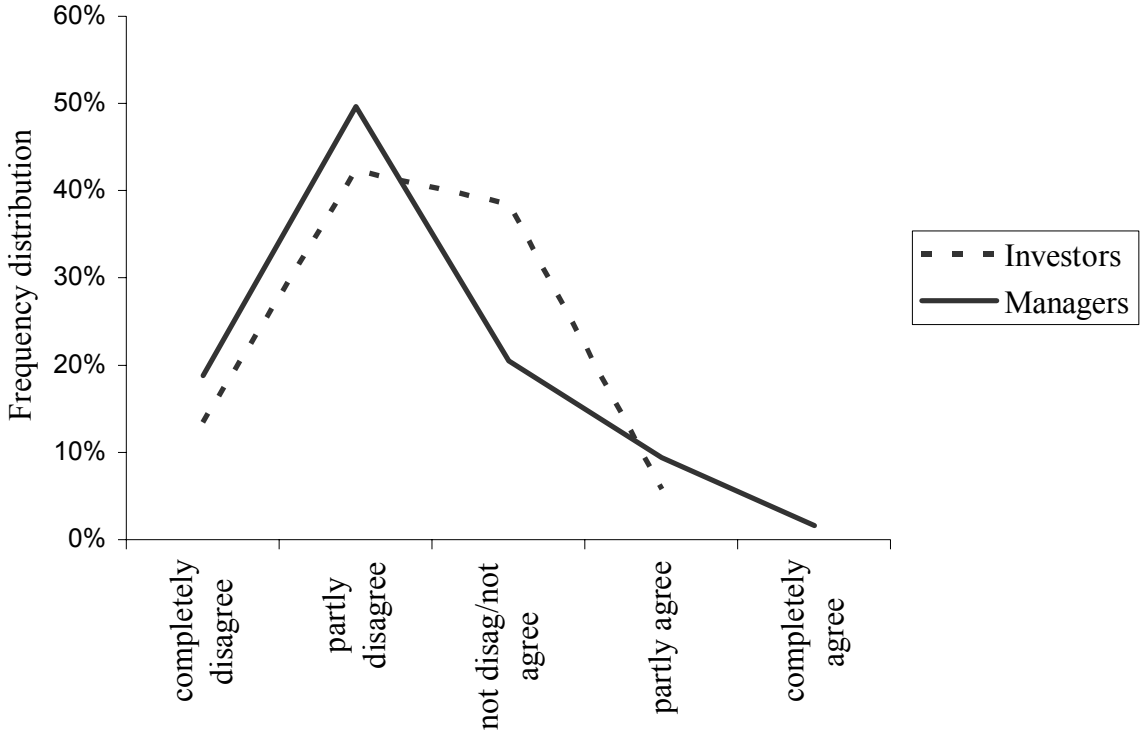


Figure 11. Managers' and investors' perception of risk.

The deviating view of risk is a highly interesting starting point for the comparison. Is this in contradiction to investor's view of managers' taking a reasonable amount of risk in general? Do investors and managers really seek to take the same level of risk? As Hamberg (2004) speculates, shareholders do not put such a great emphasis on company-specific risk as they are diversified, whereby managers usually have all their interest in that one company they are leading. As the finding shows, most institutional investors and top executives

do not believe that owners and managers share the same view of risk. How and to what extent do their views differ and how does it show?

Financial theory states risk being the probability that the outcome of a future event differs from what is expected. This difference can be either positive or negative and it can be small or large, that is of no importance. However, according to March and Shapira (1987) who investigated lower-level managers, and Hamberg (2004) researching top managers, managers seem to view risk mainly with the negative uncertainty in mind. In our analysis about investors' attitude towards risk we found that investors similarly assess the probability of the factor that return is worse than expected being more important than the probability of the return being better than expected. They view the size of a possible negative return as a more important factor than the size of a possible positive return.

Below in Table 4, the managers' assessment of certain factors' importance for the risk of an investment project is compared with the investors' assessment of same factors' importance for an investment's risk. One should keep in mind that although the actual targets of investment are different between managers and investors, they both have a human approach to the investment decision-making. And it is not their own money that is in question, but institutional investors place their clients' money in shares and managers place the company's money on projects. This is why we think the below comparison is possible and interesting to complete.

Table 4. The importance of certain factors in assessing an investment's or investment project's risk.

Factor	Managers/ Investors %				
a	1.6	6.9	12.9	55.9	22.7
	1.9	5.8	11.5	55.8	25
b	1.3	4.3	23.1	52.5	18.8
		5.9	13.7	51	29.4
c	0.7	3.9	23.6	55.5	16.3
		2	21.6	45.1	31.4
d	5,0	25.5	39.7	23.2	6.6
		6	32	44	18
e	4.9	23.2	43.7	23.6	4.6
		8	20	44	28
f		1.3	14.9	57.6	26.2
		10	34	40	16
g	2.7	4.7	6.3	21,0	65.3
		4	36	40	20
Importance	1	2	3	4	5

a) the total capital tied up by the individual investment
b) the probability that the outcome/return is worse than expected
c) the size of a possible negative outcome/return
d) the probability that the outcome/return is better than expected
e) the size of a possible positive outcome/return
f) the points in time when positive cash flows will materialise
g) the probability that the project risk the existence of the company / the probability that the investment affects the portfolio's overall ability to meet expectations

Overall, the respondents considered all the suggested factors to be important. The dispersion concerning the *total capital tied up by the individual investment* is almost identical: clear majority of both groups considers this to be an important factor. Investors give even more emphasis on the *return worse than expected* and *size of possible negative return* than managers do. On the other hand, for managers the *probability of a return better than expected* and the *size of a possible positive return* are clearly of less importance than for investors. Hamberg (2004) comments on his analysis: "*If this is a manager's definition of risk she is likely to look at investment projects and evaluate them on the basis of the probability of negative outcomes and that might certainly not be what diversified shareholders desire."* On the other hand, the managers' bias towards probability of negative outcomes is very much in line with the investor's perception of risk, as they too consider the probability of negative result to be of high importance.

The *point in time when positive cash flows materialise* seems to be more important to managers than to investors. This is understandable when the type of investing is considered, for managers the cash flows from investment projects are more essential concerning the companies operations in the product market to continue than for institutional investors concerning constant investing in the capital market. The last factor was somewhat different to the two groups and depending on the strong character of the statement given to managers (*the probability that the project risk the existence of the company*), they considered the last factor to be of greatest importance. In general, investors give more importance to all other factors except the last one. Thus we might conclude that they consider risk more often and from a larger scale of perspectives than managers.

Hamberg (2004) finds that most managers do believe risk to be a part of doing business but they do not see it as a requirement for earning high returns. When the managers were confronted with the statement *"A successful company has a high profitability while it is exposed to, relatively speaking, less risk",* half of the managers agreed that success is related with earning high returns while being exposed to less risk. The average response to this statement by managers is 3.37 and by investors 3.43, hence their opinion seems to be very similar concerning the statement that a successful company does not have to be exposed to high risk in order to have a high profitability. This can be considered a very natural result as both investors and managers perceive risk as something negative. Consequently they consider eliminating negative uncertainty, i.e. risk, as a factor leading to better profitability.

The stronger statement concerning the risk-return relationship, *"By eliminating risk managers increase the possibility of earning high returns"* was not totally rejected by top managers. In Hamberg's (2004) study, about 38% of the respondents disagreed and 36% agreed with the statement. 51% of the investors, however, disagreed with the idea of relating the elimination of risk with earning high returns, and only 21.6% agreed.

When confronted with the statement testing how the respondents relate risk to price movements against the market (modern portfolio theory and asset pricing theory), rather parallel results are received. Only 1.7% of managers and 10.2%

of investors completely agree on seeing risk as variance in probability distribution, see Table 5.

Table 5. The risk associated with investments in financial markets is determined by whether the price of the individual security moves with or against the market.

Investors		Frequency	Percent
Valid	1	9	18.4
	2	9	18.4
	3	14	28.6
	4	12	24.5
	5	5	10.2
Total		49	100

Managers		Frequency	Percent
Valid	1	20	6.6
	2	64	21.3
	3	158	52.5
	4	54	17.9
	5	5	1.7
Total		301	100

Finally, we compare the opinions of investors and management on how bonus systems affect managers' risk aversion. The managers are surveyed as to whether they think that bonus systems and option schemes increase their willingness to make risky decisions. The investors are asked whether they consider top managers make more risky decisions when managerial compensation is based on the creation of shareholder wealth. Below in Table 6 we can see the rather similar frequency distributions.

Table 6. Bonus systems and option schemes to top management increase their willingness to make risky decisions.

Investors		Frequency	Percent
Valid	1		
	2	8	15.4
	3	20	38.5
	4	22	42.3
	5	2	3.8
Total		49	100

Managers		Frequency	Percent
Valid	1	11	3.6
	2	59	19.4
	3	114	37.5
	4	92	30.3
	5	28	9.2
Total		304	100

46.1% of the institutional investors and 39.5% of the top executives partly or completely agree that compensation induces managers to make more risky decisions. This is quite understandable, as it is commonly assumed that there is a connection between CEO compensation and company performance, although empirical studies state the contrary. Hence the respondents might think that managers aim to increase their own compensation by improving the company

performance in short-term by making risky decisions, and on the other hand managers tend to admit that bonuses induce them to make more risky decisions.

This analysis reveals that managers and investors do not actually differ that much in their view of risk or their attitudes towards financial decision-making. The majority of investors think that managers in general prefer a reasonable amount of risk. Both managers and investors tend to think that they do not share the same view of the optimal level of risk in a company. However, they share the view of risk as the probability of a negative outcome rather than the probability of a possible positive outcome. Managers and investors share the opinion about it being possible for a company to have high profitability while being exposed to less risk. Further, they agree on bonus systems inducing managers to make more risky decisions. Thus we can conclude that top managers and institutional investors perceive risk in a rather similar way, but their perception deviates from what is defined as risk in financial theory.

4.4 The Effect of Managers' Behaviour on Investors

Are managers aware of how their communication through different channels e.g. media and financial reports is perceived by investors? This part will reveal how investors perceive some factors concerning management's behaviour and how this affects the investors' view of the company. In the following some of the factors contributing to value creation through management actions affecting investors' behaviour in their investment decision making are discussed. Survey statements dealing with proposition 3, "Managers are able to influence investors' perception of the company", are presented below in Table 7.

Table 7. Statements related to proposition 3; frequency distribution, median and n

No.		Frequency Distribution 1	2	3	4	5	Median	Mean
1.	In companies. strategic decisions are made solely on the value they create for the company's shareholders.	2	16	16	15	2	2.98	3.00
2.	Top managers have a sensible understanding of their company's performance.	1	2	11	27	11	4.00	3.86
5.	Because share prices fluctuate it is necessary for companies to choose the right moment to issue new equity.	2	3	10	22	15	4.00	3.86
6.	In general. the price at which a company trades at corresponds to the company's "true" value.	3	16	15	13	5	3.00	3.02
7.	Management's ability to present/communicate information affects the trustworthiness of the company's informatic		1	2	23	26	4.50	4.42
9.	When managerial compensation is based on the creation of shareholder wealth top managers make:							
	a) overall better decisions	1	11	20	16	4	3.00	3.21
	b) more risky decisions	8	20	22	2	3	3.00	3.35
	c) more short-term oriented decisions	6	14	25	7	4.00	3.63	
	d) more profitable decisions	10	20	20	2	3.00	3.27	
10.	By choosing the right time for an issue of new equity a company can create value for shareholders.	2	7	11	23	9	4.00	3.57
11.	Managers regularly adjust accounting information so that the company's financial performance looks more	6	12	18	15	1	3.00	2.86
12.	It is understandable if a company makes an investment that has a negative net present value if the investment contributes substantially to the company's overall business strategy.	7	14	11	14	4	3.00	2.88
14.	In your opinion a successful investor is good at:							
	a) choosing an optimal level of risk for his/her portfolio		2	5	24	21	4.00	4.23
	b) finding mispriced shares			5	20	27	5.00	4.42
	c) constructing sustainable long-term investment strategies	1	1	5	21	24	5.00	4.27
	d) taking advantage of short-term momentums in the market		8	16	16	12	4.00	3.62
24.	Rank the following measures based on their ability to signal a company's creation of value. where 1=most							
	a) dividends to shareholders	2						
	b) operating profit	5						
	c) net profit	3						
	d) operating cash flow	4						
	e) free cash flow (cash flow after necessary reinvestments)	1						

The “black-box” view of the firm that the traditional economic theory states is that firms maximize profits. However, today we understand that this is not very logical, as often the management is separated from ownership (Cabral 2000). Therefore there is a conflict of interest, the traditional principal-agent problem. How do investors perceive managers’ intentions with the company; do managers make decisions with shareholder wealth maximisation as their only aim? This is investigated with the following statement: *"In companies, strategic decisions are made solely on the value they create for the company’s shareholders".* The result shows us a diversified opinion of how investors view the managers’ intentions for the shareholders, as the mean is 2.98 and the median 3.0. This result may be a consequence of the investors’ awareness of the phenomenon “managerial opportunistic behaviour”, which states that in fact an executive does not act in the best interest of the shareholder, but has the intention to expand the firm at any price unless the right incentive is offered.

Do investors in general believe that managers have a fair understanding of their company’s real performance or is their understanding biased? It is a fact that humans have certain attributes, such as overconfidence and optimism, which influence the way we process data and information (Thaler, 1999). Are today’s management, according to investors, competent enough to evaluate their company’s performance? The next statement declares: *"Top managers have a sensible understanding of their company’s performance".* 73.1% of the investors partly or completely agree that managers have a good understanding of what is truly going on in their own company, with a mean of 3.86.

After finding out that investors believe managers, in general, to have a sensible understanding of the company’s performance, we wanted to investigate whether managers’ appearance influences the investors’ perception of the company result. According to the findings by Holland (1989), managers’ qualities and personality factors do have an impact on investors’ perception of the company’s financial performance. Holland (1998) also finds that managers’ personalities are important for financial investors, as the investors can use this information for their own benefit in influencing the management. Belkaoui and Cousineau (1977) investigated how the informational importance of annual reports increases when non-accounting information is added to accounting information. Their results point to the impact of variables other than accounting information on the investor's

behaviour and how it changes the subjects' perception of risk. This apparently conveys important information which these subjects did not see in the bare accounting numbers.

What is the importance of managers' ability to present company information according to investors? They were asked to answer on the following: *"Management's ability to present/communicate information affects the trustworthiness of the company's information"*. The principle of invariance in normative financial theory states that in framing a problem, variations which do not affect the actual outcome, should not affect the choice of solution. Considering this principle of invariance when analyzing above statement, we can assume that managers' ability to present, "framing the problem", should not affect the investor's choice. Kahneman and Tversky (1979) argue that the framing of a problem does affect the preference of the subject's choice. Our finding very strongly supports the latter argument, as 94.2% of the participants partly or completely agree that the manager's appearance has an effect on the investors' perception of the company. Figure 12 will demonstrate the clear opinion the investors have about managers' understanding of their own company performance and their ability to affect the trustworthiness of company information through non-accounting means, in this case their communication skills.

As we wanted to find out about both channels of information managers are able to use, verbal and written, we stated the following: *"Managers regularly adjust accounting information so that the company's financial performance looks more favourable"*. Do investors think that managers manipulate the accounting information, assuming this is done in order to influence investors in their decision-making? Investors are very split in their answers. There is no clear result showing that investors believe managers' adjustment of the accounting numbers to have an effect on their perception of value for the shareholders.

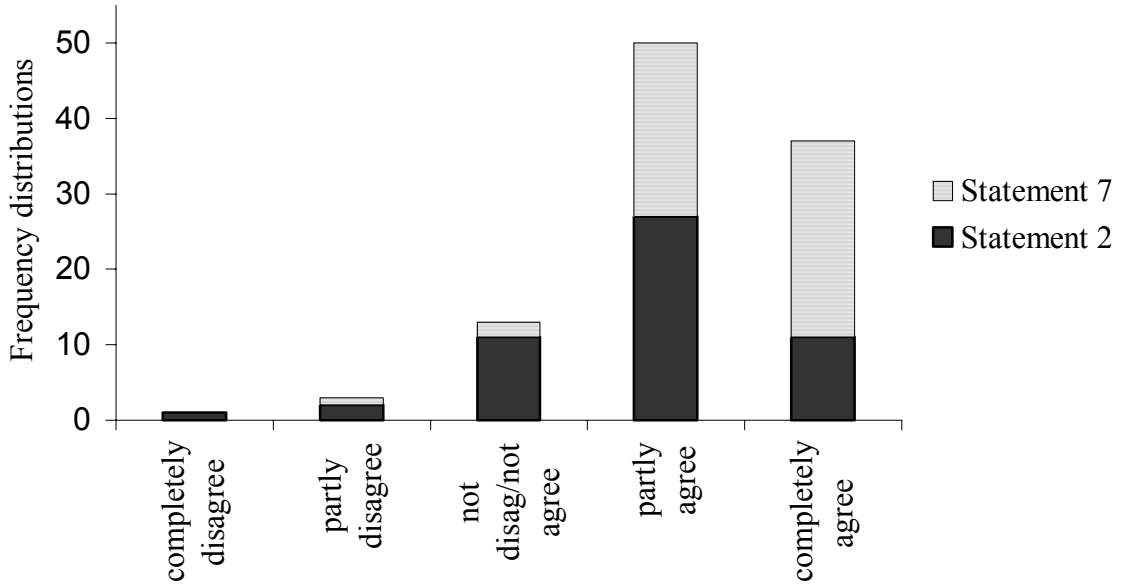


Figure 12. Presentation of results to Statements 2 (Top managers have a sensible understanding of their company's performance) and 7 (Management's ability to present/communicate information affects the trustworthiness of the company information).

Marton (1998) writes about investors'[32] interpretation on accounting diversities. He concludes that on many occasions, investors do mental adjustments for diversities in accounting, rather than a formal restatement of financial reports. Mental adjustments might easily be biased, which makes us question the rationality of investors' decision-making. Combining Marton's (1998) findings with the above result we may assume that many decisions are made on biased information, and the biases may originate both from manipulated accounting information and from mental adjustments made by investors.

According to financial theory, one can not simply look at the short horizon of investments in order to obtain an optimal value of one's portfolio. However, the prospect theory states that humans act on a status quo, which means that people tend to focus on one single action and less consideration is put on the final effect of the total assets. Investors who demonstrate myopic loss aversion are more willing to accept risk if they evaluate their investments less often and if all

[32] In this case the investors were international investors looking at Swedish companies' financial reports. However, the findings are used to show the investor behaviour when faced with accounting interpretation.

payoffs are increased enough to eliminate losses the investor will accept more risk (Thaler et al., 1997). Since myopic investors tend to have a narrow framing of decisions and outcome, they make short-term choices.

We aim to find out whether the investors show signs of myopic loss aversion by stating: *"It is understandable if a company makes an investment that has a negative net present value if the investment contributes substantially to the company's overall business strategy"*. 42% of the respondents partly or completely disagree, 22% are neutral and 36% partly or completely agree. This is not a strong disagreement, as the mean is 2.88. However, the distribution is slightly in favour towards a dislike on investments with a negative net present value, even if it contributes to the company's strategy in the long run. The result implies that the investors only look at the loss of that single project (they practise momentum trading; short-term horizon) and do not consider the overall effect on the total contribution to their assets.

Bushee (1998) states that institutional investors' frequent trading and focus on short-term sometimes forces managers to employ myopic behaviour as well. This means that managers reduce their preference level of investment in the long term in order to satisfy the investors who invest in their company. The findings in our study support both findings by Thaler et al. (1997) and Bushee (1998), that both actors concentrate on short-term investments. If this is the tendency of the majority[33] it is a worrying sign, as we know that long term strategies are necessary in order to have a sustainable good company performance. Long term planning is proven to benefit shareholder wealth, and therefore both investors and managers should focus more on the whole picture, rather than on evaluating one single project. In conclusion and also in accordance with findings the above statement one may assume that the investors do show signs of myopic loss aversion.

According to the efficient market theory, timing can not be used to overperform the market, i.e. to buy or sell over- or undervalued stocks. What does this imply to investors and companies? Do investors think that managers follow the share

[33] Because of our small sample it is difficult to say whether or not this is the nature of investors' behaviour. Nevertheless, judging by our findings and the findings from previous studies we can assume there is a tendency in this direction.

price fluctuations in the stock market in order to create value for shareholders by issuing new equity on the 'right moment'? Baker and Wurgler's (2002) study shows that managers believe timing of issuing equity does matter. Baker and Wurgler (2002) find evidence for market timing - that on average, analyses of long-run stock returns following corporate finance decisions suggest equity market timing being successful. Managers tend to issue equity when the cost of equity is relatively low, and repurchase equity when the cost is relatively high. Hence this implies that managers believe they are creating value by timing equity issuance. What is then the investors' view of equity timing?

Two statements were formulated to test the area of equity timing. We question: *"Because share prices fluctuate it is necessary for companies to choose the right moment to issue new equity"*. 71.1% of the respondents partly or completely agree that the timing of issuing new equity is necessary for companies in order capture value. Thus, one can assume that the market is inefficient since investors practice momentum trading. Therefore, timing is important when issuing new equity, yet does it - according to investors' attitude - add value? With the following statement we aimed to confirm whether the respondents were consistent in their attitude compared to the above statement. *"By choosing the right time for an issue of new equity a company can create value for shareholders"*. The replies to this statement show that 61.5% of the investors believe value is created by timing the issue of new equity. Ross et al. (2002, 342) explain the implications of the efficient market theory for the investor in the following way: "*Because information is reflected in prices immediately, investors should only expect to obtain a normal rate of return. Awareness of information when it is released does an investor no good. The price adjusts before the investor has time to trade on it.*" According to our findings the investors support the opposite view, i.e. timing is important as it does create value for the shareholders.

Next statement also touched upon the efficient market theory; the true value of a share. *"In general the price at which a company trades at corresponds to the company's "true" value."* When first appraised, the result of this question is somewhat confusing, since according to the replies to above statements, the majority believe in an inefficient market. Results had a mean of 3.02, whereby 19 investors completely or partly disagreed and 18 partly or completely agreed.

In a way, the above results concerning equity timing are not surprising: if the investors believe in an efficient market, there would be no demand for investors to manage other people's funds. However, findings in this statement seem to show that in the 'big' picture investors believe that companies are displayed at their true value.

Wealth through value creation is what the shareholders seek, and the institutional investor acts on behalf of the shareholder. But what are the factors that imply the success of an investor? The respondents were asked to comment on the following statement: *"In your opinion a successful investor is good at" (a) choosing an optimal level of risk for his/her portfolio, (b) finding mispriced shares, (c) constructing sustainable long-term investment strategies, (d) taking advantage of short-term momentums in the market.* A discussion concerning (a) is found in Section 4.2. None of the respondents completely disagreed on any of the statements, which shows they all believe these to be considerable attributes of a successful investor. However, the degrees of importance in defining how successful the investor is vary. All the results are in favour of partly or completely agreeing with statements b, c, and d with 90.4%, 86.6% and 53.9% respectively ([a] had 86.6% partly or completely agree). The result in (b) tells us that the investors believe in an inefficient market. Theory of behavioural finance has shown that people tend to make decisions on a rather short time horizon due to e.g. the following reasons: eagerness to see the result, fear of loosing money, mental accounting, and a tendency to evaluate results frequently. Based on this, the high importance given on (d) is not surprising. However, the replies on (c) could perhaps be questioned. Institutional investors are investing on behalf of other people, and can therefore not only concentrate on short-term strategies. Their clients have different types of needs and wishes and some may want them to invest part of their funds in e.g. pension funds, whereby the investor is obliged to consider long term strategies.

According to Arnswald (2002), institutional investors consider fluctuations and underperformed stocks, hence misprices stocks, to be a significant factor in estimating risk in investments. In Section 4.2 we found that investors relate risk to negative outcome. If risk and negative outcomes are related, and finding mispriced shares is an attribute of a successful investor, the following conclusion could be made: In order to be successful - assuming successful in finding

mispriced shares - the investor needs to be good at identifying risk.

Bonus compensations' relation to company performance has been a hot topic the past years. Grunditz and Lindquist (2003) showed in their research among listed companies on the Swedish attract 40 list that there is no positive relation between CEO compensation and company performance. What perception does the investor have on this matter, and what kind of managerial behaviour do they observe bonus systems to stimulate?

If the investors in fact believe that there is an effect resulting from incentives, how do the investors perceive the managerial behaviour? We stated: *"When managerial compensation is based on the creation of shareholder wealth top managers make; (a) overall better decisions, (b) more risky decisions, (c) more short-term oriented decisions, and (d) more profitable decisions".* The respondents were asked to grade each alternative. Their answers were dispersed in (a) as 23.1% completely or partly disagreed, 38.5% were neutral and 38.5% partly or completely agreed. Concerning the effect on risk exposure no one completely disagreed that managers engage in more risky decisions when given incentives. Option (c) had a somewhat more clear result to analyse, 11.5% partly disagreed, 26.9% were neutral and 61.6% partly or completely agreed on an increase in short-term decisions made by managers, when given incentives. In (d), concerning whether investors believe managers to make more profitable decisions in case of performance incentives, no one completely disagrees, 19.2% partly disagree, 38.5% are neutral and 42.3% partly or completely agree. It is difficult to say why the answers are so strongly dispersed. The investors disagreeing on statement (a) and (d) are closer to empirical evidence and modern behavioural finance theory whereby the respondents agreeing base their answer on normative financial theory, more specifically on the principal-agent problem[34]. We assumed this result could be caused by experience in the field. However a cross table analysis between work experience and answers showed no connection. It remains open as to whether the result would have been different with a larger sample. Maybe due to the formulation of this statement "*when managerial compensation is based on the creation of shareholder wealth*", 42.3 % of the respondents partly or completely agree that there is a relation between

[34] When there is a conflict of interest between the agent (manager) and the (shareholder), the conflict of interest can be solve by giving the agent an incentive which is higher than his expected utility.

incentives and profitable decisions. It is actually surprising that only 22 out of 52 agree with this statement, it should be logical to think that managers whose compensation is dependent on the performance make more profitable decisions. Media might have an effect on this, as they normally report stories concerning compensations in very negative tone. Yet most of media attention cases arise when compensation is given for no reason, i.e. it is not dependent on creation of shareholder wealth. It can be interpreted from above that institutional investors understand the complexity of the principal-agent theory, and believe that managerial incentives – when based on creation of shareholder wealth – are relevant. Nevertheless, on overall the results on above statement are leaning towards a positive relation between managers' decisions, performance, risk and short-term horizon when they have been given incentives, thus assuming investors relate managerial incentives both to higher risk taking, higher returns, and short-term decisions.

A reflection we made on our findings in Statement 12 and Statement 9 (c) makes us question whether the investors, since they show signs of myopic behaviour, prefer investing in companies who offer incentives to management? This we base on the fact that prior research and our findings show that investors favour short-term investments (because they fear loss) together with our result that investors tend to believe managers take on more short term decisions when given incentives.

Next we investigate some measures that managers normally use when they signal performance. How do investors consider these measures? The respondents were asked to rank by importance some of the commonly used measures when judging value creation in a company: *"Rank the following measures based on their ability to signal a company's creation of value, where 1=most important (a) dividends to shareholders, (b) operating profit, (c) net profit, (d) operating cash flow (e) free cash flow (cash flow after necessary reinvestments)"*

Table 8. Investors' perception of measures importance when valuing company performance.

Measure	"Score"
Free cash flow	173
Dividends to shareholders	159
Net Profit	158
Operating cash flow	144
Operating profit	112

To find out the ranking order of these measures, all the replies were given a weight according to their importance, and then summed up to get the total score. In Table 8, the scores of this ranking can be seen. Investors view the size of *free cash flow* a company presents as most important when assessing value creation. In second and third place investors rank *dividends to shareholders* and *net profit*, respectively. *Operating cash flow* and *operating profit* are ranked fourth and fifth. In general the answers on this ranking were spread, thus one can conclude that every investor has his/her own perception of important valuation factors.

What can we learn from above findings? Our findings have shown us signs of investors' behaviour which is responses from managers' behaviour. Based on our findings, managers should take careful notice on how they appear in public, and realise that not only figures matter when representing a company. Investors do in fact consider personal characteristics as an important information source when evaluating a company as their prospect. Managers should also be aware that investors tend to believe that managers do not always make decisions in favour of their shareholders. Therefore, managers should not assume what the economic theory says about a firm and value maximising to be something supported by the investors.

One of the behavioural anomalies we have identified on respondents is myopic loss aversion, caused by loss aversion and short-term thinking on investments. Since the investors seem to favour short-term decisions, and perceive managers given incentives to conduct more short-term decisions, one might question whether investors prefer companies with incentive programs.

Signalling is a widely discussed topic, i.e. whether certain measures work as signals for the investors about a company's performance. Our findings show that

it is a matter of individual taste how investors perceive a company's value creation through commonly used measures namely; free cash flow, operating profit, operating cash flow, dividends, and net profit. As can be seen, behavioural finance is a very complex area of study, and researchers find evidence of pieces and bits everywhere. Above identified factors are just a few out of many factors influencing investors' way of thinking. The remaining factors are left for future research.

5 Conclusions

As our research issue questioned, there is a gap between financial theory and actual attitudes among institutional investors in the financial markets. The areas that have been investigated are investors' attitudes towards risk and the managers' ability to influence investors in their decision making process. Our result does indeed show that financial theory is not adequate to explain investor behaviour. Throughout this research propositions were developed based on existing theory and later used as a guideline in order to identify our research problem. The following propositions were investigated: *P_1: The investors' perception of risk differs from what is stated in the financial theory*, *P_2: Investors and managers share a common perception of risk, P_3: Managers are able to influence investors' perception of the company.*

This study reveals that managers and investors do not actually differ much in their view of risk or their attitudes towards financial decision-making, however they both diverge from financial theory in their behaviour.

The findings of this study show that investors do not see risk as a variance in a probability distribution. The respondents showed clearly that they view risk as uncertainty leading to a negative outcome rather than uncertainty leading to positive outcome. Hence, investors' perception of risk supports the prospect theory and specifically the phenomenon called loss aversion. Further, we find that not only are the investors loss averse but they also show signs of myopic loss aversion.

The investors' consider their attitude to risk to vary over time, between decision making situations and as more experience is gained. Surprisingly, investors do not seem to be very consistent with their perception of the risk-return relationship, when other factors such as incentives are incorporated into the context. The majority of the investors state that it is possible for a company to have high profitability while being exposed to less risk. Further, the majority of the investors perceive that managers take larger risks while achieving higher profitability when given performance-related incentives. So apparently, when management compensation is involved in management decision-making, investors' perception of risk changes, and they relate high risk to high return.

For us to understand how the investors can be influenced by the managers, an understanding of the investors' view of *a successful investor* was defined. All factors given as attributes to describe a successful investor were considered highly important by the investors. These factors were: ability to choose an optimal level of risk the portfolio, finding mispriced shares, constructing sustainable long term investment strategies and taking advantage of short-term momentums in the market. Investors favoured finding mispriced shares as the most important attribute in a successful investor. Not surprisingly, the investors believe the market is inefficient.

Managers' effect on investors can be interpreted in many ways. Areas investigated were verbal communication, accounting numbers (financial statements) and simple measure signals. We started by estimating investors' perception of the level of risk that managers take in general. Evidently, investors think that managers take a reasonable amount of risk.

We see no clear evidence that investors think managers aim to maximize shareholder wealth. The result did show that the majority of investors believe managers have a good understanding of their own company's performance. However, there is an even spread concerning if investors perceive companies reflect their true value. Nevertheless, when considering all the replies given to statements under Proposition 3, it seems like investors generally believe companies reflect their true value.

Studies show that managers consider timing of equity highly important. Investors' attitude to statements concerning equity timing was therefore not surprising. Timing issue of new equity is of significance to investors and is seen as contributing to value creation to the company's shareholders.

When assessing risk in investment projects, investors perceive capital tied up by the investment as a very important factor to be considered. Moreover, when investors value company performance, the size or change in free cash flow is perceived to be the most important measure from the given alternatives. When compared with the managers' view, the point in time when positive cash flows materialise seems to be more important to managers than to investors. This can be assumed to be due to the fact that they have different focus on the

investments; for managers the cash flows from investment projects are more essential concerning the companies continuing operations in the product market, than cash flows for institutional investors concerning constant investing in the capital market.

As the comparison of risk reveals, both parties think that professional investors and company managers do not share the same view of the optimal level of risk in a company. To understand this, one should remember that managers concentrate on leading one company, whereby investors have diversified portfolios thus diversified risk. However, both investors and managers view the size of a possible negative return on an investment to be a more important factor than the size of a possible positive return. Also, both parties think it is not necessary for a company to be exposed to higher risk in order to have high profitability.

Financial theory associates risk to how the share moves with or against the market. The results of this study together with Hamberg's (2004) results show that investors and managers see no relation between price movement against the market and risk. Hence both parties question the asset pricing theory, which is the classical financial theory in portfolio selection.

The following questions arose while working on this thesis and they can be used as suggestions for further research: What kind of effect does the intermediate nature of the equity fund business have on institutional investors' behaviour / risk aversion? An elaboration on investors' attitudes found in this study compared to their actual behaviour and actions taken would be highly interesting. Although we consider our sample to present the population, a continuum study with a larger sample size could be interesting, in order to test if the answers will be consistent over a larger number of respondents. This study could also be extended to cover all Nordic countries, or all the countries that are covered in OMX.

The results of this broad-based survey open new paths for the analysis of institutional investor behaviour. This study proves to show that the ideal rational decision maker described in financial theory does not exist in reality. This conclusion is based to the attitudes of the actual decision makers

themselves. Concluding the remark of Thaler (2002) who forecasted the “homo economicus” evolving into “homo sapience” in finance, we find evidence on financial theory evolving into behavioural finance theories.

Reference List

Allais, M. (1953) Le comportement de l'homme rationnel devant le risque, *Econometrica*, Vol. 21, pp 503-546.

Arnswald, T. (2001) *Investment Behaviour of German Equity Fund Managers - an Exploratory Analysis of Survey Data*, Discussion paper 08/01, Economic Research Centre of the Deutsche Bundesbank.

Arrow, K. (1965) *Aspects of the Theory of Risk Bearing*, Helsinki: Yrjö Jahnssonis Säätiö.

Baker, M. and Wurgler, J. (2002) Market Timing and Capital Structure**,** *The Journal of Finance*, Vol. 57, No. 1, pp 1-32.

Basu, S. (1977) Investment Performance of Common Stocks in Relation to their Price-Earnings Ratios: A Test of the Efficient Market Hypothesis, *The Journal of Finance,* Vol. 32, No. 3, pp 663-682.

Belkaoui, A. and Cousineau, A. (1977) Accounting Information, Nonaccounting Information, and Common Stock Perception, *The Journal of Business,* Vol. 50, No. 3, pp 334-342.

Benartzi, S. and Thaler, R. H. (1995) Myopic Loss Aversion and the Equity Premium Puzzle, *The Quarterly Journal of Economics*, Vol. 110, No. 1, pp 73-92.

Bernoulli, D. (1738) Specimen theoriae novae de mensura sortis**,** *Commentarii Academiae Scientiarum Imperialis Petropolitanae*, Vol. 5, pp175-192.

Björklund, M. and Paulsson, U. (2003) *Seminarieboken*. Lund: Studentlitteratur.

Brown, K. C., Harlow, W. V. and Starks, L. T. (1996) Of Tournaments and Temptations: An Analysis of Managerial Incentives in the Mutual Fund Industry, *The Journal of Finance,* Vol. 51, No. 1, pp 85-110.

Cabral, M. L. (2000) *Industrial Organisation*. Massachusetts Institute of Technology.

Chan, L. K. C., Hamao, Y. and Lakonishok, J. (1991) Fundamentals and Stock Returns in Japan, *Journal of Finance*, Vol. 46, No.5, pp 1739-1764.

Cooley, P. C. (1977) A Multidimensional Analysis of Institutional Investor Perception of Risk, *The Journal of Finance,* Vol. 32, No. 1, pp 67-78.

Curtis, G. (2004) Modern Portfolio Theory and Behavioural Finance, *The Journal of Wealth Management*, Vol. 7, No. 2, pp16-22.

Daniel, K., Hirshleifer, D. and Subrahmanyam, A. (1998) Investor Psychology and Security Market under- and Overreactions, *The Journal of Finance,* Vol. 53, No. 6, pp 1839-1885.

Daniel, K., Grinblatt, M., Titman, S. and Wermers, R. (1997) Measuring Mutual Fund Performance with Characteristic-Based Benchmarks, *The Journal of Finance*, Vol. 52, No. 3, pp 1035-1058

De Bondt, W. F. M. (1998) A Portrait of the Individual Investor, *European Economic Review,* No. 42, pp 831-844.

De Bondt, W. F. M. and Thaler, R. H. (1985) Does the Stock Market Overreact, *Journal of Finance,* Vol. 40, No. 3, pp 793-805.
- - - (1987) Further Evidence on Investor Overreaction and Stock Market Seasonality, *Journal of Finance,* Vol. 42, No. 3, pp. 557-581.
- - (1990) Do Security Analysts Overreact?, *The American Economic Review*, Vol. 80, No. 2, pp 52-57.

Dreman, D. (2001) The Role of Psychology in Analysts' Estimates, *The Journal of Psychology and Financial Markets,* Vol. 2, No. 2, pp 66-68.

Fisher, K. L. and Statman, M. (2002) Bubble Expectations, *The Journal of Wealth Management*, Vol. 5, No. 2, pp 17-22.

Friedman, M. and Savage, L. P. (1948) The Utility Analysis of Choices involving Risk, *Journal of Political Economy*, Vol. 56, pp 279-304.

Gneezy, U. and Potters, J. (1997) An experiment on Risk Taking and Evaluation Periods, *Quarterly Journal of Economics,* Vol. 112, pp 631-645.

Ghauri, P., Gronhaug, K. and Kristianslund, I. (1995) *Research Methods in Business Studies - a Practical Guide*, Harlow, Essex: Prentice Hall Europe.

Grinblatt, M., Titman, S. and Wermers, R. (1995) Momentum Investment Strategies, Portfolio Performance, and Herding: A Study of Mutual Fund Behaviour, *The American Economic Review,* Vol. 85, No. 5, pp 1088-1105.

Grunditz, J. and Lindqvist, J. (2003) CEO Compensation and Company Performance – An Empirical Study of the situation in Sweden's Listed Companies, *Master Thesis No 2003:42, School of Economics and Commercial Law at Gothenburg University.*

Hellman, N. (2000) Investor Behaviour – An empirical study of how large Swedish institutional investors make equity investment decisions, *Doctoral dissertation, EFI, at Stockholm School of Economics*.

Holland, J. (1998) The Corporate Governance Role of Financial Institutions in their Investee Companies, *Corporate Governance: An International Review*, Vol. 6, No. 3, pp 204-205.

Hamberg, M. (2004) *Managerial Attitudes toward Risk and Financial Decision-Making*, Working paper, at Norwegian School of Economics, Bergen.

Hastorf, A. and Isen, M. (1982) *Cognitive Social Psychology*, Elsevier.

Johnson and Tversky (1983) Affect, Generalization and the Perception of Risk, *Journal of Personality and Social Psychology*, Vol. 45, pp 20-31.

Kauppalehti 2.12.2004, p.12, *Ruotsalainen pankkiiriliike Öhman Suomeen*.

Knight, F. (1921) *Risk, Uncertainty and Profit.* Houghton-Mifflin.

Koskenkylä, H. (2003) *Finnish Financial Markets 2002*, Bank of Finland Studies, A:105
- - Mörttinen, L. and Virolainen K. Chapter 1: *Overall Developments in the Finnish Financial Markets*
- - Pylkkönen, P. Chapter 3.2: *Mutual Funds and Investment Firms in Finland.*

Lakonishok, J., Shleifer, A. and Vishny, R. W. (1994) Contrarian Investment, Extrapolation, and Risk, *The Journal of Finance,* Vol. 49, No. 5, pp 1541-1578.

Lindley, D.V. (1985) *Decision Making*, John Wiley & Sons Inc, 2nd edition, London.

Malkiel, B. (1973) *A Random Walk Down Wall Street*. W.W. Norton and Company, New York

Malkiel, B. (1995) Returns from Investing in Equity Mutual Funds 1971-1991, *Journal of Finance*, Vol. 50, No. 2, pp 549-572.

March, J. G. and Shapira, Z. (1987) Managerial Perspectives on Risk and Risk Taking, *Management Science*, Vol. 33, No. 11, pp 1404 -1418.

Markowitz, H. (1952) Portfolio Selection, *Journal of Finance*, Vol. 7, No. 1, pp 77-91.

Marton, J. (1998) *Accounting and Stock Markets – A Study of Swedish Accounting for International Investors and Analysts*, Doctoral dissertation, BAS, School of Economics and Commercial Law at Gothenburg University.

Myagkov, M. and Plott, C. R. (1997) Exchange Economies and Loss Exposure: Experiments Exploring Prospect Theory and Competitive Equilibria in Market Environments, *American Economic Review*, Vol. 87, No. 5, pp 801-828.

Pinnuck, M. (2003) An Examination of the Performance of the Trades and

Stock Holdings of Fund Managers: Further Evidence, *Journal of Financial and Quantitative Analysis,* Vol. 38, No. 4. pp 811-828.

Pratt, J. W. (1964) Risk Aversion in the Small and in the Large. *Econometrica,* Vol. 32, pp 122-136.

Rabin, M. (2000) Risk Aversion and Expected-utility Theory: A Calibration Theorem, *Econometrica,* Vol. 68, No. 5, pp1281-1292.

Rabin, M. and Thaler, R. H. (2001) Anomalies – Risk Aversion, *Journal of Economic Perspectives*, Vol. 15, No. 1, pp 219-232.

Ross, S. A., Westerfield, R. W. and Jaffe, J. (2001) *Corporate Finance*, McGraw-Hill/Irwin. 6th ed. New York.

Saunders, M., Lewis, P. and Thornhill, A. (2000) *Research Methods for Business Students***,** Prentice Hall, 2nd edition.

Shefrin, H. and Statman, M. (1985) The Disposition Effect to Sell Winners too Early and Ride Losers too Long: Theory and Evidence, *Journal of Finance*, Vol. 40, No. 3, pp 777-790.

Svenska Dagbladet Näringsliv 2.12.2004, p. 4, *Vad gör Öhman i Helsingfors?*

Thaler, R. H. (2000) From Homo Economicus to Homo Sapiens, *Journal of Economic Perspectives*, Vol. 14, No. 1, pp133-141.

Thaler, R. H. (1999) The End of Behavioural Finance, *Financial Analysts Journal,* Vol. 55, No. 6, pp 12-17.

Thaler, R. H, Tversky, A., Kahneman, D. and Schwartz, A. (1997) The Effect of Myopia and Loss Aversion on Risk Taking: An Experimental Test, *Quarterly Journal of Economics,* Vol. 112, No. 2, pp 647-662.

Thaler, R. H. (1980) Toward a positive theory of consumer choice, *Journal of Economic Behavior and Organization,* Vol. 1, pp 39-60.

Tversky, A. and Kahneman, D. (1986) Rational Choice and the Framing of Decisions, *Journal of Business*, Part 2 of 2, Vol. 59, No. 4, pp 251-278.

Varian, H. R. (1983) Nonparametric Tests of Models of Investor Behavior, *Journal of Financial and Quantitative Analysis,* Vol. 18, No. 3, pp 269-278.

Varian, H. R. (1992) *Microeconomic Analysis*, W.W. Norton, 3rd edition.

Von Neumann, J. and Morgenstern, O. (1944) *Theory of Games and Economic Behavior.* 1953 ed., Princeton, NJ: Princeton University Press

Wydeveld, M. (1999), *Considerations in Explaining Investor Behaviour*, Occasional paper 2#, Securities Commission, New Zealand.

Internet Sources:

Dagens Industri. "Carnegie är Nordens bästa investmentbank", Nyhetsbyrån direkt.
http://www.di.se/nyheter/
Article published and accessed on December 1st, 2004 at 13.00.

Encyclopaedia Britannica Online,
http://www.britannica.com/ebc/article?tocId=9356106&query=attitude&ct=
Accessed on January 11th, 2005 at 22.48.

Kauppalehti Online on Wednesday December 1st, 2004, "OMX:n keskimääräinen päivävaihto 2,01 mrd. euroa marraskuussa".
http://www.kauppalehti.fi/4/f/uutiset/online/lista.jsp?selected=uuti_kaikki
Accessed on December 2nd, 2004 at 16:23

"Nordisk Statistikk"; the Nordic Securities Market - Statistics
http://www.oslobors.no/ob/nordiskstatistikk
Accessed on November 24th , 2004, at 16:06

Turtle Trader,
http://www.turtletrader.com/endowment-effect.html
Accessed on January 13th, 2005 at 22.40

APPENDIX 1: A brief discussion of the Finnish and Swedish stock markets

Investors trade equities daily worth a vast amount of money and the markets experience changes constantly. Average daily turnover in stock exchanges owned by OMX[35] was as high as € 2.01 billion in November 2004 (Kauppalehti Online 2.12.2004). By the end of October 2004, the turnover of all shares in the Stockholm Stock Exchange totalled € 315 billion and Helsinki Stock Exchange € 152 billion. Not only has the volume increased, but trade has also become more international and mobile.

As reported in Kauppalehti and Svenska Dagbladet on December 2nd 2004, Swedish and Finnish stock markets are integrating fast. CEO of the Swedish investment bank Öhman states that the Nordic stock market is colluding with a high speed. Öhman especially emphasizes the cooperation between Finland and Sweden, as they share very similar industry structure. Nordic financial markets have undergone big changes during the past years. Largest structural changes have occurred in the banking sector, but other segments of the financial markets have also seen substantial change caused by ICT[36], internationalisation and in case of Finland, the euro.[37] (Koskenkylä 2002).

Sweden is the largest security market among the Nordic countries. Today's forecast about the future looks very promising, says one of the largest investment banks in Sweden, Carnegie. Their prediction about the future is that a change is seen among the activities at investment banks in Sweden. The market situation is becoming much stronger. This can be seen in the business of IPO's and mergers and acquisitions. Further, a trend of increased interest by people wanting to change the recent downward bourse has started to flourish (Dagens Industri Online 1.12.2004).

The size of the Finnish stock market is around half of Sweden's. The major growth areas for investment firms in Finland have been mutual fund business

[35] OMX was founded in 2003 by a merger between Stockholm Stock Exchange (OM) and Helsinki Stock Exchange (HEX). Currently OMX owns the stock exchanges of Stockholm, Helsinki, Tallinn, Riga and Vilnius.
[36] Information and Communication Technology
[37] The exchange risk in the Finnish financial markets has declined as most investments are concentrated in the euro area.

and asset management services (Pylkkönen, 2002). As the Finnish money and capital markets have expanded and deepened, they have begun to function as a more efficient whole. According to Mörttinen and Virolainen (2002), on the whole, the relative importance of Finnish money and capital market instruments increased substantially in latter half of the 1990s. They further emphasise that financial intermediation in Finland has become more efficient with developments in the infrastructure for direct finance and in investment instruments.

APPENDIX 2: The survey (in English) and the results

Survey of Investors' Attitudes to Investments

In 2003 a survey of managerial attitudes to financial decisions with a particular emphasis on risk was conducted. It was sent to CEOs/CFOs of the 400 largest public companies in the Nordic region and replies were actually received from two thirds of all the companies. More than 300 top executives provided anonymously their attitudes to risk, the equity market and financial decisions in general.

Within the context of this research study your company has been selected to participate in a follow-up study and top management of your company has chosen to participate. We would therefore kindly ask you to take a couple of minutes to fill out the survey. Our tests show that it takes only about ten minutes to do so. We are only interested in your attitudes to financial decisions and with no concerns of any particular skills or 'business secrets'. You and your organisation will of course be anonymous in the study where we in total expect 300 replies.

Some of the results of the initial study are now available in your company. This survey is completed as cooperation between Norges Handelshoyskole and School of Economics and Commercial Law at University of Gothenburg. If you have any questions concerning this survey or the results of past studies please feel free to contact us.

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The person responsible at your office is: _____
Please hand the questionnaire back to this person when completed!

We would first like to have some information about you. Please mark with a circle:

Your current position

a) financial analyst
b) fund manager
c) trader
d) other investment related
e) other, define_____

Your work experience in the field:

a) less than one year
b) one to three years
c) four to ten years
d) more than ten years

Please consider the statements below and mark the extent to which you agree/disagree with them on the five-point scale, where 1=completely disagree, and 5=completely agree.

A. The following statements concern your view of the companies you invest in and the managerial decision-making within these companies.

	1	2	3	4	5
1. In companies, strategic decisions are made solely on the value they create for the company's shareholders.	2	16	16	15	2
2. Top managers have a sensible understanding of their company's performance.	2	3	1	22	15
3. A successful company has a high profitability while it is exposed to, relatively speaking, less risk.	2	8	15	15	9
4. A manager has the same view of the optimal level of risk in his/her company as the shareholders of that company.	7	22	20	3	
5. Because share prices fluctuate it is necessary for companies to choose the right moment to issue new equity.	2	3	10	22	15
6. In general, the price at which a company trades at corresponds to the company's "true" value.	3	16	15	13	5
7. Management's ability to present/communicate information affects the trustworthiness of the company's information.		1	2	23	26
8. By eliminating risk managers increase the possibility of earning high returns.	8	18	14	8	3
9. When managerial compensation is based on the creation of share-holder wealth top managers make:					
a) overall better decisions	1	11	20	16	4
b) more risky decisions		8	20	22	2
c) more short-term oriented decisions		6	14	25	7
d) more profitable decisions		10	20	20	2
10. By choosing the right time for an issue of new equity a company can create value for shareholders.	2	7	11	23	9
11. Managers regularly adjust accounting information so that the company's financial performance looks more favorable.	6	12	18	15	1

Please consider the statements below and mark the extent to which you agree/disagree with them on the five-point scale, where 1=completely disagree, and 5=completely agree.

	1	2	3	4	5
12. It is understandable if a company makes an investment that has a negative net present value if the investment contributes substantially to the company's overall business strategy.	7	14	11	14	4

13. In general, managers prefer: please circle one of the alternatives

a) too little risk *b)* a reasonable amount of risk *c)* too much risk 13 35 2

B. The following statements concern your view of decision-making and particularly your view of risk.

14. In your opinion a successful investor is good at:

a) choosing an optimal level of risk for his/her portfolio		2	5	24	21
b) finding mispriced shares			5	20	27
c) constructing sustainable long-term investment strategies	1	1	5	21	24
d) taking advantage of short-term momentums in the market		8	16	16	12
15. An investor's attitude to risk varies over time.		4	6	17	25
16. An investor's attitude to risk varies between different decision-making situations.		2	8	30	11
17. An investor's attitude to risk changes as more professional experience is gained.		5	9	27	11
18. An investor's attitude towards risk is rather a personal characteristic than a learned behaviour.	1	10	13	21	7
19. Besides the risk-return relationship, there is a level of attractiveness/ thrill in the exposure to risk.	1	12	16	19	4
20. The risk associated with investments in financial markets is determined by whether the price of the individual security moves with or against the market.	9	9	14	12	5
21. From an investment point-of-view it is better to own shares in a small number of well-analysed companies, than many shares that one has little knowledge of.	2	8	11	18	12

22. The consequences of taking much risk are primarily seen in recessions. 6 11 16 12 4

23. Assess the following factors' importance for an investment's risk, where 1=no importance and 5=very important.

a) the total capital tied up by this individual investment	1	3	6	29	13
b) the probability that the return is worse than expected		3	7	26	15
c) the size of a possible negative return		1	11	23	16
d) the probability that the return is better than expected		3	16	22	9
e) the size of a possible positive return		4	10	22	14
f) the points in time when positive cash flows will materialise		5	17	20	8
g) the probability that the investment affects the portfolio's overall ability to meet expectations		2	18	20	10

Please mark the <u>three factors</u> you believe are the most important: (a - g) □ □ □

24. Rank the following measures based on their ability to signal a company's creation of value, where 1=most important

a) dividends to shareholders	2
b) operating profit	5
c) net profit	3
d) operating cash flow	4
e) free cash flow (cash flow after necessary reinvestments)	1

25. Assess the following models' importance when determining a company's value, where 1=no importance and 5=very important.

a) the dividend discount model	1	5	18	22	2
b) the free cash flow model			6	21	23
c) the residual income model	1	10	27	3	2
d) relative valuation models	1	6	17	12	9
e) option technique models	7	17	16	1	3

f) other, define _____

Please mark the <u>three factors</u> you believe are the most important: (a - f) □ □ □

Thank you for your participation!

APPENDIX 3: Cover letter to survey (in English).

Differences in perception of the financial market between investors and managers

The view of financial decision-making is changing. Never before have reserchers been so interested in the decisions made by investors and their attitudes towards the companies they invest in. This has created an initiative for a reserch project in the area of corporate finance, with focus on the relation between professional investors and managers of larger listed corporations. We offer you the opportunity to be involved in this reserch project.

The first part of this study was performed during 2003: Managers (CEO's and CFO's) in the 400 largest Nordic companies were asked to participate in a survey concerning their relation to the financial market, their attitudes and financial decisions. The survey was a success with a very high response rate. Over 300 CEO's and CFO's from listed companies answered. Within this project we now wish to start a study on other actors on the Nordic financial market.

We wish to be in contact with a number of larger and successful analysts/investors who are in daily contact with the Swedish/Finnish/Norwegian stockmarket. With your help this could be possible. We are interested in the participants' perception on risk and the investments they conduct daily. We wish to emphasise that we are not interested in a specific person, company or any intern information that is essential in your daily activities. We are not interested in any type of information that could be classified as confidential within the company. All participants in this survey are anonymous and since we aim to reach over 100 respondents it is not possible to separate neither individuals or organisations.

This research solely concerns attitudes and thus the focus is on individuals and their opinions. The questionnaire is formulated in a clear way in order to make it easy and fast to answer. All the questions are given answer alternatives. We have tested the survey and it seems to take around 10 minutes to answer all the questions.

As a sign of our gratitude to your participation we would like you offer the following: (1) three free samples of the book *Strategic Financial Decisions* which creates a link between financial praxis and theory, (2) the results of this research, for free, at the time of publication (January 2005). If you wish, we will be pleased to visit your company during the spring 2005 and present the results of the study.

Thank you for your time and interest! We wish you will be able to support this very important research. Should you have any questions concerning the study or the survey, please don't hesitate to contact any of us.

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